

Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		26.4	V
Recommended load resistance	R_L		8	Ω
Operating supply voltage range	$V_{CC\text{ op}}$		10 to 30	V

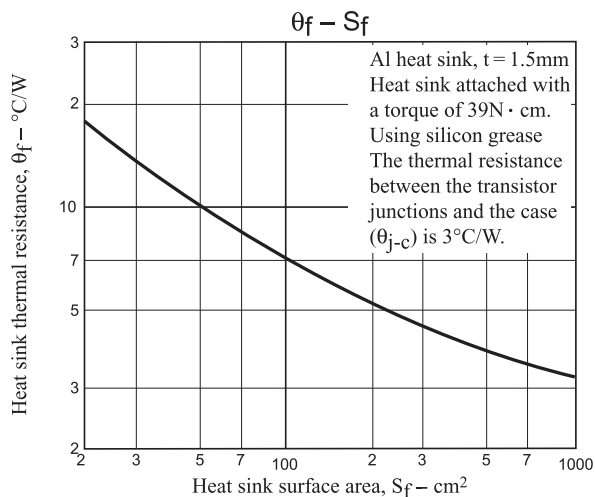
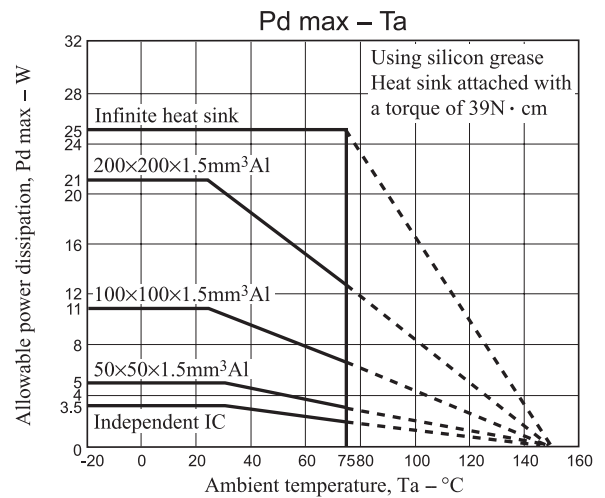
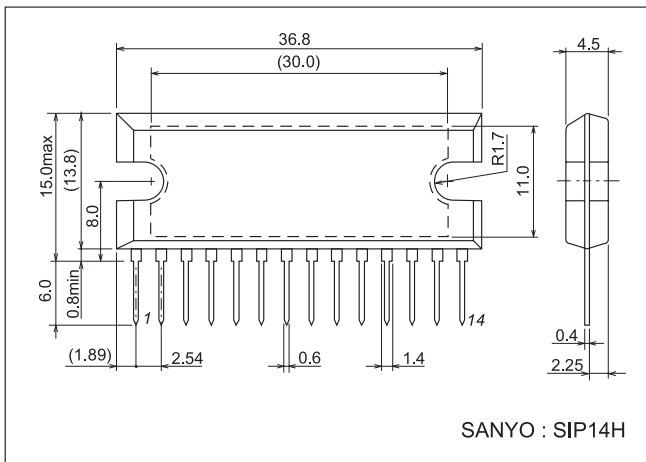
Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = 26.4\text{V}$, $R_L = 8\Omega$, $f = 1\text{kHz}$, $R_g = 600\Omega$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Standby current	I_{st}	Standby switch off		1	30	μA
Quiescent current	I_{CCO}	$R_g = 0$	50	80	140	mA
Output power	P_{O1}	THD = 10%	10	12		W
	P_{O2}	THD = 10%, $R_L = 4\Omega$		20		W
Voltage gain	V_G	$V_O = 0\text{dBm}$	49	51	53	dB
Total harmonic distortion	THD	$P_O = 1\text{W}$		0.07	0.4	%
Output noise voltage	V_{NO}	$R_g = 0$, BPF-BW = 20Hz to 20kHz		0.4	1.0	mV
Ripple exclusion ratio	SVRR	$R_g = 0$, $f_R = 100\text{Hz}$, $V_R = 0\text{dBm}$	45	55		dB
Channel separation	CHsep	$V_O = 0\text{dBm}$, $R_g = 10\text{k}\Omega$	45	55		dB
Standby control voltage	V_{st}	With a $10\text{k}\Omega$ resistor connected at pin 12	2.5		V_{CC}	V

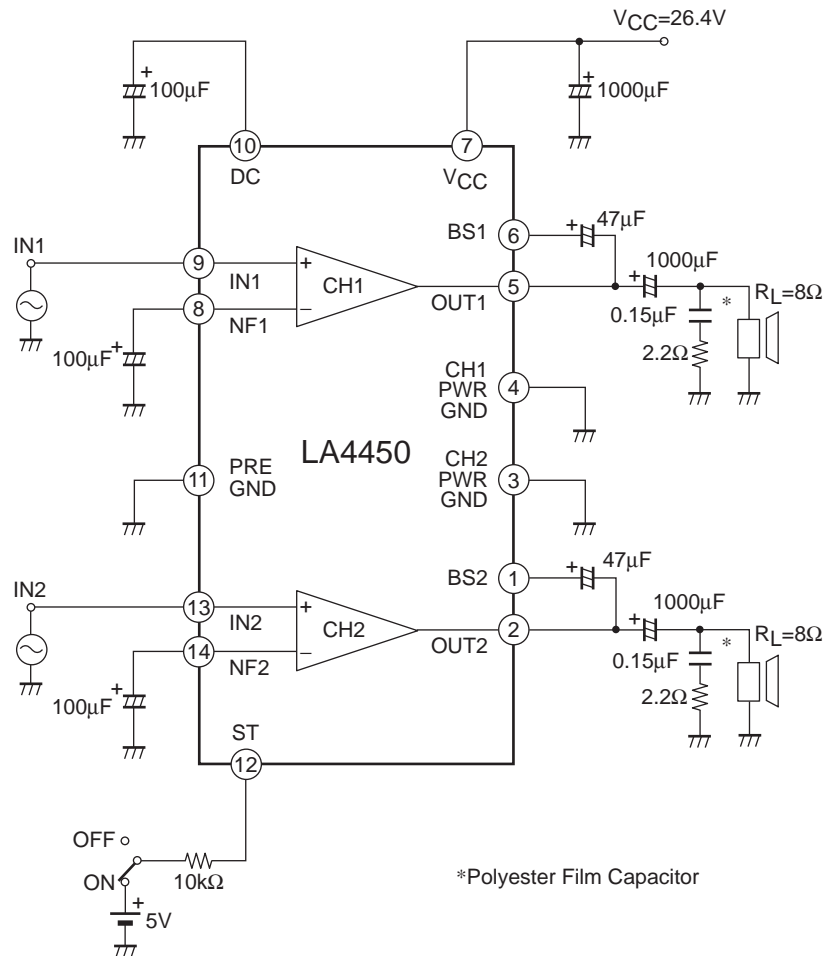
Package Dimensions

unit : mm (typ)

3023B

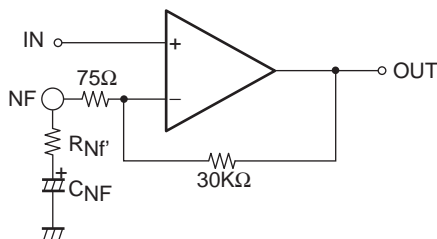


Test Circuit



1. Features and Usage Notes

- Pin 12 is the standby pin. The IC operates when a voltage of 2V or higher is applied through the external resistor R1. Note that the maximum influx current to pin 12 is 500µA.
- Changing the voltage gain



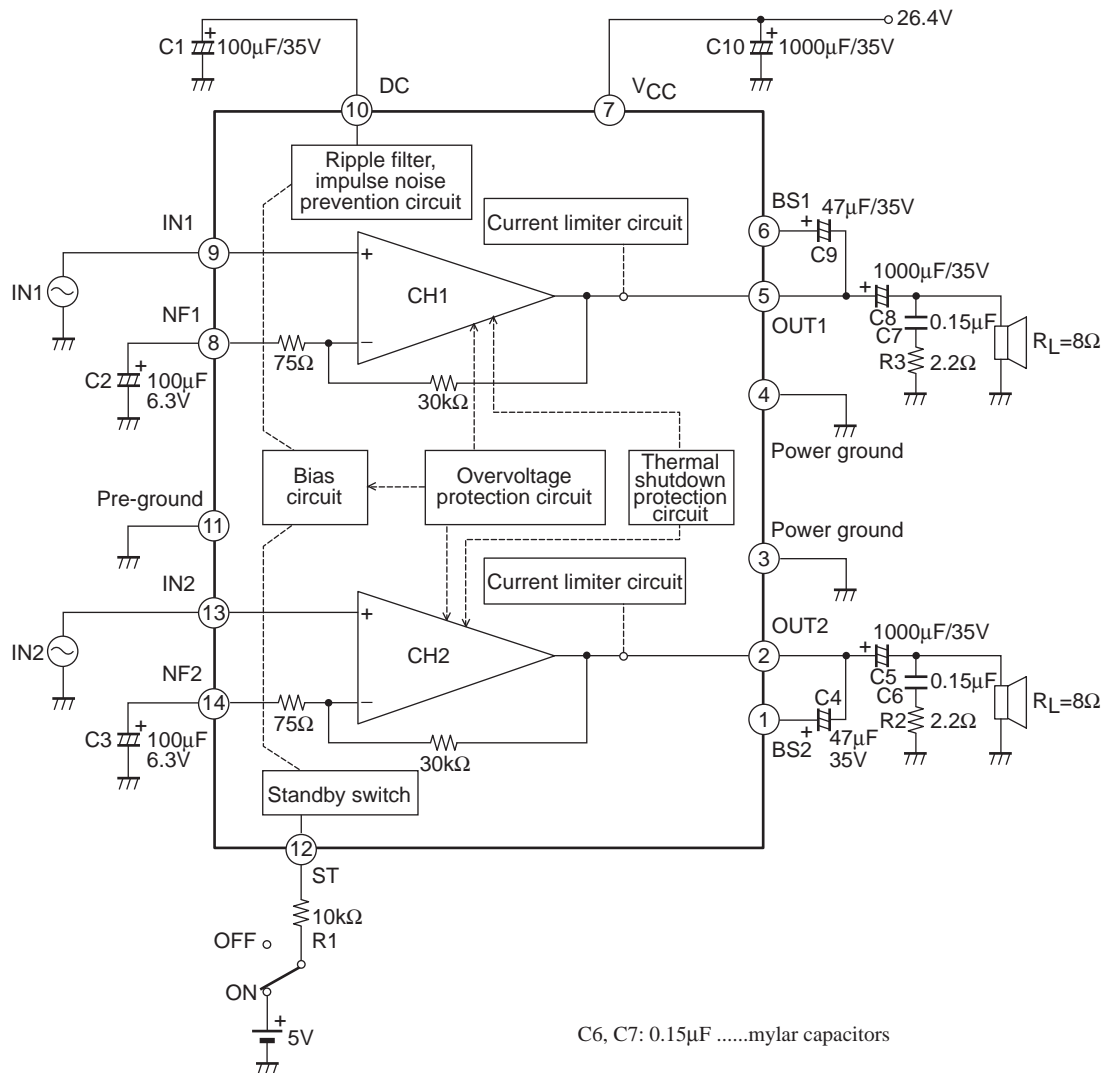
The voltage gain VG can be lowered by connecting an external resistor in series between the NF pin (pins 8 and 14) and CNF.

$$VG = 20 \log \frac{30k\Omega}{75 + R_{NF}}$$

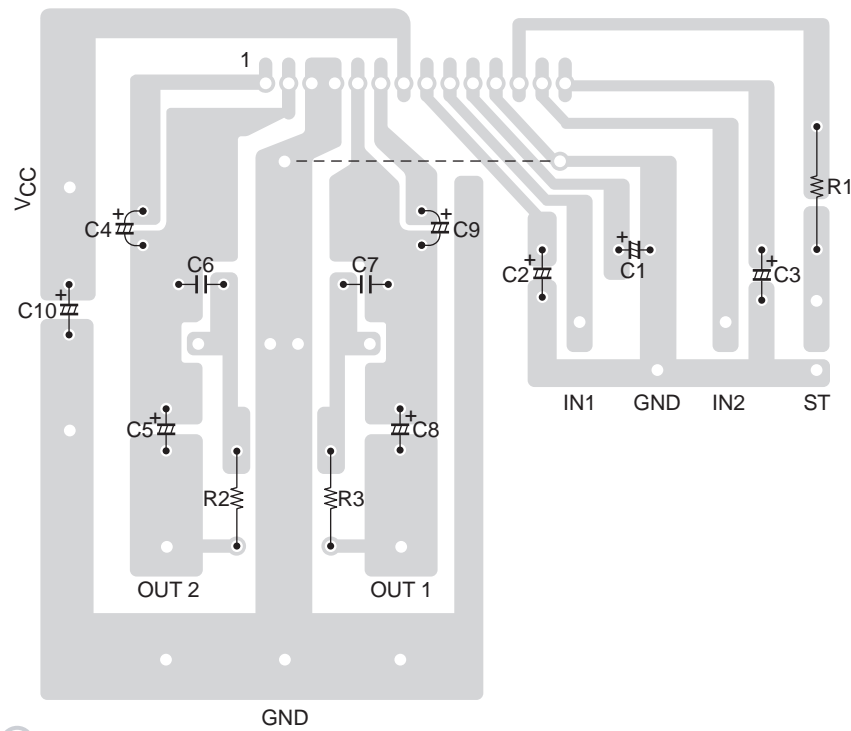
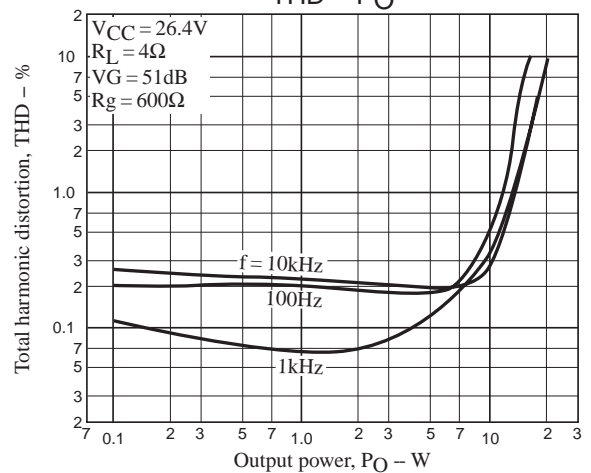
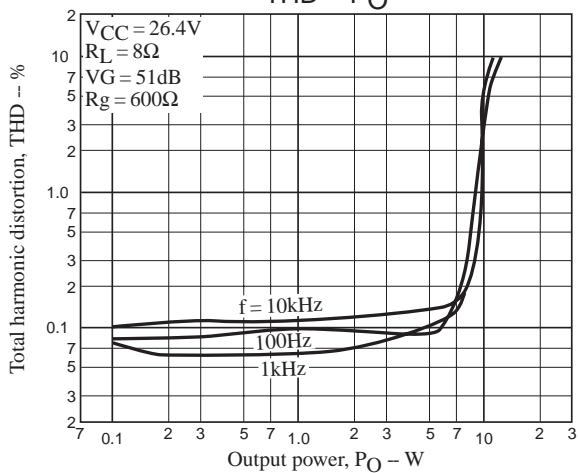
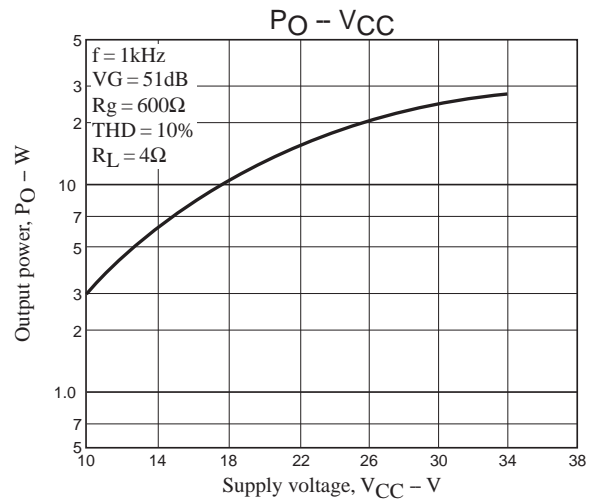
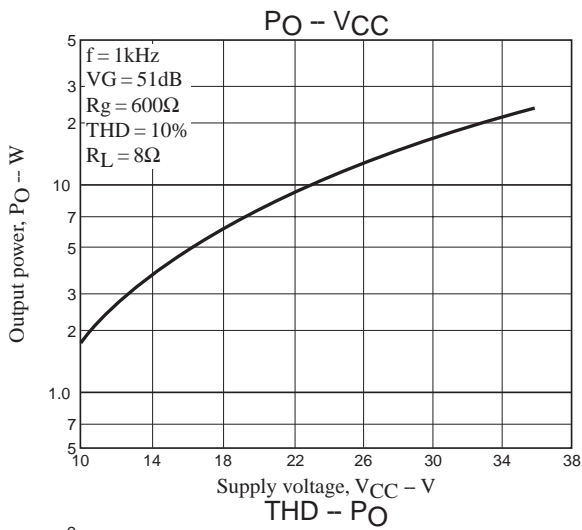
However, since the IC may oscillate if VG is 30dB or lower, use a VG of 36dB or higher.

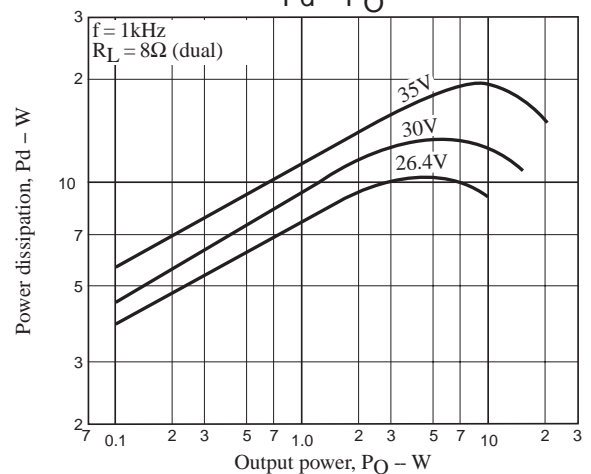
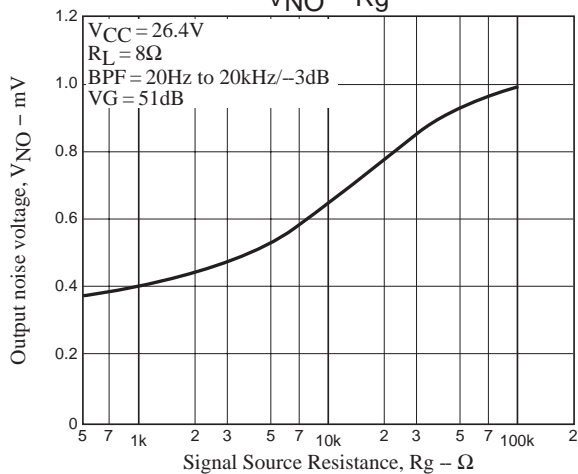
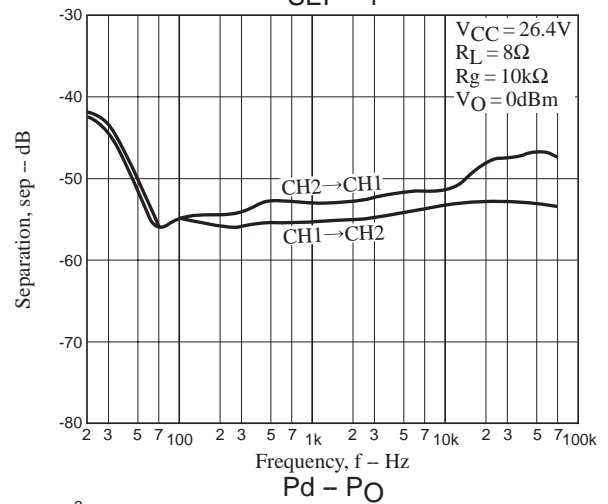
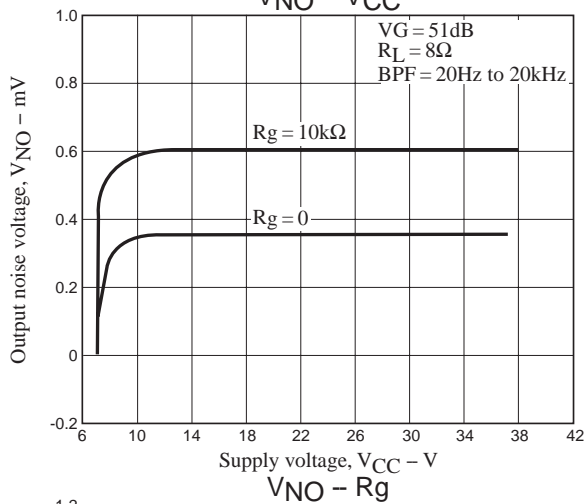
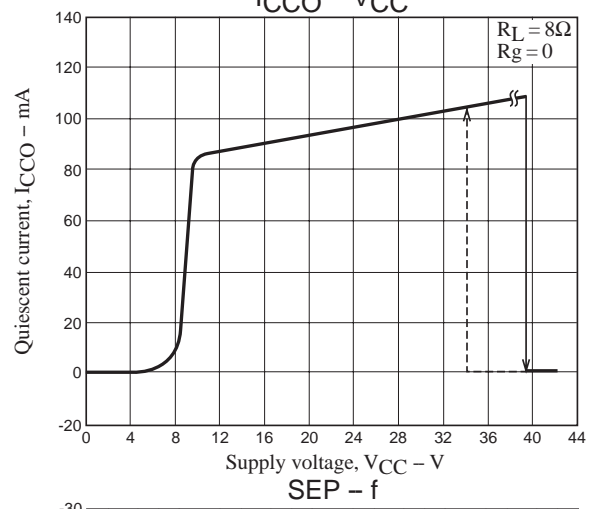
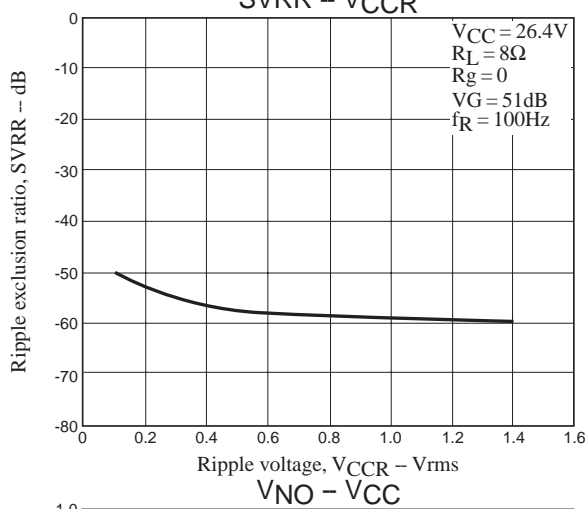
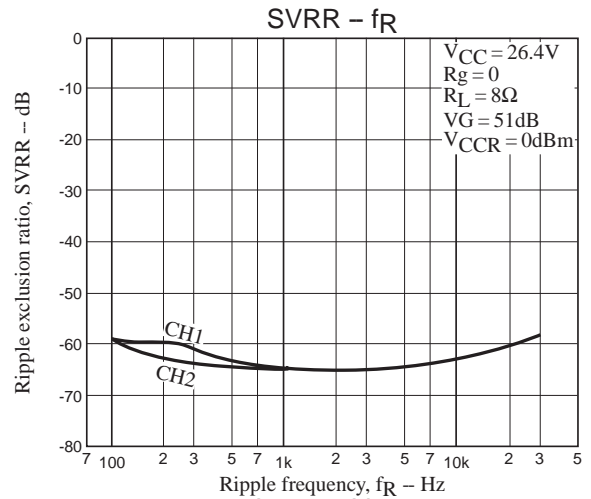
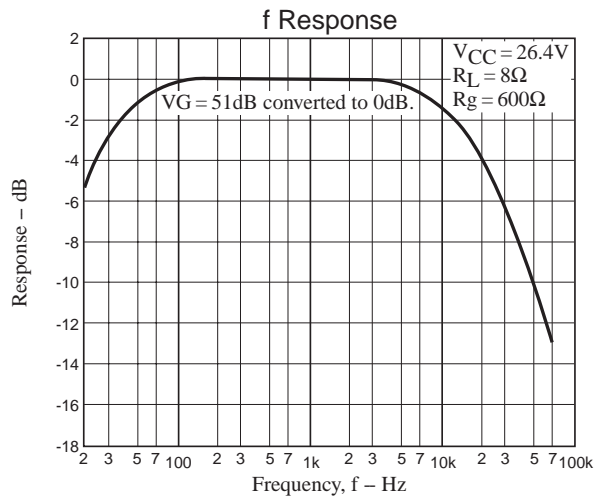
- The LA4450 includes a thermal protection circuit to prevent damage to or destruction of the IC due to abnormal overheating. As a result, the output may be attenuated or cut off if the application heat sinking is inadequate.
- The LA4450 includes an overvoltage protection circuit to protect the IC against power supply surges and abnormal voltages. This circuit has hysteresis characteristics : it operates at between 39 and 40V, and recovers at around 34V.
- Although the LA4450 includes a current limiter circuit to prevent damage due to abnormal currents, care must still be exercised to prevent load shorts and other excessive current conditions.

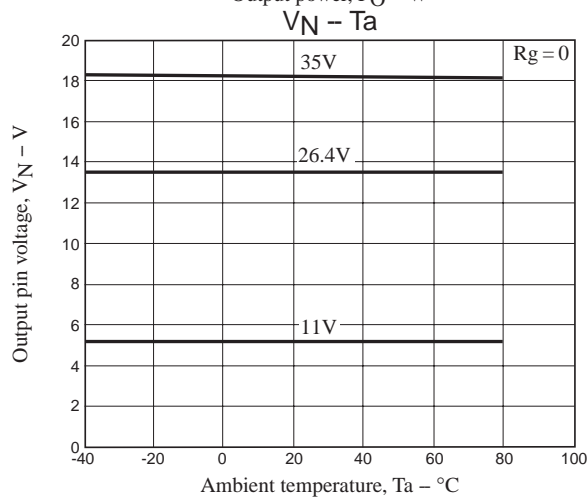
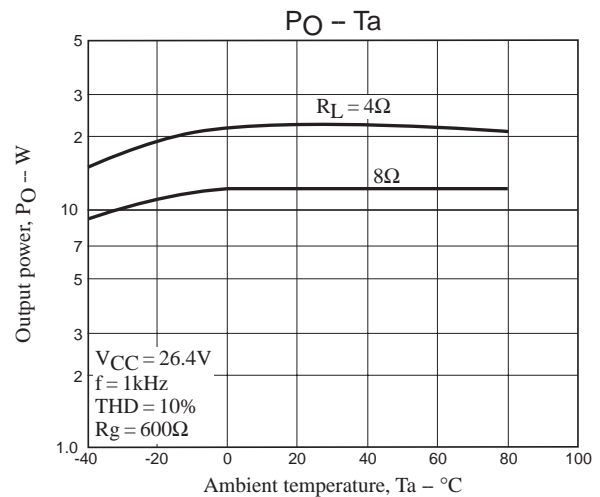
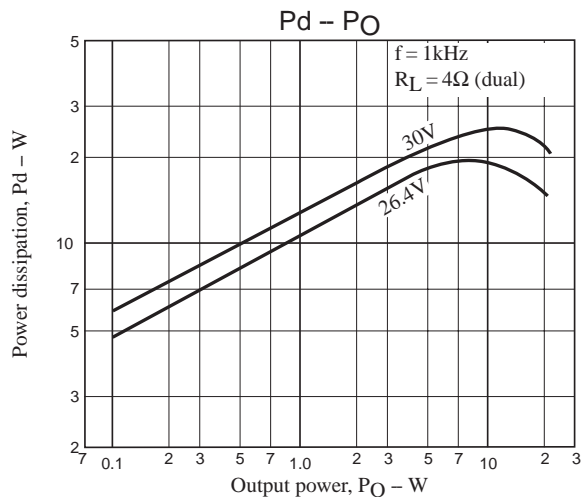
Application Circuit Example



Printed Circuit Board Pattern Example

Copper foiled side 90x100mm²





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