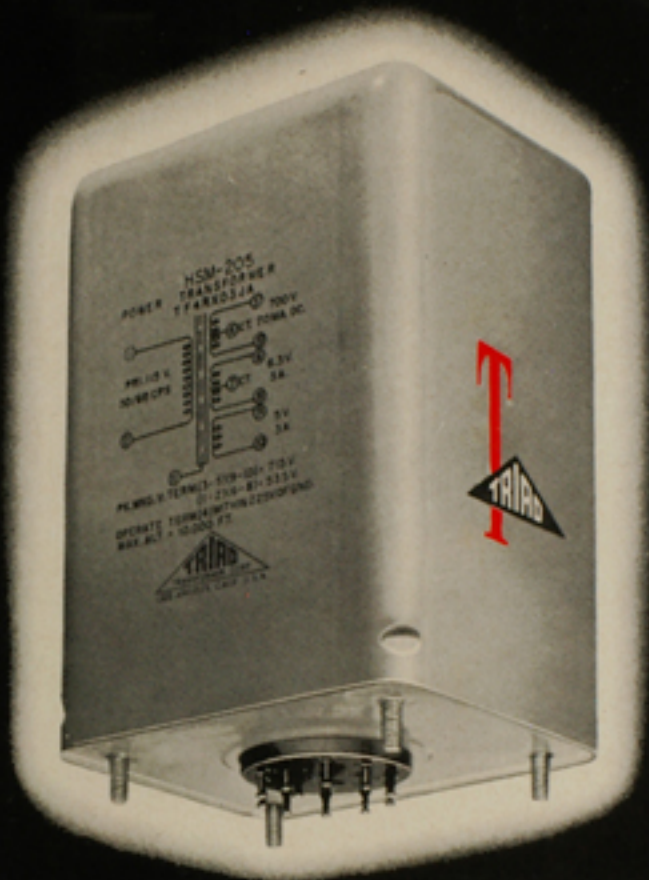


ELECTRONIC TRANSFORMERS



DISTRIBUTED BY:

Ehinger Industrial Electronics Co.
2507 S. Jefferson Ave.
St. Louis 4, Mo. — PR 2-8787

TRIAD TRANSFORMER CORPORATION
1055 REDWOOD AVENUE, VENICE, CALIFORNIA
305 NORTH BRIANT ST., HUNTINGTON, INDIANA

A DIVISION OF LITTON INDUSTRIES



RIQAP

(Reduced Inspection Quality Assurance Plan)



All TRIAD transformers are manufactured under a Signal Corps approved plan intended to assure quality in the product. The system includes approved procedures for incoming inspection of material, process controls in the plant, and final inspection. Transformers passed are approved for shipment for military use.

RIQAP applies to all Triad transformers, military or otherwise. Why not take advantage of the exhaustive quality control at Triad and eliminate or reduce the costs of your incoming inspection.

The transformers listed in this catalog are currently available from stock at better distributors throughout the United

States and Canada, and internationally through Triad's export agent.

The impedances shown in this catalog are matching impedances and do not necessarily indicate the measured impedance of the transformer windings; rather, they indicate the transformer will perform within the specifications and data ranges when matched and loaded at stated impedance.

Triad transformers are continually being revised and improved to use the best available materials. For this reason, the Triad Transformer Corporation reserves the right to modify existing mechanical construction or electrical characteristics of any catalog item without notice.

CLASSIFIED INDEX

TRIAD transformer numbers are so arranged as to indicate the type of transformer and type of mounting. The prefix letter indicates the type of transformer as follows: A—Audio C—Choke E—High "Q" Toroidal coils F—Filament G—Geoformer

M—Modulation N—Isolation or Stepdown autoformer P—Plate power transformer PL—Pulse transformer R—Power transformer, combined plate and filament S—Speaker coupling or output transformer SP—"Red Specks," micro-miniature transistor transformers T, TZ—Miniatures

TY—Transistor transformers. Hermetically sealed units bear the prefix HS and HSM; hermetically sealed "Trijets" JZ, J0 and JAF. Type of mounting is indicated by the suffix letter which refers to illustrations in the catalog.

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See above for explanation of prefix letters. Prices subject to change without notice.

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A-1X	28	1.88	A-210P	13	9.80	C-388L	27	21.00	EC-007	15	4.51	EK-700	15	7.83	ET-002	15	4.43	F-18A	26	6.00
A-3X	28	2.16	C-1X	27	1.50	C-39A	27	20.70	EC-010	15	4.39	EK-1000	15	7.99	ET-003	15	4.43	F-18X	26	4.88
A-4X	28	2.28	C-2X	27	1.44	C-40X	27	2.52	EC-015	15	4.59	EK-2000	15	8.25	ET-004	15	4.43	F-19X	26	5.25
A-5X	28	2.87	C-3X	27	2.01	C-42AL	27	12.34	EC-020	15	4.67	EK-3000	15	8.49	ET-005	15	4.50	F-20U	26	6.84
A-6X	28	2.22	C-4X	27	1.74	C-43X	32	6.00	EC-030	15	4.67	EK-4000	15	8.73	ET-007	15	4.59	F-21A	26	6.96
A-7I	28	5.28	C-5X	27	2.25	C-45AL	27	21.00	EC-040	15	4.75	EK-5000	15	8.82	ET-010	15	4.59	F-22A	26	10.20
A-9I	13	6.72	C-6X	27	1.98	C-47U	27	8.13	EC-050	15	4.75	EK-7000	15	9.24	ET-015	15	4.59	F-23U	26	7.05
A-10I	13	9.84	C-7X	27	2.58	C-48U	27	9.48	EC-070	15	4.84	EK-10000	15	9.66	ET-020	15	4.67	F-24U	26	7.11
A-11I	13	11.52	C-8X	27	2.34	C-49U	27	11.13	EC-100	15	4.84	EK-20000	15	9.99	ET-025	15	4.67	F-25X	26	3.57
A-12I	13	11.64	C-9X	27	2.34	C-80U	27	39.00	EC-200	15	4.92	EK-30000	15	10.74	ET-030	15	4.75	F-26X	26	4.17
A-13I	13	11.52	C-10X	27	3.06	EA-001	15	4.09	EC-250	15	4.92	EK-40000	15	11.31	ET-040	15	4.75	F-27U	26	9.33
A-21X	31	2.31	C-11X	27	3.06	EA-002	15	4.09	EC-300	15	4.98	Far molded cup			ET-050	15	4.75	F-28U	26	13.80
A-23X	31	2.61	C-12A	27	4.59	EA-003	15	4.09	EC-400	15	5.00	EM-001	15	4.34	ET-060	15	4.84	F-29U	26	9.00
A-31X	28	3.25	C-12X	27	3.39	EA-004	15	4.00	EC-500	15	5.09	EM-002	15	4.34	ET-070	15	4.84	F-30A	26	8.16
A-35A	28	5.70	C-13X	27	3.24	EA-005	15	4.00	EC-600	15	5.09	EM-003	15	4.34	ET-100	15	4.84	F-32A	26	6.45
A-28A	29	5.74	C-14A	27	5.19	EA-007	15	4.00	EC-700	15	5.17	EM-004	15	4.34	ET-150	15	4.92	F-34A	26	8.67
A-32X	28	3.06	C-14X	27	3.75	EA-010	15	4.00	EC-1000	15	5.26	EM-005	15	4.34	ET-200	15	4.92	F-36A	26	10.35
A-40I	13	9.84	C-15A	27	5.19	EA-015	15	4.09	EC-1500	15	5.42	EM-006	15	4.34	ET-250	15	5.01	F-38A	26	10.80
A-41I	13	9.84	C-15X	27	3.75	EA-020	15	4.09	EC-2000	15	5.50	EM-007	15	4.42	ET-300	15	5.01	F-40X	26	3.39
A-42Z	28	3.45	C-16A	27	6.66	EA-025	15	4.09	EC-3000	15	5.58	EM-010	15	4.50	ET-400	15	5.01	F-41X	26	5.04
A-51X	28	1.92	C-17X	27	3.09	EA-030	15	4.17	EC-4000	15	5.67	EM-015	15	4.62	ET-500	15	5.09	F-42A	26	7.50
A-53X	28	2.76	C-18A	27	9.34	EA-040	15	4.17	EC-5000	15	5.84	EM-020	15	4.67	ET-700	15	5.17	F-43E	26	3.75
A-54X	28	2.49	C-19A	27	10.41	EA-050	15	4.17	EC-7000	15	6.42	EM-025	15	4.67	ET-1000	15	5.26	F-44E	26	3.54
A-55I	13	9.66	C-20A	27	12.06	EA-070	15	4.25	EC-10000	15	7.14	EM-030	15	4.71	Far molded cup			F-45X	26	3.39
A-57I	13	9.81	C-21X	27	2.67	EA-100	15	4.25	Far molded cup			EM-040	15	4.75	add 1.92			F-47U	25	6.15
A-65I	13	10.08	C-22A	27	20.40	EA-150	15	4.25	add 2.00			EM-050	15	4.75	F-1X	26	2.34	F-48U	25	5.09
A-66I	13	9.75	C-23X	27	2.67	EA-200	15	4.27	EK-010	15	6.49	EM-060	15	4.84	F-3X	26	3.84	F-49U	25	13.88
A-67I	13	10.32	C-24X	27	2.13	EA-250	15	4.42	EK-020	15	6.60	EM-070	15	4.84	F-5U	26	5.64	F-50X	26	3.15
A-68I	13	9.90	C-25A	27	6.00	EA-300	15	4.42	EK-030	15	6.66	EM-070	15	4.92	F-6X	26	3.18	F-51X	26	3.42
A-75I	13	10.32	C-26X	32	4.17	EA-400	15	4.51	EK-040	15	6.66	EM-100	15	4.92	F-7X	26	3.48	F-52X	26	3.00
A-77I	13	9.00	C-27X	27	2.04	EA-500	15	4.75	EK-050	15	6.79	EM-150	15	4.92				F-53X	26	4.20
A-78I	13	9.66	C-28X	27	2.73	EA-600	15	4.84	EK-060	15	6.85	EM-200	15	5.00	F-8X	26	4.02	F-53X	26	4.20
A-79I	13	9.75	C-29X	27	3.00	EA-700	15	5.00	EK-080	15	6.99	EM-250	15	5.00	F-9A	26	8.07	F-60U	25	6.99
A-81X	32	1.15	C-30X	27	2.01	EA-1000	15	5.17	EK-100	15	7.28	EM-300	15	5.17	F-9U	26	7.17	F-61U	25	10.14
A-83X	32	2.58	C-31A	27	6.72	Far molded cup			EK-120	15	7.58	EM-400	15	5.26	F-10U	26	9.00	F-62U	25	19.20
A-85X	32	3.00	C-32AL	27	12.30	add 1.92			EK-150	15	7.88	EM-500	15	5.42	F-11U	26	9.00	F-63U	25	6.00
A-89A	32	6.81	C-33A	27	10.35	EC-001	15	4.42	EK-200	15	7.13	EM-700	15	5.75	F-12X	26	4.80	F-640	28	7.28
A-91A	32	9.30	C-34X	27	12.84	EC-002	15	4.42	EK-250	15	7.23	EM-1000	15	6.42	F-13X	26	2.10	F-65U	25	11.19
A-200P	13	14.84	C-35A	27	3.00	EC-003	15	4.42	EK-300	15	7.32	Far molded cup			F-14X	26	2.22	F-66U	25	27.00
A-202P	13	20.28	C-36X	27	2.04	EC-004	15	4.42	EK-400	15	7.50	add 1.83			F-15U	26	6.99	F-67U	25	15.30
						EC-005	15	4.42	EK-500	15	7.67	ET-001	15	4.43	F-16X	26	3.33	F-68U	25	9.90

● New Item.

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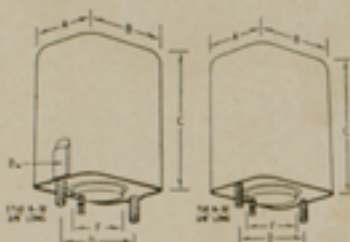
PRICE LIST AND INDEX BY TYPE NO. (CONTINUED)

See opposite page for explanation of prefix letters. Prices subject to change without notice.

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F-71U	26	6.24	WS-15	20	26.64	WS-438	6	15.84	PL-80P	16	12.75	R-104A	21	4.80	S-54X	20	2.76	TY-28X	9,10	3.75
F-72Z	26	4.05	WS-23	20	21.72	WS-441	6	27.88	PL-80E	16	12.12	R-104B	21	4.80	S-55X	20	3.66	TY-29X	9,10	3.66
F-790	25	22.50	WS-25	20	21.72	WS-442	6	19.88	PL-81P	16	13.56	R-105A	21	5.49	S-55Z	20	3.66	TY-30X	9,10	3.24
F-805Z	25	44.70	WS-27	20	19.68	WS-443	6	13.14	PL-81P	16	12.50	R-105B	21	5.49	S-56Z	20	3.72	TY-31X	9,10	3.24
F-83A	26	11.16	WS-29	20	27.48	WS-470	5	15.00	PL-81E	16	12.72	R-106A	21	5.49	S-57Z	20	4.41	TY-32X	9,10	3.75
F-84AC	25	18.90	WSM-31	20	21.06	WS-472	5	18.60	PL-82W	16	14.07	R-106B	21	5.49	S-58X	28	2.85	TY-33X	9,10	3.75
F-90X	25	3.75	WS-32	20	27.48	WS-474	5	22.86	PL-82P	16	13.32	R-107A	21	6.00	S-58Z	20	4.35	TY-34X	9,10	3.75
F-91X	25	4.86	WS-35	20	19.50	JAF-1	8,9	13.20	PL-82E	16	12.63	R-107B	21	6.00	S-60A	28	8.49	TY-35X	9,10	3.60
F-92A	25	7.62	WS-50	4	23.22	JAF-2	8,9	13.74	PL-83M	16	14.34	R-108A	21	6.33	S-61Z	30	4.65	TY-36X	9,10	3.75
G-1	18	11.75	WS-52	4	24.00	JAF-3	8,9	13.74	PL-83P	16	13.82	R-108B	21	6.33	S-62X	30	2.46	TY-37X	9,10	3.60
G-2	18	24.51	WS-54	4	28.56	JAF-5	8,9	13.74	PL-83E	16	13.50	R-109A	21	6.90	S-63X	30	2.58	TY-38X	9,10	3.60
G-4	18	24.51	WS-56	4	25.80	JAF-11	8,9	12.84	PL-84M	16	14.52	R-109B	21	6.90	S-64X	30	2.31	TY-39X	9,10	3.60
G-5	18	21.18	WS-58	4	30.30	JAF-12	8,9	13.20	PL-84P	16	13.80	R-110A	21	7.17	S-65X	28	1.92	TY-40X	9,10	3.60
G-7	18	21.18	WS-60	4	19.50	JAF-13	8,9	13.74	PL-84E	16	13.08	R-110B	21	7.17	S-66X	28	2.64	TY-41X	9,10	3.72
G-8	18	28.05	WS-61	4	20.64	JAF-14	8,9	13.74	PL-124E	16	21.00	R-111A	21	7.50	S-67X	29	2.67	TY-42X	9,10	3.60
G-9	18	21.18	WS-66	4	23.16	JAF-15	8,9	13.74	PL-124H	16	23.60	R-111B	21	7.50	S-68Z	30	4.41	TY-43X	9,10	3.72
G-10	18	28.05	WS-71	8	14.40	JAF-21	8,9	13.20	PL-129E	16	20.20	R-112A	21	7.74	S-68Z	30	4.35	TY-44X	9,10	3.75
G-12	18	19.50	WS-73	8	15.42	JAF-22	8,9	13.20	PL-129M	16	22.60	R-112B	21	7.74	S-70Z	31	3.69	TY-45X	9,10	3.75
G-14	18	19.50	WS-75	8	18.18	JAF-23	8,9	13.74	PL-129M	16	22.00	R-113A	21	5.67	S-71Z	31	3.33	TY-46X	9,10	3.75
G-15	18	32.13	WS-77	8	21.18	JAF-31	8,9	14.16	PL-140E	16	21.00	R-113B	21	5.67	S-72Z	31	4.20	TY-47X	9,10	3.96
G-16	18	20.67	WS-471	5	16.50	JAF-33	8,9	14.16	PL-140M	16	23.60	R-114A	21	6.67	S-73X	31	3.06	TY-48X	9,10	3.96
G-17	18	21.75	WS-475	5	24.50	JAF-101	8,9	12.60	PL-140M	16	23.00	R-114B	21	6.67	SR-74K	31	9.33	TY-49X	9,10	2.79
G-18	18	19.98	WSM-79	7	19.50	JO-1	8,9	13.14	PL-140E	16	20.00	R-115A	21	7.20	S-75X	31	13.20	TY-50X	9,10	4.56
G-19	18	19.98	WSM-80	7	21.30	JO-2	8,9	13.92	PL-140M	16	22.60	R-115B	21	7.20	S-76Z	28	5.64	TY-51X	9,10	3.96
G-20	17	26.89	WSM-81	7	23.56	JO-3	8,9	13.92	PL-140M	16	22.00	R-116A	21	8.76	S-77U	28	8.82	TY-52X	9,10	4.29
G-21	17	23.64	WSM-82	7	23.58	JO-5	8,9	13.92	R-2C	23	3.99	R-116B	21	8.76	S-78Z	31	3.66	TY-53X	9,10	3.33
G-22	17	31.20	WSM-84	7	23.58	JO-11	8,9	13.32	R-3A	23	5.58	R-118A	21	10.23	S-79Z	31	4.14	TY-54X	9,10	4.08
G-23	17	23.64	WSM-85	7	23.58	JO-12	8,9	13.74	R-4A	22	5.43	R-118B	21	10.23	S-129Z	31	5.28	TY-55X	9,10	4.17
G-24	17	37.80	WSM-91	7	39.30	JO-13	8,9	13.74	R-4B	22	5.43	R-120A	21	12.06	S-130Z	31	3.80	TY-56X	9,10	4.17
G-25	17	23.64	WSM-94	7	43.62	JO-21	8,9	13.74	R-5A	22	6.00	R-120B	21	12.06	S-131X	31	2.76	TY-57X	9,10	3.51
G-30	18	17.87	WSM-95	7	43.62	JO-22	8,9	13.74	R-5B	22	6.00	R-121A	21	11.43	S-132X	31	3.39	TY-58X	9,10	3.51
G-31	19	19.50	WS-97	7	82.20	JO-23	8,9	13.92	R-6A	22	6.15	R-121B	21	11.43	S-133Z	31	4.35	TY-59X	9,10	3.59
G-32	19	24.51	WSM-181	7	23.58	JO-31	8,9	13.74	R-6B	22	6.15	S-1X	29	1.65	S-142A	7	12.84	TY-60X	9,10	4.32
G-33	19	21.18	WSM-182	7	23.58	JO-101	8,9	12.60	R-7A	22	6.48	S-2X	29	1.74	S-146A	7	18.50	TY-61X	9,10	2.91
G-34	19	27.87	WSM-184	7	30.00	JO-1	8,9	11.79	R-7B	22	6.48	S-3X	29	1.74	S-146A	7	18.36	TY-62X	9,10	3.48
G-36	19	16.80	WSM-186	7	30.00	JO-5	8,9	12.12	R-8A	22	6.87	S-4X	29	2.34	S-148A	7	18.36	TY-63X	9,10	3.99
G-40	19	21.18	WSM-187	7	30.00	JO-7	8,9	11.79	R-8B	22	6.87	S-5X	29	2.37	S-152A	7	26.76	TY-64X	9,10	3.66
G-48	19	16.38	WSM-189	7	20.00	JO-13	8,9	11.79	R-9A	22	7.30	S-6Z	29	2.37	SP-4	9,12	7.60	TY-65Z	9,10	3.66
G-51	19	19.50	WSM-190	7	20.00	JO-15	8,9	11.79	R-9B	22	7.50	S-6X	29	1.56	SP-5	9,12	6.75	TY-66A	9,10	9.09
G-51A	19	19.50	WSM-192	7	45.00	JO-25	8,9	11.46	R-10A	22	8.25	S-6Z	29	1.56	SP-7	9,12	6.50	TY-67A	9,10	9.33
G-52	19	20.79	WSM-193	7	45.00	JO-26	8,9	11.46	R-10B	22	8.25	S-7X	29	1.65	SP-11	9,12	6.00	TY-68X	9,10	6.18
G-53	19	20.79	WSM-200	5	20.00	M-1X	32	2.82	R-11A	22	8.49	S-8X	29	1.59	SP-13	9,12	6.50	TY-69X	9,10	8.01
G-53A	19	20.79	WSM-201	5	21.66	M-2X	32	4.59	R-11B	22	8.49	S-8Z	29	1.59	SP-15	9,12	6.50	TY-70X	9,10	8.07
G-54	19	20.79	WSM-205	5	21.42	M-4Z	32	3.00	R-12A	22	8.73	S-9X	29	2.43	SP-20	9,12	6.10	TY-71X	9,10	8.18
G-57	19	16.80	WSM-205	5	24.15	M-5Z	32	3.99	R-12B	22	8.73	S-9Z	29	2.43	SP-21	9,12	6.10	TY-74X	9,10	9.99
G-58	19	25.83	WSM-207	5	26.40	M-7AL	32	12.96	R-14A	22	9.81	S-10X	29	2.07	SP-29	9,12	5.75	TY-75A	9,10	11.64
G-64	19	16.38	WSM-212	5	32.40	M-8AL	32	16.20	R-14B	22	9.81	S-11X	29	1.65	SP-32	9,12	5.40	TY-76A	9,10	7.65
G-65	19	16.38	WSM-216	5	37.80	M-12AL	32	19.32	R-14C	22	11.16	S-11Z	29	1.65	SP-33	9,12	5.40	TY-78	9,10	10.41
G-72	20	21.18	WSM-218	5	52.35	M-15A	32	11.28	R-16B	22	11.16	S-12X	29	1.59	SP-34	9,12	5.40	TY-79	9,10	11.10
G-80	20	24.57	WSM-219	5	49.95	M-16AL	32	12.54	R-17A	22	12.60	S-12Z	29	1.59	SP-35	9,12	5.40	TY-80	9,10	11.61
G-84	20	21.18	WSM-223	6	11.25	N-1X	24	3.87	R-18A	22	12.30	S-13X	29	1.74	SP-36	9,12	5.65	TY-81	9,10	12.51
G-85	20	21.18	WSM-225	6	14.28	N-3M	24	7.86	R-18B	22	12.30	S-13Z	29	1.74	SP-42	9,12	5.35	TY-82	9,10	12.90
G-92	20	22.05	WSM-226	6	15.51	N-4M	24	9.66	R-19A	22	14.84	S-14Z	29	1.59	SP-43	9,12	5.55	TY-83	9,10	14.04
G-101	18	19.50	WSM-227	6	19.02	N-5M	24	11.49	R-20A	22	13.20	S-15X	30	2.58	SP-44	9,12	5.55	TY-84	9,10	15.00
G-135	19	19.50	WSM-228	6	23.10	N-7M	24	16.26	R-20B	22	13.20	S-16X	29	1.83	SP-46	9,12	5.55	TY-88	9,10	10.41
G-150	19	19.50	WSM-229	6	18.18	N-9M	24	35.01	R-21A	22	13.68	S-17X	29	1.92	SP-47	9,12	5.55	TY-89	9,10	10.80
G-155	19	19.50	WSM-230	6	15.89	N-11M	24	51.90	R-21B	22	13.68	S-18X	29	2.07	SP-48	9,12	6.00	TY-90	9,10	11.64
G-183	20	24.90	WSM-231	6	20.46															



The impedances shown in this catalog are matching impedances and do not necessarily indicate the measured impedance of the transformer windings; rather, they indicate the transformer will perform within the specifications and data ranges when matched and loaded at stated impedance.



GP-1, -2, -3

GP-4, -5

**Avoid redesign —
Use Triad HS and HSM
transformers
in military prototypes**

Triad HS and HSM series transformers are designed to meet MIL-T-27A requirements. Most of these transformers use standard MIL-T-27A case sizes. Exceptions are GP cases or any cases showing a Bw dimension, which may be classified as MIL-T-27A "YY" cases. Equipment using these transformers need not be redesigned to submit for military approval. The basically good design factors which are necessary to meet MIL-T-27A standards for performance ensure longest life in any class of service.

These transformers are permanently marked with electrical and test data as specified in MIL-T-27A. All are "Climate" treated, use sturdy TRIAD terminals and are beautifully finished in grey enamel.

	GP-1	GP-2	GP-3	GP-4	GP-5
A	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
B	1 1/4	1 1/4	1 1/4	1 1/4	2
Bw	1 1/4	1 1/4	1 1/4		
C	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
D	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
F	1/4	1/4	1/4	1/4	1/4
Wt.	2 oz.	1 1/2 oz.	8 oz.	12 oz.	17 oz.

F dimension indicates recommended chassis cutout, not terminal dimension.

SHIELDING

- P-1** — One nickel alloy high permeability shield — 45db. reduction in pickup.
- P-3** — Two nickel alloy shields interleaved with one heavy copper shading ring — 70db. reduction in pickup.
- P-5** — Three nickel alloy shields interleaved with two heavy copper shading rings — 90db. reduction in pickup.

See Page 18 for exploded view.

LOW LEVEL AUDIO

Hermetically Sealed

Triad low-level audio transformers have been adopted as standard by many manufacturers of the finest in audio equipment. No other transformers offer such wide frequency range and such effective magnetic shielding in such small size. Shielding up to 95 db. is attained by multiple "Trialloy" cases interleaved with heavy copper shading rings. These transformers are solidly constructed, rigidly mounted with welded stainless steel studs, and hermetically sealed to MIL-T-27A specifications. Beautiful appearance, unmatched performance, long life, minimum size, are outstanding features of these quality transformers.

AUDIO INPUT TRANSFORMERS

Type No.	Mil Type	Application	Primary Matching Impedance	Turn Ratio	Secondary Load Impedance	Freq. Resp.	Max. Level DBM	Shielding	Case
HS-1	TF1QX32YY	Univ. line or mike to grid.	600* (250*/150-62.5)	1:11.3	77000	20-20000	10	P-5	GP-4
HS-11	TF1QX12YY	Same as above.						P-1	GP-2
HS-3	TF1QX32YY	Univ. line or mike to p.p. class A grids.	600* (250*/150-62.5)	1:14 overall	117600 CT.	20-20000	10	P-5	GP-5
HS-4	TF1QX32YY	Same as above.						P-3	GP-4
HS-14	TF1QX32YY	Same as above.						P-1	GP-3
HS-15	TF1QX11YY	Line to one or two grids. DC in pri.	600* (250*/150-62.5 (10 Ma.))	1:8 overall	38400 CT.	30-20000	20	P-3	GP-5
HS-5	TF1QX32YY	Dynamic mike to grid—Hi-gain.	30-50	1:65.7	130000	50-10000	0	P-5	GP-4
HS-8	TF1QX32YY	Line to p.p. class A grids—Hi-level.	600* (250*/150-62.5)	1:14 overall	117600 CT.	20-20000	20	P-1	GP-4

*Balanced center tap.

Low frequency loss will result from use of unbalanced DC in windings other than where specified.

AUDIO INTERSTAGE TRANSFORMERS

Type No.	Mil Type	Application	Primary Matching Impedance	Turn Ratio	Secondary Load Impedance	Freq. Resp.	Max. Level Pri. Volts	Shielding	Case
HS-23	TF1QX32YY	Single plate to single grid.	15000	1:2.7	110000	20-20000	15	P-3	GP-4
HS-25	TF1QX32YY	Single plate to p.p. class A grids.	15000	1:2.72 overall	110000 CT.	20-20000	25	P-1	GP-4
HS-35	TF1QX32YY	Single plate to p.p. class A grids.	15000	1:2.72 overall	111000 CT.	20-20000	20	P-1	GP-2
HS-27	TF1QX15YY	P.p. plates to p.p. class A grids.	20000/5000	1:1.72 overall	60000 CT.	20-20000	50	P-1	GP-4
HS-29	TF1QX32YY	Bridging-line to 1 or 2 grids.	20000/5000	1:2 overall	80000 CT.	20-20000	20	P-5	GP-4
HSM-31	TF4XX29FA	P.p. 6J5's or parallel-fed 6F6 triode to AB grids.	20000/5000	1:1 or 2:1	20000 or 5000 CT.	20-20000	240		FA
HS-32	TF1QX15YY	Single plate to p.p. grids. DC in pri.	15000 (5 Ma.)	1:2 overall	60000 CT.	20-15000	20	P-1	GP-5

†See chart on page 5 for case size.

Low frequency loss will result from use of unbalanced DC in windings other than where specified.

AUDIO LOW LEVEL OUTPUT, MIXING, MATCHING, BRIDGING

Type No.	Mil Type	Application	Primary Matching Impedance	Secondary Load Impedance	Freq. Resp.	Max. Level DBM	Shielding	Case
HS-50	TF1QX16YY	Plate to universal line.	15000	600* (250*/150-62.5)	20-20000	26	P-3	GP-4
HS-60	TF1QX16YY	Plate to universal line.	15000	600* (250*/150-62.5)	20-20000	30	P-1	GP-2
HS-61	TF1QX13YY	Plate to universal line—DC in pri.	15000 (5 Ma.)	600* (250*/150-62.5)	50-15000	20	P-1	GP-5
HS-53	TF1QX13YY	P.p. plates to universal line.	20000/5000	600* (250*/150-62.5)	20-20000	26	P-1	GP-4
HS-54	TF1QX13YY	Bridging, single or p.p. plates, to univ. line.	20000/5000	600* (250*/150-62.5)	20-20000	10	P-5	GP-4
HS-56	TF1QX16YY	Universal line to universal line.	600* (250*/150-62.5)	600* (250*/150-62.5)	10-30000	20	P-3	GP-4
HS-66	TF1QX16YY	Same as above.			10-30000	20	P-1	GP-3
HS-58	TF1QX16YY	Line-to-line, balanced resistance & capacities	600* (250*/150-62.5)	600* (250*/150-62.5)	20-30000	15	P-3H	GP-5

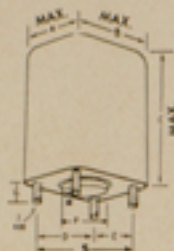
*Balanced center tap.

Low frequency loss will result from use of unbalanced DC in windings other than where specified.

See table at left for shielding data.



HS Series
(MIL Case)



Standard MIL-T-27A Case Sizes

MIL-T-27A tolerances apply to charts below.

	AH	AJ	EA	EB	FA	FB	GA
A	2 1/4	1 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
B	2 1/4	1 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
C	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
D	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
E	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
F	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
G	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
H	6-32	6-32	6-32	6-32	6-32	6-32	6-32

Wt. (approx.) 4 oz. 9 oz. 1 15 oz. 1 1/4 1 1/4 2 lbs.

*AH case has corner mtg. See "B" dim. above.

	GB	HA	HB	JA	JB	KA	KB
A	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
B	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
C	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
D	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
E	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
F	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
G	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
H	6-32	6-32	6-32	6-32	6-32	6-32	6-32

Wt. (approx.) 1 1/4 2 1/4 2 1/4 4 1/4 4 1/4 7 1/4 7 lbs.

	LA	LB	MA	MB	NA	NB
A	2 1/4	2 1/4	4	4	4 1/4	4 1/4
B	4 1/4	4 1/4	4 1/4	4 1/4	5 1/4	5 1/4
C	5 1/4	4 1/4	6	4 1/4	6 1/4	5 1/4
D	3 1/4	3 1/4	3 1/4	3 1/4	4 1/4	4 1/4
E	2 1/4	2 1/4	3	3	3 1/4	3 1/4
F	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4
G	10-32	10-32	1/4-20	1/4-20	1/4-20	1/4-20

Wt. (approx.) 3 1/4 8 1/4 13 1/4 13 1/4 18 18 lbs.

POWER COMPONENTS

Hermetically Sealed

COMBINED PLATE AND FILAMENT TRANSFORMERS

PRIMARY 115V — 50/60 CYCLE TO OPERATE 50/60 TO 1000 CYCLES

Type No.	MIL Type	Plate Supply		Filaments	Insulation Test Voltage	F Dim. (Min.) Inches	Case
		AC Volts	DC Ma.				
• HSM-300	TF4RX01FA	120	100	6.3 CT.—1.6A.	1500	1 1/4	FA
† HSM-301	TF4RX02GA	500 CT.	20	6.3 CT.—2A.	1500	1 1/4	GA
HSM-303	TF4RX03JB	600 CT.	50	6.3 CT.—2.5A. 5 —2A.	1500	1 1/4	JB
HSM-305	TF4RX03JA	700 CT.	70	6.3 CT.—3A. 5 —3A.	2000	1 1/4	JA
HSM-307	TF1RX01KA	700 CT.	120	6.3 CT.—5A. 5 —3A.	1500	1 1/4	KA
• HSM-341	TF1RX02LA	700 CT.—70 V bias tap.	150	6.3 CT.—6A. 6.3 V.—2A. 5 —3A.	1500	1 1/4	LA
• HSM-212	TF1RX03LA	1000, 800 CT.	150 (ch. input) 117 (cond. input)	6.3-5-6A 6.3 CT.—4A. 6.3-V-4A.	2000	1 1/4	LA
• HSM-343	TF1RX03MA	800, 700 CT. 70 V. bias tap.	200	6.3 CT.—6A. 6.3-V.—4A. 5 —4A.	1500	1 1/4	MA
• HSM-214	TF1RX03MA	1000, 800 CT.	200 (ch. input) 157 (cond. input)	6.3-5-6A 6.3 CT.—5A. 6.3-5A.	2000	1 1/4	MA
• HS-347	TF1RX03YY	800, 700 CT. 70 V. bias tap.	300	6.3 CT.—6A. 6.3-V.—4A. 5 —4A.	2000	1 1/4	GP-15
• HSM-218	TF1RX03YY	1000, 800 CT.	300 (ch. input) 235 (cond. input)	6.3-5-6A 6.3 CT.—6A. 6.3-6A.	2000	1 1/4	GP-15
HSM-219	TF1RX02YY	(115, 230 pri.) 760/1600 CT.	40-230 (ch. input)		2800	Spot	GP-15

†Low flux density—for pre-amplifier service.

All types electrostatically shielded.

GP-15 dimensions 4 1/2" x 5 1/2" x 6 1/2" High. Wt. approx. 22 lbs.

Mtg. centers 3 1/4" x 4 1/4".

• New item.

* Multiple windings for series or parallel connection, i.e. two 6.3 V.—2 A. windings, can be connected for 6.3 V.—4 A., 12.6 V.—2 A., or as two windings each 6.3 V.—2 A.

ISOLATION TRANSFORMERS

115-230V PRIMARY 50/60 CYCLES TO OPERATE 50-1000 CYCLES

Type No.	MIL Type	Secondary Volts	Secondary Amp.	V. A.	F Dim. (Min.) Inches	Case
HSM-270	TF4RX01JB	105-115-125	4	50	1 1/4	JB
HSM-271	TF1RX01KA	105-115-125	1	125	1 1/4	KA
HSM-272	TF1RX02NB	105-115-125	2	250	1 1/4	NB

COMBINED PLATE AND FILAMENT TRANSFORMERS

PRIMARY 115V — 400 CYCLE TO OPERATE 380 TO 1500 CYCLES

Type No.	MIL Type	Plate Supply		Filaments	Insulation Test Voltage	F Dim. (Min.) Inches	Case
		AC Volts	DC Ma.				
HS-402	TF1RX03A	475 CT.	20	6.3 CT.—1.5A.	1500	1 1/4	AJ
• HS-401	TF4RX02EB	500 CT.	40	6.3 CT.—1A. 6.3-1A.	1500	1 1/4	EB
• HS-405	TF4RX03GA	600 CT.	70	6.3 CT.—2A. 6.3-2A. 16.3-5-2A.	1500	1 1/4	GA
• HS-407	TF4RX03JB	600 CT.	120	6.3 CT.—3.5A. 6.3-3.5A. 16.3-5-3A.	1500	1 1/4	JB
• HS-409	TF4RX03HA	700 CT.	150	6.3 CT.—4A. 16.3-5-3A.	1500	1 1/4	HA
• HS-413	TF4RX03JA	450 CT.	200	6.3 CT.—6A. 6.3 —6A. 16.3-5-6A.	1500	1 1/4	JA
• HS-415	TF1RX03KB	800/600 CT.	200	6.3 CT.—6A. 6.3-6A. 16.3-5-6A.	2500	1 1/4	KB
• HS-417	TF1RX03LA	800/600 CT.	300	6.3 CT.—6A. 6.3-6A. 16.3-5-6A.	2500	1 1/4	LA

†Tapped for 5 volt rectifier use.

All types electrostatically shielded.

* Multiple windings for series or parallel connection, i.e. two 6.3 V.—2 A. windings, can be connected for 6.3 V.—4 A., 12.6 V.—2 A., or as two windings each 6.3 V.—2 A.

ISOLATION TRANSFORMERS

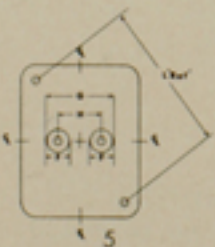
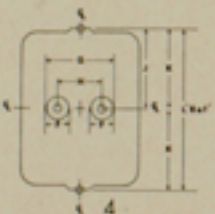
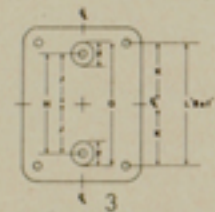
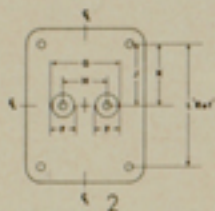
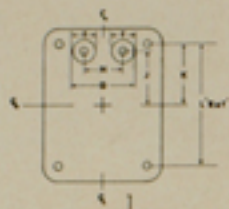
PRIMARY 115V — 400 CYCLE TO OPERATE 380 TO 1500 CYCLES

Type No.	MIL Type	Secondary Volts	Secondary Amp.	V. A.	F Dim. (Min.) Inches	Case
HS-470	TF4RX01EA	115	35	40	1 1/4	EA
• HS-471	TF4RX01FA	115	7	80	1 1/4	FA
HS-472	TF4RX02GA	115	1.4	160	1 1/4	GA
HS-474	TF4RX03JA	115	2.6	300	1 1/4	JA
• HS-473	TF4RX01KA	115	4.4	500	1 1/4	KA

All isolation transformers electrostatically shielded.

• New item.

Hermetically Sealed Header bulletin available upon request



Outline drawings show Terminal end only.

POWER COMPONENTS

Hermetically Sealed

FILAMENT TRANSFORMERS, 50/60 CYCLE

Type No.	Mil Type	Primary Volts	Secondary Volts	Secondary Amperes	Insulation Test Voltage	F Dim. (Min.) Inches	Case **
HSM-223	TF4RX01YY	115	6.3	0.6	1500	1/4	1AJ
HSM-225	TF4RX01EA	105-115-125	6.3 CT.	2	1500	1/4	EA
HSM-226	TF4RX01FA	105-115-125	6.3 CT.	3.6	1500	1/4	FA
* HSM-224	TF1RX01KA	105-115-125	6.3 CT. 6.3	10 10	2500	1 1/4	KA
* HSM-227	TF4RX01GA	105-115-125	6.3 CT. 6.3	3 3	2500	1 1/4	GA
HSM-229	TF4RX01JB	105-115-125	6.3 CT.	8	2500	1 1/4	JB
HSM-230	TF4RX01FA	105-115-125	24 CT.	0.8	1500	1/4	FA
* HSM-228	TF4RX01JB	105-115-125	12.6 CT. 12.6	2 2	2500	1 1/4	JB
* HSM-228	TF4RX01JA	105-115-125	6.3 CT. 6.3	6 6	2500	1 1/4	JA
HSM-231	TF4RX01JB	105-115-125	6.3 CT. 5 CT.	5 3	2500	1 1/4	JB
HSM-232	TF4RX01HA	105-115-125	2.5 CT.	10	7500	2 1/4	HA
HSM-235	TF1RX01MA	105-115-125	2.5 CT. 10 CT.	10 10	2500 2500	Spd.	MA

† See chart page 8.

** See case chart page 5.

* Multiple windings for series or parallel connection, i.e. two 6.3 V.—2 A. windings, can be connected for 6.3 V.—4 A., 12.6 V.—2 A., or as two windings each 6.3 V.—2 A.

FILAMENT TRANSFORMERS, 380/1500 CYCLE

Type No.	Mil Type	Primary Volts	Secondary Volts	Secondary Amperes	Insulation Test Voltage	F Dim. (Min.) Inches	Case **
HS-436	TF4RX01AH	115	6.3 CT.	1	1500	1/4	AH
HS-435	TF4RX01YY	105-115-125	6.3 CT.	2	1500	1/4	1AJ
HS-427	TF4RX01EA	105-115-125	6.3 CT.	5	1500	1/4	EA
HS-438	TF4RX01EA	105-115-125	24 CT.	1.5	1500	1/4	EA
* HS-433	TF4RX01FA	105-115-125	6.3 CT. 6.3	5 5	2500	1 1/4	FA
* HS-433	TF4RX01FA	105-115-125	6.3 CT. 6.3 16.3-5	3.5 3.5 3	2000	1 1/4	FA
* HS-441	TF4RX01HA	105-115-125	5 CT. 5 2.5 CT.	10 10 10	2000 7500	Spd.	HA
* HS-442	TF4RX01YY	105-115-125	12.6 CT. 12.6	0.8 0.8	1500	1/4	1AJ
* HS-442	TF4RX01EA	37.5-99.7-115-120 Single phase	12.6 CT. 12.6	2 2	1500	1/4	EA

Two HS-442's can be used, 115 volt 3 phase to 28 volt 2 phase, Scott-connected.

† See chart page 8. †† 15 volt tap for filament type rectifiers. ** See case chart page 5.

* Multiple windings for series or parallel connection, i.e. two 6.3 V.—2 A. windings, can be connected for 6.3 V.—4 A., 12.6 V.—2 A., or as two windings each 6.3 V.—2 A.

FILTER REACTORS

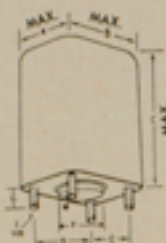
Type No.	Mil Type	Current DC Ma.	Inductance Henries	Resistance Ohms	Insulation Test Voltage	Dwg. No.	Dimensions of Outline Dwg. F Dim. 1/16 Min.					Case	
							F	G (Max.)	H	J	K	L=1/16	
HSM-301	TF4RX04EB	20	30	1000	1500	1	1/4	1 1/2	1/4	1/4	1/4	1 1/2	EB
HSM-302	TF4RX04AJ	20	14	550	1500								AJ
HS-331	TF4RX04YY	40	4	375	1500	4	1/4	1 1/2	1/4	1/4	1/4	1 1/2 (+1/16)	AH
HS-303	TF4RX04EB	50	12	385	1500	2	1/4	1 1/2	1/4	1/4	1/4	1 1/2	EB
HS-333	TF1RX04YY	70	3	225	1500	5	1/4	1 1/2	1/4	—	—	1 1/2	AJ
HSM-305	TF4RX04GB	70	25	300	2500	3	1/4	2 1/2	1 1/4	1/4	1/4	2 1/4	GB
HS-335	TF4RX04EB	120	3	150	1500	1	1/4	1 1/2	1/4	1/4	1/4	1 1/2	EB
HSM-307	TF4RX04JB	120	15	185	2500	1	1/4	2 1/2	1 1/4	1 1/4	1 1/4	2 1/4	JB
HSM-309	TF4RX04JB	150	9	115	2500	1	1/4	2 1/2	1 1/4	1 1/4	1 1/4	2 1/4	JB
HS-339	TF4RX04FB	200	3	105	2000	1	1/4	1 1/2	1/4	1/4	1/4	1 1/4	FB
HSM-315	TF4RX04JA	200	10	190	2500	1	1/4	2 1/2	1 1/4	1 1/4	1 1/4	2 1/4	JA
HS-341	TF4RX04GB	300	2	48	2000	1	1/4	1 1/2	1/4	1	1 1/4	2 1/4	GB
HSM-319	TF1RX04LA	300	10	85	2500	1	1/4	2 1/2	1 1/4	1 1/4	1 1/4	2 1/4	LA

* Inductance Tolerance —20% +50%.

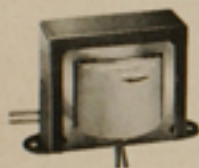
See page 5 for all case dimensions except as noted



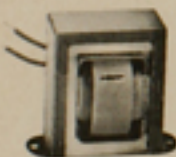
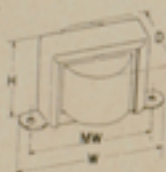
HS Series



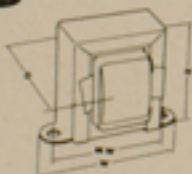
MIL-T-27A Case sizes shown on page



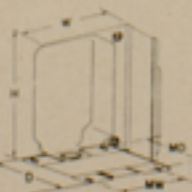
Case X



Case Z



Case A



HIGH FIDELITY OUTPUT

HIGH LEVEL OUTPUT — HERMETICALLY SEALED

TRIAD "HS" Series Output Transformers represent the application of the most modern techniques in the design of fine audio equipment. Use of annealed grain-oriented core materials, combined with multiple interleaved coil structures, have resulted in an open circuit inductance to leakage inductance ratio of 10,000, representing a frequency response range of better than 13 octaves. These transformers will deliver full rated power output within 3 db. from 15-30000 cycles and 10-50000 cycles at one fourth power. Full DC plate current can be carried through the primary windings, but every effort should be made to balance the two plates in push-pull circuits to obtain optimum results at the extreme low frequencies.

Type No.	Mil Type	Application	Primary Matching Impedance	Secondary Load Impedance	Freq. Response	Max. Level Watts	F Dim. (Min.) Inches	Case
HSM-79	TF4RX11FA	Single 2A3, 6A3, 6B4, 6F8, 6V6, 6X6, 6AQ5, etc. (w/5. DC in pri.)	2000 CT. (20 Ma.) or 5000 (40 Ma.)	16, 8, 4	50-25000	5	1 1/2	FA
HSM-80	TF4RX11FA	As above.	2000 CT. (20 Ma.) or 5000 (40 Ma.)	500-250 CT. or 125-62.5	50-25000	5	1 1/2	FA
HSM-81	TF4RX111B	P.p. 6V6's, etc. to V.C.	8000 CT. Split primary.	16, 8, 4	7-50000	15	1 1/2	1B
HSM-82	TF4RX111B	As above—to line.	8000 CT.	500-250/125	7-50000	15	1 1/2	1B
† HSM-181	TF4RX111B	P.p. 6V6's, 2A3's EL84's, etc. to V.C.	8000/2000 CT. Split primary	16, 8, 4	7-50000	15	1 1/2	1B
† HSM-182	TF4RX111B	As above—to line.	8000/2000 CT. Split primary	500-250/125	7-50000	15	1 1/2	1B
HSM-84	TF4RX111B	P.p. 2A3's, 6B4's, 6L6's, etc. to V.C.	5000 CT.	16, 8, 4	7-50000	20	1 1/2	1B
HSM-85	TF4RX111B	As above—to line.	5000 CT.	500-250/125	7-50000	20	1 1/2	1B
● HSM-184	TF1RX13KB	P.p. 7189A	8000/2000 CT. Split Primary	16, 8, 4	7-50000	25	1 1/2	KB
† HSM-189	TF1RX13KB	P.p. KT-66's, 807's, etc.—for Williamson circuit.	10000/2500 CT. Split primary	16, 8, 4	7-50000	25	1 1/2	KB
† HSM-190	TF1RX13KB	As above—to line.	10000/2500 CT. Split primary	500-250/125	7-50000	25	1 1/2	KB
† HSM-186	TF1RX13KB	5881, 6L6, 807, etc. for Williamson circuit.	6400 CT. Split primary	16, 8, 4	7-50000	25	1 1/2	KB
† HSM-187	TF1RX13KB	As above—to line.	6400 CT. Split primary	500-250/125	7-50000	25	1 1/2	KB
HSM-91	TF1RX13LA	P.p. parallel 2A3's, 6L6's, etc. to V.C.	2500 CT.	16, 8, 4	7-50000	50	1 1/2	LA
HSM-94	TF1RX13LA	P.p. par. 6L6's to V.C.	4500 CT.	16, 8, 4	7-50000	55	1 1/2	LA
HSM-95	TF1RX13LA	As above—to line.	4500 CT.	500-250/125	7-50000	55	1 1/2	LA
† HSM-192	TF1RX13LA	6550's to V.C.	4000 CT. Split primary	16, 8, 4	7-50000	65	1 1/2	LA
† HSM-193	TF1RX13LA	6550's to line.	4000 CT. Split primary	500-250/125	7-50000	65	1 1/2	LA
* HSM-97	TF1RX13YY	P.p. 845's to line.	6400 CT.	500-250/125	10-30000	125	Spcl.	Spcl.

†Williamson type circuit. Proper taps on primary for screen operation.

*Dimension — H = 6 1/2, W = 4 1/2, L = 5 1/2

● New Item.

HIGH LEVEL OUTPUT

The Triad high fidelity transformers in the group below afford a standard of performance exceeded only by the "HS" series outputs. These transformers have a frequency response linear within 3 db. from 20-20000 cycles. Feedback loops employing as high as 30 db. of negative feedback may be used.

Type No.	Application	Primary Matching Impedance	Secondary Load Impedance	Output Watts	Case Dim.—Inches			Wdg. Dim.—Inches		Wt. Lbs.
					H	W	D	MW	WD	
S-34X	Crowhurst C46. (2 used)	4000 CT.	32-16, 8	7.5	2 1/2	3 1/2	2 1/2	3 1/2	1 1/2	
S-31A	P.p. 6V6, 45, etc.	8000 CT.	16, 8, 4	15	3 1/2	2 1/2	3 1/2	2	2 1/2	
S-32A	P.p. 6V6, 45, etc.	8000 CT.	500-250/125	15	3 1/2	2 1/2	3 1/2	2	2 1/2	
† S-142A	P.p. 6V6's, EL84's.	8000 CT.	16, 8, 4	15	3 1/2	2 1/2	3 1/2	2	2 1/2	
S-33A	P.p. 2A3, 6L6, etc.	5000 CT.	16, 8, 4	20	3 1/2	2 1/2	3 1/2	2	2 1/2	
S-36A	P.p. 2A3, 6L6, etc.	5000 CT.	500-250/125	20	3 1/2	2 1/2	3 1/2	2	2 1/2	
● S-144A	P.p. 7189A	8000 CT.	16, 8, 4	25	3 1/2	3	4 1/2	2 1/2	3 1/2	
† S-146A	P.p. 5881, 6L6, etc.	6400 CT.	16, 8, 4	25	3 1/2	3	4 1/2	2 1/2	3 1/2	
† S-148A	P.p. KT-66, 807, etc. triodes	10000 CT.	16, 8, 4	25	3 1/2	3	4 1/2	2 1/2	3 1/2	
S-42A	P.p. par. 6L6, class A.	4500 CT.	16, 8, 4	50	4 1/2	3 1/2	4 1/2	2 1/2	3 1/2	
† S-152A	6550's to V.C.	4000 CT.	16, 8, 4	65	4 1/2	3 1/2	4 1/2	2 1/2	3 1/2	
* SR-45Z	70 volt line. Autformer.	4000-2000/1000-500	16, 8, 4	10	2 1/2	3 1/2	2 1/2	2 1/2	1 1/2	
S-46A	70 volt line. Autformer.	2000/1000/500-250	16, 8, 4	20	3 1/2	2 1/2	3 1/2	2	2 1/2	

†Williamson type circuit. Proper taps on primary for screen operation, leads out both end leads.

*Replaces S-45Z.

● New Item.

Note: Last letter of Type No. denotes case style



MINIATURES

JAF SERIES — HERMETICALLY SEALED

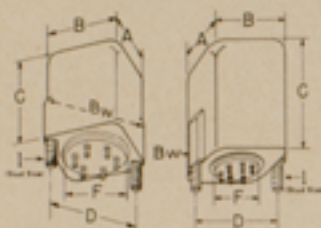
These tiny transformers are hermetically sealed to MIL-T-27A requirements and are encased in deep-drawn "Trialloy" nickel alloy magnetic shielding material. Wide frequency range is consistently achieved by layer wound coils of extremely fine wire.



JZ



JAF Series

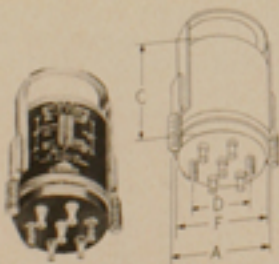


JAF AJ AG AH

	AF	AG	AH	AJ	JZ**
A	1 1/4	1	1 1/4	1 1/4	1/2 dia.
B	1 1/4	1	1 1/4	1 1/4	Round
*B-w	1 1/4	1 1/4	1 1/4		
C	1 1/4	1 1/4	1 1/4	1 1/4	1/2
D	1 1/4	1 1/4	1 1/4	1 1/4	
F	1/4	1/4	1/4	1/4	
I	4-40	6-32	6-32	6-32	

Unit Wt. 2Vb 2 1/2 gr. 5 1/4 gr. 11 gr. 5 gr.
 max. wt. 2 1/2 gr. 5 1/4 gr. 11 gr. 5 gr.

*Not in conformance with MIL-T-27A
 †Not in conformance with MIL-T-27



J0 Series

Standard threaded studs, plus optional bracket supplied (1 1/4" mtg.), offers practically unlimited mounting variations.

	J0A	J0B
A	1 1/4 dia.	1 1/4 dia.
B	Round	Round
C	1 1/4	1 1/4
D	1/2	1/2
F	1/4	1/4
Unit Wt.	2 gr.	2 1/4 gr.

Type No.	Mil Type	Application	Primary Matching Impedance	Secondary Load Impedance	DC Res. Ohms (Approx.) Pri. Sec.	Max. Level-DBM	Shielding db.	Freq. Resp.	MTG.
JAF-1	TF1QX10YY	Line or mike to grid.	600-250-50	50000	100 3200	0	45	60-15000 AF	
JAF-2	TF1QX10YY	Line or mike to grid. Hi-gain.	600-250-50	250000	48 3600	0	45	150-2000 AF	
JAF-3	TF1QX10YY	Line or mike to p.p. grids.	600-250-50	60000 CT.	125 3600	0	45	60-15000 AF	
JAF-5	TF1QX10YY	Dynamic mike or speaker. V.C. to grid.	30-12-4	50000	10 4100	0	45	60-12000 AF	
JAF-11	TF1QX10YY	Plate to grid.	15000	50000	1000 2860	10	45	60-15000 AF	
JAF-12	TF1QX10YY	Plate to p.p. grids.	15000	60000 CT.	1350 2700	10	45	60-15000 AF	
JAF-13	TF1QX15YY	Plate to p.p. grids. 3 Ma. in pri.	15000	95000 CT.	1450 3050	10	45	250-7000 AF	
JAF-14	TF1QX10YY	Mike or line to grid.	200	1/2 megohm	200 4900	0	45	250-5000 AF	
JAF-15	TF1QX10YY	Single plate to single grid.	15000	1 megohm	550 4450	10	45	250-5000 AF	
JAF-21	TF1QX16YY	Plate to line.	15000	600-250-50	1330 58	10	45	60-15000 AF	
JAF-22	TF1QX13YY	Plate to line. 3 Ma. in pri.	15000	600-250-50	1330 58	10	45	250-7000 AF	
JAF-23	TF1QX16YY	P.p. plates to line.	20000 CT.	600-250-50	2600 84	10	45	60-15000 AF	
JAF-31	TF1QX16YY	Line to line.	600-250-50	600-250-50	80 85	10	45	60-15000 AF	
JAF-33	TF1QX21YY	Hi-imp. line to line.	5000 CT.	5000 CT.	2150 2190	10	45	60-15000 AF	
JAF-101	TF1QX20YY	Coupling Reactor.	50 h. 75 Ma.		4800		45	AF	

Low frequency loss will result from DC in windings other than where specified.

SUB-MINIATURE AUDIO — HERMETICALLY SEALED

Type No.	Mil Type	Application	Primary Matching Impedance	Secondary Load Impedance	DC Res. Ohms (Approx.) Pri. Sec.	Case
JZ-1	TF1QX10YY	Microphone or line to grid.	600-250-50	60000	350 4100	JZ
JZ-5	TF1QX10YY	Dynamic mike or speaker V.C. to grid.	30-12-4	50000	11.5 3800	JZ
JZ-7	TF1QX16YY	Dynamic mike or speaker V.C. to transistor.	30-12-4	1000	5 480	JZ
JZ-13	TF1QX15YY	Plate to single or p.p. grids. DC in pri.	15000 (1 Ma.)	125000 CT.	985 4400	JZ
JZ-15	TF1QX15YY	Transistor interstage, emitter to collector	20000 (5 Ma.)	1200-600-100	2700 250	JZ
JZ-25	TF1QX13YY	Tube to line. DC in pri.	10000 (1 Ma.)	300	1500 120	JZ
JZ-26	TF1QX21YY	Transistor to V.C. or line DC in pri.	1000 (5 Ma.)	50	355 20	JZ

JO-SERIES — HERMETICALLY SEALED

Type No.	MIL TYPE	Application	Primary Matching Impedance	Secondary Load Impedance	DC Res. Ohms (Approx.) Pri. Sec.	Max. Level-DBM	Shielding db.	Freq. Resp.	Case
J0-1	TF1QX10YY	Line or mike to grid.	600-250-50	50000	100 3200	0	45	50-15000 J0A	
J0-2	TF1QX10YY	Line or mike to grid. Hi-gain.	600-250-50	250000	48 3600	0	45	150-7000 J0A	
J0-3	TF1QX10YY	Line or mike to p.p. grids.	600-250-50	60000 CT.	125 3600	0	45	50-15000 J0A	
J0-5	TF1QX10YY	Dyn. mike or VC to grid.	30-12-4	50000	10 4100	0	45	50-12000 J0A	
J0-11	TF1QX10YY	Plate to grid.	15000	60000	1100 2860	10	45	50-15000 J0B	
J0-12	TF1QX10YY	Plate to p.p. grids.	15000	60000 CT.	1350 2700	10	45	50-15000 J0B	
J0-13	TF1QX15YY	Plate to p.p. grids. 3 Ma. in pri.	15000	95000 CT.	2145 3570	10	45	200-7000 J0B	
J0-21	TF1QX16YY	Plate to line.	15000	600-250-50	1330 58	10	45	50-15000 J0B	
J0-22	TF1QX13YY	Plate to line. 3 Ma. in pri.	15000	600-250-50	1330 58	10	45	200-7000 J0B	
J0-23	TF1QX13YY	P.p. plates to line.	20000 CT.	600-250-50	1695 40	10	45	50-15000 J0B	
J0-31	TF1QX16YY	Line to line.	600-250-50	600-250-50	80 85	10	45	50-15000 J0B	
J0-101	TF1QX20YY	Coupling Reactor.	50 h. 2 Ma.		4800		45	J0B	

Low frequency loss will result from DC in windings other than where specified.

POWER OUTPUT TO LINE AND VC. — HERMETICALLY SEALED

Type No.	Mil Type	Application	Primary Matching Impedance	Secondary Load Impedance	Max. Level-Watts	Freq. Resp.	Case
*HS-71	TF1QX13YY	Plate to line. DC in pri.	10000 (20 Ma.)	600-150	2	150-15000	AH
*HS-73	TF1RX13YY	Plate to line or V.C. DC in pri.	5000 (40 Ma.)	500-250-16-8-4	5	150-15000	AJ
*HS-75	TF4RX13EB	P.p. plates to line or V.C.	10000 CT. (50 Ma. bal.)	500-250-16-8-4	10	150-15000	EB
*HS-77	TF4RX13GA	P.p. plates to line or V.C.	9000 CT. (20 Ma. bal.)	500-250-16-8-4	25	150-15000	GA

*See case chart page 5

Only Triad Transformers are "Climatite" treated

MINIATURES

LISTING OF MINIATURE TRANSFORMERS FOR TRANSISTORS AND TUBES BY PRIMARY IMPEDANCES

Type No.	Primary Matching Impedance	Secondary Load Impedance	Unit Weight Oz.	Page No.	Type No.	Primary Matching Impedance	Secondary Load Impedance	Unit Weight Oz.	Page No.
A-7J	3.2	50000	4	28	SP-53	1500 CT.	600	3	12
TY-67A	6 CT. (5A)	16/8/4	4 1/2 Lbs.	10	SP-47	2000 CT./1500 CT.	16/12	3	12
TY-66A	6 CT. (5A)	6000/4000/3000	4 1/2 Lbs.	10, 32	SP-64	2000 CT./1600 CT.	4/3.2	3	12
TY-39X	24 CT. (500 Ma)	8/4	1 1/4 Lbs.	10	TY-47X	2000 CT. (10 Ma)	16/8/4	1.2	10
JZ-7	30/12/4	1000	5	8	TY-51X	2000 CT. (10 Ma)	200 CT.	1.2	10
TZ-7	30/12/4	1000	32	11	TY-55X	2000 CT. (2 Ma)	500 CT.	1.2	10
JAF-5	30/12/4	50000	1.5	8	A-78J	2000 CT. (10 Ma)	600 CT./150	4	13
JO-5	30/12/4	50000	2	8	TY-36X	2000 (2 Ma)	2500 CT.	1.2	10
JZ-5	30/12/4	50000	5	8	TY-37X	2000 CT.	8000 CT.	1.2	10
T-5X	30/12/4	50000	5	11	TY-38X	3000 CT.	1000 CT.	1.2	10
TZ-5	30/12/4	50000	32	11	TY-39X	4000 CT.	16/8/4	1.2	10
TY-64X	32 CT. (325 Ma)	16/8/4	1 1/4 Lbs.	10	TY-40X	5000	200 CT.	.64	10
TY-65Z	32 CT. (325 Ma)	6000/4000/3000	1 1/4 Lbs.	10, 32	JAF-33	5000 CT.	5000 CT.	1.5	8
TY-63X	48 CT. (350 Ma)	16/8	1 Lbs.	10	T-33X	5000 CT.	5000 CT.	.64	11
TY-48X	100 CT. (40 Ma)	16/8/4	1.2	10	TY-59X	5000 CT. (1 Ma)	50000 CT.	1.2	10
TY-30X	100 CT. (100 Ma)	8/4	4	10	T-42X	9000 (2 Ma)	36	.64	11
TY-61X	100 (100 Ma)	100 CT.	9	10, 29	SP-48	10000 CT./7500 CT.	16/12	3	12
TY-46X	100 (100 Ma)	1000 CT.	6.7	10	SP-65	10000 CT./8000 CT.	4/3.2	3	12
TY-58X	125 CT. (15 Ma)	8/4	1.2	10	SP-36	10000	3.2	3	12
SP-59	150 CT./110 CT.	4/3.2	3	12	TY-62X	10000 (2 Ma)	4	.64	10
SP-42	200 CT./150 CT.	16/12	3	12	JZ-25	10000 (1 Ma)	200	5	8
TY-31X	200 CT. (40 Ma)	8/4	4	10	TZ-25	10000 (1 Ma)	200	32	11
TY-33X	200 CT./200 Ma)	400 CT.	35	10	TY-36X	10000 (1 Ma)	2000 CT.	1.2	10
TY-32X	200 CT. (2 Ma)	2000 CT.	1.2	10	SP-66	10000 CT.	10000 CT.	3	12
JAF-14	200	1/2 mag	1.5	8	SP-29	12000 CT./10000 CT.	600 CT./500 CT.	3	12
TY-57X	250 CT. (10 Ma)	16/8/4	1.2	10	SP-20	12000 CT./10000 CT.	1500 CT./1200 CT.	3	12
SP-49	300 CT.	600	3	12	SP-15	12000 CT./10000 CT.	1800 CT./1500 CT.	3	12
SP-60	400 CT./300 CT.	4/3.2	3	12	SP-21	12000 CT./10000 CT.	2500 CT./2000 CT.	3	12
SP-43	400 CT./300 CT.	16/12	3	12	TY-34X	15000 (1.5 Ma)	200 CT.	1.2	10
TY-32X	400 CT. (5 Ma)	16/8/4	1.2	10	A-68J	15000 CT. (5 Ma)	600 CT./150 (2 Wedgs)	4	13
TY-34X	400 CT. (5 Ma)	2000 CT.	1.2	10	A-69J	15000 CT.	600 CT./150 (2 Wedgs)	4	13
TY-45X	500 CT. (5 Ma)	16/8/4	1.2	10	A-55J	15000	600/250/50	4	13
TY-35X	500 CT. (2 Ma)	150 CT.	.64	10	A-67J	15000 (5 Ma)	600/250/50	4	13
TY-38XT	500 CT. (2 Ma)	200 CT.	.25	10	JAF-21	15000	600/250/50	1.5	8
TY-37XT	500 CT. (2 Ma)	500 CT.	.25	10	JO-21	15000	600/250/50	2	8
SP-50	500 CT.	600	3	12	JAF-22	15000 (3 Ma)	600/250/50	1.5	8
TY-49X	500 CT. (12 Ma)	5000 CT.	5.6	10	JO-22	15000 (3 Ma)	600/250/50	2	8
A-13J	600 CT./200 CT./50	600/150 (2 Wedgs)	4	13	T-20X	15000	600/250/50	.64	11
A-57J	600/250/50	600/250/50	4	13	T-22X	15000 (3 Ma)	600/250/50	.64	11
A-67J	600/150 (2 Wedgs)	600/150 (2 Wedgs)	4	13	JAF-11	15000	50000	1.5	8
JAF-31	600/250/50	600/250/50	1.5	8	JO-11	15000	50000	2	8
JO-31	600/250/50	600/250/50	2	8	T-11X	15000	50000	.64	11
T-31X	600/250/50	600/250/50	.64	11	JAF-12	15000	60000 CT.	1.5	8
JAF-1	600/250/50	50000	1.5	8	JO-12	15000	60000 CT.	2	8
JO-1	600/250/50	50000	2	8	T-12X	15000	60000 CT.	.64	11
T-1X	600/250/50	50000	.64	11	A-41J	15000 (8 Ma)	80000 CT.	4	13
A-11J	600/250/50	60000	4	13	JAF-13	15000 (3 Ma)	95000 CT.	1.5	8
A-12J	600/150 (2 Wedgs)	60000	4	13	JO-13	15000 (3 Ma)	95000 CT.	2	8
JAF-2	600/250/50	60000 CT.	1.5	8	T-13X	15000 (3 Ma)	95000 CT.	.64	11
JO-2	600/250/50	60000 CT.	2	8	A-40J	15000	115000 CT.	4	13
JZ-1	600/250/50	60000	5	8	JZ-13	15000 (3 Ma)	135000 CT.	5	8
T-2X	600/250/50	60000 CT.	.64	11	TZ-13	15000 (3 Ma)	135000 CT.	.32	11
TZ-1	600/250/50	60000	.32	11	JAF-15	15000	1 MEG.	1.5	8
A-10J	600/150 (2 Wedgs)	66000	4	13	TY-41X	16000 (1 Ma)	4000	.64	10
A-9J	600/250/50	80000	4	13	TY-42X	20000 (5 Ma)	8/4	.64	10
JAF-3	600/250/50	250000	1.2	8	JAF-23	20000 CT.	600/250/50	1.5	8
JO-3	600/250/50	250000	2	8	JO-23	20000 CT.	600/250/50	2	8
T-2X	600/250/50	250000	.64	11	T-23X	20000 CT.	600/250/50	.64	11
SP-32	600/500	60/50	3	12	TY-43X	20000 (5 Ma)	800 CT.	.64	10
SP-34	600	3.2	3	12	TY-60X	20000	1000	1.2	10
TZ-38	600	50	32	11	JZ-13	20000 (5 Ma)	1200/600/100	5	8
SP-61	750 CT./600 CT.	4/3.2	3	12	TZ-13	20000 (5 Ma)	1200/600/100	.32	11
SP-44	800 CT./600 CT.	16/12	3	12	TY-52X	20000	2000 CT.	1.2	10
SP-51	900 CT.	600	3	12	SP-11	30000 CT./20000 CT.	1200/800	3	12
SP-62	1000 CT./800 CT.	4/3.2	3	12	SP-13	30000 CT./20000 CT.	1200 CT./800 CT.	3	12
TY-44X	1000 (10 Ma)	16/8/4	1.2	10	T-21X	30000	50	.64	11
TZ-36	1000 (5 Ma)	50	32	11	TY-22X	50000	500 CT.	.64	10
T-41X	1000 (10 Ma)	200 CT.	.64	11	SP-5	50000	1000 CT.	3	12
A-79J	1000 (10 Ma)	200 CT./50	4	13	TY-24X	50000	3000 CT.	1.2	10
SP-33	1200/1000	60/50	3	12	TY-25X	100000	200 CT.	1.2	10
SP-35	1200	3.2	3	12	TY-26X	100000	3000 CT.	1.2	10
SP-46	1330 CT./1000 CT.	16/12	3	12	TY-30X	125000	2000 CT.	1.2	10
SP-63	1500 CT./1200 CT.	4/3.2	3	12	SP-7	200000	1000	3	12
					SP-4	200000 CT.	1000 CT.	3	12

● New Item.

Note: Also see special transistor transformers for low frequency use on Page 18.

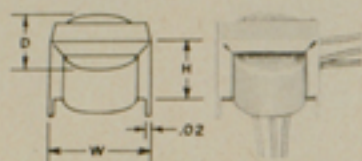


MINIATURES

AUDIO TRANSISTOR TRANSFORMERS

Type No.	Primary Matching Impedance	Primary Current MA	Secondary Matching Impedance	Maximum Level	D.C. Resistance		Dimensions				Wt. Oz.
					PR1	SEC	H	W	D	MW	
●TY-23X	50000	.5	500 CT.	100 MW	2400	95	1 1/2	1 1/2	1 1/2	1	.64
●TY-24X	50000	.5	3000 CT.	200 MW	2400	140	1 1/2	1 1/2	1 1/2	1 1/2	1.2
●TY-25X	100000	.5	200 CT.	200 MW	4000	16	1 1/2	1 1/2	1 1/2	1 1/2	1.2
●TY-26X	100000	.5	3000 CT.	200 MW	4000	180	1 1/2	1 1/2	1 1/2	1 1/2	1.2
TY-27XT	500 CT.	2	500 CT.	10 MW	37	50	1 1/2	1 1/2	1 1/2		.25
TY-28XT	500 CT.	2	200 CT.	10 MW	38	25	1 1/2	1 1/2	1 1/2		.25
●TY-32X	200 CT.	2	2000 CT.	200 MW	20	150	1 1/2	1 1/2	1 1/2	1 1/2	1.2
●TY-33X	400 CT.	5	16, 8/4	200 MW	30	2	1 1/2	1 1/2	1 1/2	1 1/2	1.2
●TY-34X	400 CT.	5	2000 CT.	200 MW	30	150	1 1/2	1 1/2	1 1/2	1 1/2	1.2
●TY-35X	500 CT.	2	150 CT.	100 MW	48	14	1 1/2	1 1/2	1 1/2	1	.64
●TY-36X	2000	2	1500 CT.	200 MW	185	128	1 1/2	1 1/2	1 1/2	1 1/2	1.2
●TY-37X	2000 CT.	4	8000 CT.	200 MW	185	500	1 1/2	1 1/2	1 1/2	1 1/2	1.2
●TY-38X	3000 CT.	4	1000 CT.	200 MW	190	75	1 1/2	1 1/2	1 1/2	1 1/2	1.2
●TY-39X	4000 CT.	4	16, 8/4	200 MW	220	2	1 1/2	1 1/2	1 1/2	1 1/2	1.2
●TY-40X	5000	1	200 CT.	100 MW	315	16	1 1/2	1 1/2	1 1/2	1	.64
●TY-41X	16000	1	4000	100 MW	900	300	1 1/2	1 1/2	1 1/2	1	.64
●TY-42X	20000	.5	8/4	100 MW	1200	8	1 1/2	1 1/2	1 1/2	1	.64
●TY-43X	20000	.5	800 CT.	100 MW	1200	80	1 1/2	1 1/2	1 1/2	1	.64
TY-44X	1000	10	16, 8/4	200 MW	180	3.8	1 1/2	1 1/2	1 1/2	1 1/2	1.25
TY-45X	500 CT.	5	16, 8/4	200 MW	56	3.8	1 1/2	1 1/2	1 1/2	1 1/2	1.2
TY-46X	100	100	1000 CT.	250 MW	1.4	60	1 1/2	1 1/2	1 1/2	2	6.7
TY-47X	2000 CT.	10	16, 8/4	200 MW	260	4	1 1/2	1 1/2	1 1/2	1 1/2	1.25
TY-49X	500 CT.	12	5000 CT.	200 MW	40	245	1 1/2	1 1/2	1 1/2	2	5.6
TY-50X	125000		2000 CT.	40 MW	5500	120	1 1/2	1 1/2	1 1/2	1 1/2	1.2
TY-51X	2000 CT.	10	200 CT.	50 MW	750	120	1 1/2	1 1/2	1 1/2	1 1/2	1.2
TY-52X	20000 CT.	1	2000 CT.	100 MW	2140	325	1 1/2	1 1/2	1 1/2	1 1/2	1.2
TY-54X	15000	1.5	200 CT.	100 MW	2130	96	1 1/2	1 1/2	1 1/2	1 1/2	1.2
TY-55X	2000 CT.	2	500 CT.	200 MW	125	95	1 1/2	1 1/2	1 1/2	1 1/2	1.2
TY-56X	10000	1	2000 CT.	50 MW	1035	335	1 1/2	1 1/2	1 1/2	1 1/2	1.2
TY-57X	250 CT.	10	16, 8/4	200 MW	35	3.8	1 1/2	1 1/2	1 1/2	1 1/2	1.2
TY-58X	125 CT.	15	8/4	200 MW	16	2.2	1 1/2	1 1/2	1 1/2	1 1/2	1.2
TY-59X	5000 CT.	1	50000 CT.	200 MW	378	6400	1 1/2	1 1/2	1 1/2	1 1/2	1.2
TY-60X	200000		1000	-10 DBM	840	195	1 1/2	1 1/2	1 1/2	1 1/2	1.2
TY-62X	10000	2	4	100 MW	710	1.5	1 1/2	1 1/2	1 1/2	1	.5

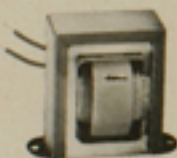
● New Item.



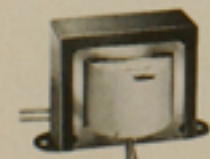
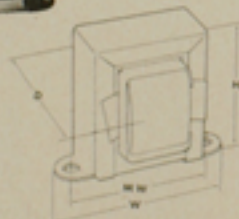
XT Mounting



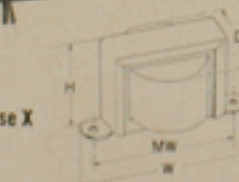
Case A



Case Z



Case X



OUTPUT AND DRIVER TRANSISTOR TRANSFORMERS HIGH LEVEL

Type No.	Primary Matching Impedance	Primary Current MA	Secondary Matching Impedance	Maximum Level	DC Resistance Ohms DC		Dimensions—Inches				Wt. Lbs.
					PR1	SEC	H	W	D	MW	
●TY-29X	24 CT.	500	8/4	10W	1.8	.7	2	3 1/2	1 1/2	2 1/2	1 1/2
●TY-30X	100 CT.	100	8/4	2W	8	.9	2 1/2	2 1/2	1 1/2	1 1/2	1 1/2
●TY-31X	200 CT.	60	8/4	2W	14	.9	2 1/2	2 1/2	1 1/2	1 1/2	1 1/2
TY-48X	100 CT.	40	16, 8/4	.5W	14	4	1 1/2	1 1/2	1 1/2	1 1/2	.875
TY-53X	200 CT.	100	400 CT.	.5W	26	58	2	3 1/2	2	2 1/2	1
TY-61X	100 CT.	100	100 CT.	.5W	10.6	10	1 1/2	2 1/2	1 1/2	2 1/2	.8
TY-63X	48 CT.	550	16, 8	.5W	4.8	1.4	2	3 1/2	1 1/2	2 1/2	1
TY-64X	32 CT.	575	16, 8/4	10W	2.2	1.3	2	3 1/2	1 1/2	2 1/2	1 1/2
TY-65Z	32 CT.	575	6K/4K/3K	10W	1.9	275	2 1/2	2 1/2	2	2 1/2	1 1/2
TY-66A	6 CT.	5A	6K/4K/3K	40W	36	80	3 1/2	2 1/2	3 1/2	2 1/2	4.7
TY-67A	6 CT.	5A	16, 8/4	40W	.17	.24	3 1/2	2 1/2	3 1/2	2 1/2	4.7

● New Item.

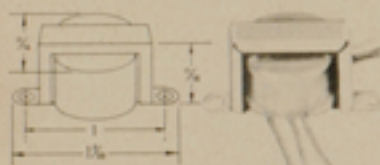
Note: Last letter of Type No. denotes case style



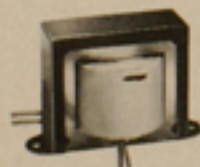
MINIATURES

MIL TYPE NUMBERS

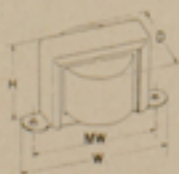
Where a MIL type number is shown, the first two letters (TF) designate "transformer." The next number is the grade. Grade one, four or five indicate the type of shock tests applicable. Grades one and four apply to metal encased units and grade five applies to encapsulated units. The next letter is the Class, which indicates the maximum operating temperature allowable for the types of material used. For example, Class "Q" is for 85 degrees Centigrade; Class "R" is for 105 degrees Centigrade. The letter "X" indicates the life expectancy of ten-thousand hours minimum. The next two numbers indicate the general family the unit belongs to. For instance, family "03" indicates only that this transformer supplies both rectified and unrectified loads. The next two letters are the type of MIL-T-27A case used on each unit.



Miniature X Case
Trijets



Case X



MINIATURE AUDIO — "TRIJETS"

Type No.	Application	Primary Matching Impedance	Secondary Load Impedance	DC Res. Ohms (Approx.)		Max. Level-DBW	Freq. Resp.
				Pri.	Sec.		
T-1X	Line or mike to grid.	600-250-50	50000	100	1200	0	60-15000
T-2X	Line or mike to grid, Hi-gain.	600-250-50	250000	48	3600	0	100-5000
T-3X	Line or mike to p.p. grids.	600-250-50	60000 CT.	125	3600	0	60-15000
T-5X	Dynamic mike or speaker VC to grid.	30-12-4	50000	10	4100	0	60-15000
T-11X	Plate to grid.	15000	50000	1000	2860	10	60-15000
T-12X	Plate to p.p. grids.	15000	60000 CT.	1350	2700	10	60-15000
T-13X	Plate to p.p. grids, 3 Ma. in pri.	15000	95000 CT.	1450	3050	10	250-7000
T-20X	Plate to line.	15000	600-250-50	1330	58	10	60-15000
T-21X	Plate to line.	30000	50	1330	58	10	60-15000
T-22X	Plate to line, 3 Ma. in pri.	15000	600-250-50	1330	58	10	250-7000
T-23X	P.p. plates to line.	20000 CT.	600-250-50	2600	84	10	60-15000
T-31X	Line to line.	600-250-50	600-250-50	80	85	10	60-15000
T-32X	Hi-imp. line to line.	5000 CT.	5000 CT.	2150	2150	10	60-15000
T-41X*	Driver transformer-transistor to Class B transistors.	1000	200 (10 Ma.) CT.	430	130		
T-42X*	Output-transistor to V.C.	9800 (2 Ma.)	35	855	1.7		
T-101X	Coupling Reactor.	50 henries @ .75 Ma.		4000			

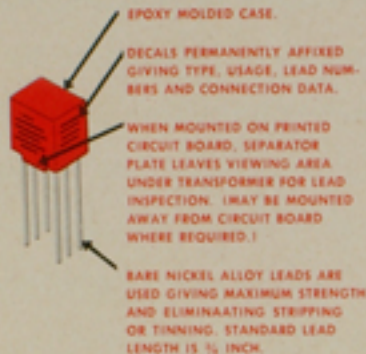
*Height $\frac{1}{2}$, width $1\frac{1}{2}$, depth $\frac{1}{2}$; unit weight .65 oz.

Low frequency loss will result from DC in windings other than where specified.

SUB-MINIATURE AUDIO — OPEN FRAME

Type No.	Application	Primary Matching Impedance	Secondary Load Impedance	DC Res. Ohms (Approx.)		Dimensions—Inches			Unit Wt. Oz.
				Pri.	Sec.	H	W	D	
TZ-1	Microphone or line to grid.	600-250-50	60000	250	4100	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$.32
TZ-5	Dynamic mike or speaker V.C. to grid.	30-12-4	50000	11.5	3800	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$.32
TZ-7	Dynamic mike or speaker V.C. to transistor.	30-12-4	1000	5	480	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$.32
TZ-12	Plate to single or p.p. grids, DC in pri.	15000 (1 Ma.)	125000 CT.	985	4400	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$.32
TZ-13	Transistor interstage, emitter to collector.	20000 (5 Ma.)	1200/600-100	2700	350	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$.32
TZ-25	Tube to line, DC in pri.	10000 (1 Ma.)	200	1500	120	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$.32
TZ-26	Transistor to V.C. or line.	1000 (5 Ma.)	50	355	20	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$.32
TZ-28	Transistor input.	600	50	95	11	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$.32

Note: Last letter of Type No. denotes case style



EPOXY MOLDED CASE.

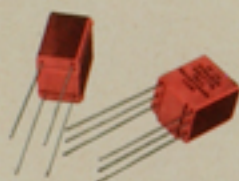
DECALS PERMANENTLY AFFIXED GIVING TYPE, USAGE, LEAD NUMBERS AND CONNECTION DATA.

WHEN MOUNTED ON PRINTED CIRCUIT BOARD, SEPARATOR PLATE LEAVES VIEWING AREA UNDER TRANSFORMER FOR LEAD INSPECTION. (MAY BE MOUNTED AWAY FROM CIRCUIT BOARD WHERE REQUIRED.)

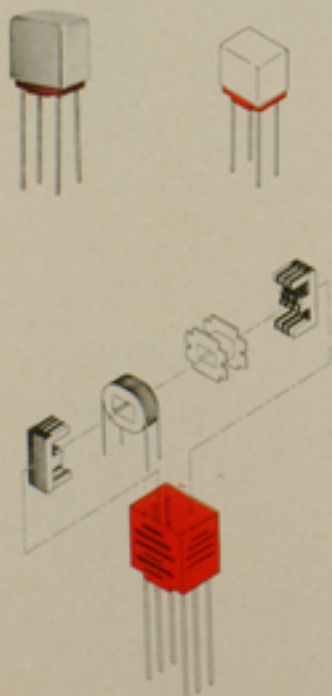
BARE NICKEL ALLOY LEADS ARE USED GIVING MAXIMUM STRENGTH AND ELIMINATING STRIPPING OR TINNING. STANDARD LEAD LENGTH IS 1/8 INCH.

ALL LEADS SEPARATED IN INCREMENTS OF 1/10 OF AN INCH.

NEW DEVELOPMENTS AND IMPROVED TECHNIQUES OF CONSTRUCTION MAKE THESE "RED SPECS" POSSIBLE.

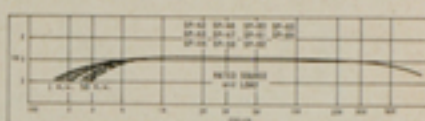
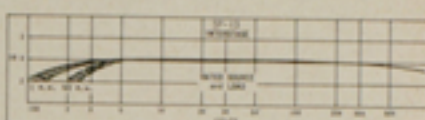


SP-310
MAGNETIC SHIELDING CASE



"RED SPEC" TRANSISTOR TRANSFORMERS

Triad's SP or "RED SPEC" series transformers are especially designed for use in all transistorized and printed circuit applications. They incorporate .020 inch diameter high strength nickel alloy loads spaced on standard 1/10 inch grid centers to fit printed circuit boards. Truly miniature in size, these "SPECS" have base dimensions of only .310 by .410 inches and weigh only 1/10 ounce! Complete electrical and mechanical data can be found in our SP Brochure free for the asking from any Triad distributor.

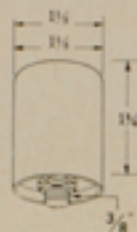


"RED SPEC" TRANSFORMERS

Type No.	Type	MIL. T-27A Designation	Primary Impedance	D.C. Res. Pri. Ohms	Max. Unbal. Pri. D.C. Ma.	Secondary Impedance	Max. Power MW
SP-4	Input	TFSRX16Z2	20000 c.t.	5300	0	1000 c.t.	10
SP-5	Input	TFSRX16Z2	50000 c.t.	3800	.2	1000 c.t.	25
SP-7	Input	TFSRX16Z2	200000	5300	0	1000	10
SP-11	Interstage	TFSRX13Z2	20000/30000	1700	.5	800/1200	40
SP-13	Interstage	TFSRX13Z2	20000/30000 c.t.	1700	.5	800/1200 c.t.	40
SP-15	Interstage	TFSRX13Z2	10000/12000 c.t.	1050	1	1500/1800 c.t.	50
SP-20	Driver	TFSRX13Z2	10000/12000 c.t.	1050	1	1200/1500 c.t.	50
SP-21	Driver	TFSRX13Z2	10000/12000 c.t.	1050	1	2000/2500 c.t.	50
SP-29	Driver	TFSRX13Z2	10000/12000 c.t.	1050	1	500/600 c.t.	50
SP-32	Output	TFSRX17Z2	500/600	60	3	50/60	50
SP-33	Output	TFSRX17Z2	1000/1200	145	3	50/60	50
SP-34	Output	TFSRX17Z2	600	70	3	3.2	50
SP-35	Output	TFSRX13Z2	1200	120	2	3.2	50
SP-36	Output	TFSRX13Z2	10000	1160	1	3.2	50
SP-42	Output	TFSRX17Z2	150/200 c.t.	18	10	12/16	50
SP-43	Output	TFSRX17Z2	300/400 c.t.	38	7	12/16	50
SP-44	Output	TFSRX17Z2	600/800 c.t.	75	4.5	12/16	50
SP-46	Output	TFSRX17Z2	1000/1330 c.t.	120	3.5	12/16	50
SP-47	Output	TFSRX13Z2	1500/2000 c.t.	180	3	12/16	50
SP-48	Output	TFSRX13Z2	7500/10000 c.t.	820	1	12/16	50
SP-49	Output	TFSRX13Z2	300 c.t.	37	7	600	50
SP-50	Output	TFSRX17Z2	500 c.t.	60	3	600	50
SP-51	Output	TFSRX17Z2	900 c.t.	100	4	600	50
SP-52	Output	TFSRX17Z2	1500 c.t.	170	3	600	50
SP-59	Output	TFSRX17Z2	120/150 c.t.	15	10	3.2/4	50
SP-60	Output	TFSRX17Z2	320/400 c.t.	40	6	3.2/4	50
SP-61	Output	TFSRX17Z2	600/750 c.t.	70	4.5	3.2/4	50
SP-62	Output	TFSRX17Z2	800/1000 c.t.	100	4	3.2/4	50
SP-63	Output	TFSRX13Z2	1200/1500 c.t.	125	3	3.2/4	50
SP-64	Output	TFSRX13Z2	1600/2000 c.t.	190	2.5	3.2/4	50
SP-65	Output	TFSRX13Z2	8000/10000 c.t.	820	1	3.2/4	50
SP-66	Output (Isolation)	TFSRX13Z2	10000 c.t.	1000	1	10000 c.t.	50
SP-106	Choke	TFSRX20Z2	6 hy. @ 2 ma.	1700			
SP-107	Choke	TFSRX20Z2	1.25 hy. @ 2 ma.	180			
SP-108	Choke	TFSRX20Z2	3.5 hy. @ 2 ma.	1100			
SP-118	Choke	TFSRX20Z2	.3 hy. @ 4 ma.	42			
SP-310	Magnetic shielding case						



Case J



Case P



A-210P

AUDIO

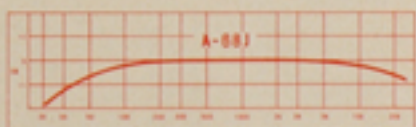
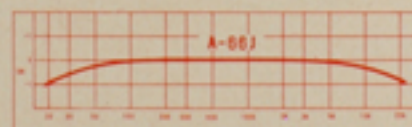
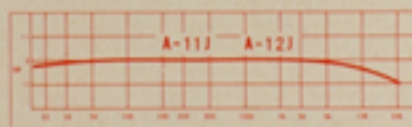
Low Level High Fidelity

The Triad "J" series affords an opportunity to closely approximate the remarkable results obtainable in the hermetically sealed units, and at a lower cost. These units, while approaching the electrical performance of the "HS" series, provide economies in the modification or elimination of the more expensive mechanical features. Careful design, taking full advantage of the "J" series flexibility, will result in low level amplifiers which meet broadcast quality in every way.

Features of the "J" series: (1) Single hole mounting, permitting rotation for minimum hum pickup. (2) Alloy shielding for 40-60 DB reduction in hum pickup (50-80 DB on A-11J and A-12J). (3) Flexible leads. (4) Wide frequency range. (5) All input transformers are supplied with electrostatic as well as magnetic shielding.

"J" series transformers are uniform in size (1 1/4" in diameter by 1 1/4" above chassis) and light in weight (1/4 lb.). Finish is Triad grey baked enamel with connection data marked on case.

Type No.	Application	Impedance—Ohms		Overall Turns Ratio	Frequency Response	Output Pwr. Level
		Primary	Secondary			
A-9J	Line or microphone to single grid	600/250/50	86200	1:32	30-15000	0 dbm.
A-10J	Balanced line or microphone to single grid	600 CT. or 150 split windings	66000	1:30.5	30-15000	0 dbm.
A-11J	Line or microphone to single grid 60-80 db. magnetic shielding	600/250/50	60000	1:30	30-15000	0 dbm.
A-12J	Balanced line or microphone to single grid. 60-80 db. magnetic shielding	600 CT. or 150 split winding	60000	1:30	30-15000	0 dbm.
A-13J	Line to transistor or line. 60-80 db. magnetic shielding	600/200 CT./50	600 CT. or 150 split windings	1:1	30-15000	0 dbm.
A-79J	Transistor to p.p. transistors or line 10 ma D.C. in Primary	2000	200 CT. or 50 (split winding)	2:2:1	45-15000	+10 dbm.
A-40J	Parallel—Fed tube to p.p. grids	15000	115000 CT.	1:2.76	30-15000	+10 dbm.
A-41J	Tube to p.p. grids. 8 ma. D.C. in primary	15000	80000 CT.	1:2.3	30-15000	+10 dbm.
A-55J	Parallel—Fed tube to line	15000	600/250/50	5:1	30-15000	+20 dbm.
A-65J	Parallel—Fed tube or p.p. tubes to balanced line	15000 CT.	600 CT. or 150 split windings	5:1	30-15000	+20 dbm.
A-66J	Tube to line 5 ma. D.C. in primary	15000	600/250/50	5:1	40-15000	+20 dbm.
A-68J	Single or p.p. tubes to balanced line. (Max. amb. D.C. 5 Ma.)	15000 CT.	600 CT. or 150 split windings	5:1	40-15000	+20 dbm.
A-78J	P.p. transistors to line	2000 CT.	600 CT. or 150 split windings	1.82:1	30-15000	+20 dbm.
A-57J	Line or transistor to line or transistor	600/250/50	600/250/50	1:1	30-15000	+10 dbm.
A-67J	Line or transistor to line or transistor	600 CT. or 150 split windings	600 CT. or 150 split windings	1:1	30-15000	+10 dbm.
A-75J	Audio choke 15h.—no D.C.—for use in cathode equalizer circuit 60-80 db. magnetic shielding					
A-77J	Choke—250 h.—5 ma. 7500 ohms or 62.5 h.—10 ma. 1875 ohms.					



PLUG-IN INPUT TRANSFORMERS

These are high-quality input transformers with a high degree of magnetic shielding and are designed to couple low-impedance microphones or magnetic heads to amplifier input. The A-200P and the A-202P are equipped with nine prong plugs to match the sockets on many commercial amplifiers. HS-273P has an eight prong octal plug and was designed to replace Ampex part number 17331-1.

Type No.	Application	Primary Matching Impedance	Secondary Load Impedance	Freq. Resp.	Shielding	Case Dimensions—Inches		Wt. Lbs.
						H	Dia.	
A-200P	Line or mike to grid.	200/50 CT.	36,000	30-20000	70 db.	2 1/4	1 1/4	1/4
A-202P	Same as above.	200/50 CT.	36,000	20-20000	90 db.	2 1/4	1 1/4	1/4
HS-273P	Same as above.	200/50 CT.	80,000	30-30000	70 db.	1 1/4	1 1/4	1/4
A-310P	Stereo isolation 0 DBM	30,000	30,000	20-20000	45 db.	2 1/4	1 1/4	1/4



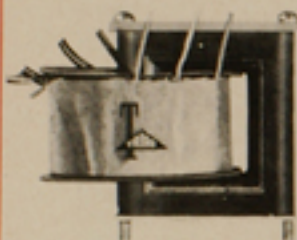
TRANSFORMERS

For Transistor Power Supplies

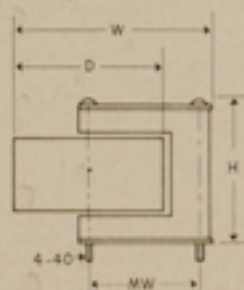
12 VOLT — OPEN TYPE

These units are designed for use in compact, inexpensive and efficient common emitter power supplies for mobile equipment. The transformers themselves are built with an absolute minimum of bracketing and leads with the assumption that the entire supply will be fabricated and encapsulated as a unit.

NOTE: These transformers develop some audible noise at 2000 cycles and this can be very objectionable in quiet locations. If they are to be used without potting and in places where the noise could be offensive, we recommend the use of the toroidal epoxy molded units described below.



S-TYPE



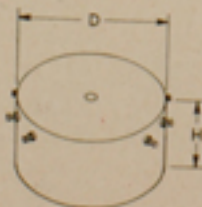
EPOXY MOLDED TOROIDAL TYPE

For military uses, for marine work, or where the power supply is to be assembled in chassis form, these toroidal units are superior in that they are hermetically sealed, are smaller in size, mount with a single bolt and have strong turret terminals. The noise level is greatly reduced from that encountered in the open type.

Electrically, these transformers are usable in either common emitter or common collector circuits at very high efficiency. The single hole mounting and peripheral terminals permit ready stacking for easy series parallel connections where increased output is needed. These transformers are designed to meet the requirements of MIL-T-27A, Grade S, Class R.



MOLDED TYPE



Development of semi-conductors has made possible that device so much needed for many years, the "D.C. Transformer." Transistor oscillators, with the oscillation transformers listed below, and silicon rectifiers, permit D.C. to D.C. conversion in very small volume and at high efficiencies.

The elimination of moving parts results in greatly increased life over vibrator or motor generator supplies. Well designed, transistor supplies will last indefinitely and with power consumption at only a fraction of that used by mechanical inverters.

Triad Engineers have done a great deal of development on this type of power supply. This information has been tabulated in our brochure TY-61 free on request. In addition, complete circuitry and circuit constants for use with various makes of transistors is supplied with each transformer.

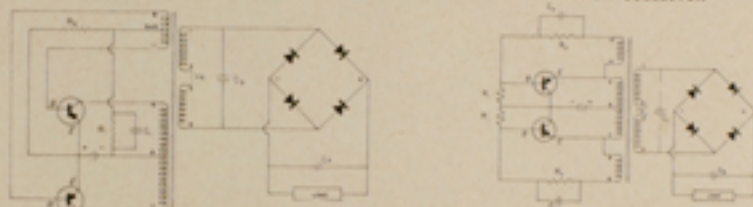
12 VOLT — OPEN TYPE

Type No.	D.C. Volts Out of Rect.	D.C. Ma. Max.	Dimensions—Inches			MW	Wt. Lbs.
			H	W	D		
TY-685	250/125	65	1 1/4	1 1/4	1 1/2	1 1/2	.2
TY-695	300/150	100	1 1/4	2 1/4	1 1/2	1 1/2	.5
TY-705	325/162.5	150	2	2 1/4	2 1/2	1 1/2	.6
TY-715	375/187.5	200	2	2 1/4	2 1/2	1 1/2	.85
TY-745	600/300	200	2	4 1/4	3	3 1/2	1.07

COMMON EMITTER

TYPICAL CIRCUITS

COMMON COLLECTOR



EPOXY MOLDED TOROIDAL TYPE

Type No.	D.C. Source Volts	D.C. Volts Out of Rectifier	D.C. Ma. Max.	Dimension—Inches		Wt. Lbs.
				Dia.	Height	
TY-78	12.6	250/125	100	1 1/4	1 1/2	.35
TY-79	12.6	300/150	200	1 1/4	1	.35
TY-80	12.6	325/162.5	150	1 1/4	1	.35
TY-81	12.6	375/187.5	200	2	1	.50
TY-82	12.6	450/225	150	2	1	.50
● TY-83	12.6	500/250	250	2 1/4	1 1/4	.85
TY-84	12.6	600/300	200	2 1/4	1 1/4	1.00
TY-88	28	250/125	80	1 1/4	1 1/2	.25
TY-89	28	300/150	100	1 1/4	1 1/2	.35
TY-90	28	325/162.5	200	1 1/4	1	.35
TY-91	28	375/187.5	200	2	1	.50
TY-92	28	450/225	200	2	1	.50
● TY-93	28	500/250	250	2 1/4	1 1/4	.85
TY-94	28	600/300	200	2 1/4	1 1/4	1.00
TY-99	6	300/150	100	1 1/4	1	.35
TY-100	6	325/162.5	150	2	1	.50
TY-101	6	375/187.5	200	2 1/4	1 1/4	1.00
TY-102	6	450/225	150	2 1/4	1 1/4	1.00

● New Item.

D.C. TO A.C. TRANSISTOR TRANSFORMERS

Type No.	D.C. Primary	Secondary	DIMENSIONS — IN.			MTG. DIMENSIONS		
			H	W	D	MW	MD	WT.
TY-448	28	115v 400cps 80 watts	1 1/4	2 1/4	2	1 1/4	1 1/4	15#
TY-75A	12	115v 60cps 115 watts	3 1/4	3 1/4	3 1/4	2 1/2	2 1/2	5#
TY-76A	12	115v 60cps 60 watts	3 1/4	2 1/4	2 1/4	2	1 1/4	

Note: Last letter of Type No. denotes case style

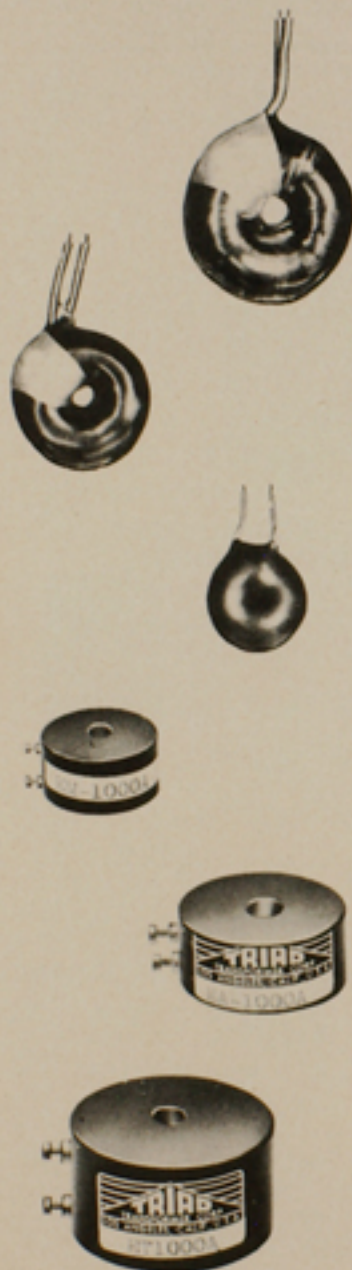


FIG. A

Toroidal inductors made with powdered nickel alloy dust cores closely approach the perfect inductor with high "Q," high stability with level and temperature, and high resistance to shock and vibration. Triad toroids are wound with low distributed capacitance and resistance to obtain the best possible performance from this optimum coil construction. Individual coils are held to $\pm 2\%$ inductance tolerance; closer tolerances can be had on special order. Stock coils are supplied with leads and encapsulated in a strong plastic material or in molded epoxy encapsulation (to meet the tests of MIL-T-27A).

These units are shown in (Fig. A) with gold plated terminals. When molded units are desired add "A" to the type number, i.e., EA-100-A.

Note: EF and EH series toroids, formerly supplied, have been replaced by the EK series; ES toroids have been replaced by the ET series.

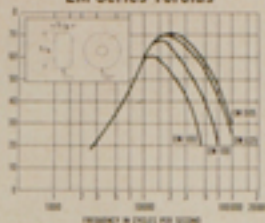


MOLDED SIZES

	EA Series	EC-ET Series	EK Series	EM Series
DIA.	1 1/4"	1 1/4"	2"	3/4"
HT.	3/8"	3/8"	1"	3/4"

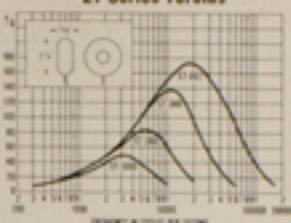
TOROIDS

EM Series Toroids



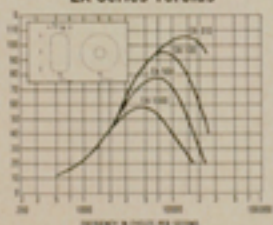
Type No.	Ind.	Res. ohms approx.	DC-ma for 5% ind. drop
EM-001	1 mh	2.8	150
EM-002	2 mh	4.1	108
EM-003	3 mh	5.1	87
EM-004	4 mh	6.0	76
EM-005	5 mh	6.8	68
EM-007	7 mh	8.2	57
EM-010	10 mh	10	48
EM-015	15 mh	12.5	39
EM-020	20 mh	14.5	34
EM-025	25 mh	16.5	30
EM-030	30 mh	18	27.6
EM-040	40 mh	22	24
EM-050	50 mh	30	22
EM-060	60 mh	40	19.5
EM-070	70 mh	43	18
EM-100	100 mh	66	15
EM-150	150 mh	100	12.5
EM-200	200 mh	115	11
EM-250	250 mh	167	8.6
EM-300	300 mh	180	8.8
EM-400	400 mh	265	7.6
EM-500	500 mh	295	7
EM-700	700 mh	445	5.8
EM-1000	1000 mh	650	4.8

ET Series Toroids



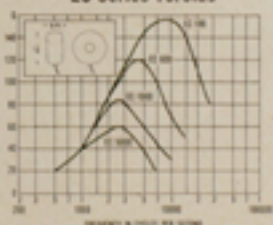
Type No.	Ind.	Res. ohms approx.	DC-ma for 5% ind. drop
ET-001	1 mh	.57	680
ET-002	2 mh	.82	480
ET-003	3 mh	.98	396
ET-004	4 mh	1.10	342
ET-005	5 mh	1.25	306
ET-007	7 mh	1.50	260
ET-010	10 mh	2	217
ET-015	15 mh	3	177
ET-020	20 mh	4.3	153
ET-025	25 mh	4.8	137
ET-030	30 mh	6.9	125
ET-040	40 mh	7.2	108
ET-050	50 mh	8	97
ET-060	60 mh	15.5	88
ET-070	70 mh	16.8	82
ET-100	100 mh	26.0	68
ET-150	150 mh	38.5	56
ET-200	200 mh	44.5	48
ET-250	250 mh	64	43
ET-300	300 mh	72	40
ET-400	400 mh	103	34
ET-500	500 mh	118	30
ET-700	700 mh	173	26
ET-1000	1000 mh	245	22

EA Series Toroids



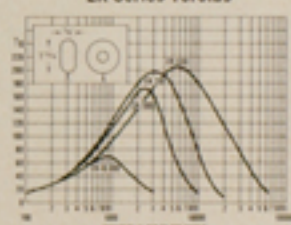
Type No.	Ind.	Res. ohms approx.	DC-ma for 5% ind. drop
EA-001	1 mh	.40	270
EA-002	2 mh	.58	192
EA-003	3 mh	.73	157
EA-004	4 mh	.85	135
EA-005	5 mh	1.20	120
EA-007	7 mh	1.42	102
EA-010	10 mh	2.20	86
EA-015	15 mh	3.40	70
EA-020	20 mh	5.05	60
EA-025	25 mh	5.80	54
EA-030	30 mh	7.50	50
EA-040	40 mh	11.40	43
EA-050	50 mh	12.80	38
EA-070	70 mh	19.00	32
EA-100	100 mh	30.00	27
EA-150	150 mh	46.00	22
EA-200	200 mh	52.00	19
EA-250	250 mh	73.00	17
EA-300	300 mh	80.00	16
EA-400	400 mh	115.00	14
EA-500	500 mh	126.00	12
EA-600	600 mh	178.00	11
EA-700	700 mh	193.00	10
EA-1000	1000 mh	297.00	8.6

EC Series Toroids



Type No.	Ind.	Res. ohms approx.	DC-ma for 5% ind. drop
EC-001	1 mh	.40	520
EC-002	2 mh	.56	368
EC-003	3 mh	.70	300
EC-004	4 mh	.82	260
EC-005	5 mh	.92	233
EC-007	7 mh	1.05	195
EC-010	10 mh	1.30	165
EC-015	15 mh	1.60	134
EC-020	20 mh	1.85	116
EC-030	30 mh	2.85	95
EC-040	40 mh	4.20	82
EC-050	50 mh	4.60	74
EC-070	70 mh	7.00	62
EC-100	100 mh	8.00	52
EC-200	200 mh	25.00	37
EC-250	250 mh	28.00	33
EC-300	300 mh	38.20	30
EC-400	400 mh	44.00	26
EC-500	500 mh	63.50	23
EC-600	600 mh	71.00	21
EC-700	700 mh	80.00	19.5
EC-1000	1000 mh	113.00	16.5
EC-1500	1500 mh	175.00	13.5
EC-2000	2000 mh	243.00	11.6
EC-3000	3000 mh	370.00	9.5
EC-4000	4000 mh	435.00	8.2
EC-5000	5000 mh	645.00	7.4
EC-7000	7000 mh	780.00	6.2
EC-10000	10000 mh	1190.00	5.2

EK Series Toroids



Type No.	Ind.	Res. ohms approx.	DC-ma for 5% ind. drop
EK-010	10 mh	.82	262
EK-020	20 mh	1.30	185
EK-030	30 mh	1.65	150
EK-040	40 mh	1.90	130
EK-050	50 mh	3.50	116
EK-060	60 mh	4.00	106
EK-080	80 mh	4.60	92
EK-100	100 mh	5.20	82
EK-120	120 mh	5.50	75
EK-150	150 mh	6.20	67
EK-200	200 mh	7.50	58
EK-250	250 mh	10.30	52
EK-300	300 mh	12.00	47
EK-400	400 mh	16.50	41
EK-500	500 mh	23.60	37
EK-700	700 mh	30.00	31
EK-1000	1000 mh	45.00	26
EK-2000	2000 mh	100.00	18.4
EK-3000	3000 mh	151	15
EK-4000	4000 mh	175	13
EK-5000	5000 mh	250	11.6
EK-7000	7000 mh	380	9.8
EK-10000	10000 mh	500	8.2
EK-20000	20000 mh	1000	5.8
EK-30000	30000 mh	1500	4.7
EK-40000	40000 mh	1850	4.1

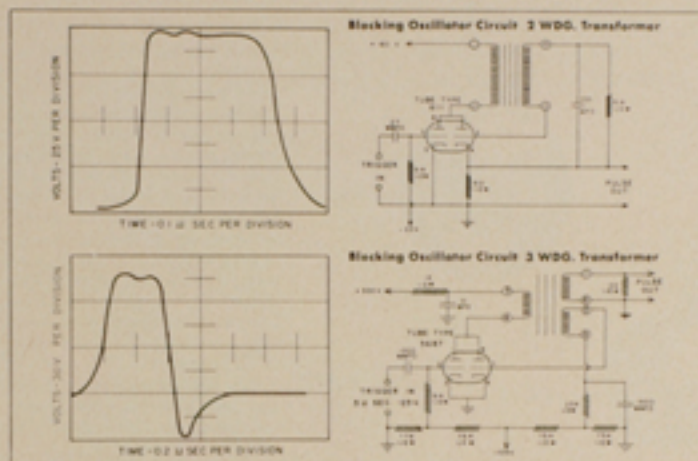
Triad designs incorporate the latest in techniques and materials

PULSE

PULSE TRANSFORMER BLOCKING OSCILLATOR TYPE

Type No.	Fig. No. or Case	Pulse Voltage per Winding	Pulse Duration— μ s	Max. Duty Ratio	Load Impedance—Ohms
PL-4	Fig. 1	100-100	54 to 66	.01	500*
PL-5	Fig. 2	100-100-100	36 to 54	.01	2000*
PL-6	Fig. 3	100-100-100	36 to 54	.01	2000*

CIRCUITS—PERFORMANCE DATA



HIGH SPEED FERRITE TOROIDAL CORE LOW POWER PULSE TRANSFORMERS

Type No.	Turns Ratio	Pulse Width μ Sec.	Rise Time μ Sec.	Repetition Rate	Suggested Output Load Ohms	Primary Inductance μ H	Leakage Inductance μ H	Figure	Ultrad or Utah Equiv.
● PL-80H ● PL-80P ● PL-80E	1-1	.07	.03	1-2 Mc	200	15	125 μ H	12 μ H	10 X80H 9 X80P 13 X80E
● PL-81H ● PL-81P ● PL-81E	2-1	.07	.03	1-2 Mc	200	20	150 μ H	15 μ H	10 X81H 9 X81P 13 X81E
● PL-82H ● PL-82P ● PL-82E	3-1	.08	.03	1-2 Mc	100	15	160 μ H	15 μ H	10 X82H 9 X82P 13 X82E
● PL-83H ● PL-83P ● PL-83E	4-1	.08	.03	1-2 Mc	100	15	180 μ H	20 μ H	10 X83H 9 X83P 13 X83E
● PL-84H ● PL-84P ● PL-84E	5-1	.08	.03	1-2 Mc	100	15	200 μ H	2 μ H	10 X84H 9 X84P 13 X84E

The letter "H" indicates Hermetically Sealed, the letter "P" indicates Miniature Plug-in and the letter "E" indicates Epoxy Molded. ● New Item.

SLOW SPEED SILICON CORE LOW POWER PULSE TRANSFORMERS

Type No.	Std. Type	Fig. No. or Case	Pulse Voltage per Winding	Pulse Duration— μ Sec.	Max. Duty Ratio	Load Impedance—Ohms	DC Resistance 1 2 3	Ultrad or Utah Equiv.
PL-124E PL-124H	TF1QX36YY	Fig. 4 Fig. 5	300-300-300	6 to 5	.002	150	4.1 4.6 5	X-124F X-124H-2
PL-140E PL-140H PL-140M	TF1QX36YY	Fig. 4 Fig. 5 AG	100-400-100	6 to 5	.002	175	2.05 9.2 2.5	X-140F X-140H-2 X-140M-61
PL-139E PL-139H PL-139M	TF1QX36YY	Fig. 4 Fig. 5 AF	100-100	3 to 1.5	.002	250	2.05 2.3	X-139F X-139H-2 X-139M-61
PL-144E PL-144H PL-144M	TF1QX36YY	Fig. 4 Fig. 5 AG	300-300	6 to 5	.002	250	4.1 4.6	X-144F X-144H-2 X-144M-61

*Not identical dimensions or mounting. For AF & AG dimensions see page 8

PHOTO-FLASH

Improved operation and reduced cost in flash photography can be attained through the use of electronic flash equipment. Triad VR-30Z and PL-10 have been especially developed for use in these circuits.

Type No.	Application	Case Dim.—in.			Mfg. Dim.—in.		Wt. Lbs.
		H	W	D	MW	MD	
VR-30Z	From 115v-60 cycle line or 4 volt-180 cy. vibrator (Radant 5514-4 or equiv.) to 350V RMS @ 14 ma.	2 3/4	3 3/4	2 1/4	2 1/4		1 1/2
PL-10	Trigger coil. Turn ratio 1:30	1/2		1/2			0 1/2 wt.

*Replaces V-30Z.



FIG. 1

PL-4

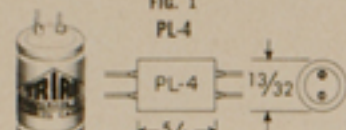


FIG. 2

PL-5

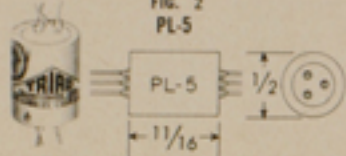


FIG. 3

PL-6

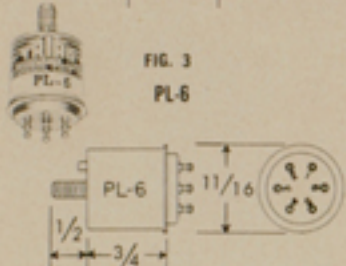


FIG. 9

FIG. 10

177 PINS, ONE DIA. PINS TO HOLE WITH A P FOR MINIMUM TENSILE STRENGTH

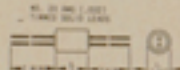
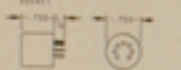


FIG. 13

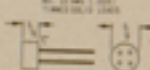


FIG. 5

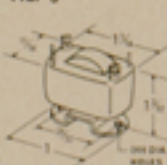
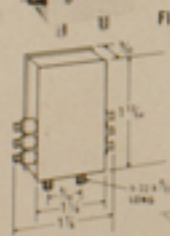
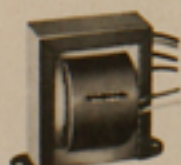


FIG. 4



VR-30Z

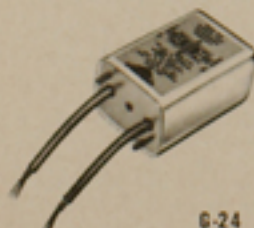


PL-10





The impedances shown in this catalog are matching impedances and do not necessarily indicate the measured impedance of the transformer windings; rather, they indicate the transformer will perform within the specifications and data ranges when matched and loaded at stated impedance.



G-24

GEOFORMERS

Geophysical and low frequency Instrumentation Transformers

Triad Geoformers are low-frequency transformers especially designed to meet the rigid requirements of geophysical recording equipment and other low frequency instruments. Uniformity of construction, extreme low frequency response, good shielding and small size are stressed in all units. All Geoformers are constructed to the rigid requirements of MIL-T-27A but due to the lack of government certified standards of inductances at the extremely low levels of 10 to 100 milli-volts at which the units are matched, inductance measurements cannot be performed by Government inspection at these low levels. Government inspection to Triad specifications with the inductance test deleted can be performed. Or, if requested, a certificate of compliance can be furnished.

SPECIFICATIONS FOR TRIAD GEOFORMERS

FREQUENCY RESPONSE: Special emphasis has been placed on the 5 to 2000 cycle range, with gradual attenuation at frequencies above 2000 cycles. In many applications, the 3DB point has been brought down to 1 cycle or a fraction of 1 cycle. While the high frequency response has been deliberately sacrificed to obtain the necessary low frequency response, the 3DB point on many of the standard Geoformers is 8000 to 10,000 cycles.

STATIC SHIELDING: Static shields are provided in all input Geoformers regardless of size. All interstage Geoformers of the standard size, and the majority of the miniature sizes are also provided with static shields. Output Geoformers with static shields can be provided on special order.

RESISTANCE: Geoformers are constructed to keep winding resistance to a minimum, thus keeping the insertion losses as low as possible.

INDUCTANCE TOLERANCES: Inductances are held within $\pm 5\%$ of standard. Individual shipments may fall within a $\pm 2\%$ range. Tests are made on a specially designed bridge with a 60-cycle potential maintained at the standard level across the coil. Input and interstage coils are checked at 10 MV.; outputs and reactors at 100 MV. Tests are made after coils have normalized for 24 hours at a 26°C. temperature. Each coil is checked before impregnation, before assembly, and again after completion.

IMPREGNATION: After first adjustment, the coil and core assemblies are prebaked at 250°C, followed immediately by vacuum impregnation with the highest quality treating compounds. After casing the complete units are vacuum impregnated with the highest quality wax and sealed off while hot. Special compounds can be used for special applications.

FINISH: Geoformers are supplied in bright brushed nickel finish.

MARKING: Each Geoformer is individually calibrated with inductance measurements, and marked with serial number and with type number on side and top.

CHOPPER INPUT TRANSFORMERS — 30 TO 500 CYCLE

Triad's new Chopper Input Transformers are manufactured under the same rigid high quality control standards as the Triad Input Transformers, plus the addition of an extremely close balance between the two halves of the primary winding. One half of the primary is balanced to the other half in both inductance and "Q". Cores are specially treated to eliminate noise in the microvolt range of input signals. Adjustment is at 60 cycles and, since input impedances are kept extremely high and the windings are not tuned, the chopper frequency may be 30 to 500 cycles. Magnetic and electrostatic shielding can be varied to meet customer's requirements.

Types for tube or transistor input are available. In addition to the standard types listed below, many types are currently being supplied to customer's specifications. We invite your inquiry on your special requirements.

Type No.	Primary Impedance in Ohms	Secondary Impedance in Ohms	Turns Ratio		Minimum Pri. Ind. (of Full Pri.) @ 1-V-60~	Maximum Pri. Volts (Full Pri.) @ 60~	D.C. Resistance		Magnetic Shielding	Case	Weight
			Full Pri. to Full Sec.	1/2 Pri. to Full Sec.			Full Primary	Secondary			
G-20	10000 CT. or 2500	640000 CT.	1.8	1.16	120	75	370	21000	P5-H	GP-4T	11 1/4 oz.
G-21	200000 CT.	12500 CT.	4.1	2.1	1200	84	4000	1300	P1-H	GP-2L	5 1/4 oz.
G-22	50000 CT.	800000 CT.	1.4	1.8	1000	90	2200	19000	P5-H	GP-5W	1 lb.
G-23	40000 CT.	1000 CT.	6.32:1	3.16:1	1000	75	4400	160	P1-H	GP-2L	5 1/4 oz.
G-24	40000 CT.	40000 CT.	1.1	5.1	400	1.85	1625	1625	P5	GP-5S	1 lb.
G-25	40000 CT. or 33000 CT.	10000 CT.	2.1	1.1	800	70	3200	2200	P1-H	GP-2L	5 1/4 oz.

Geoformers—Especially designed for geophysical prospecting and low frequency instrumentation



- MUMETAL CASE AND MUMETAL SHIELDS, NICKEL-PLATED FOR APPEARANCE AND DURABILITY.
- HI CONDUCTIVITY INNER SHIELDS, COPPER.
- COIL INSULATION 500 VOLT.
- SPECIAL PUNCHED MUMETAL LAMINATION.
- HUM-BUCKING CONSTRUCTION TWO IDENTICAL COILS.
- SOLDERED CONNECTION CORE TO CASE.
- ALL LEADS INSULATED FOR 500 VOLTS.
- THREE MUMETAL SHIELD LIDS CLOSE FITTING.
- MOUNTING STUDS WELDED TO LID, 6-32 BOLTS.
- STURDY LOW-LOSS TRIAD HERMETICALLY SEALED TERMINAL HEADER SOLDERED TO LID, 3 TO 12 TURRET PINS.

SHIELDING AVAILABLE IN GEOFORMERS

The "GP" series cases used for Geoformers are drawn from "Mumetal" and are dry hydrogen-annealed after fabrication to achieve the greatest low-density permeability possible. When several "Mumetal" cases are used with heavy copper interleaving, the maximum attenuation possible approaches 100 db., and additional reduction in pickup from use of humbucking coils can add 45 db. in the most effective plane. Shield designations in the tables are as follows: P-1—One "Mumetal" case—45 db.; P-1H—P-1 shielding plus humbucking coils—90 db. in most effective plane; P-3—Two "Mumetal" cases with interleaved copper—70 db.; P-3H—P-3 shielding plus humbucking—115 db. in most effective plane; P-5—Three "Mumetal" shields and interleaving copper—95 db.; P-5H—P-5 shielding plus humbucking—135 db. in most effective plane.

GEOFORMERS

For Geophysical and low frequency instrumentation.

Geoformers listed below have become standardized by repeated usage. Hundreds of others are supplied to customer's specifications. Geoformers to your specifications can be supplied in a reasonable time and at a reasonable cost. We invite your inquiries on your special requirements.

INPUT GEOFORMERS STANDARD

Type No.	Primary Impedance in Ohms	Secondary Impedance in Ohms	Primary Inductance @ 10 MV	DC Resistance		Stray Fields Shield	Turn Ratio	Case & Wtg.	Weight
				Pri. in Ohms	Sec. in Ohms				
G-1	500 ^{**} 333-233 200 125 ^{**} 67.5 ^{**} 50 ^{**} 17 ^{**}	157000 ^{**} CT.	8.7 h.	50	10400	P1-H	1-17.7	GP-2K	5 1/2 oz.
G-2	500 ^{**} 333-233 200 125 ^{**} 67.5 ^{**} 50 ^{**} 17 ^{**}	157000 ^{**} or 39250 [*]	8.7 h.	50	10400	P5-H	1-17.7	GP-4T	11 1/2 oz.
G-4	40 ^{**} 44-30 ^{**} 25 15 ^{**} 7.5 ^{**} 5 ^{**} 1.25 [*]	157000 ^{**} or 39250 [*]	9 h.	9	10400	P5-H	1-51	GP-4T	11 1/2 oz.
G-5	1000 ^{**} 666-666 400 ^{**} 250 ^{**} 135 ^{**} 100 ^{**} 34 [*]	137000 ^{**} or 34250 [*]	55 h.	225	15500	P1-H	1-11.75	GP-3P	7 1/2 oz.
G-7	500 ^{**} 333-233 200 ^{**} 125 ^{**} 67.5 ^{**} 50 ^{**} 17 ^{**}	315000 ^{**} or 78750 [*]	11.5 h.	58	16200	P1-H	1-25	GP-3P	7 1/2 oz.
G-8	500 ^{**} 333-233 200 ^{**} 125 ^{**} 67.5 ^{**} 50 ^{**} 17 ^{**}	315000 ^{**} or 78750 [*]	11.5 h.	58	16200	P5-H	1-25	GP-5W	1 lb.
G-9	500 ^{**} 333-233 200 ^{**} 125 ^{**} 67.5 ^{**} 50 ^{**} 17 ^{**}	712000 ^{**} or 178000 [*]	8 h.	72	20000	P1-H	1-37.7	GP-3P	7 1/2 oz.
G-10	500 ^{**} 333-233 200 ^{**} 125 ^{**} 67.5 ^{**} 50 ^{**} 17 ^{**}	712000 ^{**} or 178000 [*]	8 h.	72	20000	P5-H	1-37.7	GP-5W	1 lb.
G-13	500 ^{**} or 125 [*]	50000 ^{**} CT.	10 h.	150	20000	P1-H	1-30	GP-2L	5 1/2 oz.
G-14	500 ^{**} 333-233 200 ^{**} 125 ^{**} 67.5 ^{**} 50 ^{**} 17 ^{**}	450000 ^{**} CT.	6.8 h.	54	12500	P1-H	1-30	GP-2K	5 1/2 oz.
G-15	500 ^{**} CT.	200000 ^{**} CT.	12 h.	80	9800	P5-H	1-20	GP-5W	1 lb.
G-16	500 ^{**} or 125 [*]	50000 ^{**} CT.	10 h.	200	36000	P1-H	1-10	GP-3R	7 1/2 oz.
G-17	200 ^{**} or 50 [*]	442000 ^{**} CT.	4 h.	17	26000	P3-H	1-47	GP-3R	8 oz.

MINIATURE AND SUB-MINIATURE

G-101	500 ^{**} 333-233 200 ^{**} 125 ^{**} 67.5 ^{**} 50 ^{**} 17 ^{**}	145000 ^{**} CT.	8.3 h.	100	10000	P1-H	1-17	GP-10	3.2 oz.
G-301	500 ^{**} 125 [*]	145000 ^{**} CT.	8.3 h.	100	10000	P1-H	1-17	GP-1F	3.2 oz.
G-302	500 ^{**} 125 [*]	392000 ^{**} CT.	8.3 h.	94	13000	P1-H	1-28	GP-1F	3.2 oz.
G-301	500 ^{**} 125 [*]	145000 ^{**} CT.	3 h.	106	5800	P1-H	1-17	AF-1	1.5 oz.
G-306	500 ^{**} 125 [*]	60000 ^{**} CT.	7 h.	140	5600	P5-H	1-11	AF-1	1.5 oz.
G-313	500 ^{**} 125 [*]	36000 ^{**} CT.	10.5 h.	200	5300	P1-H	1-8.5	AF-1	1.5 oz.
G-315	500 ^{**} 125 [*]	114000 ^{**} CT.	5.2 h.	210	6200	P1-H	1-15.1	AF-1	1.5 oz.
G-401	500 ^{**} 125 [*]	157000 ^{**} CT.	8 h.	100	9500	P1-H	1-17.7	GP-1F	3.2 oz.

** Balanced, two windings. * Balanced, parallel windings

LOW FREQUENCY TRANSISTOR TRANSFORMERS

Type No.	Impedance Ohms		Turns Ratio	Min. Pri. Ind. @ 100MV - 60 cy. With No Unbalanced D.C. Current	D.C. Resistance (Ohms)		Frequency Response in Cycles Primary Signal of 1 Volt Unbalanced D.C. Secondary Current of 2 Ma. 5 Ma.								Shielding	Case Wtg.	Wt.	
	Pri.	Sec.			Pri.	Sec.	1 Ma.		3 Ma.		5 Ma.							
							-30B	-10B	-30B	-10B	-30B	-10B	-30B	-10B				
G-18	1000 or 250	125 or 31	2.83:1	60.	500	44		5 to 20000	8 to 7000	5 to 20000	8 to 7000	6 to 20000	9 to 7000	7 to 3800	10 to 2000	P1-H	GP-1F	3.2 oz.
G-19	1000 or 250	1000 or 250	1:1	65.	540	230		12 to 7000	15 to 3800	12 to 7000	15 to 3800	12 to 7000	15 to 3800	20 to 7000	40 to 3800	P1-H	GP-2L	5 1/2 oz.
G-30	1000 CT.	2500 CT.	1:1.58	20.	350	1800		20 to 8000	40 to 4200	22 to 8000	45 to 4200	40 to 8000	25 to 4200	20 to 8000	160 to 4200	P1	GP-1F	3.2 oz.

Geoformers—Especially designed for geophysical prospecting and low frequency instrumentation



COMBINED PLATE AND FILAMENT TRANSFORMERS

New "100" Series

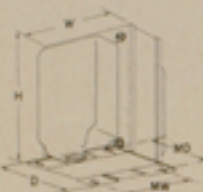
PRIMARY 115 VOLTS 60 CYCLES

Triad power components are liberally designed to best meet average design specifications and to ensure maximum utility for each design. All units are beautifully finished in baked grey enamel and have all connection data permanently marked on the case.

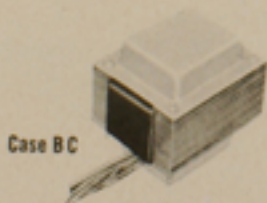
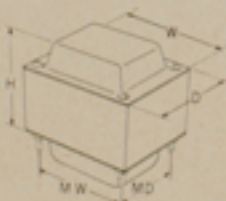
All types are "Climateite" treated, both coil and core, for protection against moisture and for elimination of lamination chatter. Although they are small in size, the high quality materials used keep losses to a minimum. The temperature rise design is 55°C. Only copper foil static shields, grounded to the case and core, are used. Leads are of a type approved by UL for high temperature operation.



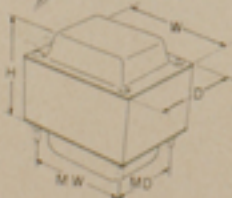
Case A



Case B



Case BC



PRIMARY 115 VOLTS 60 CYCLES

Type No.	Plate Supply		Rect. Filaments Volts Amp.	Other Filaments Volts Amp.		Case Dim.			Mtg. Dim.		Wt. Lbs.
	AC Volts	DC Ma.		H	W	D	MW	MD			
E-104A	500 C.T.	40		6.3 V.C.T.	2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	1.55
E-104B	500 C.T.	40		6.3 V.C.T.	2	1 1/2	2 1/2	2 1/2	2 1/2	2 1/2	1.55
E-105A	600 C.T.	65		6.3 V.C.T.	2.7	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2
E-105B	600 C.T.	65		6.3 V.C.T.	2.7	1 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2
E-106A	480 C.T.	50	5 2	6.3 V.C.T.	2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2.05
E-106B	480 C.T.	50	5 2	6.3 V.C.T.	2	1 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2.05
E-107A	600 C.T.	50	5 2	6.3 V.C.T.	2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2.35
E-107B	600 C.T.	50	5 2	6.3 V.C.T.	2	1 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2.35
E-108A	500 C.T.	75	5 2	6.3 V.C.T.	2.5	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2.4
E-108B	500 C.T.	75	5 2	6.3 V.C.T.	2.5	1 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2.4
E-109A	600 C.T.	75	5 2	6.3 V.C.T.	3	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2.9
E-109B	600 C.T.	75	5 2	6.3 V.C.T.	3	1 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2.9
E-110A	525 C.T.	90	5 2	6.3 V.C.T.	5	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3.25
E-110B	525 C.T.	90	5 2	6.3 V.C.T.	5	2	2 1/2	2 1/2	2 1/2	2 1/2	3.25
E-111A	700 C.T.	90	5 2	6.3 V.C.T.	3.5	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3.55
E-111B	700 C.T.	90	5 2	6.3 V.C.T.	3.5	2	2 1/2	2 1/2	2 1/2	2 1/2	3.55
E-112A	550 C.T.	110	5 2	6.3 V.C.T.	5	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3.7
E-112B	550 C.T.	110	5 2	6.3 V.C.T.	5	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3.7
E-113A	650 C.T.	40	5 2	6.3 V.C.T.	2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2.3
E-113B	650 C.T.	40	5 2	6.3 V.C.T.	2	2	2 1/2	2 1/2	2 1/2	2 1/2	2.3
E-114A	700 C.T.	125	5 3	6.3 V.C.T.	4.5	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	4.7
E-114B	700 C.T.	125	5 3	6.3 V.C.T.	4.5	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	4.7
E-115A	680 C.T.	70	5 2	6.3 V.C.T.	2.5	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3.5
E-115B	680 C.T.	70	5 2	6.3 V.C.T.	2.5	2	2 1/2	2 1/2	2 1/2	2 1/2	3.5
E-116A	700 C.T.	150	5 3	6.3 V.C.T.	5	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	5.65
E-116B	700 C.T.	150	5 3	6.3 V.C.T.	5	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	5.65
E-118A	750 C.T.	175	5 3	6.3 V.C.T.	8	4 1/2	3 1/2	4	2 1/2	2 1/2	7.45
E-118B	750 C.T.	175	5 3	6.3 V.C.T.	8	2 1/2	4 1/2	3 1/2	3 1/2	2 1/2	7.45
E-120A	700 C.T.	200	5 3	6.3 V.C.T.	8	4 1/2	2 1/2	4 1/2	2 1/2	2 1/2	8.25
E-120B	700 C.T.	200	5 3	6.3 V.C.T.	8	3	4 1/2	3 1/2	3 1/2	2 1/2	8.25
E-121A	800 C.T.	200	5 3	6.3 V.C.T.	6	4 1/2	2 1/2	4 1/2	2 1/2	2 1/2	8.25
E-121B	800 C.T.	200	5 3	6.3 V.C.T.	6	3 1/2	4 1/2	3 1/2	2 1/2	2 1/2	8.25

Triad's "know-how" has made the production of these items possible together with new materials now available and new manufacturing techniques employed at Triad.

The items listed above are designed to meet the competitive market price-wise and still perform in the 55°C. heat rise region. Look to Triad for quality, performance and reliability.

Type No.	Plate Supply		Filaments— Volts and Amperes		DC Volts @ Rectifier Load		Dimensions in Inches				Wt. Lbs.	
	AC Volts	100% DC Ma.	70% 100%	Rectifier	H	W	D	MD	MW			
E-388C	750 V.C.T.	225	5V—3A, 6.3V—2.5A.	6.3V—10A, 6.3V—1.2A.	420	365	3 1/2	4 1/2	3 1/2	3 1/2	3	12
E-388C		225	5V—3A, 6.3V—2.5A.	6.3V—10A, 6.3V—1.2A.	420	365	3 1/2	4 1/2	3 1/2	3 1/2	3	12
E-39A	640 V.C.T.	225	5V—3A	6.3V—10A, 6.3V—1.2A.	350	300	4 1/2	3 1/2	4 1/2	3	3 1/2	12
E-40A	780/440 V.C.T.	300	5V—3A, 5V—2A	6.3V—8.5A, 6.3V—1.5A.	420	390	4 1/2	3 1/2	5 1/2	3	4 1/2	14
E-40B	780/440 V.C.T.	300	5V—3A, 5V—2A	6.3V—8.5A, 6.3V—1.5A.	420	390	3 1/2	4 1/2	3 1/2	3 1/2	3	14
E-42B	675 V.C.T.	185	5V—3A	6.3V—7A, 6.3V—2A.	375	360	2 1/2	4 1/2	3 1/2	3 1/2	3	8
E-50A	790/650 V.C.T.	300	5V—3A, 5V—2A	6.3—5A, 6.3—3A, 6.3—2.5A.	450	435	4 1/2	3 1/2	5 1/2	3	4 1/2	15
E-50B		300	5V—3A, 5V—2A	6.3—5A, 6.3—3A, 6.3—2.5A.	340	325	4 1/2	3 1/2	3 1/2	3 1/2	3	15
E-758A	560 V.C.T.	250	5V—3A	6.3—8.5A	275	255	2 1/2	3 1/2	3 1/2	2 1/2	3 1/2	6 1/2
E-798A	127 V Multi-Purpose Usage	500	6.3V—2A	12.6V—2A	295	581	2 1/2	3 1/2	3 1/2	2 1/2	3 1/2	6 1/2
E-808A	550 V.C.T.	300	5V—6A, 6.3V—3A	6.3V—6A, 6.3V—3A	295	275	3	3 1/2	3 1/2	2 1/2	3 1/2	9
E-868A	117/126/141 Multi-Purpose Usage	500	6.3—6A, 6.3—5A	12.6 CT.—2A			2 1/2	3 1/2	3 1/2	2 1/2	3 1/2	6 1/2

For further listings check Triad Correct Television Replacement Guide and Catalog
Triad designs incorporate the latest in techniques and materials

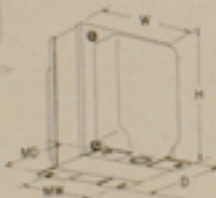


A seemingly almost infinite number of power transformer types are required to meet the range of input and output values required in the manufacture of the many types of electronic equipment now being made in this country. Careful study of the thousands of such items in the Triad specification file has enabled us to condense the list of needed units to those on this page; items covering 90% of the most frequent demands. To meet dimensional requirements and still supply adequate output for a wide range of power applications, substantially better quality materials are used than in the average commercial design. Triad power transformers have the following advantages:

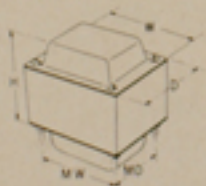
1. **Low Temperature Rise.** Where size limitations permit, Triad general purpose power transformers are held to 40°C. rise. In no case is more than 55°C. rise permitted.
2. **"Climate" Treatment.** All Triad general purpose transformers are vacuum-varnish impregnated by this exclusive process for protection against moisture and lamination chatter.
3. **Electrostatically Shielded.** Copper foil static shields are used; grounded to case and core.
4. **Permanently and Legibly Marked.** All circuit data and wiring information is clearly indicated.
5. **Beautifully Finished.** Baked Triad grey enamel.



Case AL



Case B



Case A



POWER

COMBINED PLATE AND FILAMENT TRANSFORMERS

PRIMARY 115 VOLTS 60 CYCLES

Triad power components are liberally designed to best meet average design specifications and to ensure maximum utility for each design. All units are beautifully finished in baked grey enamel and have all connection data permanently marked on the case.

All types are "Climate" treated, both coil and core, for protection against moisture and for elimination of lamination chatter. Although they are small in size, the high quality materials used keep losses to a minimum and hold temperature rise below 55° C. Only copper foil static shields, grounded to the case and core, are used. Leads are of a type approved by UL for high temperature operation.

Type No.	Plate Supply		Rect. Fil.		Other Fil.		Case Dim.-inches			Wtg. Dim.-inches			Wt. Lbs.
	AC Volts	DC Ma.	Volts	Amp.	Volts	Amp.	H	W	D	MW	MD		
R-4A	500 CT.	40			6.3 CT.	2	2 1/2	2 1/4	2 1/4	1 1/4	1 1/4	1 1/4	1 1/4
R-4B	500 CT.	40			6.3 CT.	2	2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-5A	600 CT.	65			6.3 CT.	2.7	3 1/2	2 1/4	2 1/4	2	1 1/4	2 1/4	2 1/4
R-5B	600 CT.	65			6.3 CT.	2.7	1 1/2	3	2 1/4	2 1/4	2	2 1/4	2 1/4
R-6A	480 CT.	50	5	2	6.3 CT.	2	2 1/2	2 1/4	2 1/4	2	1 1/4	2 1/4	2 1/4
R-6B	480 CT.	50	5	2	6.3 CT.	2	1 1/2	2 1/4	2 1/4	2 1/4	2	2 1/4	2 1/4
R-7A	600 CT.	50	5	2	6.3 CT.	2	2 1/2	2 1/4	2 1/4	2	1 1/4	2 1/4	2 1/4
R-7B	600 CT.	50	5	2	6.3 CT.	2	1 1/2	3	2 1/4	2 1/4	2	2 1/4	2 1/4
R-22A	380/320 CT.	70	6.3	6	6.3 CT.	3	3 1/2	2 1/4	2 1/4	2	1 1/4	2 1/4	2 1/4
R-22B	380/320 CT.	70	6.3	6	6.3 CT.	3	1 1/2	3	2 1/4	2 1/4	2	2 1/4	2 1/4
R-8A	500 CT.	75	5	2	6.3 CT.	2.5	3 1/2	2 1/4	2 1/4	2	1 1/4	2 1/4	2 1/4
R-8B	500 CT.	75	5	2	6.3 CT.	2.5	2 1/2	3	2 1/4	2 1/4	2	2 1/4	2 1/4
R-9A	600 CT.	75	5	2	6.3 CT.	3	3 1/2	3	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-9B	600 CT.	75	5	2	6.3 CT.	3	2 1/2	3 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-10A	525 CT.	90	5	2	6.3 CT.	5	3 1/2	3	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-10B	525 CT.	90	5	2	6.3 CT.	5	2 1/2	3 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-11A	700 CT.	90	5	2	6.3 CT.	3.5	3 1/2	3	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-11B	700 CT.	90	5	2	6.3 CT.	3.5	2 1/2	3 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-12A	550 CT.	110	5	2	6.3 CT.	5	3 1/2	3 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-12B	550 CT.	110	5	2	6.3 CT.	5	2 1/2	3 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-14A	700 CT.	125	5	3	6.3 CT.	4.5	3 1/2	3 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-14B	700 CT.	125	5	3	6.3 CT.	4.5	2 1/2	3 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-72A	800 CT.	140	5	3	6.3	4	4 1/4	3 1/2	4 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-16A	700 CT.	160	5	3	6.3 CT.	5	3 1/2	3 1/4	4 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-16B	700 CT.	160	5	3	6.3 CT.	5	2 1/2	3 1/4	3 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-17A	750 CT. 80 Tap	160	5	3	6.3 CT. 2.5 CT.	5	4 1/4	3 1/4	4 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-18A	750 CT.	175	5	3	6.3 CT.	8	4 1/4	3 1/4	4 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-18B	750 CT.	175	5	3	6.3 CT.	8	2 1/2	4 1/4	3 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-58A	875 CT.	185	5	3	6.3 6.3	4	4 1/4	3 1/2	4 1/4	3	2 1/4	2 1/4	2 1/4
R-19A	750 CT. 80 Tap	200	5	3	6.3 CT. 2.5 CT.	6	4 1/4	3 1/2	4 1/4	3	2 1/4	2 1/4	2 1/4
R-20A	700 CT.	200	5	3	6.3 CT.	8	4 1/4	3 1/2	4 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-20B	700 CT.	200	5	3	6.3 CT.	8	2 1/2	4 1/4	3 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-21A	800 CT.	200	5	3	6.3 CT.	6	4 1/4	3 1/4	4 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-21B	800 CT.	200	5	3	6.3 CT.	6	2 1/2	4 1/4	3 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-71A	900 CT.	250	5 CT.	4	6.3 CT. 6.3	2	4 1/4	4	5	3	2 1/4	2 1/4	2 1/4
R-24A	800 CT.	300	5	6	6.3 CT.	6	4 1/4	3 1/2	4 1/4	3	2 1/4	2 1/4	2 1/4
R-24B	800 CT.	300	5	6	6.3 CT.	6	2 1/2	4 1/4	3 1/4	2 1/4	2 1/4	2 1/4	2 1/4
R-25A	800 CT.	500	5	6	6.3 CT. 6.3	3	5 1/4	4 1/4	5 1/4	3 1/4	4 1/4	4 1/4	4 1/4
R-92A	110-120	150-160 170 (500 Ma DC) 250 Ma Dc Voltage Doubler Circuit			6.3 CT.	6	4 1/4	3 1/2	4 1/4	2 1/4	2 1/4	2 1/4	2 1/4

PLATE POWER TRANSFORMERS

PRIMARY 115 VOLTS 60 CYCLES

Type No.	Secondary Volts		Sec. D.C. Ma.		Rect. Fil.	Case Dim.-inches			Wtg. Dim.-inches			Wt. Lbs.
	AC	DC	CCS	ICCS		H	W	D	MW	MD		
P-1A	440/220 CT.	180/90	160	190	5V-3A	2 1/2	3	3 1/4	2 1/4	2 1/4	4	4
P-3A	600/300 CT.	250/125	300	380	5V-6A	3 1/4	3 1/4	3 1/4	2 1/4	2 1/4	5 1/4	5 1/4
P-5A	1100 CT.	400	250	310	5V-6A	4 1/4	3 1/2	4	3	2 1/4	9	9
P-7A	1235 CT.	500	250	310	5V-6A	4 1/4	3 1/2	4 1/4	3	2 1/4	11	11
P-9A	1235 CT.	500	500	600	5V-6A	5 1/4	4 1/4	5 1/4	3 1/4	4 1/4	19	19
P-11A	1455 CT.	600	250	310		4 1/4	3 1/2	4	3	2 1/4	12	12
† P-14A	1780 CT.	750/600	250	300		5 1/4	4 1/4	4 1/4	3 1/4	3 1/4	14	14
† P-15AL	2340 CT.	1000	250	310		5 1/4	4 1/4	5 1/4	3 1/4	4 1/4	17	17
† P-16AL	2430 CT.	1000	500	600		6 1/4	5 1/4	6 1/4	4 1/4	4 1/4	20	20
† P-17AL	2880 CT.	1250	250	300		5 1/4	4 1/4	5 1/4	3 1/4	4 1/4	20	20
† P-18AL	2880 CT.	1250	500	600		6 1/4	5 1/4	6 1/4	4 1/4	4 1/4	25	25
† P-20AL	3300 CT.	1500	300	425		6 1/4	5 1/4	6 1/4	4 1/4	4 1/4	25	25
● PR-21AL*	3300 CT.	1500	500	700		6 1/4	5 1/4	6 1/4	4 1/4	4 1/4	32	32

†Plate leads out side of case for 866 rectifiers. †Tapped Pri. to produce the lower D.C. voltage.

● New item.

*Primary 115 V or 230 V, designed for grounded grid linear amplifier, compact size.

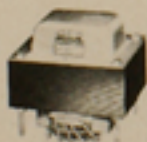
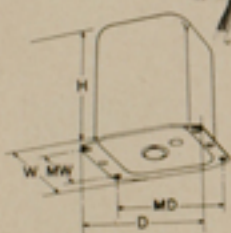
Only Triad Transformers are "Climate" treated



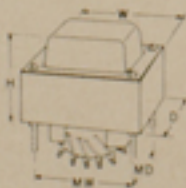
Case A



Case K



Case C



INSTRUMENT POWER

INSTRUMENT POWER SUPPLY TRANSFORMERS

Quality instrument design involves consideration of many factors not critical in ordinary electronic circuitry. The close tolerances which must be maintained force unusually great isolation of circuits, extremely close regulation, low external fields, high insulation and leakage resistance factors, and lower than standard temperature rise. Each type of instrument involves a special set of parameters in the transformers to be used which in most cases cannot be met by ordinary receiver type transformers.

For many years Triad has been the preferred transformer source for the manufacturers of quality test and measuring equipment. Close adherence to specifications without deviations or variations through long and successive runs, absence of operational failures, and ability to meet difficult specifications contribute to Triad's acceptance in this field.

The transformers listed on this page are units which have proven to have wide usage in instrument design. The special ratings and unusual precision of design and construction are such as have proven desirable and necessary in manufacture of high quality instruments. Triad Instrument Power Transformers have the fine appearance and attention to detail in marking, packaging, and specification requirements which are characteristic of all Triad transformers.

FOR PREAMPLIFIERS, VTVM, ETC.

PRIMARY 115 VOLTS — 60 CYCLES

Type No.	Plate Supply			Filament Windings Volts and Amperes	Case Dim.—Inches			Mtg. Dim.—Inches		Wt. Lbs.
	AC Volts	DC Ma.			H	W	D	MW	MD	
R-68A	800 CT.	30		5V-2A, 6.3-1.2A, 6.3-1.2A	3½	2½	3½	2	2½	3
R-3C	135	15		6.3V-3A	1½	1½	1½		1½	1
R-33B	250 CT.	22		6.3-3A, 15.5/12.6-6A	2	2½	2½	2½	1½	1½
R-3A	500 CT.	20		6.3 CT.-2A	2½	2½	2½	1½	1½	1½
R-29A	230 CT.	40		6.3V-1.5A	2½	2½	2½	1½	1½	1½
R-30X	135	50		6.3V-1.5A	2½	2½	2½	1½	1½	1½
R-34X	115	15		6.3V-6A	1½	2½	1½	2½		1
R-36A	130	20		0.15-22.5-30-3A	2½	2½	2½	1½	2	2
R-73B	135	200		6.3 CT.-5.5A	2	2½	2½	2½	2½	2½

FOR CATHODE RAY TUBES

PRIMARY 115 VOLTS — 60 CYCLES

Type No.	Plate Supply			Filament Windings Volts and Amperes	Case Dim.—Inches			Mtg. Dim.—Inches		Wt. Lbs.
	AC Volts	DC Ma.			H	W	D	MW	MD	
R-41C	440-0-440-1250	125/5		6.3V-6A, 12.5V-1.75A, 5V-3A	3½	4½	3½	3½	2½	7½
R-45C	400-0-400-800	30/5		6.3V-6A, 6.3 CT.-3A, 15V-3A	2½	3½	3½	3½	2½	4½
R-43C	1600	3		6.3/5/2.5V-1A, 16.3/5/2.5V-3A	2½	3	2½	2½	2	3½
RR-83A	800 CT. 650	70 3		6.3 CT.-3.5 6.3-8 ^{***} 1.25-3	3½	2½	3½	2½	2½	4½
RR-84A				6.3-6A ^{†††}	2½	2½	2½	1½	2½	1½
RR-85A	1825 117 180	3 200 475		1.25V-2A 6.3 CT.-5.65A	3½	3½	4½	2½	3½	7½

* Statically shielded and insulated for full plate voltage. † Insulated for full plate voltage.

** Insulated for 3000 volts RMS test. †† Insulated for 3500 volts RMS test.

‡ 2 ohm 2W resistor in series with filament when 1V2 is used.

▲ Direct replacement for scope transformer Heathkit O-12.

■ Both R-84K & R-85A are required to make a correct replacement for power transformer in Heathkit scope OP-1 —

complete instructions included in box, point to point wiring.

▲ All leads outside of case — no chassis hole required.

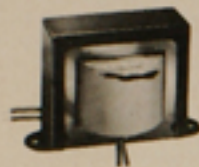
FOR REGULATED POWER SUPPLIES

PRIMARY 115 VOLTS — 60 CYCLES

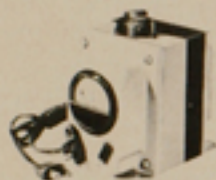
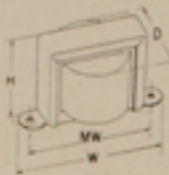
Type No.	Plate Supply			Filament Windings Volts and Amperes	Case Dim.—Inches			Mtg. Dim.—Inches		Wt. Lbs.
	AC Volts	DC Ma.			H	W	D	MW	MD	
R-70A	880 CT.	75		6.3V-6A, 6.3V-3A	3½	3½	3½	2½	2½	4½
R-36A	880-220 CT.	200		6.3 CT.-8A, 6.3V-1A	4½	3½	4½	3	3½	12
R-38A	1250 CT.	300		6.3 CT.-8A, 6.3V-3A	5½	4½	5½	3½	4½	20
R-46A	1250 CT. 130 (Bias winding)	300 50		5V-6A, 6.3V-6A, 6.3V-1A, 6.3V-1A	5½	4½	5½	3½	4½	20
R-37A	1500 CT.	400		5V-6A, 6.3V-3A, 6.3V-6A	5½	4½	7½	3½	4½	30

R-46A will supply 550 V. D.C. using 2 5BR5 rectifier tubes, choke input. Will also supply 130 V. for bias using Selenium rectifier. Sufficient filament windings to regulate screen voltages.

Note: Last letter of Type No. denotes case style



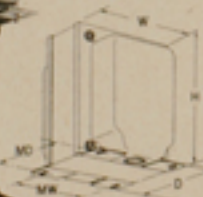
Case X



Case M
with Meter



Case A



Case AC



Case SC



LINE POWER

ISOLATION TRANSFORMERS 50/60 CYCLES

Type No.	V. A. Output	Input Volts	Output Volts	Case Dim.—Inches			Mtg. Dim.—Inches		Wt. Lbs.
				H	W	D	MW	MD	
N-51X	35	115	115	2 1/4	3 1/4	2 1/4	3 1/4		1 1/2
N-68X	50	230/115	115	2 1/4	3 1/4	2 1/4	3 1/4		1 1/2
N-53M	85	115	115	3 1/2	3	3 1/2	2 1/4	2 1/4	4 1/2
N-54M	150	115	115	4	3 1/4	4 1/2	2 1/2	3 1/4	6 1/2
N-67A	150	230/115	115	3 1/2	3 1/4	4 1/4	2 1/2	3	7
N-55M	250	115	115	4 1/2	3 1/2	5	3	3 1/2	12
N-66A	250	230/115	115	4 1/2	3 1/2	4 1/2	3	3 1/2	14
N-57M	500	115	115	5 1/2	4 1/2	6 1/2	3 1/2	5 1/4	24
N-59M	1000	115	115	5 1/2	4 1/2	6 1/2	3 1/2	7 1/4	35
†N-56M	150	95 to 130 (in 5V. steps)	115	4 1/2	3 1/2	3 1/2	3	2 1/2	7
†N-52M	350	95 to 130 (in 5V. steps)	115	4 1/2	3 1/2	4 1/2	3	3 1/2	11
●N-469A	50	460, 230	115	3 1/2	2 1/2	2 1/4	2	1 1/4	2 1/2
●N-470A	150	460, 230	115	3 1/2	3 1/2	3 1/2	2 1/2	2 1/2	5 1/2
●N-471A	300	460, 230	115	4 1/2	3 1/2	4 1/2	3	3 1/2	10 1/2

† With switch and meter for primary voltage control. Detachable cord.

● New Item

STEPDOWN AUTOFORMERS 50/60 CYCLES

Type No.	V. A. Output	Input Volts	Output Volts	Case Dim.—Inches			Mtg. Dim.—Inches		Wt. Lbs.
				H	W	D	MW	MD	
N-1X	50	230	115	2 1/4	3 1/4	2 1/4	3 1/4		1 1/2
N-3M	85	230	115	3 1/2	3	2 1/2	2 1/4	1 1/4	2 1/2
N-4M	150	230	115	3 1/2	3	2 1/2	2 1/4	2 1/4	4 1/2
N-5M	250	230	115	4	3 1/4	4 1/2	2 1/2	3 1/4	6 1/2
N-7M	400	230	115	4 1/2	3 1/2	5	3	3 1/2	12
N-9M	1250	230	115	5 1/2	4 1/2	6 1/2	3 1/2	5 1/4	25
N-11M	2000	230	115	5 1/2	4 1/2	6 1/2	3 1/2	7 1/4	35
N-34X	150	95, 105, 115, 125, 135	115	2 1/2	4	2 1/2	3 1/2		2
† N-35M	350	95 to 130 (in 5V. steps)	115	4 1/2	3 1/2	3 1/2	2 1/4	2 1/4	5 1/2
† N-30M	500	95 to 130 (in 5V. steps)	115	4 1/2	3 1/2	5 1/2	3	4 1/2	8

† M case with switch for primary voltage control and detachable cord.

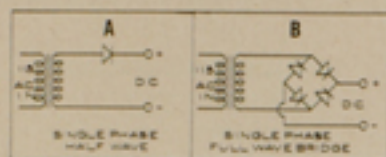
UNIVERSAL ISOLATION, AUTOFORMER, VOLTAGE CONTROL 50/60 CYCLES

This group of transformers is designed with four equal 115 volt windings. They may be connected as isolation transformers of 230 to 230, 230 to 115, or 115 to 115 volts at the full rating given. They can also be used as an autoformer at any combination of 460, 345, 230 or 115 volts at twice this rating. Mounting is with conduit nipple for ready connection to conduit fittings. Connections as shown below.

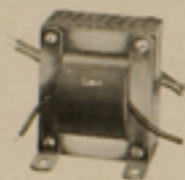


Type No.	V. A. (Isolation)	V. A. (Autoformer)	Case Dim.—Inches			Mtg. Dim.—Inches		Wt. Lbs.
			H	W	D	MW	MD	
N-64AC	500	1000	5 1/2	4 1/2	5 1/2	3 1/2	4 1/4	17
N-63AC	1000	2000	6 1/2	5 1/2	5 1/2	4 1/4	3 1/2	23
N-60SC	2000	4000	7 1/2	5 1/2	13 1/4	7 1/2	7 1/2	58

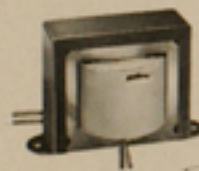
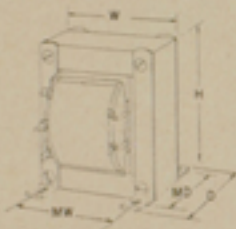
Note: Last letter of Type No. denotes case style



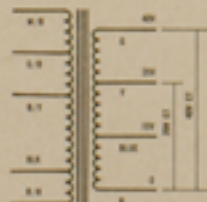
Rectifier Circuits



Case U



Case X



These transformers are designed for use with silicon diode rectifiers, to supply the DC voltages for transistors in their various applications. They are intended for use with full wave bridge or bridge rectifier, but may be used with voltage doubler circuits at one-half of the rated current.

CAUTION: Never apply the full line voltage (115 volts) between the Black/Red and Black leads of the primary. One of these leads is used as a primary common lead in all applications. The lowest output voltage is obtained when the available line voltage is applied to the Black/Red and White/Black primary leads.

RECTIFIER POWER

Triad rectifier power transformers listed below are the result of demands. Demands of customers and results of study by rectifier manufacturers. Triad is the leader in this field. These transformers may be used with all types of rectifiers providing the current ratings are not exceeded. They may be used for intermittent duty at increased current providing excessive heating is not experienced. Voltage doubler rectifiers may be used by derating the wattage rating slightly. Somewhat greater voltages may be obtained from circuits A and B by the use of heavy duty capacitors across the output voltage. Increased filtering may be obtained by use of high current reactors shown on page 27.

UNIVERSAL RECTIFIER TRANSFORMERS PRIMARY 60 CYCLES

These transformers may be used with all rectifiers. Rectifiers not included

Type No.	Pri. Volts	Secondary		Rectifier Circuit		Case Dim.-Inches			Mfg. Dim.-Inches		Wt. Lbs.
		AC Volts	Ampers RMS	A Volts DC	B Volts DC	H	W	D	MW	MD	
F-47U	115	17-18	3	6-7	13-14	3	2 1/2	2 1/4	2	2 1/4	2 1/2
F-48U	115	17-18	6	6-7	13-14	3 1/2	3 1/2	3 1/4	2 1/2	2 1/4	3 1/2
F-49U	115	36 36	3	13	26	4 1/2	3 1/2	4	3	3	9 1/2
F-60U	115	6.5-13- 19.5-26	3	9	18	3 1/2	2 1/2	3 1/4	2 1/4	2 1/4	3
F-61U	115	24-27-30- 33-36	3	13	26	3 1/2	3 1/2	3 1/4	2 1/2	2 1/4	3 1/2
F-67U	110-120	24-27-30- 33-36	8	13	26	4 1/2	3 1/2	3 1/4	3	3 1/2	10 1/2
F-63U	115	8-9 8-9	2 2	—	6-7	3 1/2	2 1/2	2 1/4	2	2	2
F-64U	115	7-8-9	7	—	6-7	3 1/2	2 1/2	2 1/4	2 1/4	2 1/4	3
F-62U	105-115- 125	9 9 9	10 10 10	—	6-7 6-7 w/6	4 1/2	3 1/2	3 1/4	3	4 1/2	15
F-68U	115	9 C.T. 9 9 9	2.5 3.5 3.5 3.5	—	6-7 6-7 w/6	3 1/2	3 1/2	3	2 1/2	2 1/2	5
F-65U	110-120	140-150- 160	7.5	60	115	3 1/2	3 1/2	3 1/4	2 1/2	2 1/4	5 1/2
F-66U	110-120	140-150- 160	2.5	60	115	5 1/2	4 1/2	5	3 1/2	4	18 1/2
F-79U†	115	24-26- 28-30	15	—	22.8	4 1/2	3 1/2	5	3	4 1/2	18.5
F-80U*	115 tapped	18-18	20-20	—	10	4 1/2	3 1/2	3 1/4	4 1/2	4 1/2	
F-84AC**	230-125	12-12	10-10	—	8	4 1/2	3 1/2	4 1/2	3	3 1/2	12
R-93A	110-120	150-160 170 (500ma DC) 6.3 V.C.T. 6A			290ma DC-voltage doubler circuit	4 1/2	3 1/2	4 1/2	2 1/2	3 1/2	8 1/2

†Replaces F-69U

‡ Multiple windings for series or parallel connection.

*The F-80U is a flexible unit designed to deliver a wide variety of voltages at relatively high current values. With primary of 115 volts, 60 cycles, the secondaries will each deliver 12, 13.5, 15, 16.5 and 18 volts at 20 amperes or may be paralleled to give these voltages at 40 amperes. With series connected secondaries, additional voltages of 24, 27, 30, 33 and 36 center-tapped at 20 amperes are available. Low current switching is possible since all outputs are adjusted by changing primary taps.

**The F-84AC is designed as a flexible source of power for small plating plants. The mechanical construction is such as to permit direct conduit wiring into either 115 or 230 volts 60 cycle circuits. The two secondaries will each deliver 12 C.T., 10 C.T., 6 or 5 volts at 10 amperes or can be paralleled for 20 amperes at these voltages. With secondaries in series 24 C.T., 20 C.T., 18 C.T., 15 C.T., 12 C.T., 10 C.T., 6 or 5 volts are available at 10 amperes. With 230 volt input, 22 C.T., 16.5 C.T., 11 C.T., 5.5 volts are also available. Voltage changes are produced by combinations of primary and secondary taps.

LOW VOLTAGE RECTIFIER TRANSFORMERS

To supply drive voltage for transistors

Type No.	Primary Volts	Secondary Volts and Amperes	Case Dim.-Inches			Mfg. Dim.-Inches		Wt. Lbs.
			H	W	D	MW	MD	
F-90X	115 tapped	40 CT.-20 CT.-10	300ma DC	1 1/2	2 1/4	3 1/4	2 1/4	1/4
F-91X	115 tapped	40 CT.-20 CT.-10	100ma DC	2 1/2	3 1/2	2 1/4	2 1/4	1 1/4
F-92A	115 tapped	40 CT.-20 CT.-10	1A DC	3 1/2	2 1/2	3	2	2 1/4

Only Triad Transformers are "Climate" treated

FILAMENT

Electronic tubes, as used in most equipment, operate with filaments on continuously. Filament transformers should then be designed for low temperature rise under continuous operation, good regulation, minimum size, and long life. Triad filament transformers meet all these requirements. All units are "Climatite" treated, both coil and core, for moisture protection and elimination of lamination noise. All types are permanently marked with connection data and cased types are beautifully finished in grey baked enamel. Only the highest quality of materials are used to permit rated output in minimum size.

FILAMENT TRANSFORMERS, SINGLE SECONDARY PRIMARY 115 VOLTS — 60 CYCLES

Type No.	Secondary Volts	Secondary Amperes	Test Volts	Case Dim.-Inches			Mfg. Dim.-Inches		Wt. Lbs.
				H	W	D	MW	MD	
F-1X	2.5 CT.	3	1500	2 1/4	2 1/4	1 1/4	2 1/4		1/4
F-72Z	2.5 CT.	5	7500	2 1/4	3 1/4	2 1/4	2 1/4		1 1/4
F-6X	2.5 CT.	6	2500	2 1/4	2 1/4	2	2 1/4		1 1/4
F-3X	2.5 CT.	10	3000	2 1/4	2 1/4	2 1/4	2 1/4		1 1/4
F-5U	2.5 CT.	10	7500	3	2 1/4	2 1/4	1 1/4	2	2
F-71U	2.5 CT.	10	10000	3	2 1/4	2 1/4	1 1/4	2 1/4	2 1/4
F-7X	5 CT.	3	1500	1 1/4	2 1/4	2	2 1/4		1 1/4
F-8X	5 CT.	6	1500	2 1/4	2 1/4	2 1/4	2 1/4		1 1/4
F-12X	5 CT.	8	2500	2 1/4	4	2 1/4	2 1/4		2 1/4
F-9A	5.2 CT.	13	1500	2 1/4	3	2 1/4	2 1/4	2 1/4	4
F-9U	5.2 CT.	13	1500	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
F-15U	5 CT.	15	3000	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	3
F-10U	5 CT.	15	10000	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	4 1/4
F-11U	5.2 CT.	26	1500	2 1/4	2 1/4	4	2 1/4	3	6 1/4
F-13X	6.3	8	1500	2 1/4	2 1/4	2 1/4	2		1 1/4
F-84K	6.3	8	2500	2 1/4	2 1/4	2 1/4	1 1/4	2 1/4	1 1/4
F-14X	6.3 CT.	1.2	1500	2 1/4	2 1/4	2 1/4	2 1/4		1 1/4
F-52X	6.3	1.2	5000	2 1/4	2 1/4	1 1/4	2 1/4		1
F-51X	6.3/5	2	5000	2 1/4	2 1/4	2	2 1/4		1 1/4
F-53X	6.3	4	9000	2 1/4	4 1/4	2 1/4	2 1/4		2 1/4
F-42X	6.3	4	1500	2 1/4	2 1/4	2	2 1/4		1 1/4
F-16X	6.3 CT.	3	1500	2 1/4	2 1/4	2	2 1/4		1 1/4
F-18A	6.3 CT.	6	1500	2 1/4	2 1/4	2 1/4	2	1 1/4	2 1/4
F-18X	6.3 CT.	6	1500	2 1/4	4 1/4	2 1/4	2 1/4		2 1/4
F-19X	6.3/6 CT.	6	2500	2 1/4	4	2 1/4	2 1/4		2 1/4
F-21A	6.3 CT.	10	1500	2 1/4	3	2 1/4	2 1/4	2	2 1/4
F-20U	6.3/6 CT.	11	2500	2 1/4	2 1/4	3	2 1/4	2 1/4	2 1/4
F-22A	6.3 CT.	20	2000	4	2 1/4	4 1/4	2 1/4	3 1/4	7
F-24U	7.5/6.3 CT.	8	2500	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	3
F-28U	7.5/6.3 CT.	25	3000	4 1/4	2 1/4	2 1/4	3	3	7 1/4
F-23U	10 CT.	7	1500	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	4
F-29U	12/11/10 CT.	11	3000	4 1/4	2 1/4	3	2 1/4	2 1/4	5
F-25X	12.6 CT.	1.5	1500	1 1/4	2 1/4	2	2 1/4		1 1/4
F-44X	12.6 CT.	2	1500	1 1/4	2 1/4	2	2 1/4		1 1/4
F-26X	12.6 CT.	2.5	1500	2 1/4	2 1/4	2 1/4	2 1/4		2 1/4
F-40X	26.8 CT.	1	1500	2 1/4	2 1/4	2	2 1/4		1 1/4
F-41X	25.2 CT.	2.2	1500	2 1/4	4 1/4	2 1/4	2 1/4		2 1/4
F-30X	Filament line transformer Pri. 6.3V/5W Sec. 6.3/5V	2	5000	2 1/4	2 1/4	2	2 1/4		1 1/4
F-45X	12CT	1	1500	1 1/4	2 1/4	2	2 1/4		1 1/4

Low capacity—High voltage insulation for damper tube operation. ● New item.
▲ Primary taps to obtain various secondary voltages.

FILAMENT TRANSFORMERS, MULTIPLE SECONDARY PRIMARY 115 VOLTS — 60 CYCLES*

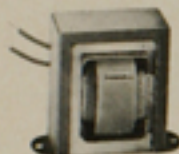
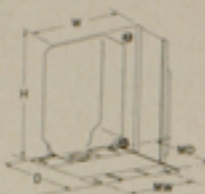
Type No.	Secondary Volts and Amperes	Test Volts RMS	Case Dim.-Inches			Mfg. Dim.-Inches		Wt. Lbs.
			H	W	D	MW	MD	
F-27U	10 CT.-10A, 2.5 CT.-10A.	1500 7500	4 1/4	2 1/4	2 1/4	2 1/4	2 1/4	6
F-30A	5 CT.-3A, 6.3 CT.-8A.	1500	2 1/4	3	2 1/4	2 1/4	2 1/4	2 1/4
F-32A	6.3 CT.-3A, 6.3 CT.-3A.	1500	2 1/4	2 1/4	2 1/4	2	1 1/4	2 1/4
F-34A	6.3 CT.-1.75A, 6.3V-1.75A, 6.3V-1.75A.	1500	2 1/4	2 1/4	3	2	2 1/4	3
F-36A	6.3 CT.-3.5A, 6.3V-3.5A, 6.3V-3.5A.	1500	4	2 1/4	2 1/4	2 1/4	2 1/4	5
F-38A	6.3 CT.-5A, 6.3V-5A, 6.3V-1A, 5V-6A, 5V-6A.	1500	4	2 1/4	2 1/4	2 1/4	2 1/4	5 1/4
F-42A	12.6 CT.-2.5A, 12.6 CT.-5A.	1500	2 1/4	3	3	2 1/4	2	3 1/4
F-83A	12.6 CT.-5A, 12.6 CT.-5A.	1500	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	5 1/4

*F-83A has primary tapped for 105, 115, 125 volts.

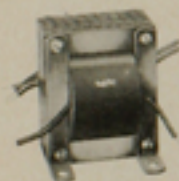
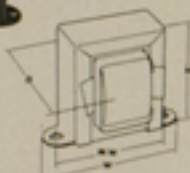
Note: Last letter of Type No. denotes case style



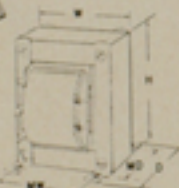
Case A



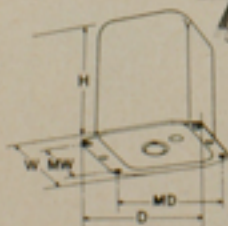
Case Z



Case U



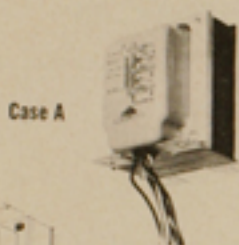
Case K





SWINGING FILTER REACTORS

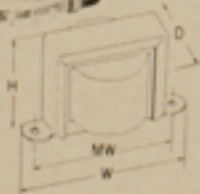
Greatly improved regulation can be simply obtained in high voltage power supplies by the use of a "swinging" input reactor as shown in Fig. 1. Effectively, the input reactor, in addition to its filtering function, acts to shift the phase of the charging current to the input condenser and to prevent the D.C. voltage from rising to its theoretical maximum value of peak A.C. rectifier input. The "swinging" choke's inductance value is allowed to reduce with increasing D.C., thereby reducing the amount of phase shift and reducing the voltage drop with increasing current. Fig. 2 illustrates this effect.



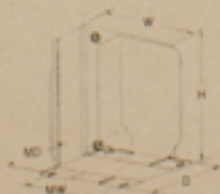
Case A



Case X



Case AL

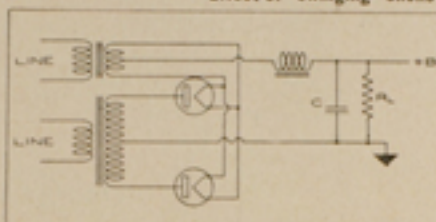


CHOKES

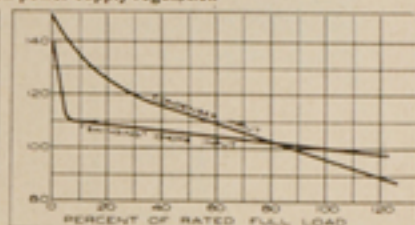
SWINGING FILTER REACTORS

Type No.	*Inductance Henries	Current Ma.	Resistance Ohms	Test Volts RMS	Case Dim.-Inches			Mtg. Dim.-Inches		Wt. Lbs.
					H	W	D	MW	MD	
C-31A	25.5	20,000	150	2500	3 1/4	3	3 1/4	2 1/4	2 1/4	4 1/2
C-33A	25.5	30,000	105	3000	4 1/4	3 1/4	4 1/4	2 1/4	3 1/4	7 1/4
C-32AL	20.4	35,000	105	5000	4 1/4	3 1/4	4	3	2 1/4	8 1/2
C-35A	20.4	45,000	60	3000	4 1/4	3 1/4	4 1/2	3	3 1/4	9 1/2
C-39A	25.5	50,500	65	3000	5 1/4	4 1/4	5 1/4	3 1/4	4 1/4	17
C-38AL	25.5	50,500	65	5000	5 1/4	4 1/4	5 1/4	3 1/4	4 1/4	17

Effect of "swinging" choke on power supply regulation



Full wave power supply



Regulation curves. Bleeder must be heavy enough to load supply past knee of the curve.

SMOOTHING FILTER REACTORS

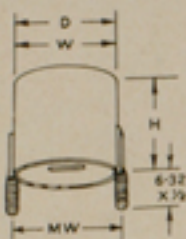
Type No.	*Inductance Henries	Current Ma.	Resistance Ohms	Test Volts RMS	Case Dim.-Inches			Mtg. Dim.-Inches		Wt. Lbs.
					H	W	D	MW	MD	
C-30X	50	15	3000	1500	2 1/4	2 1/4	1 1/2	2		1 1/2
C-2X	2	15	70	1500	2 1/4	2 1/4	1 1/4	1 1/4		1 1/4
C-1X	25	20	1000	1500	2 1/4	2 1/4	1 1/4	1 1/4		1 1/4
C-3X	10	50	500	1500	2 1/4	2 1/4	1 1/4	2 1/4		1 1/4
C-4X	4	50	360	1500	1 1/4	2 1/4	1 1/4	2		1 1/2
C-6X	5	65	330	1500	1 1/4	2 1/4	1 1/4	2 1/4		1 1/4
C-5X	12	75	290	1500	1 1/4	2 1/4	1 1/4	2 1/4		1
C-8X	7	75	240	1500	1 1/4	2 1/4	1 1/4	2 1/4		1
C-7X	10	90	270	1500	1 1/4	2 1/4	2	2 1/4		1 1/4
C-9X	4	90	100	1500	1 1/4	2 1/4	1 1/4	2 1/4		1
C-11X	6	100	160	1500	2 1/4	3 1/4	2 1/4	3 1/4		1 1/4
C-10X	9	125	250	1500	2 1/4	3 1/4	2 1/4	3 1/4		1 1/4
C-12X	6	160	165	1500	2 1/4	3 1/4	2 1/4	3 1/4		1 1/4
C-12A	6	160	165	1500	2 1/4	2 1/4	2 1/4	1 1/4	1 1/4	1 1/4
C-13X	3	160	75	1500	2 1/4	3 1/4	2 1/4	3 1/4		1 1/4
C-14X	6	200	150	1500	2 1/4	4 1/4	2 1/4	3 1/4		2 1/4
C-14A	6	200	150	1500	2 1/4	2 1/4	2 1/4	2	1 1/4	2 1/4
C-16A	10	200	150	2000	2 1/4	3	3 1/4	2 1/4	2 1/4	4 1/4
C-21X	1.5	225	65	1500	1 1/4	2 1/4	1 1/4	2 1/4		1
C-15X	4	250	100	1500	2 1/4	4 1/4	2 1/4	3 1/4		2 1/4
C-13A	4	250	100	1500	3 1/4	2 1/4	2 1/4	2	1 1/4	2 1/4
C-22X	1.2	260	45	1500	1 1/4	2 1/4	2	2 1/4		1 1/4
C-24X	1	240	50	1500	1 1/4	2 1/4	1 1/4	2 1/4		1 1/4
C-37X	7	290	25	1500	1 1/4	2 1/4	1 1/4	2 1/4		1 1/4
C-36X	5	300	30	1500	1 1/4	2 1/4	1 1/4	2		1 1/4
C-17X	1.5	300	40	1500	2 1/4	2 1/4	2 1/4	3 1/4		1 1/4
C-18A	8	300	90	2500	4	2 1/4	3 1/4	2 1/4	2 1/4	6
C-19A	10	300	105	3000	4 1/4	3 1/4	4 1/4	2 1/4	3 1/4	7 1/4
C-25A	2.6	310	60	1500	3 1/4	2 1/4	3 1/4	2	2 1/4	3 1/4
C-42AL	8	350	105	5000	4 1/4	3 1/4	4	3	2 1/4	8 1/2
C-34X	5	350	35	1500	1 1/4	2 1/4	1 1/4	2 1/4		1 1/4
C-28X	7	350	35	1500	1 1/4	2 1/4	2	2 1/4		1 1/4
C-29X	1.5	375	50	1500	2 1/4	3 1/4	2 1/4	3 1/4		1 1/4
C-20A	6	400	60	3000	4 1/4	2 1/4	4 1/4	3	3 1/4	10 1/2
C-22A	10	500	65	3000	5 1/4	4 1/4	5 1/4	3 1/4	4 1/4	17
C-45AL	10	500	65	5000	5 1/4	4 1/4	5 1/4	3 1/4	4 1/4	17
C-40X	.32	600	10	1500	1 1/4	2 1/4	2	2 1/4		1 1/4
C-47U	3-.875	1A-2A	3-75	1500	3 1/4	2 1/4	3 1/4	2 1/4	2 1/4	5
C-48U	.08-.02	2.5A-5A	57-143	1500	3 1/4	2 1/4	4	2 1/4	3	6 1/2
C-49U	.032-.008	5A-10A	19-.35	1500	4 1/4	3 1/4	4 1/4	2 1/4	3	7 1/4
C-80U	.024-.006	20A-40A	.096-.024	1500	4 1/4	5 1/4	5 1/4	4 1/4	4 1/4	

● New item. *Inductance tolerance -20% +50%.

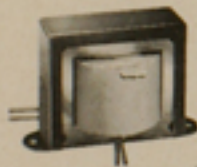
Triad designs incorporate the latest in techniques and materials



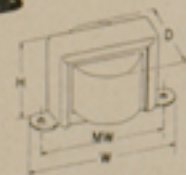
A-7J



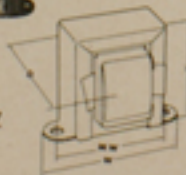
Case A



Case X



Case Z



AUDIO

AUDIO COMPONENTS

These medium-priced audio components are designed to fill demands in public-address, amateur, and replacement equipment and offer absolute maximum of performance possible in the size allowed.

INPUT TRANSFORMERS

LINE OR MICROPHONE TO GRID

Type No.	Application	Frequency Response	Primary Matching Impedance	Turn Ratio	Case Dim.-Inches			Mtg. Dim.-Inches		Wt. Lbs.
					H	W	D	MW	MD	
A-1X	Line or single button mike to grid.	300-3000	100	31.4	2 1/4	2 1/4	1 1/4	1 1/4	1 1/4	1 1/4
A-3X	Line or D.B. mike to grid.	300-3000	400 CT.	15.8	1 1/2	2 1/4	1 1/4	1 1/4	1 1/4	1 1/4
A-4X	Line to grid.	300-3000	500/200/67.5 CT.	12	1 1/2	2 1/4	1 1/4	1 1/4	1 1/4	1 1/4
A-5X	Single button mike to p.p. grids—60 gain.	300-3000	100	84	2 1/4	2 1/4	1 1/4	2 1/4	1 1/4	1 1/4
A-6X	Speaker V.C. to grid.	300-3000	8/3.2	79	2 1/4	2 1/4	1 1/4	1 1/4	1 1/4	1 1/4
A-7J	Voice Coil to grid	300-3000	3.2	124	2 1/4	2 1/4	1 1/4	2 1/4	1 1/4	1 1/4

INTERSTAGE TRANSFORMERS

PLATE TO GRID

Type No.	Application	Frequency Response	Primary Matching Impedance	Secondary Load Impedance	Ratio	Case Dim.-Inches			Mtg. Dim.-Inches		Wt. Lbs.
						H	W	D	MW	MD	
A-31X	Plate to single or p.p. grids.	300-3000	10000	90000 CT.	1 : 3	2 1/4	2 1/4	1 1/4	2	1 1/4	1 1/4
A-32X	Plate to single or p.p. grids.	70-7000	10000	90000 CT.	1 : 3	1 1/2	2 1/4	1 1/4	2 1/4	1 1/4	1
A-42Z	Multi-ratio single or p.p. plates to single or p.p. grids.	70-7000	15000	135000 CT. or 33750	1 : 1.5 1 : 3 1 : 6	2 1/4	2 1/4	2	2 1/4	1 1/4	1 1/4
A-33A	Plate to single or p.p. grids.	50-10000	10000	90000 CT.	1 : 3	2 1/4	2 1/4	2 1/4	1 1/4	1 1/4	1 1/4
A-39A	P.p. plates to p.p. grids.	50-10000	20000	45000 CT.	1 : 1.5	2 1/4	2 1/4	2 1/4	1 1/4	1 1/4	1 1/4

LOW LEVEL OUTPUT TRANSFORMERS

Type No.	Application	Frequency Response	Primary Matching Impedance	Secondary Load Impedance	Ratio	Case Dim.-Inches			Mtg. Dim.-Inches		Wt. Lbs.
						H	W	D	MW	MD	
A-31X	Tube to line.	300-3000	7000	50	50	1 1/2	2 1/4	1 1/4	1 1/4	1 1/4	1 1/4
A-33X	Single or p.p. tubes to line.	70-7000	18000 CT.	600/250/50	1 1/2	2 1/4	2 1/4	2 1/4	1 1/4	1 1/4	1 1/4
A-34X	P.P. Tubes to V.C.	300-15000	2700 CT.	8/4	8/4	2 1/4	2 1/4	2 1/4	2	1 1/4	1 1/4
S-38X	Line to line.	300-3000	600/150	400/150	— Split windings —	2 1/4	2 1/4	1 1/4	1 1/4	1 1/4	1 1/4

OUTPUT TRANSFORMERS

LINE TO VOICE COIL

Type No.	Primary Matching Impedance	Secondary Load Impedance	Output Watts	Freq. Resp.	Dimensions-Inches					Wt. Lbs.
					H	W	D	MW	MD	
S-23X	50 (autoformer).	3.2	3	300-3000	2 1/4	2 1/4	1 1/4	1 1/4	1 1/4	1 1/4
S-26X	500/50 (autoformer).	3.2	3	300-3000	2 1/4	2 1/4	1 1/4	1 1/4	1 1/4	1 1/4
S-66X	500 (autoformer).	16/8/4	3	100-5000	2 1/4	2 1/4	1 1/4	2	1 1/4	1 1/4
S-65X	500	8/4	5	300-7000	2 1/4	2 1/4	1 1/4	2	1 1/4	1 1/4
S-76Z	250/125/62.5/31	16/8/4	10	40-15000	2 1/4	2 1/4	2 1/4	2 1/4	1 1/4	1 1/4
S-77W	500 CT./125	32/16/8/4/2	30	40-15000	2 1/4	2 1/4	2 1/4	2 1/4	3	5

OUTPUT TRANSFORMERS

TUBE TO VOICE COIL AND LINE

Type No.	Tubes	Primary Matching Impedance	Secondary Load Impedance	DC Pol.	Audio Watts	Case Dim.-Inches			Mtg. Dim.-Inches		Wt. Lbs.
						H	W	D	MW	MD	
S-27A	2A3, 6A3, 6B4, 6L6, 6X6, 6Y6, 12A5, 25B6, 25B8, 30A5.	2500	500/16/8/4	80	8	2 1/4	2 1/4	2 1/4	1 1/4	1 1/4	1 1/4
S-28X	2A5, 6AC5, 6B5, 6F6, 6A6, 7B5, 14A5, 25AC5.	2500	500/16/8/4	40	5	1 1/2	2 1/4	1 1/4	2 1/4	1	
S-29X	6AQ5, 6AV5, 6V6, 7C5, 25A6, 25B6, 25A8, 25N6, 35A3, 35L6.	5000	500/16/8/4	45	5	1 1/2	2 1/4	1 1/4	2 1/4	1	
S-22A	P.p. 2A3, 6B4, 6A5, 6L6, etc.	5000 CT.	500/16/8/4	100 (bal.)	15	2 1/4	2 1/4	2 1/4	1 1/4	2	2 1/4
S-24A	P.p. 6V6, 7C5, 6K6, 6F6, etc.	8000 CT.	500/16/8/4	80 (bal.)	15	2 1/4	2 1/4	2 1/4	1 1/4	2	2 1/4
S-60A	P.p. 6L6, 5881, 807, etc.	6600 CT.	500/250/16/8/4	120 (bal.)	30	3 1/4	3	3 1/4	2 1/4	2 1/4	4

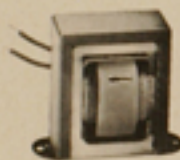
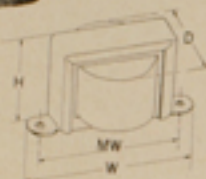
AUDIO

OUTPUT TRANSFORMERS

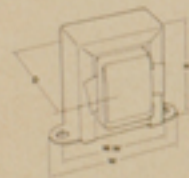
Triad audio transformers for replacement are constructed wherever possible to fit into the exact location of the original transformer. For this reason a wide range of sizes and mountings are available. In every case the transformer is designed to deliver the best response which can be built into this size. Quality of workmanship and materials is identical with the more expensive Triad transformers and better performance with greater life should result from use of these replacements. All Triad replacement transformers are "Climatite" treated!



Case X



Case Z



Transformers to fill the exacting requirements for the hundreds of new Audio type tubes used in present day electronic equipment are now being supplied by Triad.

The new type transformers listed above will give this complete coverage over the impedance and wattage ranges as well as covering the various mounting dimension requirements.

Ask your distributor or write for Triad's new Audio Transformer Replacement Guide, BRG-61.

This Guide lists all Audio type tubes for single or push-pull operation, giving the class, wattage, matching impedances and the transformer recommendations with complete mounting dimensions.

Look to Triad for transformer coverage.

REPLACEMENT OUTPUT TRANSFORMERS SINGLE TUBE TO STANDARD VOICE COIL 3-4 OHMS

Type No.	Primary Impedance	D.C. Ma	Audio Watt	Case Dimension—Inches			Mtg	Wt. Lbs.
				H	W	D		
●S-20X	2000	50	2-3	1 1/4	2 1/4	1 1/4	1 1/4	1/4
●S-20Z	2000	50	2-3	1 1/4	1 1/4	1 1/4	1 1/4	1/4
S-2X	2000	55	3-5	1 1/4	2 1/4	1 1/4	2	1/4
S-12X	2500	50	2-3	1 1/4	2 1/4	1 1/4	1 1/4	1/4
●S-12Z	2500	50	2-3	1 1/4	1 1/4	1 1/4	1 1/4	1/4
S-1X	2500	55	3-5	1 1/4	2 1/4	1 1/4	2	1/4
●S-30X	2500	60	4-6	1 1/4	2 1/4	1 1/4	2 1/4	1/4
S-16X	3000	60	2-3	1 1/4	2 1/4	1 1/4	1 1/4	1/4
●S-30X	3000	60	3-5	1 1/4	2 1/4	1 1/4	2	1/4
●S-67X	3000	55	4-6	1 1/4	2 1/4	1 1/4	2 1/4	1/4
S-4X	3000	70	5-8	1 1/4	3 1/4	1 1/4	2 1/4	1
●S-14Z	4000	50	2-3	1 1/4	1 1/4	1 1/4	1 1/4	1/4
●S-41X	4000	50	3-5	1 1/4	2 1/4	1 1/4	2	1/4
●S-41Z	4000	50	3-5	1 1/4	2	1 1/4	1 1/4	1/4
S-6X	5000	35	2-3	1 1/4	2 1/4	1 1/4	1 1/4	1/4
●S-6Z	5000	35	2-3	1 1/4	1 1/4	1 1/4	1 1/4	1/4
S-3X	5000	40	3-5	1 1/4	2 1/4	1 1/4	2	1/4
S-5X	5000	50	5-8	1 1/4	3 1/4	1 1/4	2 1/4	1
S-3Z	5000	50	5-8	2 1/4	2 1/4	1 1/4	2 1/4	1
●S-48X	6500	35	2-3	1 1/4	2 1/4	1 1/4	1 1/4	1/4
●S-48Z	6500	35	2-3	1 1/4	1 1/4	1 1/4	1 1/4	1/4
●S-49X	6500	40	3-5	1 1/4	2 1/4	1 1/4	2	1/4
S-7X	7500	40	3-5	1 1/4	2 1/4	1 1/4	2	1/4
S-9X	7500	50	5-8	1 1/4	3 1/4	1 1/4	2 1/4	1
S-9Z	7500	50	5-8	2 1/4	2 1/4	1 1/4	2 1/4	1
S-8X	8000	30	2-3	1 1/4	2 1/4	1 1/4	1 1/4	1/4
●S-8Z	8000	30	2-3	1 1/4	1 1/4	1 1/4	1 1/4	1/4
●S-18X	8000	45	4-6	1 1/4	2 1/4	1 1/4	2 1/4	1/4
●S-18Z	8000	45	4-6	1 1/4	2 1/4	1 1/4	2	1/4
S-11X	10000	30	2-3	1 1/4	2 1/4	1 1/4	1 1/4	1/4
S-11Z	10000	30	2-3	1 1/4	1 1/4	1 1/4	1 1/4	1/4
S-17X	10000	40	3-5	1 1/4	2 1/4	1 1/4	2	1/4
●S-10X	10000	45	4-6	1 1/4	2 1/4	1 1/4	2 1/4	1/4
●S-40X	14000	5.5	1/4	1 1/4	1 1/4	1 1/4	1 1/4	1/4
●S-38X	16000	15	2-3	1 1/4	2 1/4	1 1/4	1 1/4	1/4
●S-38Z	16000	15	2-3	1 1/4	1 1/4	1 1/4	1 1/4	1/4
●S-37X	25000	4.0	1/4	1 1/4	1 1/4	1 1/4	1 1/4	1/4
S-13X	25000	10	2-3	1 1/4	2 1/4	1 1/4	1 1/4	1/4
●S-13Z	25000	10	2-3	1 1/4	1 1/4	1 1/4	1 1/4	1/4

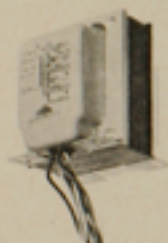
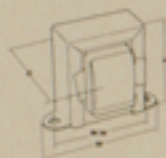
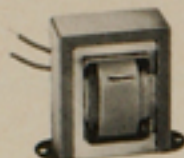
● New Item.

Note: Last letter of Type No. denotes case style

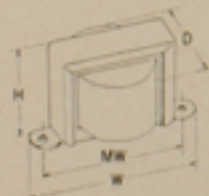
AUDIO



Case Z



Case A



Case X



Triad output transformers are acknowledged in the industry as the quality line that gives the most complete coverage in the replacement field. With the greatly increased number of audio type tubes developed in the last few months for the entertainment field Triad has kept pace. With the new items listed below and on page #29 this can be shown. They are made wherever possible to fit into the exact location of the original transformer. For this reason a wide range of sizes, mounting dimensions, type and power ratings are available.

The overall performance of items of this type are normally limited by price. Triad in every case designs into these transformers the best overall frequency response that can be built into this size, with greater life and better performance as a prime consideration, still meeting price consideration resulting in a better replacement transformer.

REPLACEMENT PUSH-PULL OUTPUT TRANSFORMERS PUSH-PULL TUBES TO VOICE COIL 3-4 OHMS

Type No.	Impedance	DC MA	Audio Watts	Case Dimensions			Wt. Lbs.
				H	W	D	
●S-39X	12000 CT.	30 ea	3-4	1½	2½	1½	2
●S-44X	6000 CT.	45 ea	4-6	1½	2½	1½	2
S-13X	10000 CT.	40 ea	7-10	1¾	2¾	1½	2½
S-19Z	10000 CT.	50 ea	10-14	2¼	2¼	2	2½
●S-68Z	3000/3800 CT.	70 ea	15-28	2¾	3¼	2¼	2¾
●S-69Z	5000 CT.	55	15-28	2¾	3¼	2¼	2¾
●S-21A	8000 CT.	50	15-28	2¼	2¾	2¼	1¾x2¼
●S-21Z	8000 CT.	50	15-28	2¾	3¼	2¼	2¾

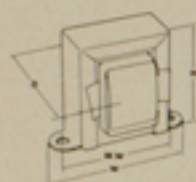
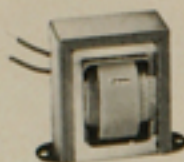
● New Item.

UNIVERSAL OUTPUT TRANSFORMERS SINGLE OR PUSH-PULL TUBES TO VOICE COIL

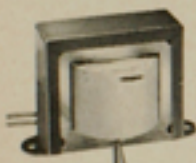
Type No.	Application	Impedance	DC MA	Audio Watts	Case Dimensions			Wt. Lbs.
					H	W	D	
●S-62X	Single or p.p. plates	2000-10000	30	2	1¾	2¼	1½	1½
●S-52X	Single or p.p. plates	4000-24000	30	4	1¾	2¾	1¾	2
S-51X	Single or p.p. plates	4000-14000	35	5	1¾	2¾	1¾	2
●S-63X	Single or p.p. plates	1500-7000	50	6	1¾	2¾	1½	2
●S-54X	Single	1500-5000	70	8	1¾	2¾	1½	2½
S-53X	Single or p.p. plates	4000-14000	40	8	1¾	2¾	1½	2½
S-55X	P.p. plates	4000-14000	40 ea	10	1¾	3¼	1¾	2¾
S-55Z	P.p. plates	4000-14000	40 ea	10	2¼	2¼	1¾	2½
●S-56Z	Single	1500-6000	85	12	2¼	3¾	2¼	2¾
●S-59Z	P.p. plates	1500-4000	65	15	2¼	3¾	2¼	2¾
S-57Z	P.p. plates	4000-14000	55	15	2¼	3¾	2¼	2¾
S-61Z	P.p. plates	4000-10000	60	20	2¼	3¾	2¼	2¾

● New Item.

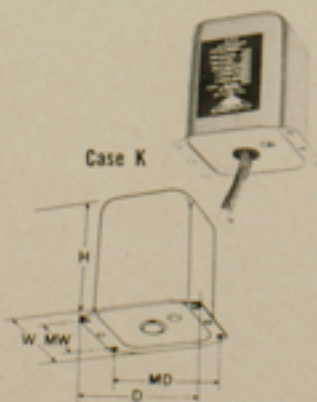
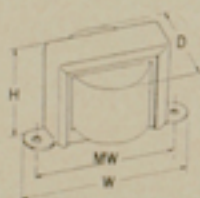
Note: Last letter of Type No. denotes case style



Case Z



Case X



Case K

AUDIO

Public address systems can involve a variety of problems in properly distributing the output of a central amplifier to adequately cover various areas with the correct and uniform amplitude.

Modern distribution systems involve an amplifier operating at fixed output voltage level (usually 70.7 or 25 volts) with each speaker supplied with an input transformer which will transfer various wattages to the speaker based on the impedance offered to the line. These systems are inherently more efficient than systems using resistive volume controls in that the transformer controls the amount of power transferred to the speaker with no waste, while the resistive control absorbs all power not used.

OUTPUT TRANSFORMERS 70.7 VOLT LINE TO VOICE COIL

Type No.	Primary Matching Impedance	Secondary Load Impedance	Output Watts	Freq. Resp.	Dimensions-Inches					Wt. Lbs.
					H	W	D	MW	MD	
S-70Z	Autoformer 16000/8000/4000/2000/1000.	8/4	5	100-5000	1 1/2	2	1 1/4	1 1/4		1/2
S-71Z	Autoformer 4000/2000/1000/500.	16/8/4	10	100-5000	1 1/2	2 1/2	1 1/2	2		1/2
S-23Z	Autoformer 4000/2000/1000/500.	8/4	10	70-7000	2 1/4	2 1/4	1 1/2	2 1/4		1
SR-45Z*	Autoformer 4000/2000/1000/500.	16/8/4	10	20-20000	2 1/4	3 1/4	2 1/4	2 1/4		1 1/2
SR-74K*	Weatherproof autoformer 4000/2000/1000/500.	16/8/4	10	20-20000	3 1/4	3	2 1/4	1 1/4	2 1/4	2 1/4
S-72Z	Autoformer 2000/1000/500/250.	16/8/4	20	100-5000	2 1/4	2 1/4	1 1/2	2 1/4		1
S-46A	Autoformer 2000/1000/500/250.	16/8/4	20	20-20000	3 1/4	2 1/4	3 1/4	2	2 1/4	4
S-73K	Weatherproof autoformer 2000/1000/500/250.	16/8/4	20	20-20000	4 1/4	3 1/4	4 1/4	2 1/4	3 1/4	6
S-78Z	Isolation 4000/2000/1000/500.	16/8/4	10	100-5000	2	2 1/4	1 1/4	2		1/2
S-79Z	Isolation 2000/1000/500/250.	16/8/4	20	100-5000	2 1/4	2 1/4	1 1/2	2 1/4		1
S-47Z	Isolation 10K/5K/2.5K/1250/625	16/8/4	8	20-20000	2	2 1/4	1 1/4	2		1/2
S-73X	Isolation 16K/8K/4K/2K/1K	16/8/4	5	100-10000	1 1/4	2 1/4	2 1/4	2		1/2

*New Item. *Replace S-45Z and S-74K

25 VOLT LINE TRANSFORMERS

Type No.	Primary Matching Impedance	Secondary Load Impedance	Output Watts	Case Dim.-Inches			Mtg. Dim. In.	Wt. Lbs.
				H	W	D		
S-131X	1250/625/312	8/4	2	1 1/4	2 1/4	1 1/4	2	1/2
S-132X	1000/500/250/125	16/8/4	5	1 1/4	2 1/4	1 1/4	2 1/4	1/2
S-133Z	500/250/125/62.5	16/8/4	10	2 1/4	3 1/4	2 1/4	2 1/4	1 1/2

*New Item.

MATCHING TRANSFORMERS FOR 25 OR 70.7 VOLT LINE

Type No.	Primary Matching Impedance	Output Watts	Frequency Response	Dim.-Inches			Mtg. Dim.	Wt. Lbs.
				H	W	D		
S-139Z	20.8 CT. to 166 CT. (75v to 70v) 166 CT. to 20.8 CT. (70v to 25v)	30	20-15000	2 1/2	4	2 1/4	3 1/4	2
S-130Z	62.5 CT. to 500 CT. (75v to 70v) 500 CT. to 62.5 CT. (70v to 25v)	10	20-15000	1 1/4	3 1/4	1 1/4	2 1/4	1

SPECIAL TRANSCEIVER TRANSFORMERS (VOICE FREQUENCIES)

Type No.	Application	Primary Matching Impedance	Secondary Load Impedance	Case Dim.-Inches			Mtg. Dim.-Inches	Wt. Lbs.
				H	W	D		
A-21X	S.B. mike or plate to grid (2 primaries)	500 10000	100000	1 1/4	2 1/4	1 1/4	1 1/4	1/2
A-23X	Tube to line and hi-impedance phones.	10000	50 and 2000	1 1/4	2 1/4	1 1/4	2	1/2

Ask for the Triad publication "Sound distribution using the 70 volt line."
Free from your distributor.

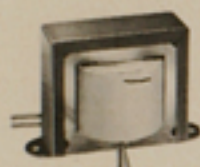
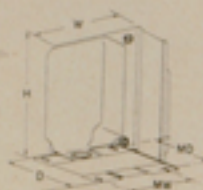


AUDIO

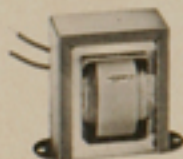
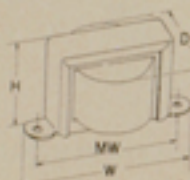
Triad transformers for use in transmitter audio circuits represent the accumulation of many years of experience in modulator design for maximum efficiency and flexibility when used with the most popular final R.F. stages. Used with matching Triad power components, superior performance can be obtained at low cost.



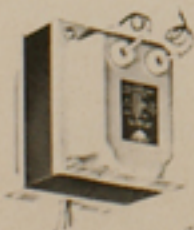
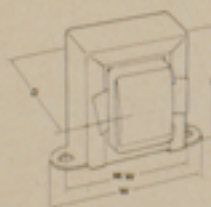
Case A



Case X



M-4Z



Case AL



DRIVER TRANSFORMERS

Type No.	Driver tubes	Output tubes	Frequency Response	Ratio Primary 1/2 Sec.	Primary D.C. Ma.	Case Dim.-Inches			Wtg. Dim.-Inches		Wt. Lbs.
						H	W	D	MW	MD	
A-81X	20, 1H4, etc.	1R, 20's, 1H, etc.	300-3000	2.66:1	15	1 1/2	2 1/4	1 1/4	1 1/4	1 1/4	1/4
A-82X	6F6, 42, 45, etc.	6L6, 6F6, 6V6, 807, etc.	70-7000	1.33:1	40	1 1/2	2 1/4	1 1/4	2 1/4	2 1/4	3/4
A-83X	6F6, 42, 45, etc.	6L6, 6F6, 6V6, 807, etc.	50-10000	2.66:1	40	1 1/2	3 1/4	1 1/4	2 1/4	2 1/4	1
A-89A	P.p. plates to class B or AB grids—Universal 15 watt.	Any class B or AB tubes, 100-500 watts output.	50-10000	1:1 or 1.8:1	100 per side	3 1/4	2 1/4	2 1/4	2	1 1/4	2 1/4
A-91A	P.p. plates to class B or AB grids—Universal 30 watt.	Any class B or AB tubes, 400-1500 watts output.	50-10000	1:1 or 1.8:1	160 per side	3 1/4	3	2 1/4	2 1/4	2 1/4	4
TY-61X	Transistor use 100 Pyl. — 100 CT. Sec.		70-10000	1-0.5	100	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	3/4

"SPLATTER" CHOKES

Type No.	Inductance Henries	Current Ma.	Res. Ohms	H	Case Dim.-Inches			Wt. Lbs.
					W	D	MW	
C-36X	Tapped 2 to 1.5	100	95	3 1/4	3 1/4	2	2 1/4	1 1/4
C-43X	Tapped .05 to 1	300	40	2 1/4	4	2 1/4	3 1/4	2

MODULATION TRANSFORMERS, TUBE TO RF LOAD

Type No.	Primary	Frequency Response	Secondary		Audio Watts	Case Dim.-Inches			Wtg. Dim.-Inches		Wt. Lbs.
			Impedance	Ma.		H	W	D	MW	MD	
TY-65Z	32 CT. (375 Ma.) (Transistor use)	70-15000	3000-4000-6000	100	10	2 1/4	2 1/4	2	2 1/4	2 1/4	1 1/4
M-4Z	5000 (Autoforner)	300-3000	6750 4	100 (total)	10	2 1/4	2 1/4	1 1/4	2	2 1/4	1/4
M-5Z	5000 (Autoforner)	300-3000	6750 4	165 (total)	20	2 1/4	3 1/4	2 1/4	2 1/4	2 1/4	1 1/4
M-1X	10000 CT. for 1R, 1H, 6N7, 6A6, etc.	300-3000	5000-8000-10000	50	5	1 1/4	2 1/4	1 1/4	1 1/4	1 1/4	3/4
M-3X	10000 CT. for 6N7, 6A6, 6F6's, etc.	300-3000	3000-5000-8000	100	20	2 1/4	3 1/4	2 1/4	3 1/4	3 1/4	1 1/4
TY-66A	6 CT. (5A) (Transistor use)	300-3000	3000-4000-6000	200	40	3 1/4	3 1/4	3 1/4	2 1/4	2 1/4	4 1/4
† M-7AL	4250 CT. for 807's	300-3000	3000-5000-8000	200	60	4 1/4	3 1/4	4	2 1/4	3 1/4	6 1/4
M-15A	Multi-match	300-3000	4000 to 20000	150	30	3 1/4	3	3 1/4	2 1/4	2 1/4	3
† M-16AL	Multi-match	300-3000	4000 to 20000	180	60	3 1/4	3 1/4	3 1/4	2 1/4	2 1/4	3 1/4
† M-8AL	Multi-match	300-3000	4000 to 20000	200	80	4 1/4	3 1/4	4 1/4	2 1/4	3 1/4	8
† M-12AL	Multi-match	300-3000	4000 to 20000	300	125	4 1/4	3 1/4	4 1/4	3	3 1/4	12

†Plate leads out side of case

Note: Last letter of Type No. denotes case style

PRODUCTS

The Triad transformers listed in this catalog are standard types in that they are made from parts which are carried in stock and using machinery and manufacturing techniques with which our employees are highly skilled. Variations in these transformers using the same parts, machinery, and techniques are readily available with fast delivery, a high degree of precision in construction, and high quality in performance and appearance. Such transformers will be made in any quantity and are low in price because the materials are readily available from our stocks and fabrication is similar to transformers already in production. Triad also builds many transformers and other magnetic components to extremely difficult customer specifications and to mechanical and electrical tolerances in excess of those normally required in transformer production. This book is not large enough to completely illustrate all of these items but some of the items which are being made in production are listed below. We will be greatly pleased to quote on similar units or on other magnetic components to your specifications.

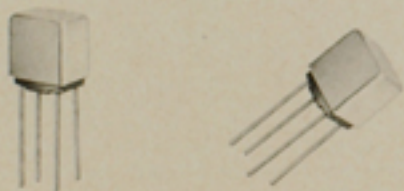
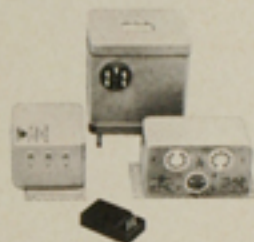


PULSE TRANSFORMERS

The pulse network shown is used with an airborne radar system for 4J52 and 6543 magnetrons operating at 225 peak KW. It includes the pulse transformer, filament transformer, line filter, pulse current metering circuit, and magnetron well in one oil-filled bronze casting. Pulse transformers covering the range from high powered modulators to the tiny blocking oscillator transformers as shown on page 16 can be readily made to your specifications.

FILTERS

The Triad filter department builds a variety of networks to customer specifications. Currently in production are ultra-miniature encapsulated filters for telemetering, hermetically sealed filters for missile use, frequency control filters for aircraft, and many others. Triad's highly experienced engineering group, skilled winding and assembly personnel, modern winding assembly and test equipment assure the best in this field.

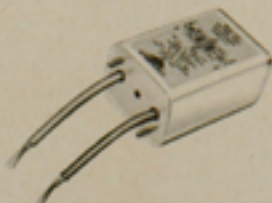
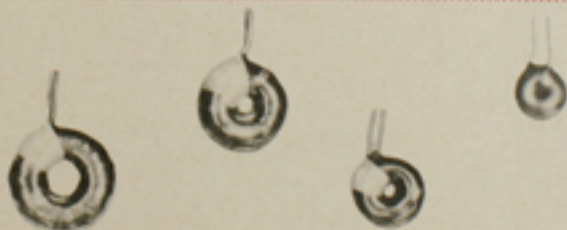


MICRO-MINIATURE TRANSFORMERS

Triad's "Red Spec" transformers (pg. 12) are the latest product in a continual development program leading to smaller and smaller transformers retaining high performance and long life. Many years of experience in the handling of extremely fine wire and high nickel alloy core materials have enabled Triad to lead this trend in the industry and to meet increasingly difficult requirements in miniature transformers.

TOROIDAL COILS

Toroids, like all other magnetic components, achieve best performance through a combination of know-how in engineering, winding, assembly and quality control. Perhaps to a greater degree than most items, consistent quality performance in toroids is dependent on highly developed winding equipment. Triad toroidal winders (see pg. 34) are the most modern in this field.



PRECISION LOW-LEVEL TRANSFORMERS

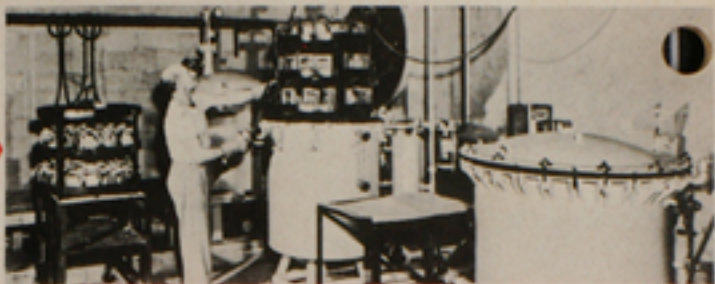
Triad "Geofomers," as the name indicates, were developed for geophysical petroleum prospecting equipment where exceptional low frequency response, maximum magnetic shielding, inductance matching to an extremely close percentage, small size, and long life are all mandatory.

Triad engineers were the first in this field and have continued to lead technical development to the point that Triad is the major supplier in the industry. During the past few years, these same characteristics have proven desirable in other applications and our "Geofomer" department produces chopper input transformers and all kinds of precision transformers for low frequency instrumentation.

FACILITIES

"CLIMATITE" TREATING FACILITIES

A view of some of the highly developed vacuum impregnating equipment used in the "Climatite" method of coil transformer treatment. All Triad transformers, no matter how inexpensive, are vacuum treated by the "Climatite" process. The area used in "Climatiting" transformers is completely fireproof and includes eight vacuum tanks with accompanying ovens of precise temperature control to ensure exact repetition of the specified "Climatite" impregnation cycle.



MULTIPLE WINDING DEPT.

A partial view of the highly developed multiple winding department at Triad. These machines were developed and built at Triad and include features not available in any commercial machine, particularly in quick set-up and in the ability to handle extremely fine wire. Much of the quality reputation of Triad is due to the high precision possible with these machines and to the skill of the operators.



"PRODUCTION" BELT CONVEYORS

Many of the operations at Triad are improved in speed and precision by the use of moving conveyors. Illustrated here is one of the belts especially developed for the operations involved in applying external leads to the coils used in Triad transformers. Use of conveyor systems permits a greater degree of training for the workman at each station as well as encouraging the use of better tools and more highly developed handling fixtures.



"RED SPEC"

A view of the winding and assembly area for our "Red Spec" transformers. The extremely fine wire sizes and minute mechanical parts used in these items make it imperative that the manufacturing operations be isolated in a dust-free, temperature-controlled area. The machinery used in winding is all new and was developed especially for use with the "Red Spec" series. New tooling was necessary for all parts and special assembly jigs and fixtures are used.



TOROIDAL WINDING MACHINE

One of the bank of toroidal winding machines at Triad. Six separate types of machines are needed to cover the complete range of core and wire sizes handled here. This machine is electronically controlled and has an electronic counter which is accurate to a single turn. The controls can be set to wind over 360° or any segment; windings may be continuous or bank winding. Coils may have up to 6 taps automatically controlled without resetting the machine or breaking the wire since the slow start and stop is also controlled electronically.



"GEOFORMER" TESTING

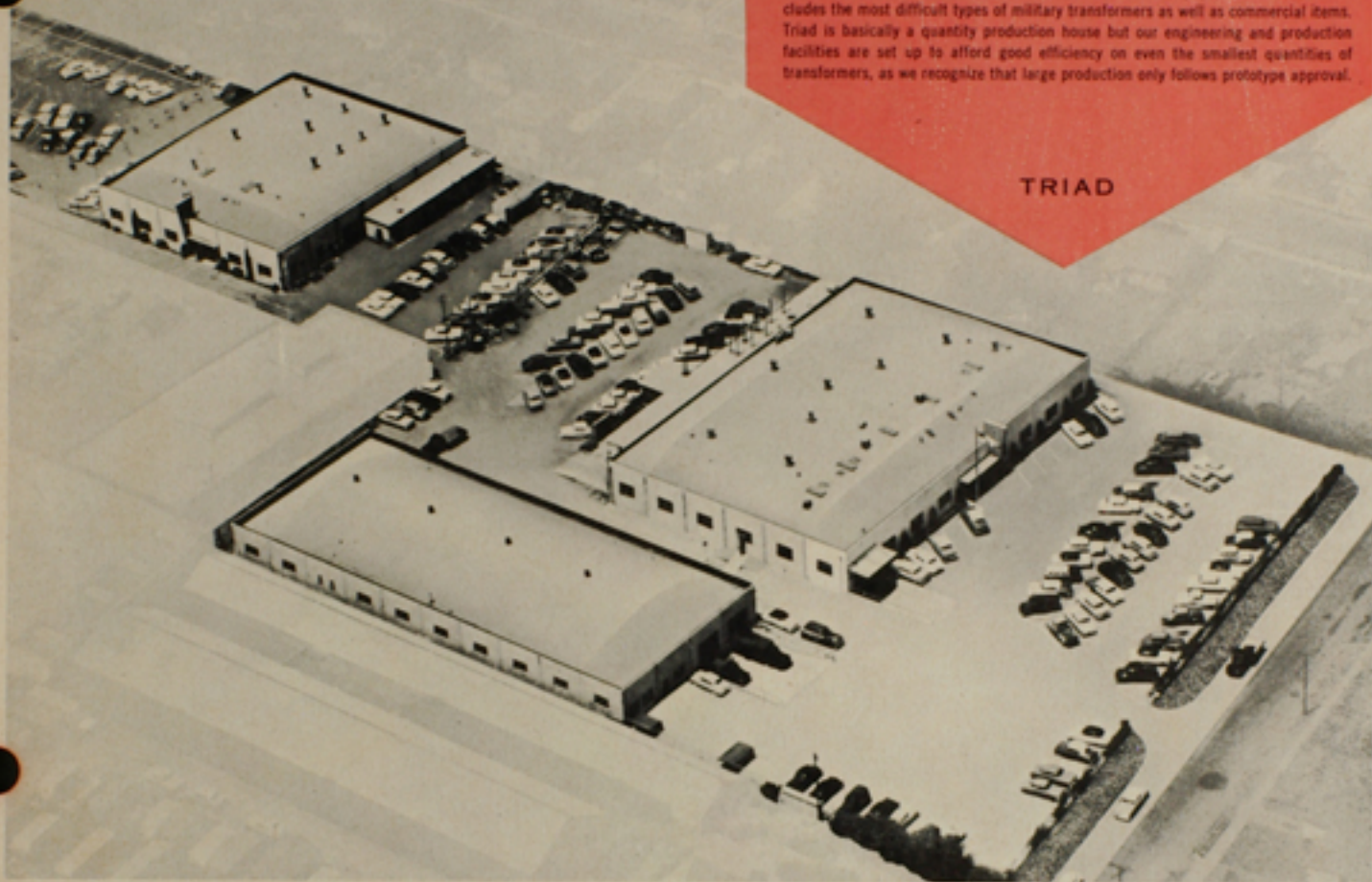
Illustrating the test equipment used to ensure the high degree of accuracy and uniformity required in Triad Geofomers. This equipment is our own design since commercial equipment is not available for measurements in the ranges here used. Inductance measurements are made at values of inductance up to 10,000 henries with as low as 1 millivolt at 60 cycles across the coil. Geofomers are actually assembled to rated inductance while connected to the bridge and are re-checked three times in the process of manufacture.



FACILITIES

This illustration is of the Venice plants of Triad consisting of 67,080 square feet in three new and modern concrete truss roof structures on 4½ acres of land. Triad's plants were especially designed for transformer manufacture and afford a maximum of efficiency with the most modern machinery and highly skilled of personnel. Currently Triad employs 500 people in the Venice plant who make the over 1,000 items in our stock line plus geophysical transformers, toroids, filters, reactors, and all types of special transformers for use in manufactured equipment. Production includes the most difficult types of military transformers as well as commercial items. Triad is basically a quantity production house but our engineering and production facilities are set up to afford good efficiency on even the smallest quantities of transformers, as we recognize that large production only follows prototype approval.

TRIAD



UTRAD

The plant of Triad and Utrad Corporation in Huntington, Indiana, is the "center of the magnet wire industry." This building is brand new, especially designed for transformer production. Equipment also is new for the optimum efficiency and precision in transformer manufacture. Utrad employs 125 people, the majority of them with years of experience in the manufacturing of coils and transformers. The Indiana plant manufactures many of the items in the Triad line, particularly for eastern distribution. A complete stock of Triad stock items is maintained at Huntington and accounts in the eastern half of the country are serviced therefrom. Utrad builds all types of transformers for original equipment manufacturers and is recognized as the outstanding source in the country for small pulse and blocking oscillator transformers.

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