

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

# TA8265K

## DUAL AUDIO POWER AMPLIFIER

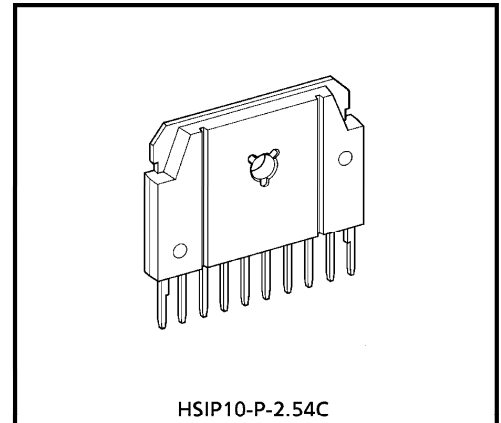
The TA8265K is dual audio power amplifier for consumer applications.

This IC provides an output power of 6 watts per channel (at  $V_{CC} = 20\text{ V}$ ,  $f = 1\text{ kHz}$ ,  $\text{THD} = 10\%$ ,  $R_L = 8\ \Omega$ ).

It is suitable for power amplifier of TV and home stereo.

### FEATURES

- High Output Power :  $P_{\text{out}} = 6\text{ W/channel (Typ.)}$   
( $V_{CC} = 20\text{ V}$ ,  $R_L = 8\ \Omega$ ,  $f = 1\text{ kHz}$ ,  $\text{THD} = 10\%$ )
- Low Noise :  $V_{\text{NO}} = 0.14\text{ mV}_{\text{rms}} \text{ (Typ.)}$   
( $V_{CC} = 20\text{ V}$ ,  $R_L = 8\ \Omega$ ,  $G_V = 34\text{ dB}$ ,  $R_g = 10\text{ k}\Omega$ ,  
 $\text{BW} = 20\text{ Hz}\sim 20\text{ kHz}$ )
- Very Few External Parts
- Built In Thermal Shut Down Protector Circuit
- Operating Supply Voltage Range :  $V_{CC(\text{opr.})} = 10\sim 30\text{ V}$  ( $T_a = 25^\circ\text{C}$ )



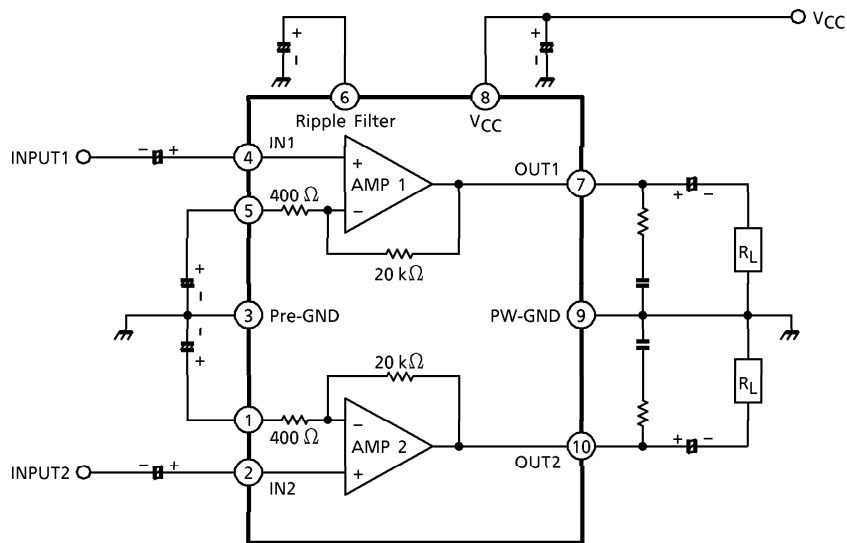
HSIP10-P-2.54C

Weight : 3.15 g (Typ.)

980910EBF1

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**BLOCK DIAGRAM**



**APPLICATION INFORMATION**

(1) Voltage gain

The closed loop voltage gain is determined by R<sub>1</sub>, R<sub>2</sub>.

$$G_V = 20 \log \frac{R_1 + R_2}{R_2} \text{ (dB)}$$

$$= 20 \log \frac{20 \text{ k}\Omega + 400 \Omega}{400 \Omega}$$

$$\cong 34 \text{ (dB)}$$

(a) Amplifier with gain < 34 dB

$$G_V = 20 \log \frac{R_1 + R_2 + R_4}{R_2 + R_4} \text{ (dB)}$$

When R<sub>4</sub> = 220 Ω  
 G<sub>V</sub> ≅ 30 (dB)  
 is given.

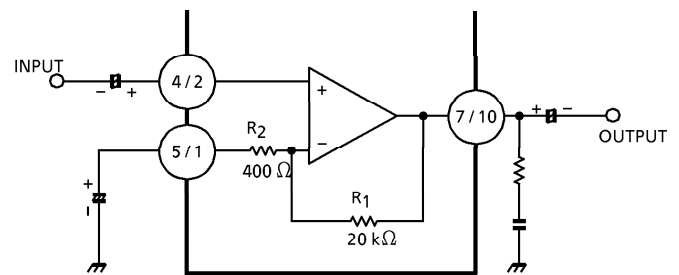


Fig.1

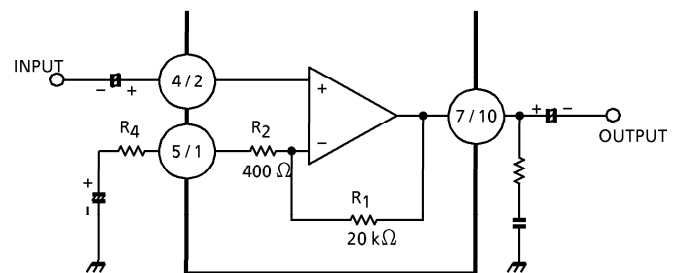


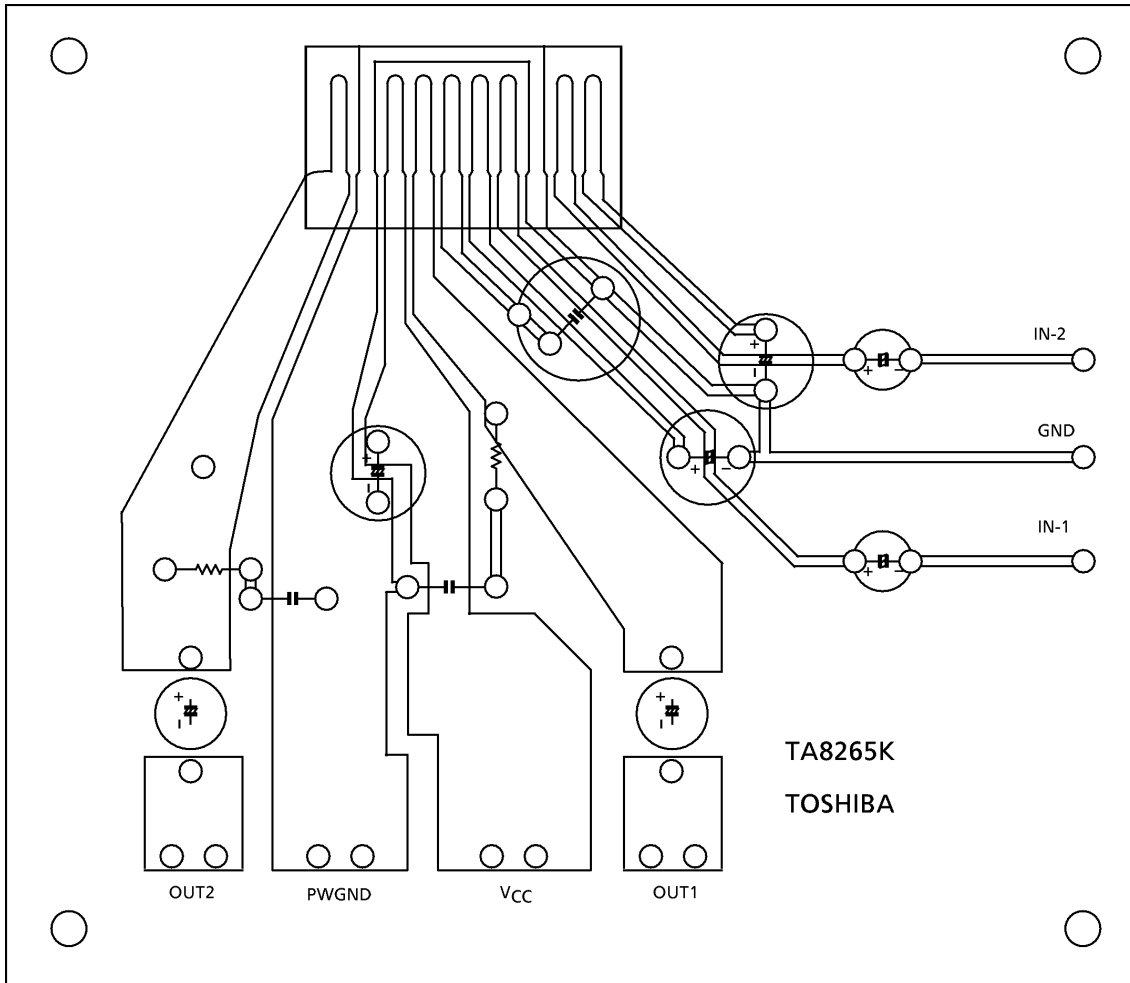
Fig.2

**CAUTIONS**

This IC is not proof enough against a strong E-M field by CRT which may cause malfunction such as leak.

Please set the IC keeping the distance from CRT.

STANDARD P.C.B



(BOTTOM VIEW)

**MAXIMUM RATINGS** ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	$V_{CC}$	30	V
Output Current (Peak / Ch)	$I_{O(\text{peak})}$	2	A
Power Dissipation	$P_D$ (Note)	20	W
Operating Temperature	$T_{opr}$	-20~75	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$

(Note) : Derated above  $T_a = 25^\circ\text{C}$  in the proportion of 267 mW/ $^\circ\text{C}$ .

**ELECTRICAL CHARACTERISTICS**

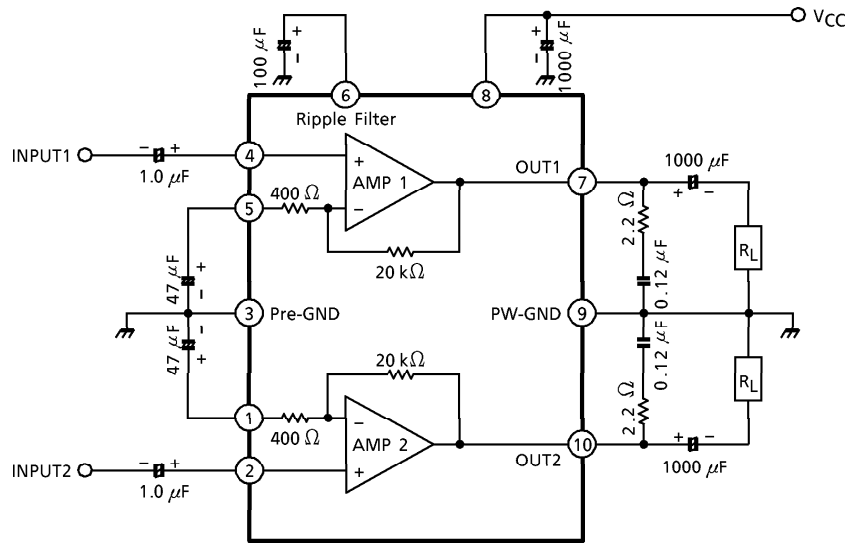
(Unless otherwise specified,  $V_{CC} = 20\text{ V}$ ,  $R_L = 8\ \Omega$ ,  $R_g = 600\ \Omega$ ,  $f = 1\text{ kHz}$ ,  $T_a = 25^\circ\text{C}$ )

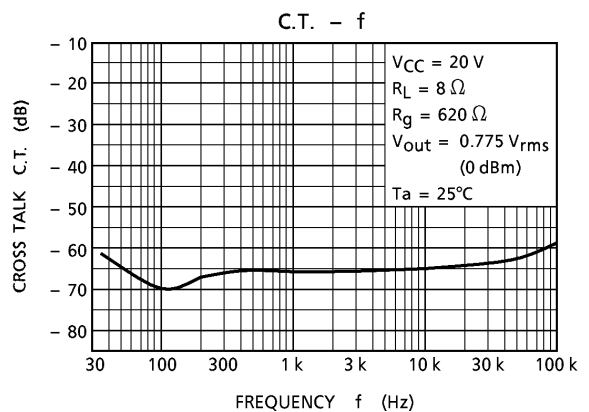
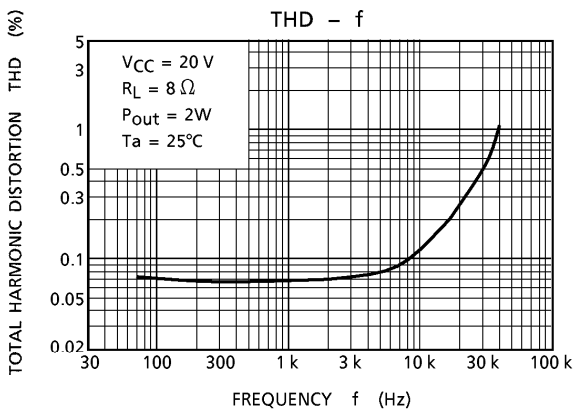
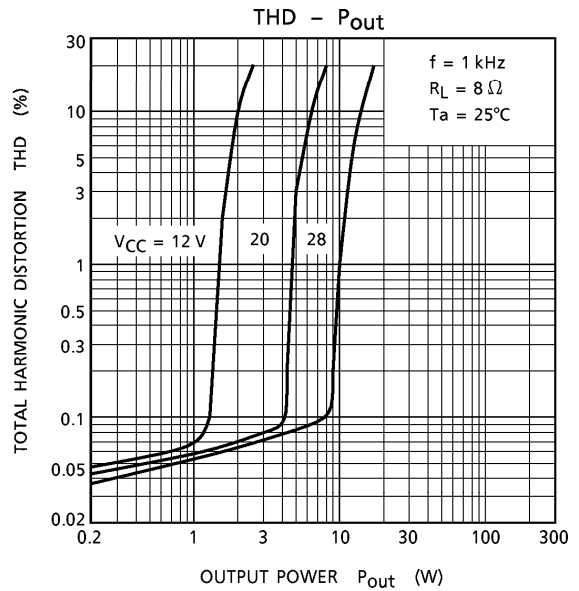
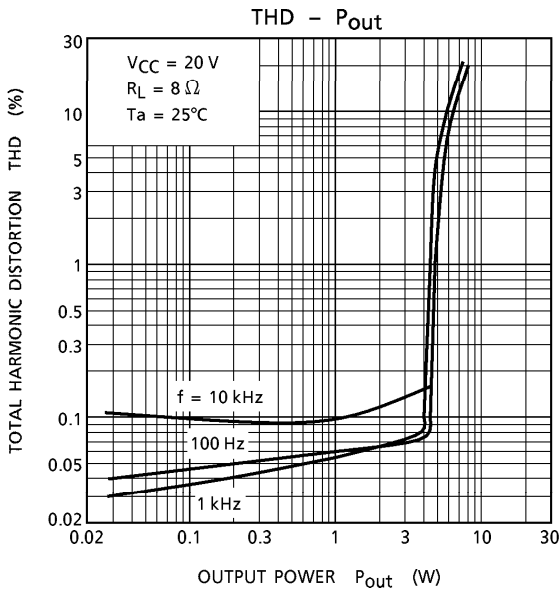
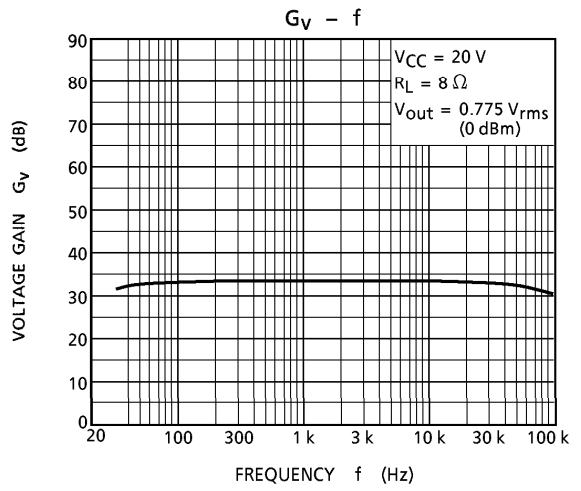
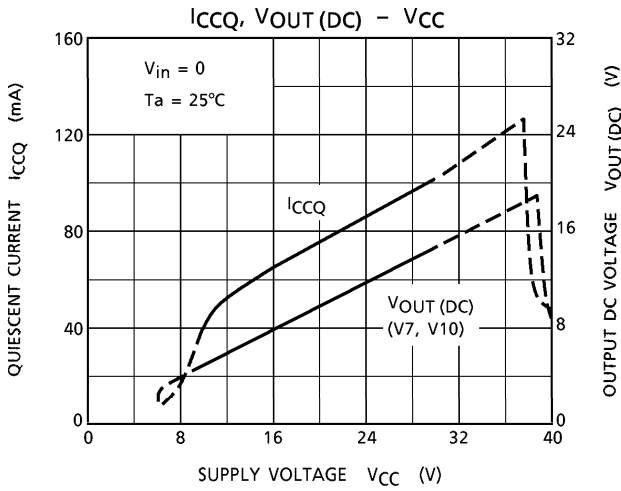
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	$I_{CCQ}$	—	$V_{in} = 0$	—	75	130	mA
Output Power	$P_{out(1)}$	—	THD = 10%	5.0	6.0	—	W
	$P_{out(2)}$	—	THD = 1%	—	4.5	—	
Total Harmonic Distortion	THD	—	$P_{out} = 2\text{ W}$	—	0.1	0.6	%
Closed Loop Voltage Gain	$G_V$	—	$V_{out} = 0.775 V_{rms}$ (0 dBm)	32.5	34.0	35.5	dB
Cross Talk	C.T.	—	$V_{out} = 0.775 V_{rms}$ (0 dBm)	—	-65	—	dB
Input Resistance	$R_{IN}$	—	—	—	30	—	$k\Omega$
Ripple Rejection Ratio	R.R.	—	$R_g = 10\ k\Omega$ , $f_{ripple} = 100\text{ Hz}$ $V_{ripple} = 0.775 V_{rms}$ (0 dBm)	-45	-57	—	dB
Output Noise Voltage	$V_{no}$	—	$R_g = 10\ k\Omega$ , BW = 20 Hz~20 kHz	—	0.14	0.3	$mV_{rms}$

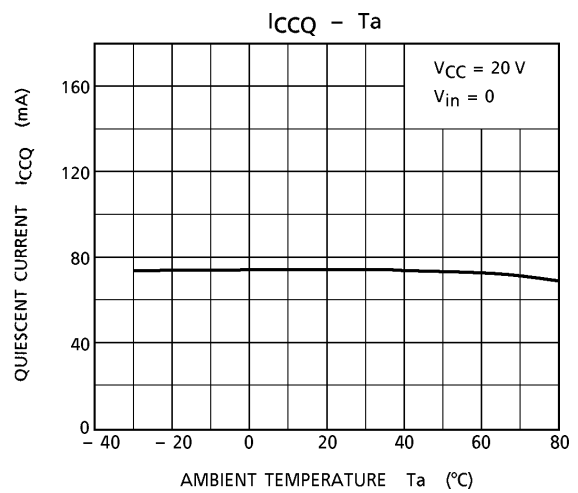
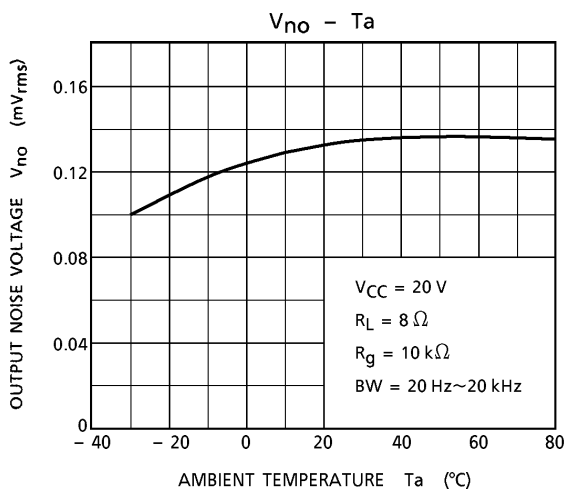
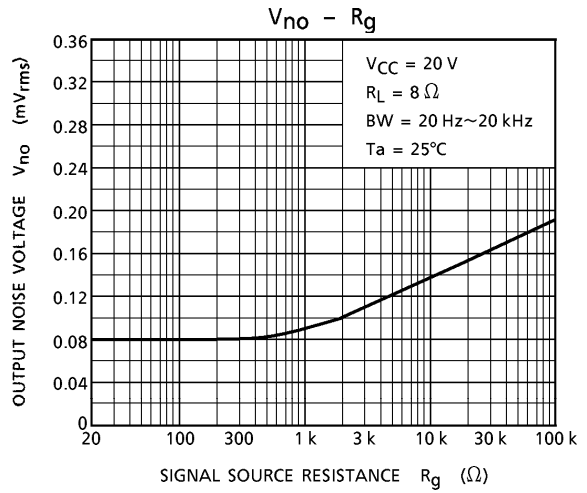
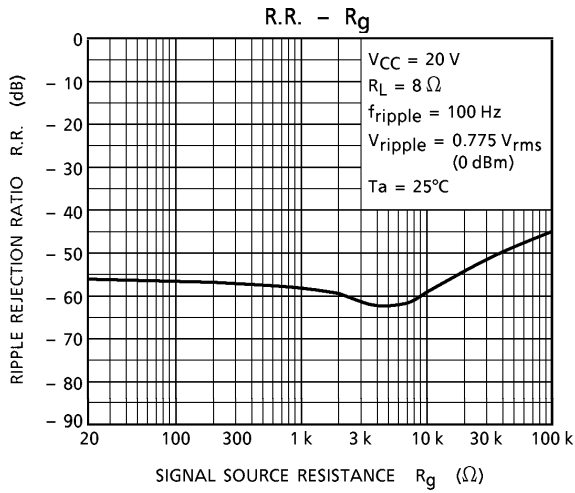
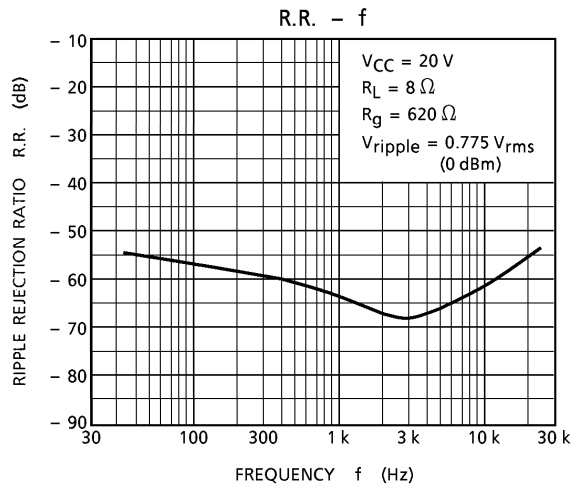
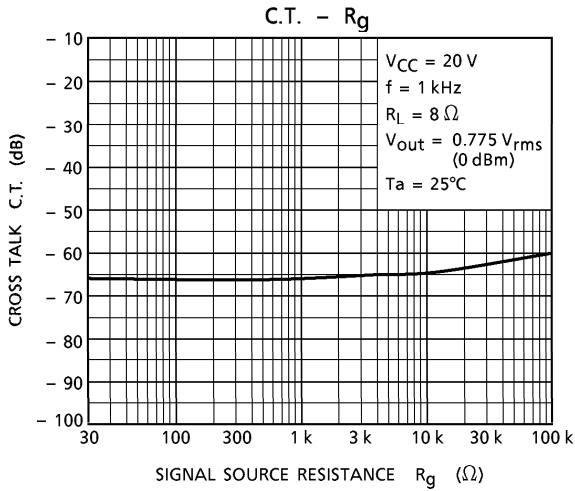
**TYP. DC VOLTAGE OF EACH TERMINAL** ( $V_{CC} = 20\text{ V}$ ,  $T_a = 25^\circ\text{C}$ )

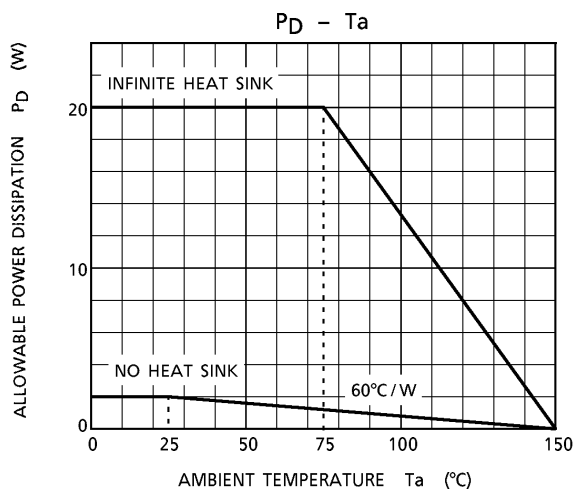
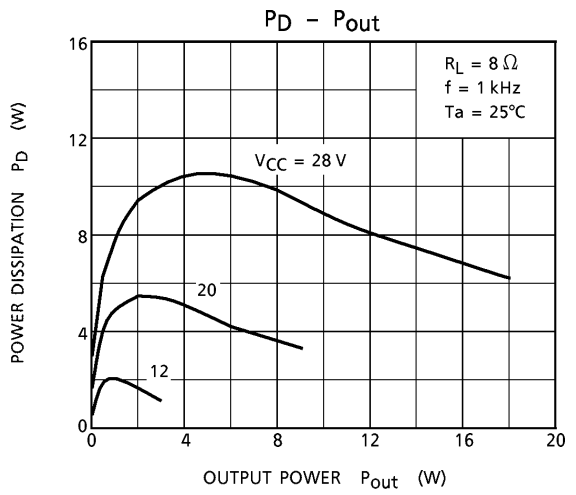
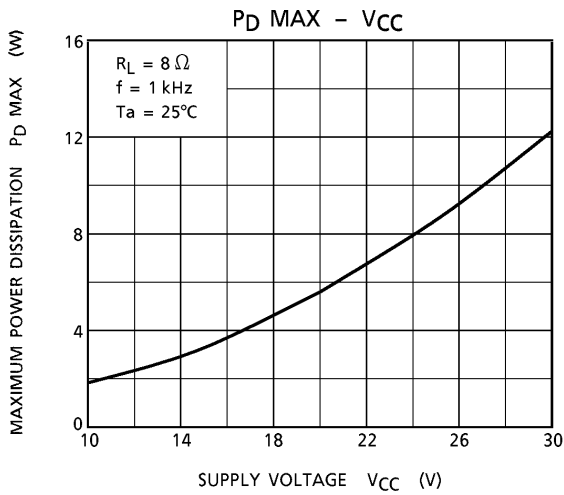
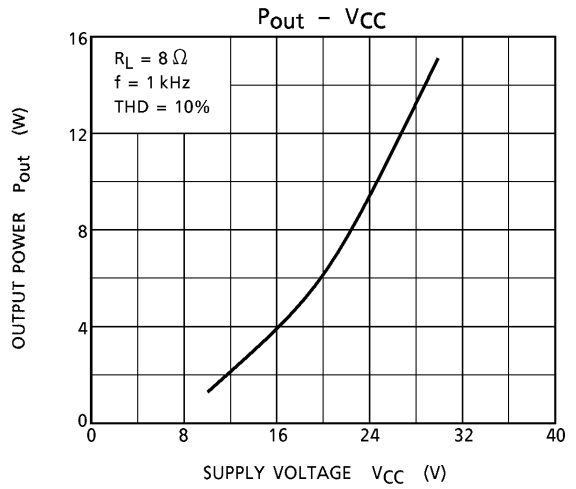
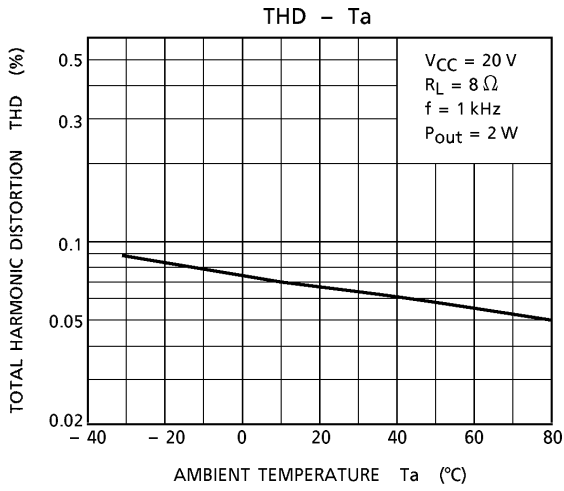
TERMINAL No.	1	2	3	4	5	6	7	9	9	10
DC Voltage (V)	2.1	2.25	GND	2.25	2.1	6.8	9.8	$V_{CC}$	GND	9.8

TEST CIRCUIT





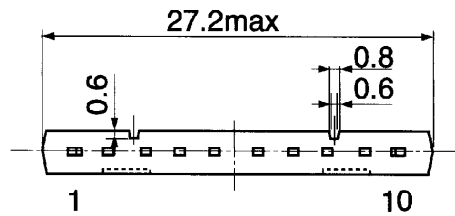
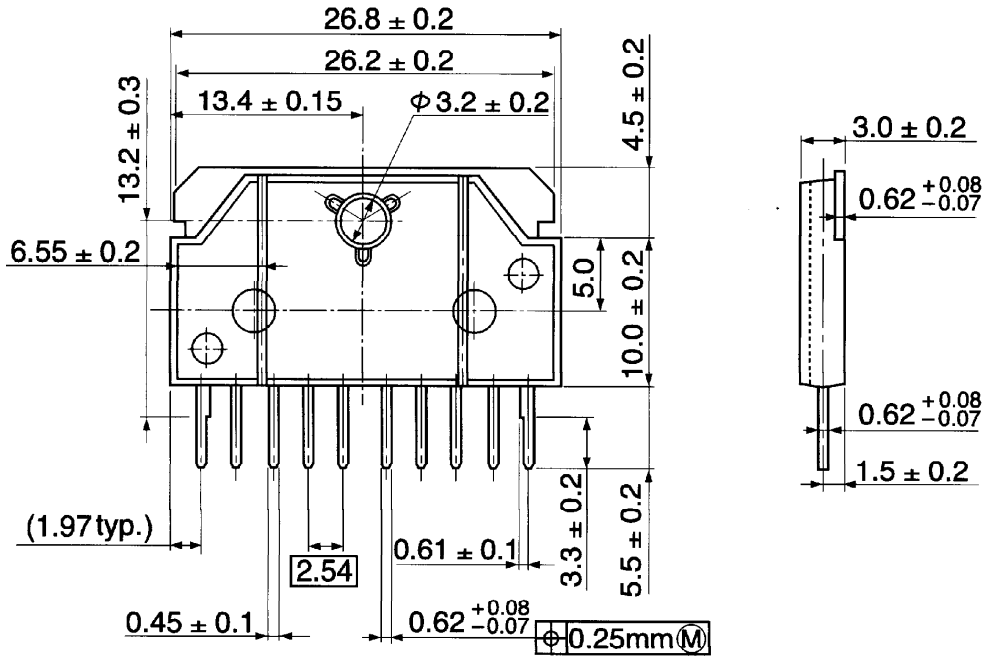






**PACKAGE DIMENSIONS**  
HSIP10-P-2.54C

Unit : mm



Weight : 3.15 g (Typ.)