

Bulletin No.  
QA-08  
(Feb., 1974)

# sanken hybrid audio power amplifier

## SERIES SI-1000G

SI-1010G(10W output) SI-1020G(20W output)

SI-1030G(30W output) SI-1050G(50W output)

- \*Multi-purpose linear amplifiers for commercial and industrial applications.
- \*Less than 0.5% harmonic distortion at full power level.
- \*1/2dB response from 20 to 100,000Hz.
- \*Built-in current limiting (for SI-1030G & SI-1050G) and efficient heat radiating construction.
- \*Single or split (dual) power supply.
- \*Rugged, compact and light weight packages.

SANKEN Series SI-1000G amplifiers are self-contained power hybrid amplifiers designed for Hi-Fi, stereo, musical instruments, public address systems and other audio applications. The amplifiers have quasi-complementary class B output. The circuit employs flip-chip transistors with high reliability and passivated chip power transistors with excellent secondary breakdown strength. Built-in current limiting is provided for SI-1030G and SI-1050G. The device can be operated from a single or split power supply.

The logo for Sanken Electric Co., Ltd. features the word "Sanken" in a stylized, white, sans-serif font with a registered trademark symbol (®) to the upper right. The text is set against a solid red rectangular background.

1-22-8 NISHI-IKEBUKURO, TOSHIMA-KU, TOKYO 171

ELECTRIC CO., LTD.

TELEX : 0272-2323

CABLE : SANKELE TOK

PHONE : 986-6151

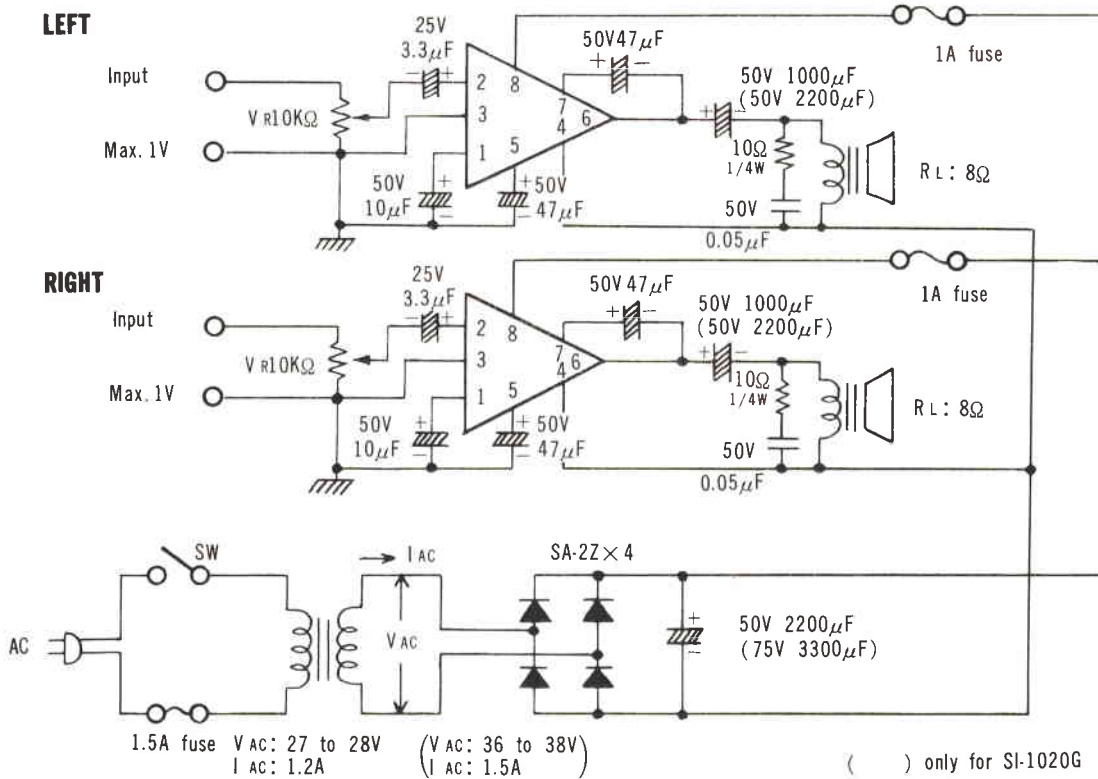
## ELECTRICAL CHARACTERISTICS

Characteristic	SI-1010G	SI-1020G	SI-1030G	SI-1050G
Maximum rms Power	10W	20W	30W	50W
Output Load	8 ohms	8 ohms	8 ohms	8 ohms
Supply Voltage	34V or $\pm 17V$	46V or $\pm 23V$	54V or $\pm 27V$	66V or $\pm 33V$
Absolute Max. Supply Voltage	45V or $\pm 22.5V$	55V or $\pm 25V$	60V or $\pm 30V$	80V or $\pm 40V$
Supply Current (ave.)	0.50A	0.72A	0.86A	1.1A
Protective Fusing	1A Quick Blow	1A Quick Blow	1.5A Quick Blow	2A Quick Blow
Harmonic Distortion at Full Output	0.5% max.	0.5% max.	0.5% max.	0.5% max.
Input Voltage	0.30V typ.	0.42V typ.	0.52V typ.	0.70V typ.
Maximum Input Voltage (p-p)	10V	10V	10V	10V
Voltage Gain Full Feedback ( $P_o=1W$ )	30dB typ.	30dB typ.	30dB typ.	30dB typ.
Input Impedance	40,000 ohms typ.	40,000 ohms typ.	40,000 ohms typ.	40,000 ohms typ.
Output Impedance ( $P_o=1W$ )	0.2 ohm typ.	0.2 ohm typ.	0.2 ohm typ.	0.2 ohm typ.
Load Current (rms)	0.89A typ.	1.58A typ.	2.00A typ.	2.50A typ.
Load Current (p-p)	2.52A typ.	4.45A typ.	5.66A typ.	7.00A typ.
Output Voltage (rms)	8.9V typ.	12.7V typ.	16.0V typ.	20.0V typ.
Signal to Noise Ratio (Input Shorted)	90dB typ.	90dB typ.	90dB typ.	90dB typ.
Idling Current	20mA typ.	20mA typ.	20mA typ.	20mA typ.
Frequency Range ( $P_o=1W$ )	20Hz to 100kHz	20Hz to 100kHz	20Hz to 100kHz	20Hz to 100kHz
Power Bandwidth (-3dB)	20Hz to 20kHz	20Hz to 20kHz	20Hz to 20kHz	20Hz to 20kHz
Operating Temperature	-10°C to +70°C	-20°C to +80°C	-20°C to +80°C	-20°C to +80°C
Storage Temperature	-25°C to +85°C	-30°C to +100°C	-30°C to +100°C	-30°C to +100°C
Built-in Protection	—	—	current limiting	current limiting

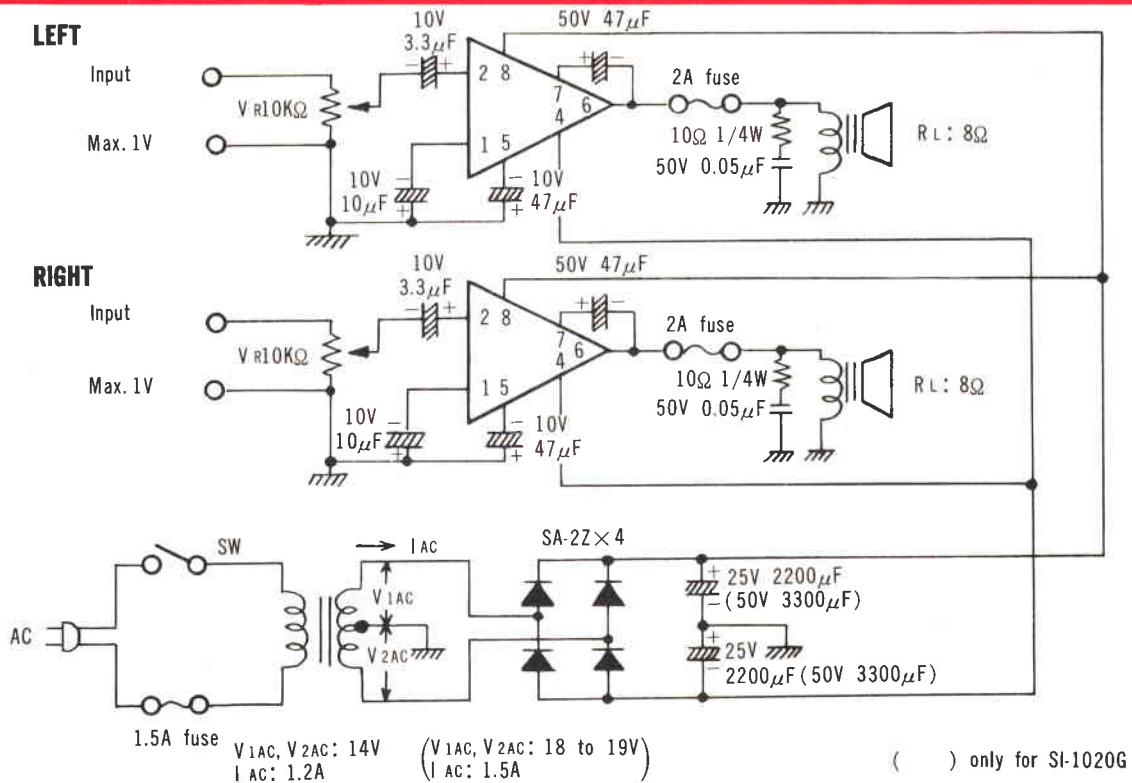
At 25°C ambient, 1kHz,  $R_L=8$  ohms

# RECOMMENDED CONNECTIONS (SI-1010G & SI-1020G)

## A. SINGLE POWER SUPPLY

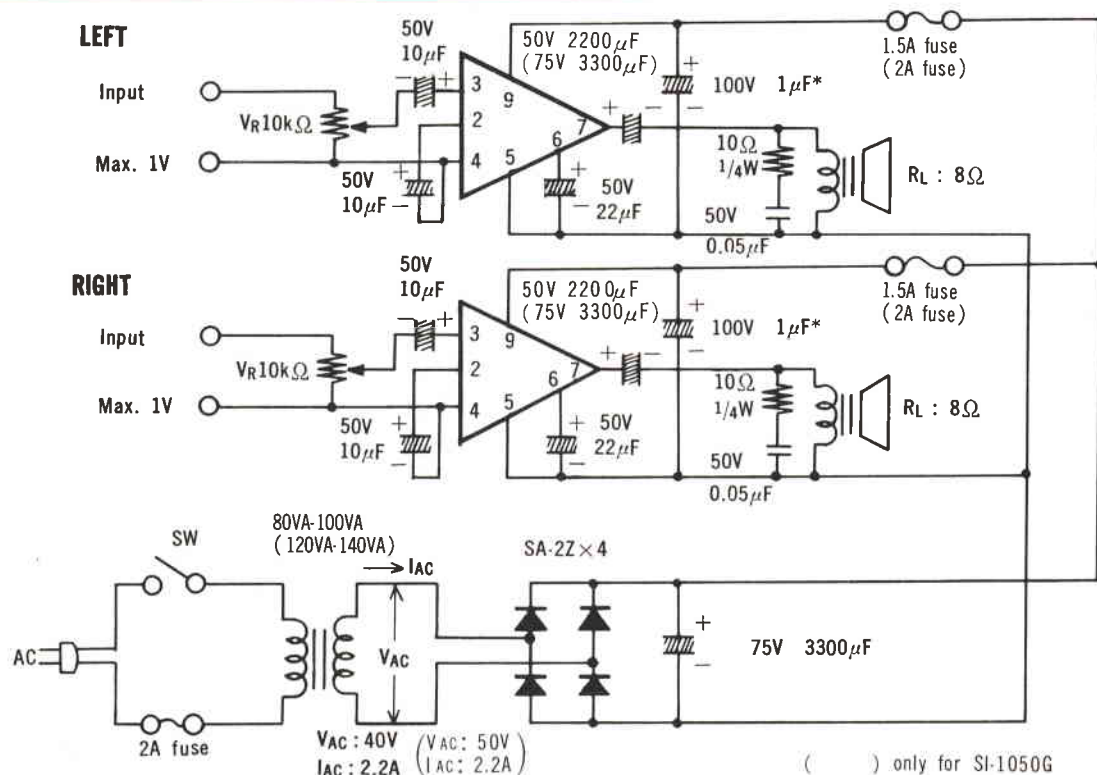


## B. SPLIT POWER SUPPLY

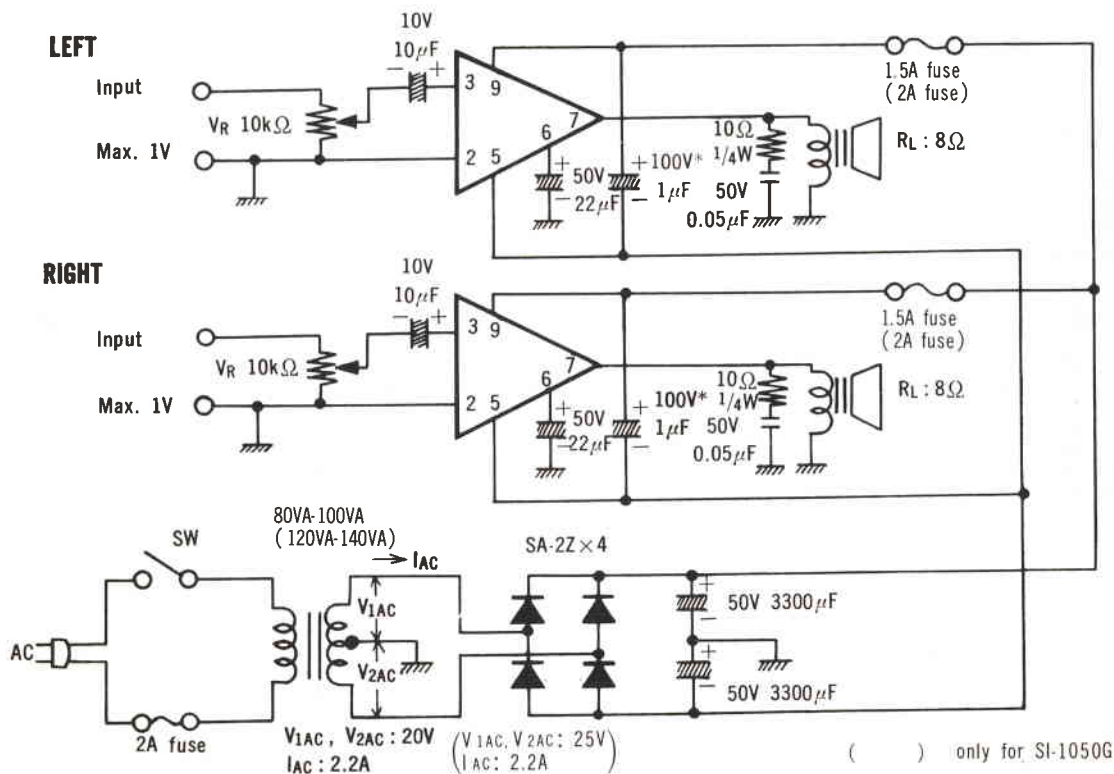


# RECOMMENDED CONNECTIONS (SI-1030G & SI-1050G)

## A. SINGLE POWER SUPPLY



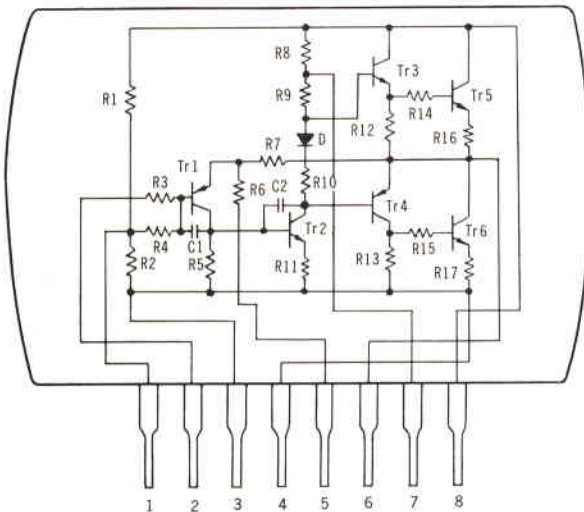
## B. SPLIT POWER SUPPLY



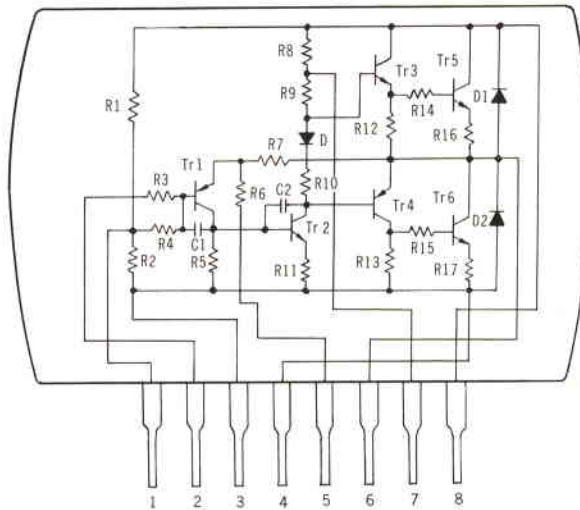


# SCHEMATIC

SI-1010G



SI-1020G



## TERMINAL ASSIGNMENTS

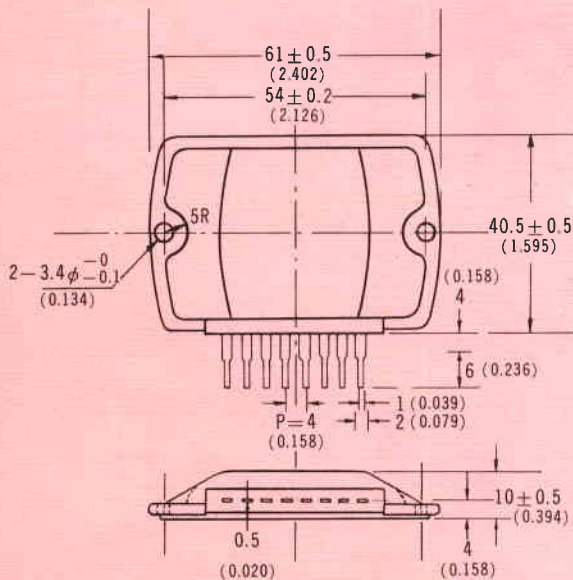
A. With single power supply

1. Ripple filter capacitor (+)
2. Input (+)
3. Input (-)
4. Ground for power supply & ground for output
5. Feedback
6. Output
7. Boot strap capacitor(+)
8. Power supply (+)

B. With split (dual) power supply

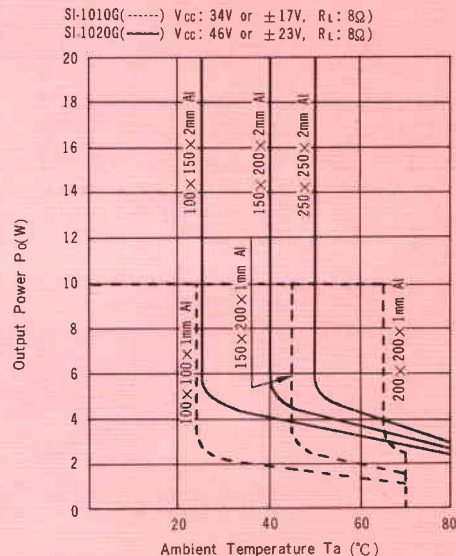
1. Ripple filter capacitor (-)
2. Input (+)
3. Spare
4. Power supply (-)
5. Feedback
6. Output
7. Boot strap capacitor (+)
8. Power supply (+)

## OUTLINE DRAWINGS (SI-1010G & SI-1020G)



in mm (approx. inch)

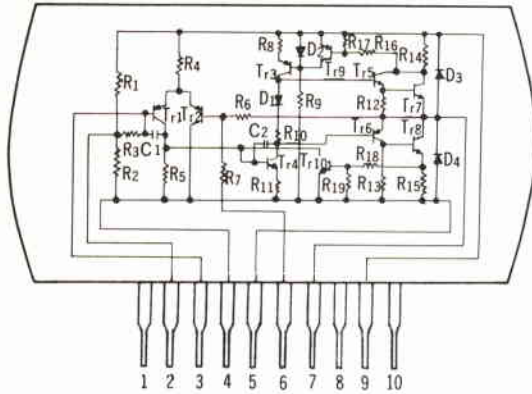
## POWER DERATING (SI-1010G & SI-1020G)



Note: Design heat sink to keep case temperature below 70°C for SI-1010G and below 80°C for SI-1020G

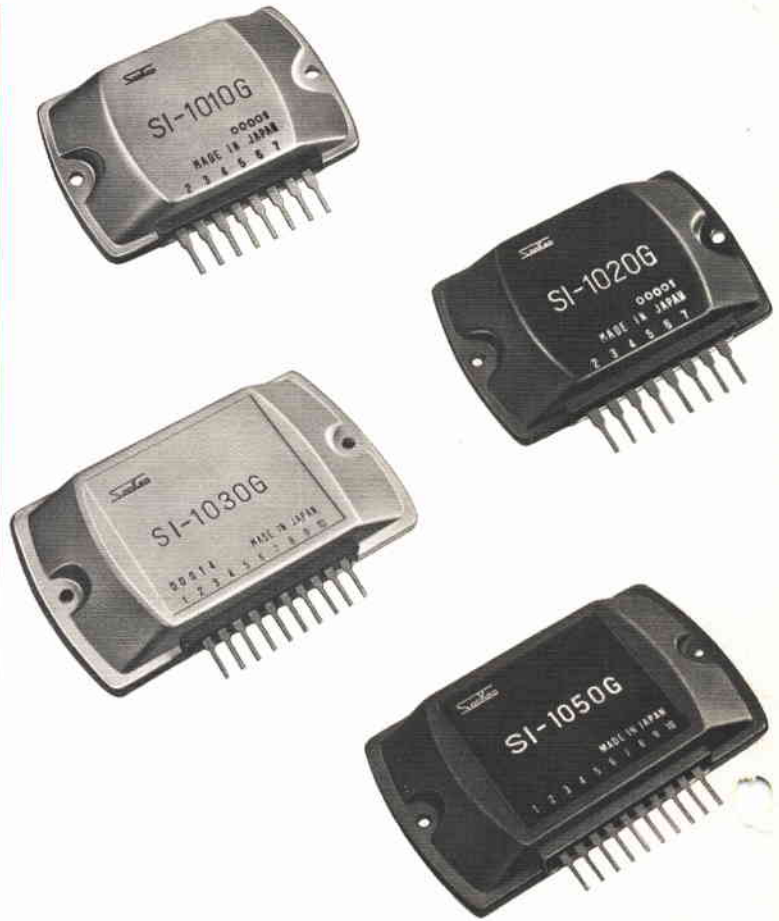
# SCHEMATIC

(SI-1030G & SI-1050G)



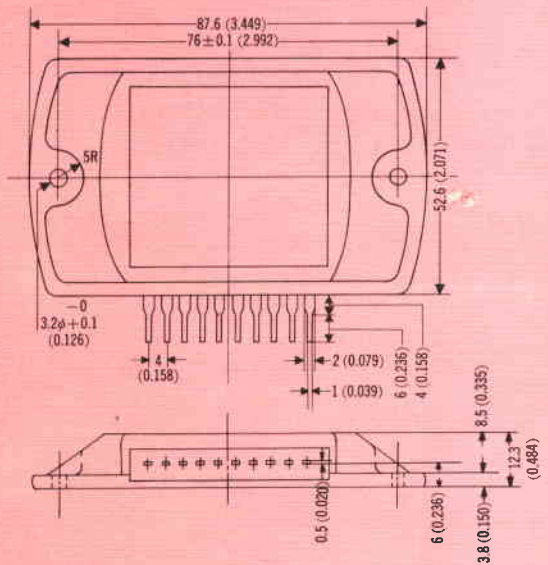
## TERMINAL ASSIGNMENTS

- |  |  |
|--|--|
| <b>A. With single power supply</b>             | <b>B. With split (dual) power supply</b> |
| 1, Spare                                       | 1, Spare                                 |
| 2, + terminal of noise suppression capacitor   | 2, Input (-) & ground terminal           |
| 3, Input (+)                                   | 3, Input (+)                             |
| 4, Input (-)                                   | 4, Not used                              |
| 5, Ground for power supply & ground for output | 5, Power supply (-Vcc)                   |
| 6, Feedback                                    | 6, Feedback                              |
| 7, Output                                      | 7, Output                                |
| 8, Spare                                       | 8, Spare                                 |
| 9, Power supply (+)                            | 9, Power supply (+Vcc)                   |
| 10, Spare                                      | 10, Spare                                |



# OUTLINE DRAWINGS

(SI-1030G & SI-1050G)

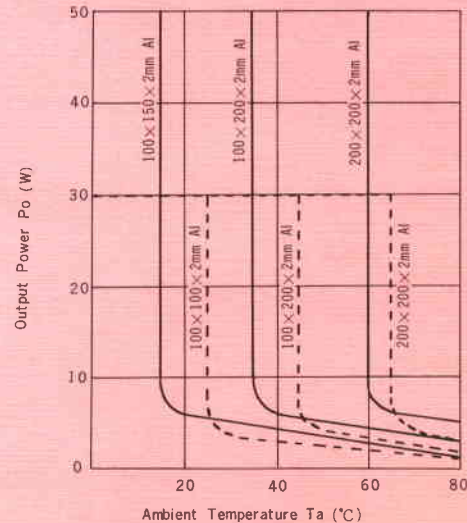


in mm (approx. inch)

# POWER DERATING

(SI-1030G & SI-1050G)

SI-1030G(-----) Vcc: 54V or ±27V, R<sub>L</sub>: 8Ω  
 SI-1050G(——) Vcc: 66V or ±33V, R<sub>L</sub>: 8Ω



Note: Design heat sink to keep case temperature below 80°C