

TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic

TA8265K

Dual Audio Power Amplifier

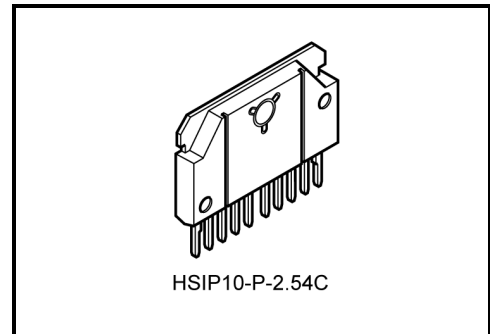
TA8265K is a high-output audio power IC developed for outputting audio signals for TV and compact stereos.

Fewer external components and a sealed compact 10-pin package means the IC needs only a small space on the printed circuit board.

The IC incorporates thermal shutdown and load short-protection circuits.

Features

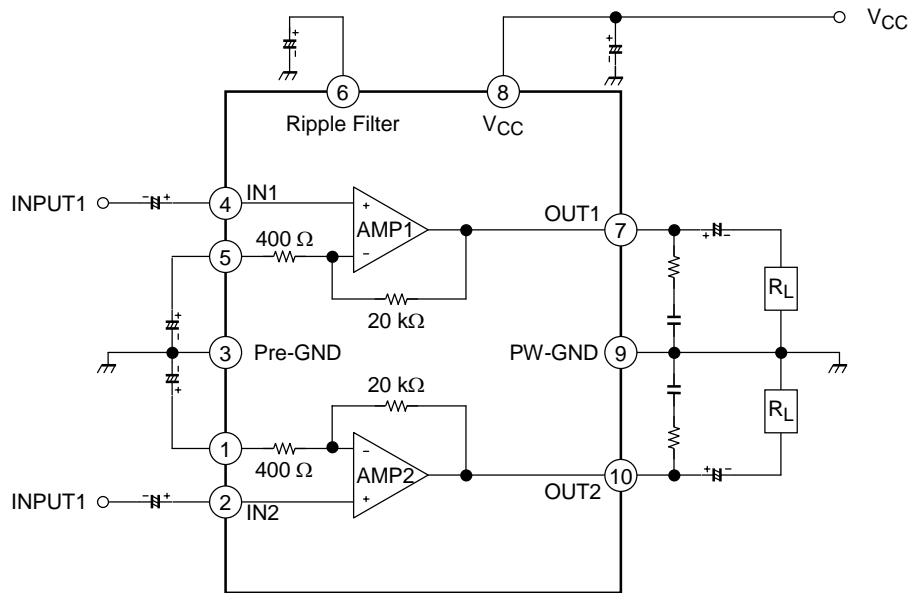
- High output power: $P_{out} = 6 \text{ W/channel (Typ.)}$
($V_{CC} = 20 \text{ V}$, $R_L = 8 \Omega$, $f = 1 \text{ kHz}$, $\text{THD} = 10\%$)
- Low noise: $V_{no} = 0.14 \text{ mVrms (Typ.)}$
($V_{CC} = 20 \text{ V}$, $R_L = 8 \Omega$, $G_v = 34\text{dB}$, $R_g = 10 \text{ k}\Omega$, $\text{BW} = 20 \text{ Hz} \sim 20 \text{ kHz}$)
- 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.)

Block Diagram



Application Information

Voltage gain

The closed loop voltage gain is determined by R₁, R₂.

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

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

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

(a) Amplifier with gain G_V < 34 (dB)

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

When R₄ = 220 Ω
 G_V ≈ 30 (dB)
 is gain.

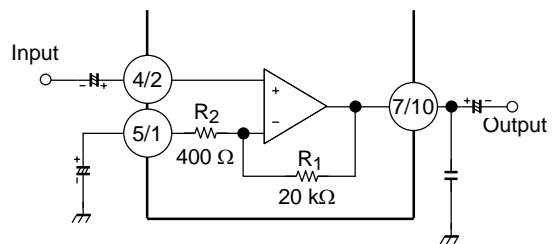


Figure 1

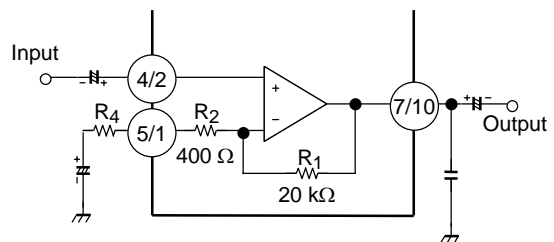
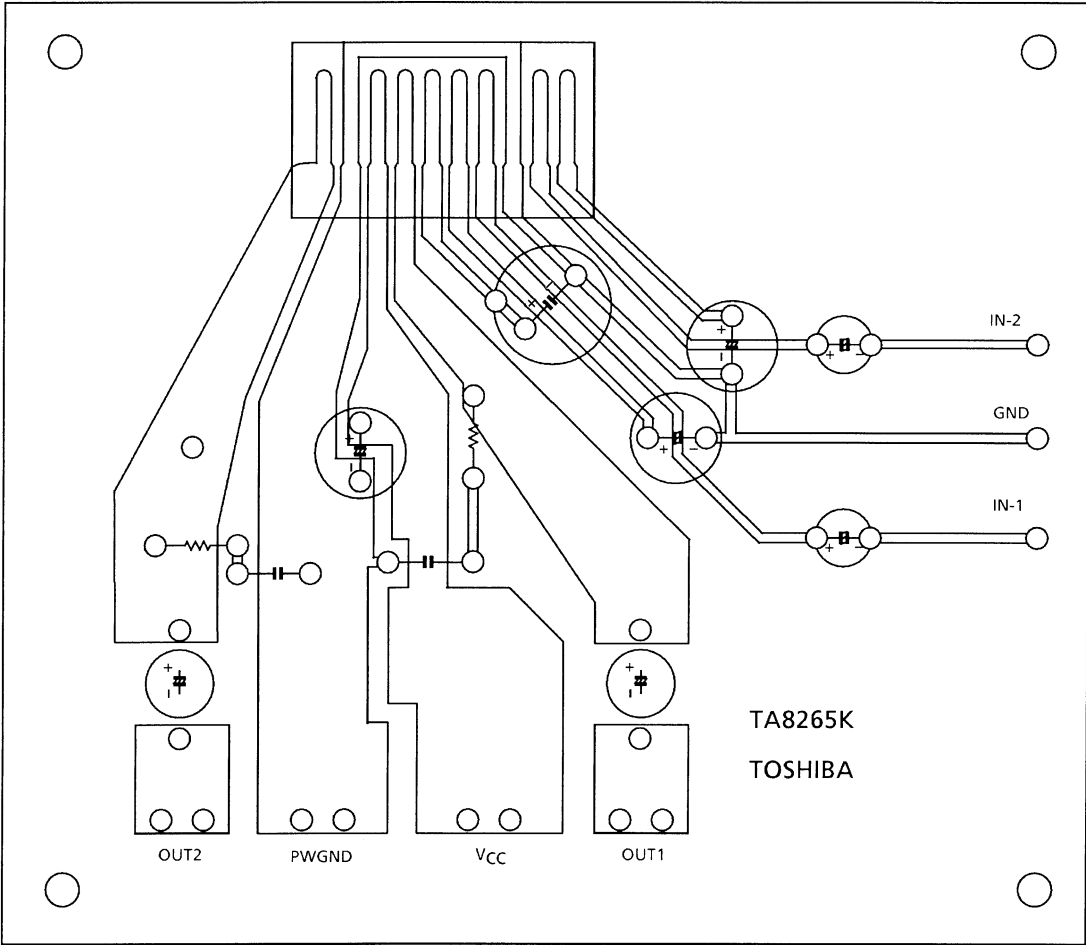


Figure 2

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 (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Supply voltage	V _{CC}	30	V
Output current (peak/ch)	I _{O (peak)}	2	A
Power dissipation	P _{D (Note)}	20	W
Operating temperature	T _{opr}	-20~75	°C
Storage temperature	T _{stg}	-55~150	°C

Note: Derated above Ta = 25°C in the proportion of 267 mW/°C.

Electrical Characteristics

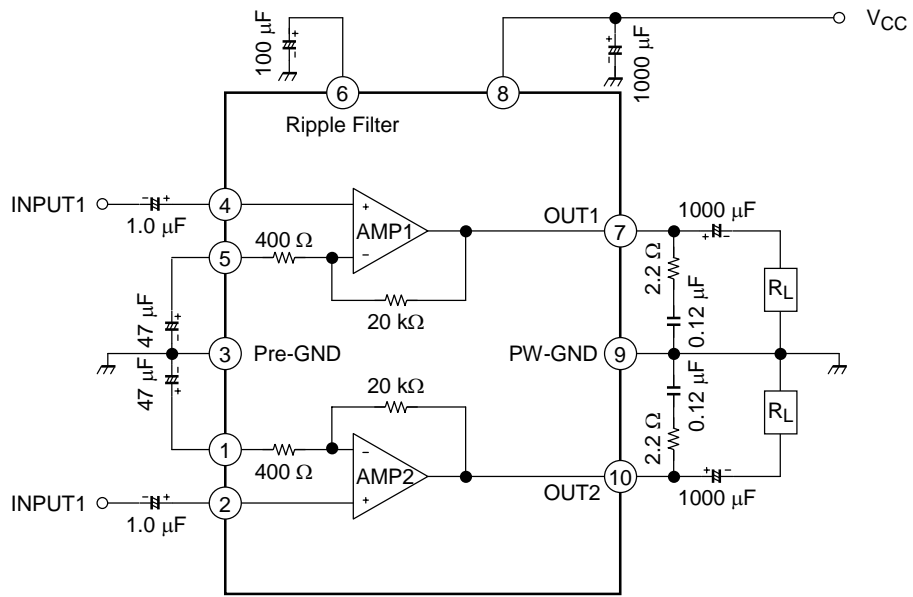
(Unless otherwise specified, V_{CC} = 20 V, R_L = 8 Ω, R_g = 600 Ω, f = 1 kHz, Ta = 25°C)

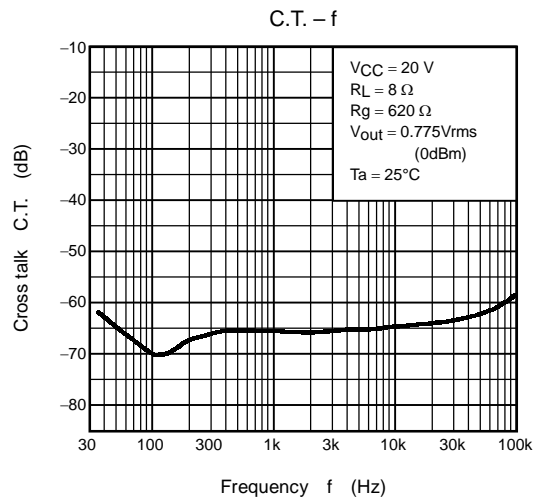
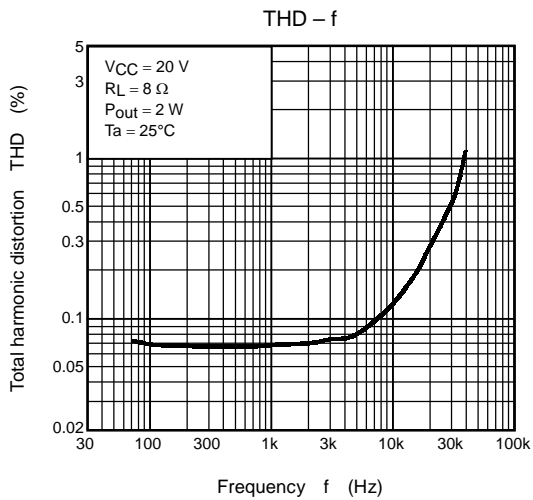
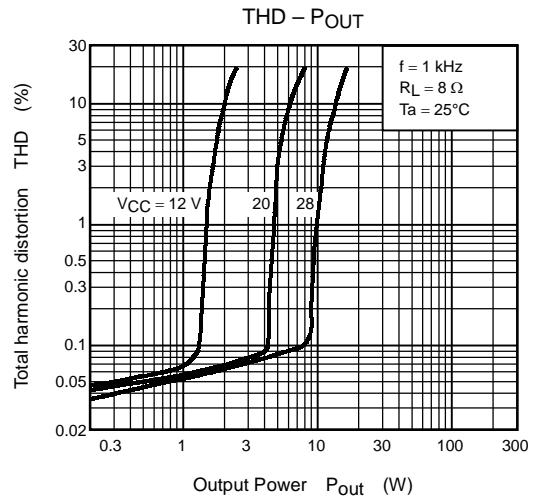
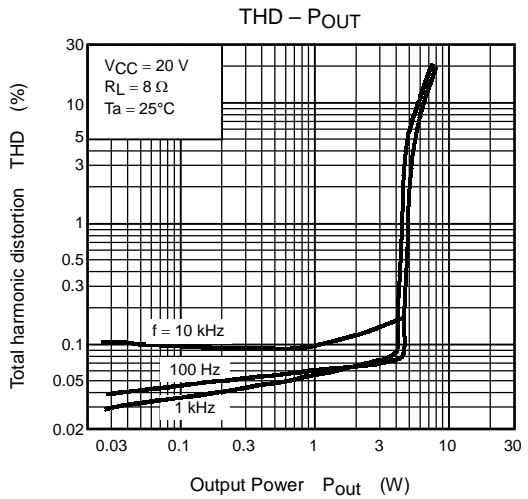
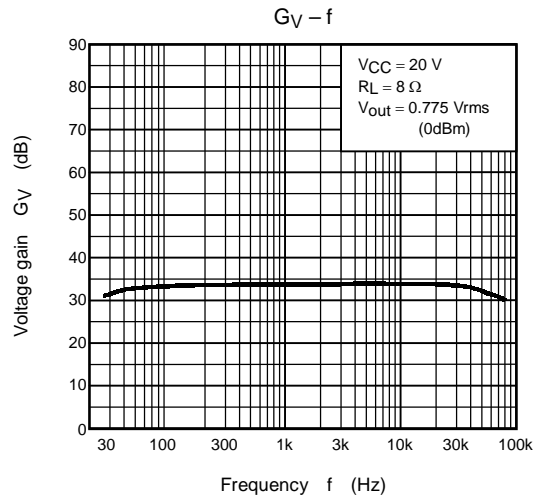
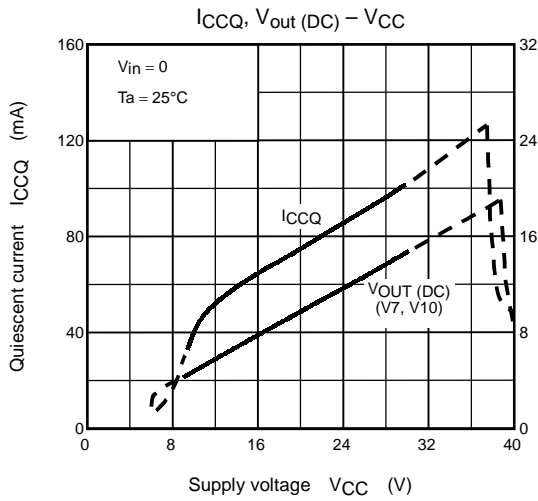
Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max	Unit
Quiescent current	I _{CCQ}	—	V _{in} = 0	—	75	130	mA
Output power	P _{out (1)}	—	THD = 10%	5.0	6.0	—	W
	P _{out (2)}	—	THD = 1%	—	4.5	—	
Total harmonic distortion	THD	—	P _{out} = 2 W	—	0.1	0.6	%
Closed loop voltage gain	G _V	—	V _{out} = 0.775 V _{rms} (0dBm)	32.5	34.0	35.5	dB
Cross talk	C.T.	—	V _{out} = 0.775 V _{rms} (0dBm)	—	-65	—	dB
Input resistance	R _{IN}	—	—	—	30	—	kΩ
Ripple rejection ratio	R.R.	—	R _g = 10 kΩ, f _{ripple} = 100 Hz V _{ripple} = 0.775 V _{rms} (0dBm)	-45	-57	—	dB
Output noise voltage	V _{no}	—	R _g = 10 kΩ, BW = 20 Hz~20 kHz	—	0.14	0.3	mV _{rms}

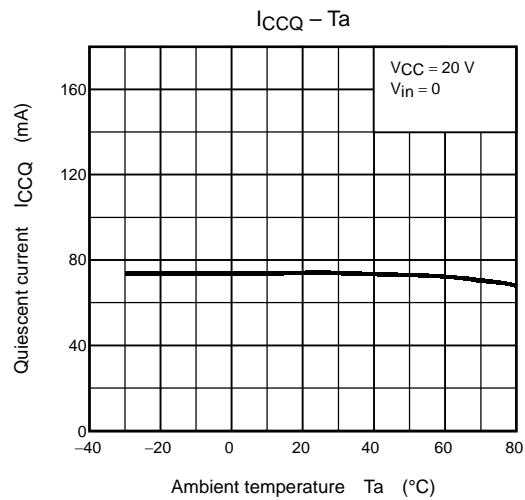
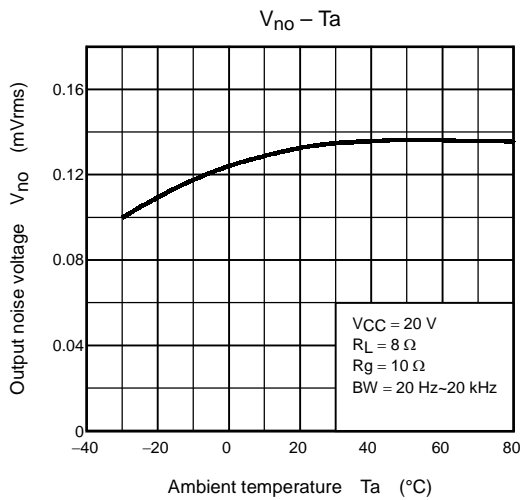
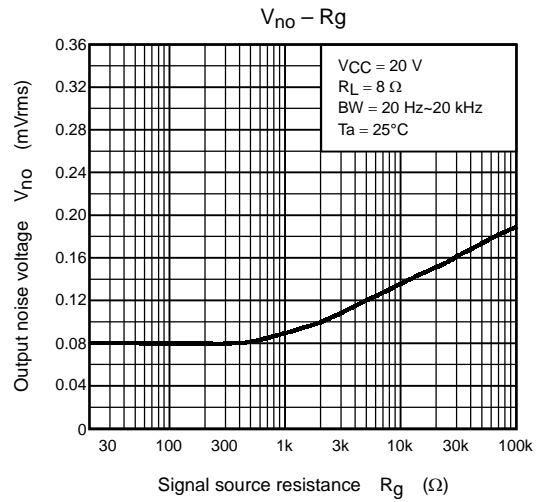
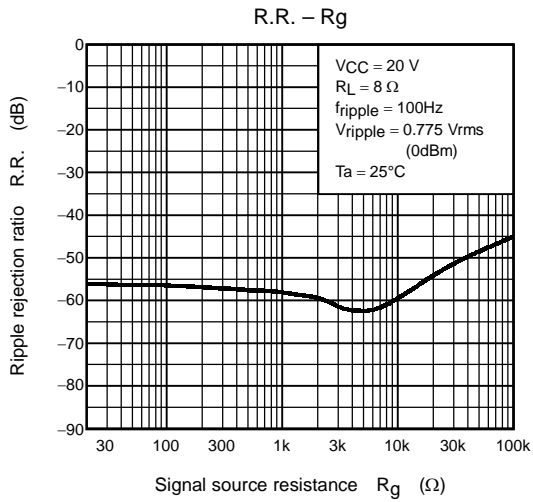
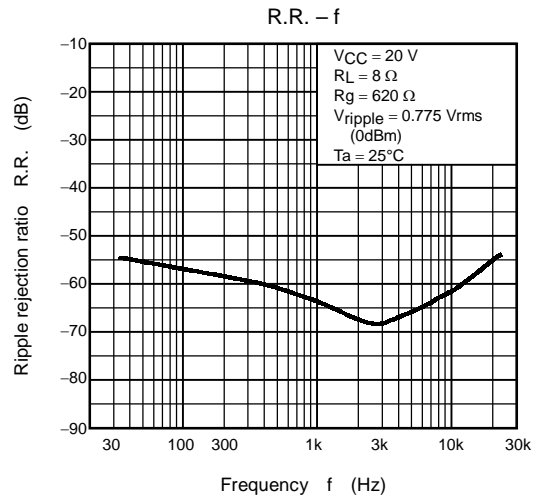
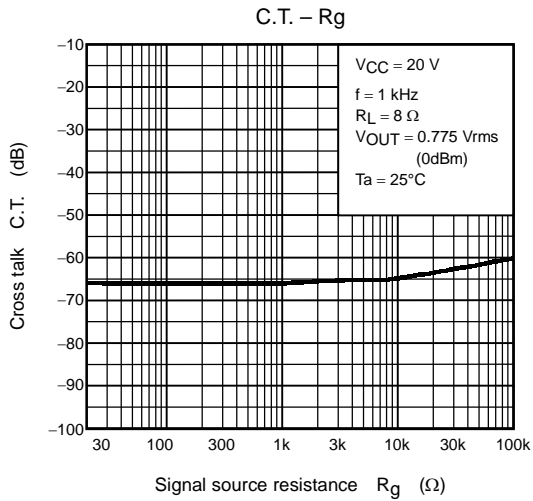
Typ. DC Voltage of Each Terminal (V_{CC} = 20 V, Ta = 25°C)

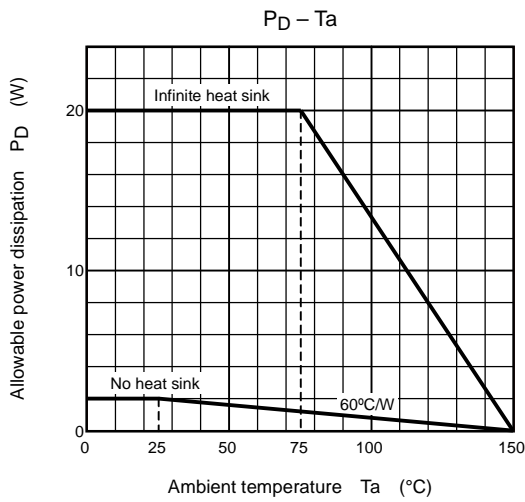
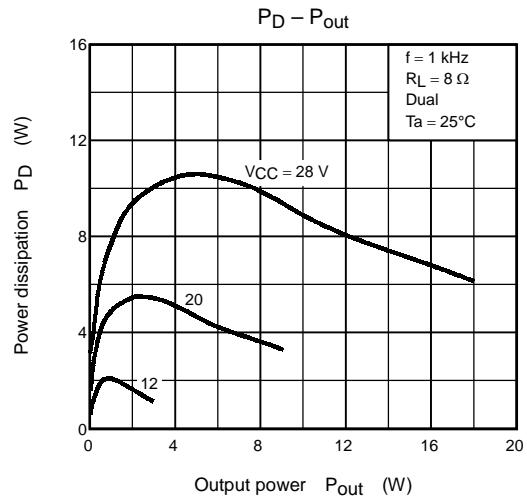
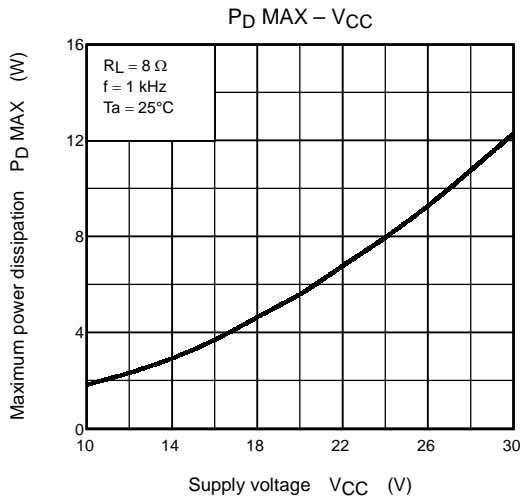
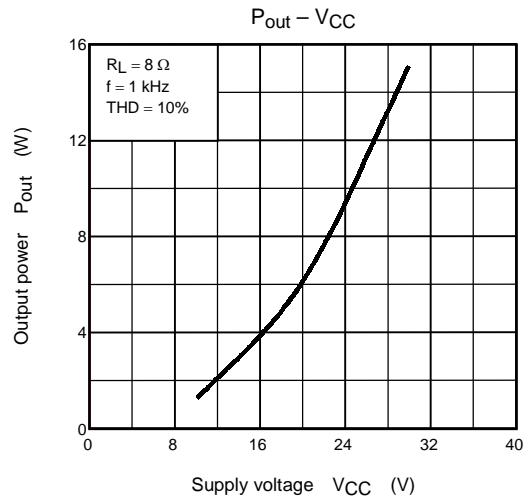
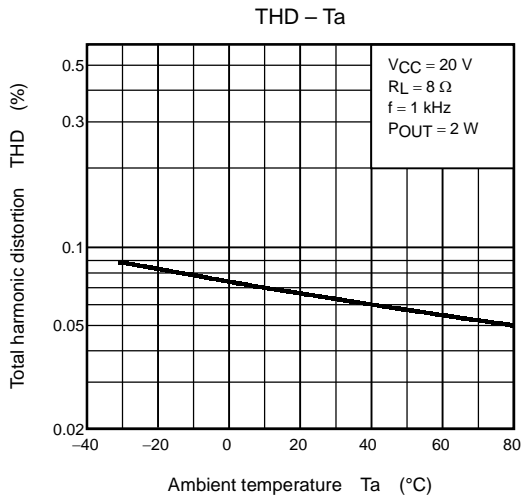
Terminal No.	1	2	3	4	5	6	7	8	9	10
DC voltage (V)	2.1	2.25	GND	2.25	2.1	6.8	9.8	V _{CC}	GND	9.8

Test Circuit





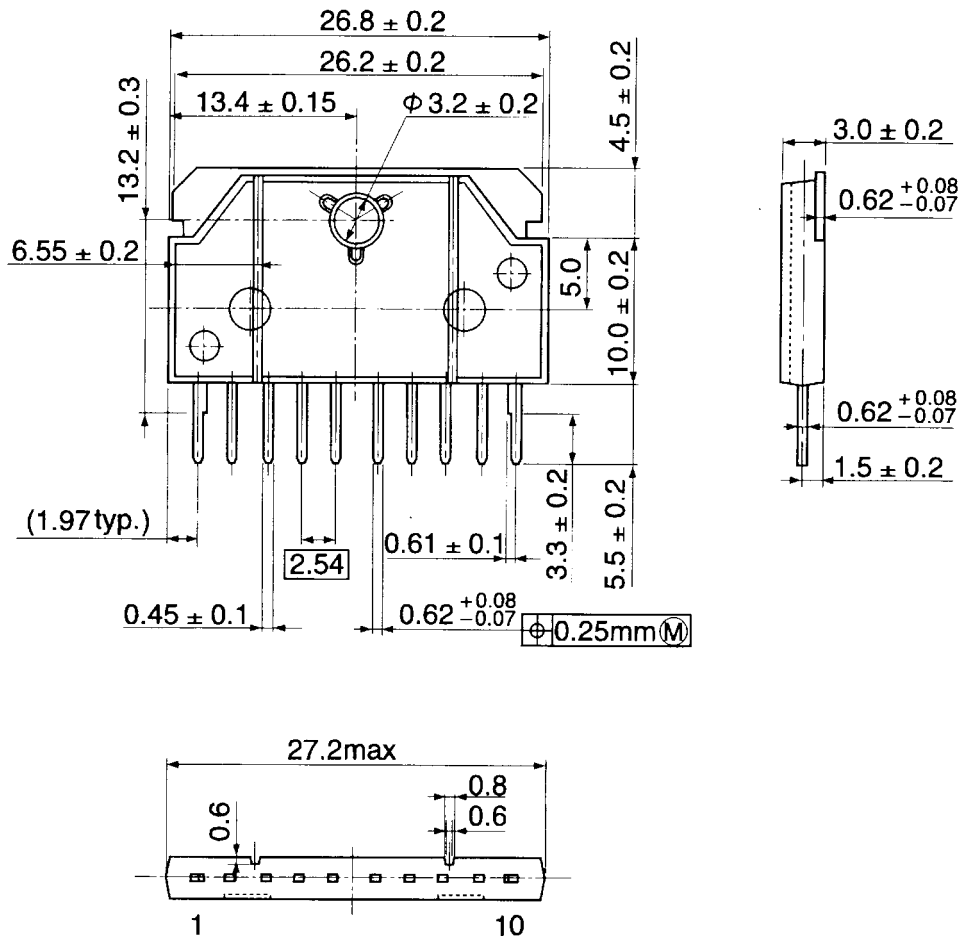




Package Dimensions

HSIP10-P-2.54C

Unit : mm



Weight: 3.15 g (typ.)

RESTRICTIONS ON PRODUCT USE

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