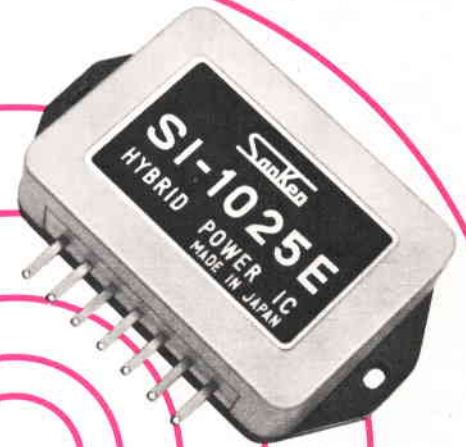


Bulletin No.
QA-04B
(Nov., 1973)

sanken hybrid audio power amplifier



Sanken[®]

SANKEN ELECTRIC CO., LTD., TOKYO, JAPAN

HYBRID AUDIO POWER AMPLIFIER, SERIES SI-1000E

SI-1025E (25W output) SI-1050E (50W output)

- * Have a single-ended push-pull output.
- * Withstand a 5 second output short-circuit.
- * Have less than 1/2% distortion at 25 and 50 watts.
- * Have 1/2 dB response from 20 to 100,000Hz.

Series SI-1000E SANKEN audio amplifiers are high power hybrid amplifiers for Hi-Fi, stereo, musical instruments, and other audio applications. Two power ranges of 25 and 50 watts rms output are provided. The amplifiers are completely self-contained, requiring only an output coupling capacitor, parasitic oscillation suppressors and a power supply.

SPECIFICATIONS

Power: Output power ratings are maximum continuous at 1000 Hz with a distortion less than 1/2%, a load of 8 ohms, and the recommended heat sink and mounting.

Response: Flat within 1/2 dB from 20 Hz to 100,000 Hz, with specified feedback arrangement, as measured at 1 watt output.

Temperature Compensation: An internal compensating diode is used to provide minimum cross-over distortion and protection from thermal runaway.

Voltage Gain: The feedback resistor provided internally allows 28 dB gain (typical) when feedback terminal 3 is connected to an 8 ohm load. Open loop gain is approximately 62 dB.

Special Applications: Parallel and bridge operation for higher power, variations in load, power supply regulation, ambient temperature variations, and variations in feedback are described in Technical Bulletin 70-02 QA.

Heat Sinks: Values shown are minimum for a plain white aluminum sheet, 2 mm (approximately 1/16 inch) thick, at a 25°C ambient,

with reasonable ventilation. A silicone grease such as GE Insulgrease G-640 should be used to provide good thermal contact from base to heat sink.

Power Supply: Maximum voltage values are absolute maximum. A transformer with 10% regulation is recommended to assure withstanding a 5 second output short. Idling current increases exponentially with supply voltage, in causing heating.

Derating: Idling current remains constant at any output power level. Internal power loss reaches its maximum when the output is 40% of the rated maximum output. Refer to Bulletin, 70-02 QA for complete application data.

Application: (1) Amplifiers may be damaged by oscillation or overdriving. (2) Provide separate ground connection to both input and output. (3) For loads of less than 8 ohms see Technical Bulletin 70-02 QA. (4) Do not exceed recommended power supply voltage. (5) Fuses connected to the terminal I should be quick-acting type such as Bussman type AGC.

ELECTRICAL CHARACTERISTICS

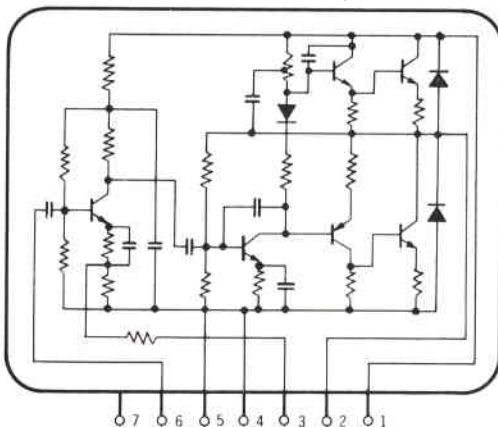
Characteristic	SI-1025E	SI-1050E
Maximum rms power	25W	50W
Output Load	8 ohms	8 ohms
Supply Voltage	48V	62V
Absolute Max. Supply Voltage	55V	80V
Supply Current	0.8A	1.1A
Suggested Fuse	1A	2A
Harmonic Distortion at Full Output	0.5% max.	0.5% max.
Voltage Gain, Full Feedback	28 dB typ.	28 dB typ.
Input Impedance	70,000 ohms typ.	70,000 ohms typ.
Output Impedance	0.2 ohms typ.	0.2 ohms typ.
Output Coupling Capacitor	2200 μ F 50 WV DC	2200 μ F 75 WV DC
Signal to Noise Ratio	90 dB typ.	90 dB typ.
Idling Current	30 mA typ.	30 mA typ.
Heat Sink (Minimum)	70 cm ² (11 sq. in.)	135 cm ² (21 sq. in.)
Operating Temperature	-10°C to +70°C	-10°C to +70°C
Storage Temperature	-20°C to +80°C	-20°C to +80°C



At 25°C ambient, 1 KHz, $R_L=8$ ohms.

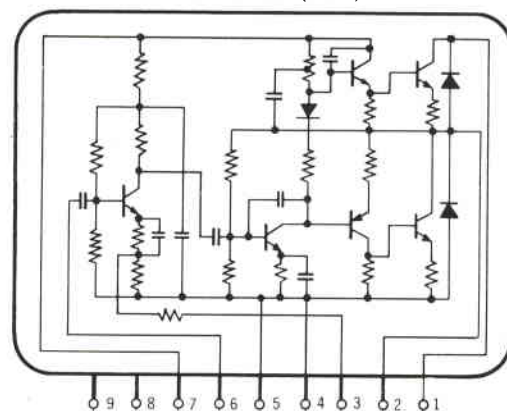
SCHEMATICS

SI-1025E (25W)



1. Vcc 2. Output (to a capacitor) 3. Feedback
4. Ground for output 5. Ground for input 6. Input 7. Spare

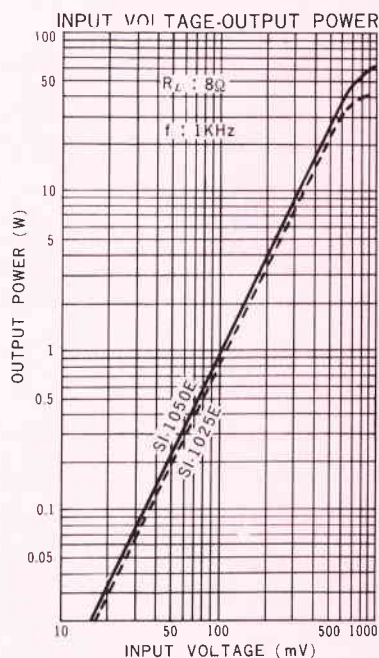
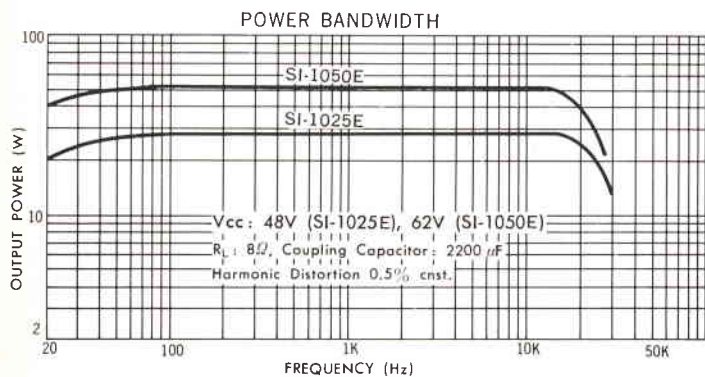
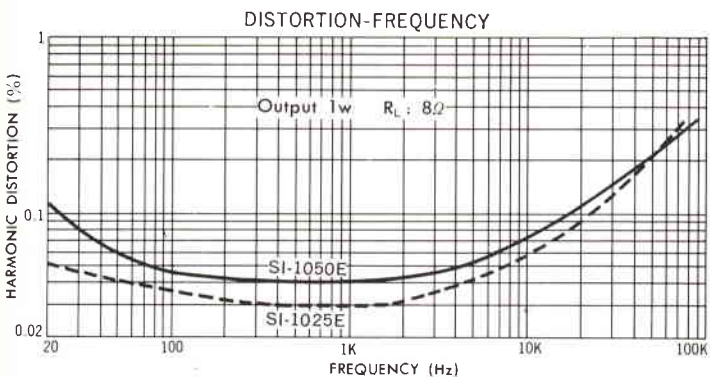
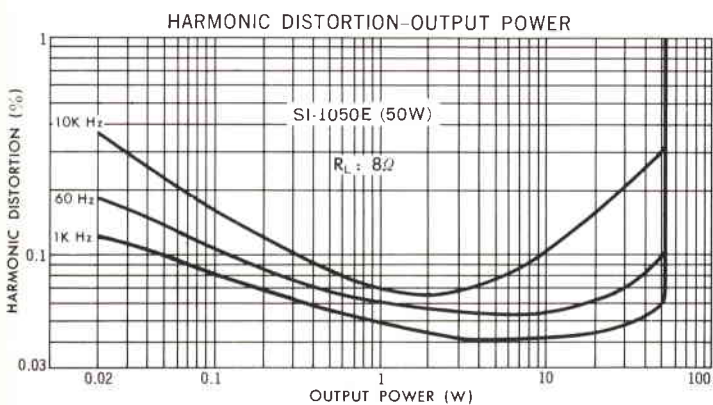
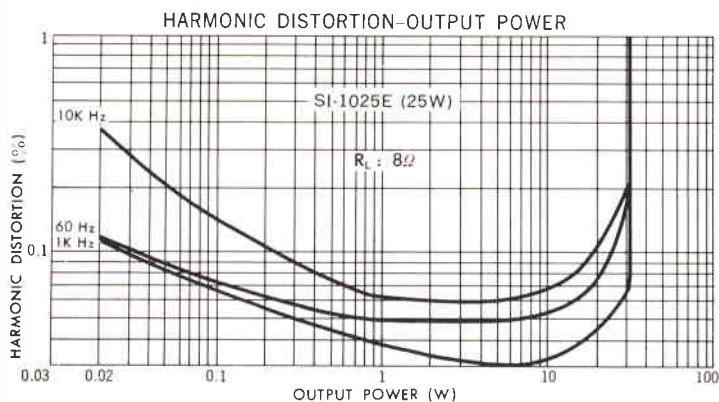
SI-1050E (50W)



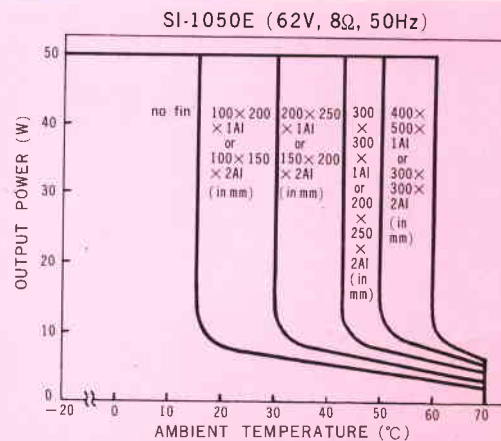
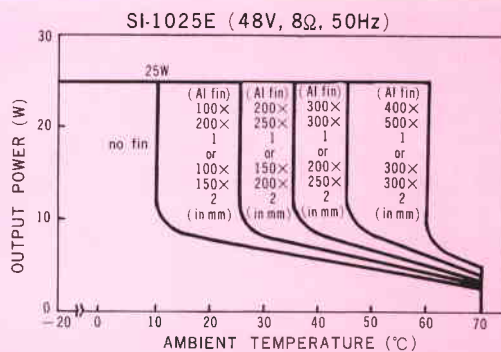
1. Vcc 2. Output (to a capacitor) 3. Feedback 4. Ground for output
5. Ground for input 6. Input 7. Vcc 8. 9. Spare

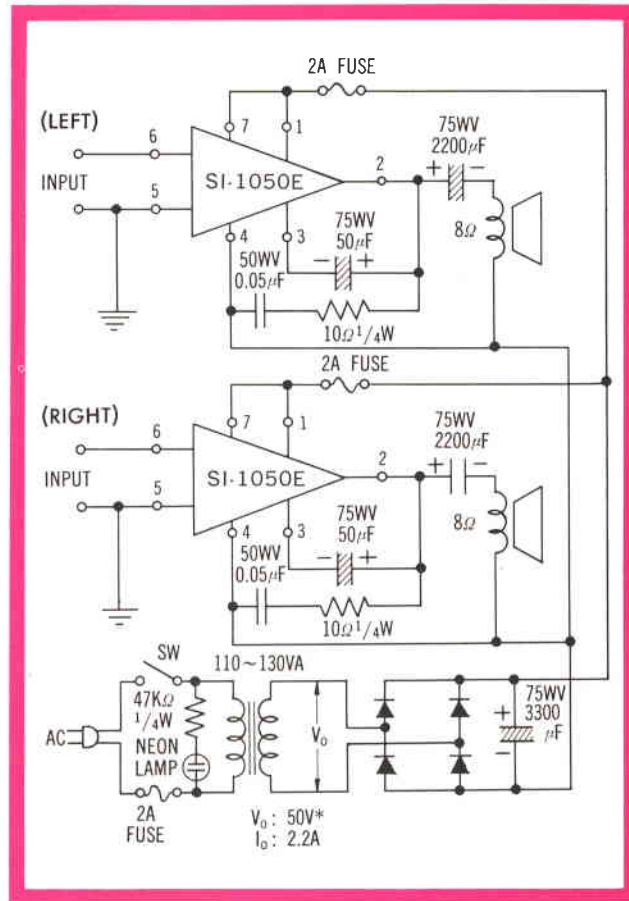
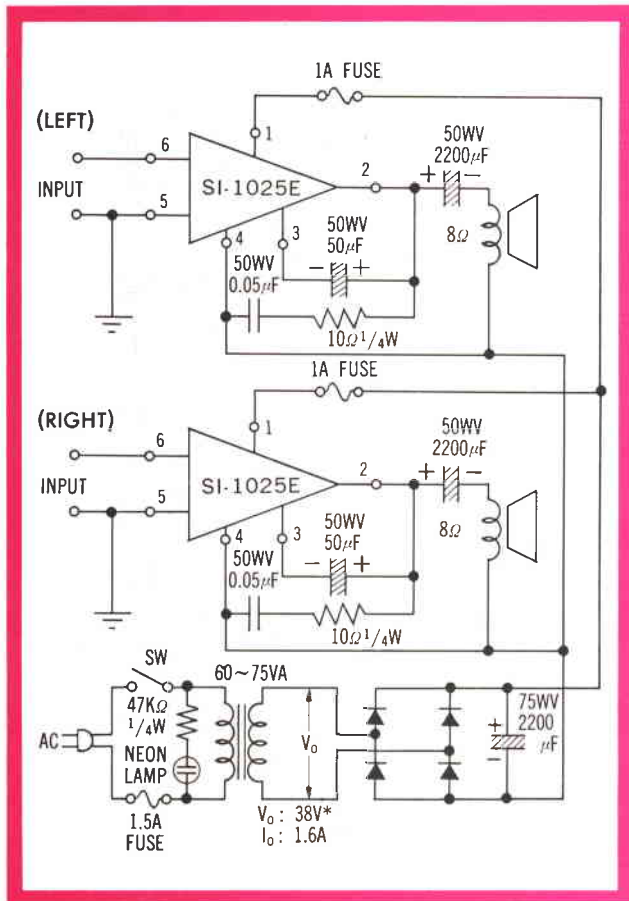
* Terminals as viewed from rear.

TYPICAL CHARACTERISTIC CURVES



POWER DERATING

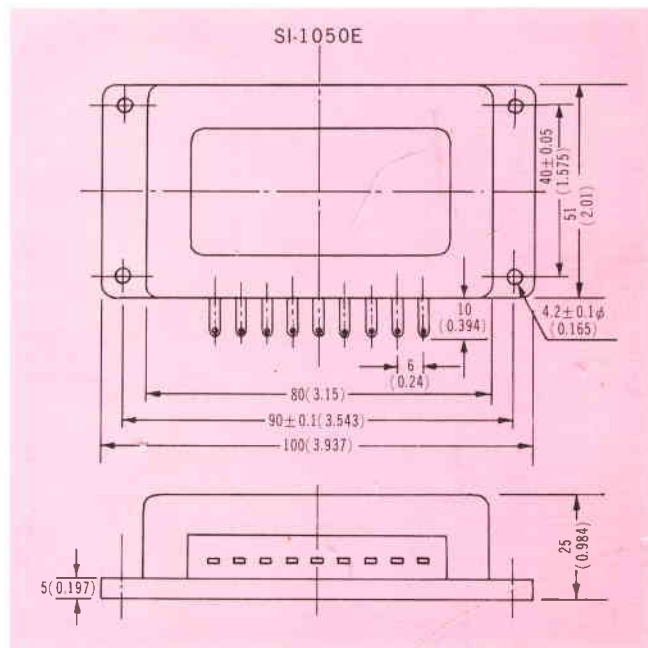
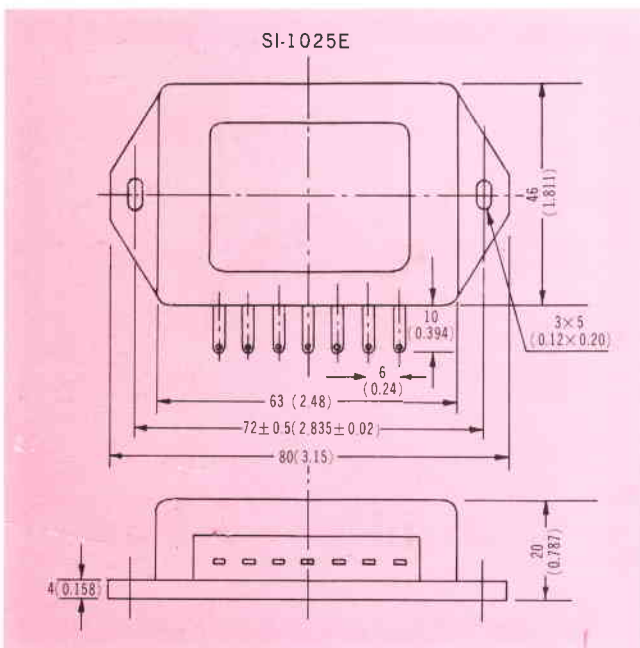


RECOMMENDED CONNECTIONS


*Where line voltage fluctuates by $\pm 10\%$,
 V_o is to be decreased to 36V.

*Where line voltage fluctuates by $\pm 10\%$,
 V_o is to be decreased to 44V.

*Capacitors and a resistor between terminals 2 & 3
 and 2 & 4 are for parasitic oscillation suppression.

OUTLINE DRAWINGS in mm (approx. inch)




SANKEN ELECTRIC CO., LTD.

1-22-8 NISHI-IKEBUKURO, TOSHIMA-KU, TOKYO
CABLE: SANKELE TOKYO PHONE: 986-6151
TELEX: 0272-2323 (SANKELE TOK)