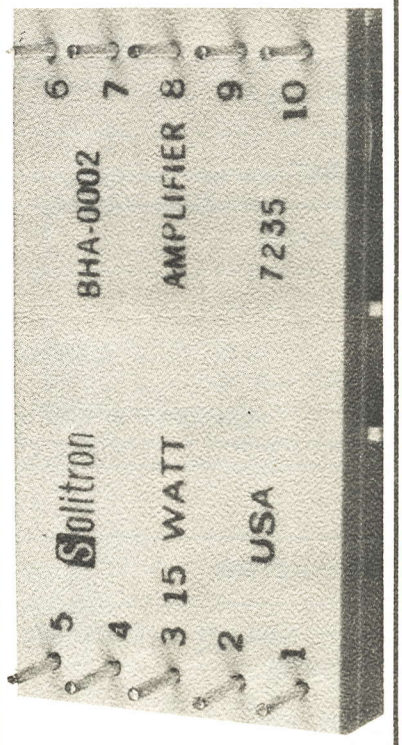
15 WATT CLASS B AUDIO AMPLIFIER

BHA-0002

FEATURES:
- Standard Solitron modular package
- Rated output power 15W (RMS) at T $\leq$ 50° C
- Low cost thick film fabrication
- Frequency response: 25 Hz to 20 KHz
- Minimum of external components required



The Solitron BHA-0002 is a Class B Quasi-complementary audio amplifier. It is capable of continuous operation at output powers as high as 15 watts operating into conventional speaker loads. Thick film cermet construction assures uniform performance, optimum reliability and low function cost.

This power microcircuit will produce full output from 350mV input signals—compatible with the great majority of existing preamplifier designs. Useful feedback compensation can be achieved with no external components, but external networks may be added to tailor response to any desired characteristic. External terminals are also provided to permit optional trimming of idle current and crossover characteristics.

The BHA-0002 has been designed for use with stereo/Hi-Fi amplifiers, high quality receivers, public address systems, intercoms and musical instruments. Packaging of the 15 watt amplifier conforms to the standard Solitron modular configuration.

TEST CIRCUIT

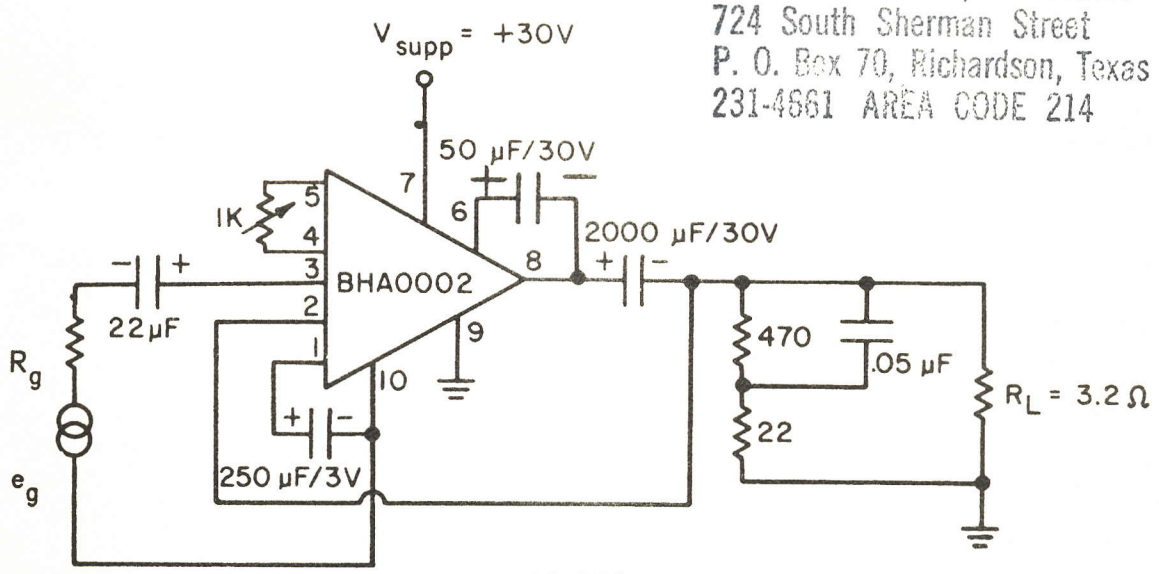


FIGURE 1

Solitron 256 OAK TREE ROAD, TAPPAN, N.Y. 10983
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TERMINOLOGY

CURRENTS:

I_k — means a current is entering terminal k. (k — 1,2,3, etc.)
$-I_k$ — means a current is leaving terminal k.

VOLTAGES:

V_{n-m} — means a positive voltage is applied to terminal n with terminal m as the reference (n = 1,2,3 etc; m = 1,2,3, etc; n = m)

ELECTRICAL CHARATERISTICS

ELECTRICAL CHARACTERISTICS AT 30V SUPPLY VOLTAGES AND $T_C \leq 50^\circ$ C TO BE MEASURED IN TEST CIRCUIT OF FIGURE 1 (NOTE 1).

PARAMETERS	SYMBOL	MIN.	TYP.	MAX.	UNITS
Power Gain at P_o = 15 W (RMS) at f = 1 KHz $G_p = 10 \log \frac{P_o}{P_{in}}$	G_p	55	60		db
Input Voltage for P_o = 15 W at f = 1 KHz.	V_{3-10}		0.35	0.5	V(RMS)
Frequency Response (-2 db at P_o = 15 W) (See Fig. 3)			25 to 20K		Hz
Quiescent Current (NOTE 2)	I_7		7		mA
Efficiency for P_o = 15 W (f = 1 KHz)			60		%
Distortion at f = 1 KHz and P_o = 15 W (See Figs. 4 & 5)				1	%
Input Impedance	Z_{in}		18K		Ω
Noise Output Relative to P_o = 15W (input open, BW = 50 Hz to 10 KHz).	M		—70		db
Thermal Resistance Junction to Case	θ_{J-C}			5	°C/W

NOTE 1: Performance is dependent on the external components that are used in the test circuit.
NOTE 2: Adjust 1k Pot for 1_7=7mA

MAXIMUM RATINGS

AT $T_C \leq 50°C$		
Maximum Voltage Pin 7 to 9	V_{7-9}	40.0 Volts
Maximum Current Pin 7	I_7	1.2 Amps
Power Dissipation	P_T	30.0 Watts
Operating Case Temperature	T_C	—30 to +100°C
Storage Temperature	T_{STG}	—55 to +125°C

EQUIVALENT CIRCUIT

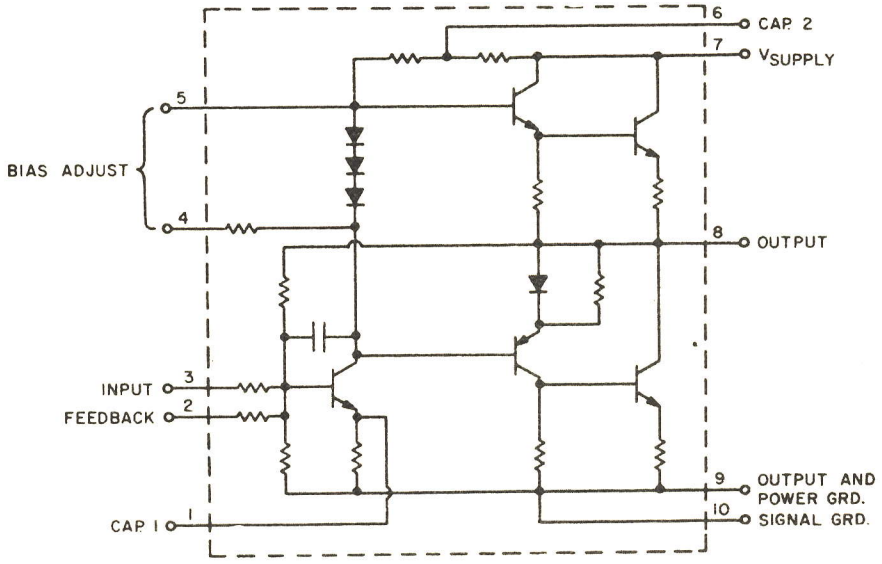
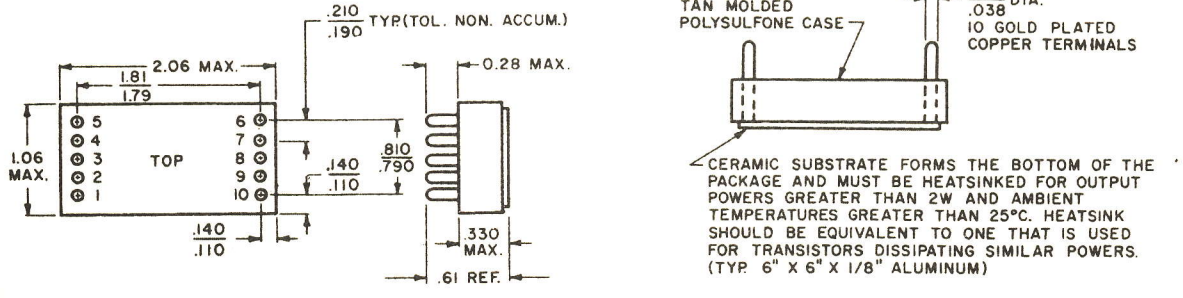


FIGURE 2

STANDARD PACKAGE DESIGN



TYPICAL FREQUENCY RESPONSE

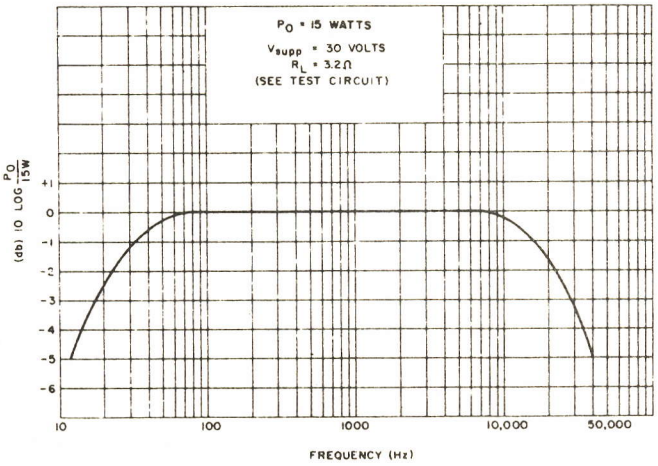


FIGURE 3

TYPICAL THD VS FREQUENCY

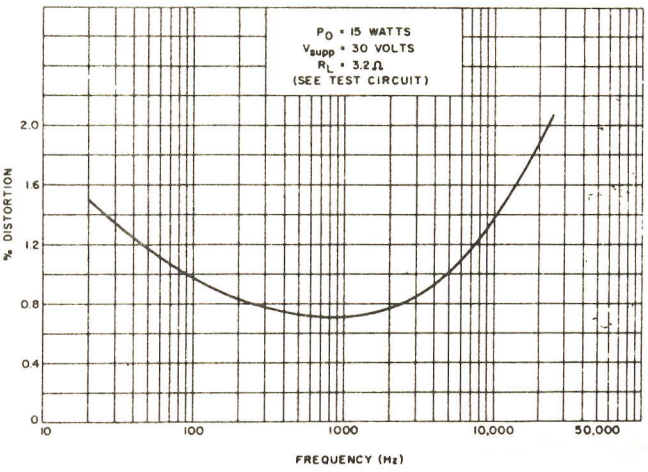


FIGURE 4

TYPICAL THD VS OUTPUT POWER

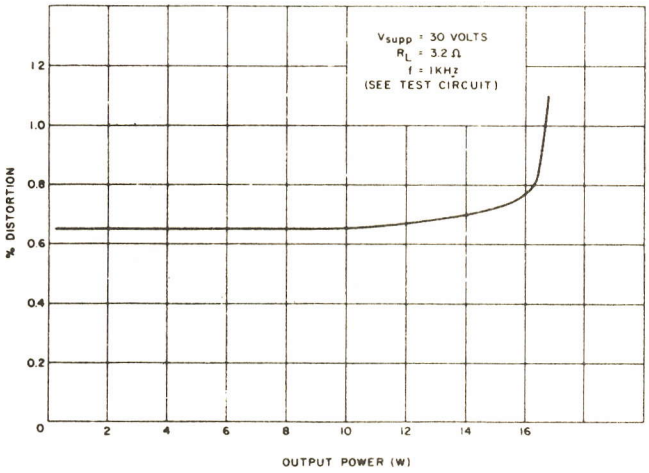


FIGURE 5

TYPICAL OUTPUT POWER VS SUPPLY VOLTAGE

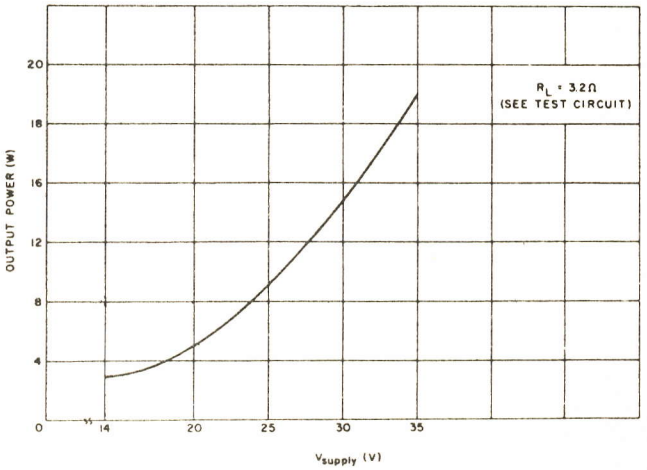


FIGURE 6

TYPICAL OUTPUT POWER VS LOAD RESISTANCE

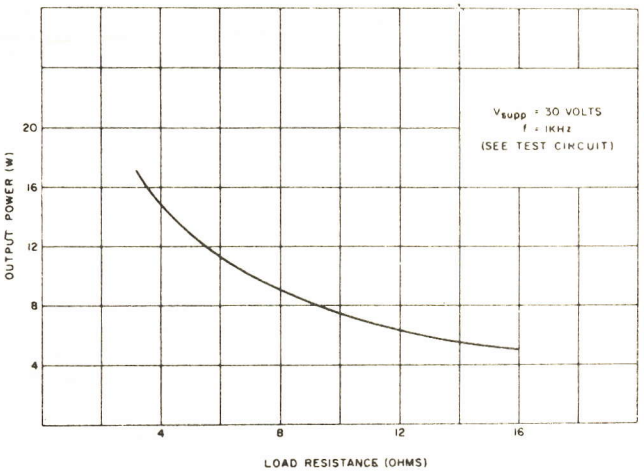


FIGURE 7

OUTPUT POWER VS CASE TEMPERATURE

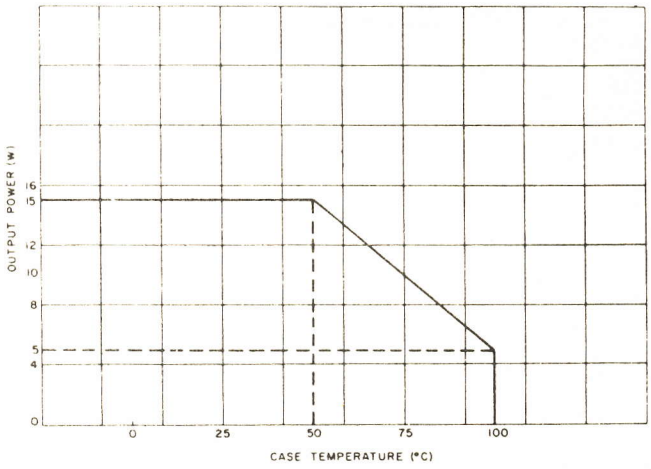


FIGURE 8

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