

Dual Low-Voltage Power Amplifier

The PJ2822M is a monolithic integrated circuit in 8 lead Minidip package.It is intended for use as dual audio power amplifier in portable cassette player and radios.

FEATURES

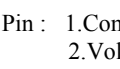
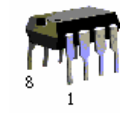
- Supply Voltage Down to 1.8V
- Low Crossover Distorsion
- Low Quiescent Current
- Bridge or Stereo Configuration

ORDERING INFORMATION

Device	Operating Temperature	Package
PJ2822MCD	-20℃ ~ +85℃	DIP-8
PJ2822MCS		SOP-8

DIP-8

SOP-8



Pin : 1.Compensation 5.Gnd
2.Voltage Feedback 6.Output
3.Current Sense 7.Vcc
4.RT/CT 8.Vref

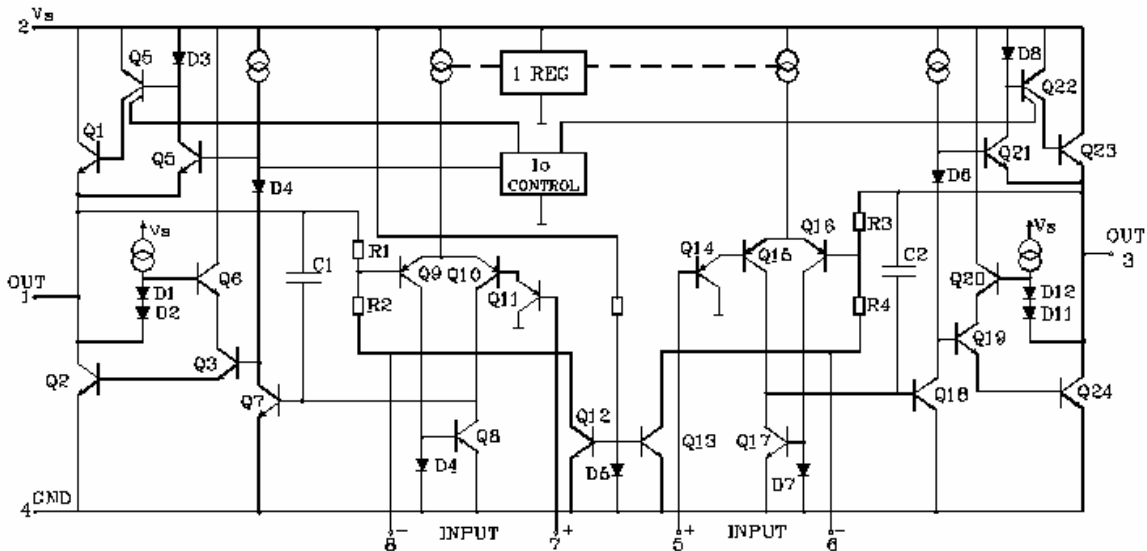
ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unite
Supply Voltage	Vs	16	V
Peak Output Current	Io	1	A
Total Power Dissipation at Tamb = 50℃ Tcase = 50℃	Ptot	1	W
		1.4	W
Storage and Junction Temperature	Tstg,Tj	-40 ~ +150	℃

THERMAL DATA

Parameter	Symbol	Value	Unite
Thermal Resistance Junction-ambient	Rthj-amb	100	℃/W
Thermal Resistance Junction-pin(4)	Rthj-case	70	℃/W

SCHEMATIC DIAGRAM



Dual Low-Voltage Power Amplifier

ELECTRICAL CHARACTERISTICS (Vs=6V, Tamb=25°C, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
STEREO (test circuit of Figure 1)						
Supply Voltage	Vs		1.8		15	V
Quiescent Output Voltage	Vo	Vs = 3V		2.7 1.2		V V
Quiescent Drain Current	Id			6	9	mA
Input Bias Current	Ib			100		nA
Output Power (each channel) (f=1KHz, d=10%)	Po	RL = 32 Ω Vs = 9V Vs = 6V Vs = 4.5V Vs = 3V Vs = 2V RL = 16 Ω Vs = 6V RL = 8 Ω Vs = 9V Vs = 6V RL = 4 Ω Vs = 6V Vs = 4.5V Vs = 3V	90 15 170 300 450	300 120 60 20 5 220 1000 380 650 320 110		mW
Distortion (f=1KHz)	d	RL = 32 Ω Po = 40mW RL = 16 Ω Po = 75mW RL = 8 Ω Po = 150mW		0.2 0.2 0.2		% % %
Close Loop Voltage Gain	Gv	F =1KHz	36	39	41	dB
Channel Balance	△Gv				±1	dB
Input Resistance	Ri	F =1KHz	100			K Ω
Total Input Noise	θN	Rs = 10K Ω B = Curve A B =22Hz to 22KHz		2 2.5		μV μV
Supply Voltage Rejection	SVR	F =100Hz, C1 = C2 = 100 μ F	24	30		dB
Channel Separation	Cs	F =1KHz		50		dB

BRIDGE(test circuit of Figure 2)

Supply Voltage	Vs		1.8		15	V
Quiescent Drain Current	Id	RL = ∞		6	9	mA
Output Offset Voltage (between the outputs)	Vos	RL = 8 Ω			+/-50	mV
Input Bias Current	Ib			100		nA
Output Bias Current	Po	RL = 32 Ω Vs = 9V Vs = 6V Vs = 4.5V Vs = 3V Vs = 2V RL = 16 Ω Vs = 9V Vs = 6V Vs = 3V RL = 8 Ω Vs = 6V Vs = 4.5V Vs = 3V RL = 4 Ω Vs = 4.5V Vs = 3V Vs = 2V	320 50 900 200	1000 400 200 65 8 2000 800 120 1350 700 220 1000 350 80		mW
Output Power (f=1KHz,d=10%)	d	Po =0.5W, RL = 8 Ω, f=1KHz		0.2		%
Closed Loop Voltage Gain	Gv	F =1KHz		39		dB
Input Resistance	Ri	F =1KHz	100			K Ω
Total Input Noise	eN	Rs =10K Ω B =Curve A B = 22Hz to 22KHz		2.5 3		μV μV
Supply Voltage Rejection	SVR	F =100Hz		40		dB
Power Bandwidth (-3dB)	B	RL = 8 Ω, Po =1W		120		KHz

Figure 1. TEST CIRCUIT (Stereo)

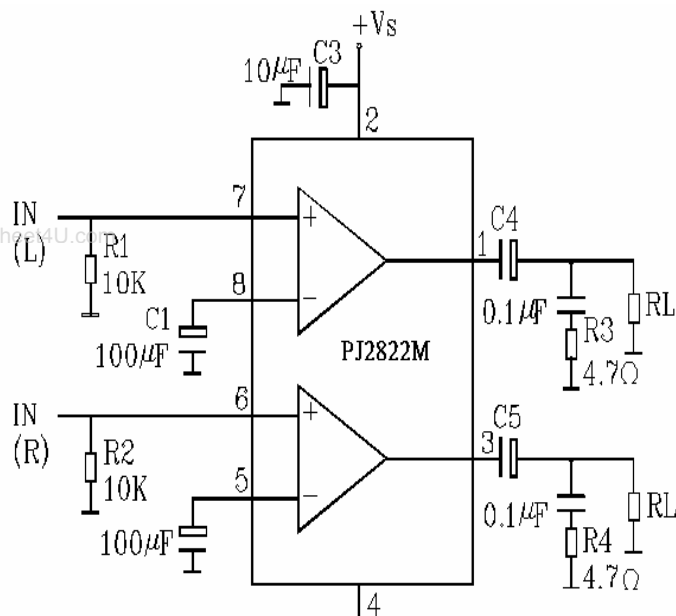


Figure 2. TEST CIRCUIT (Bridge)

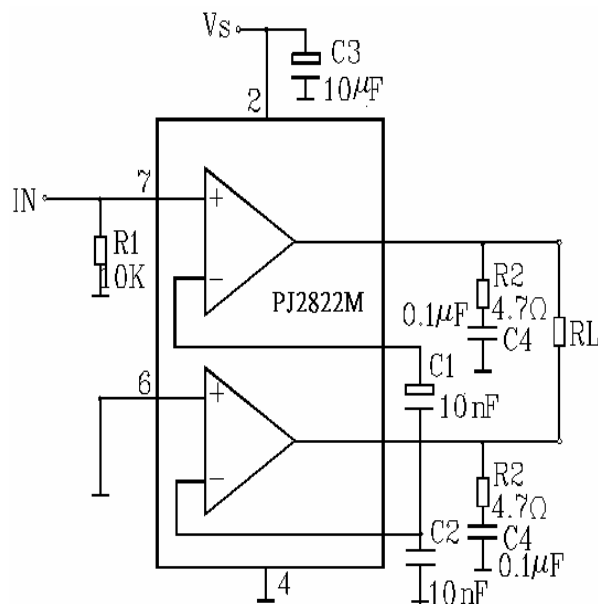


Figure 3. TYPICAL APPLICATION IN PORTABLE PLAYERS

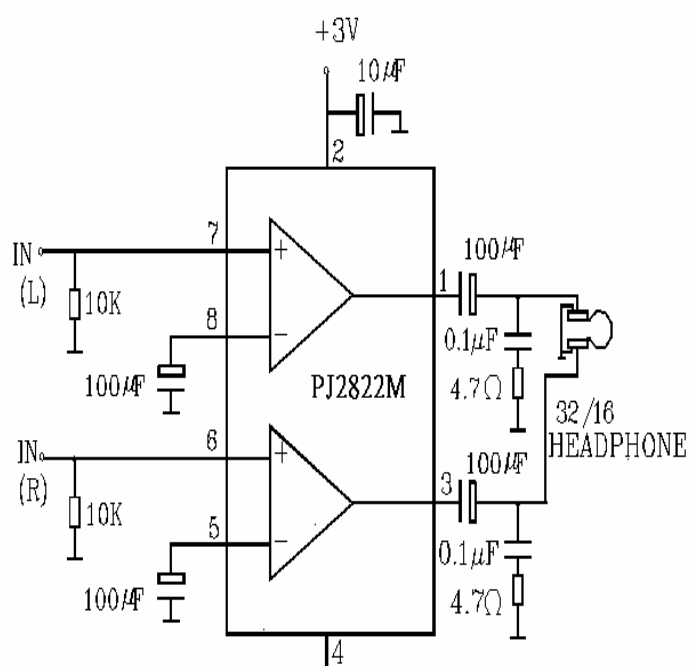


Figure 4. LOW COST APPLICATION IN PORTABLE PLAYERS
(using only one 100 μ F output capacitor)

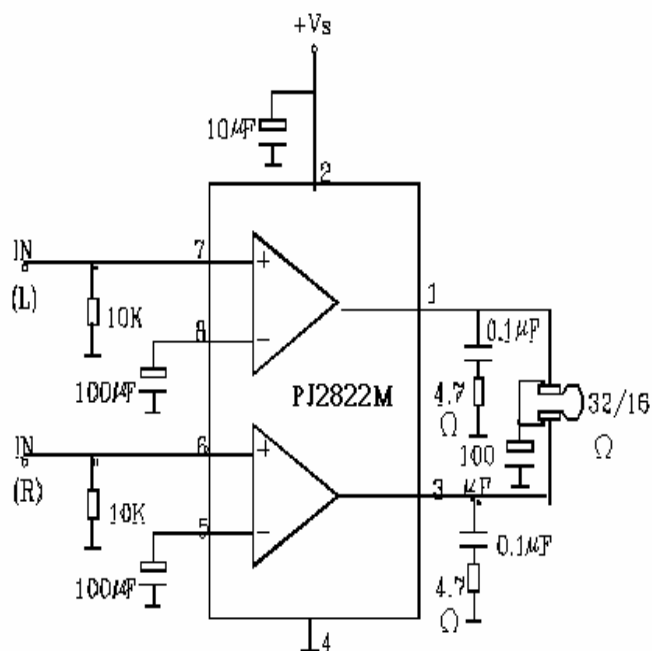
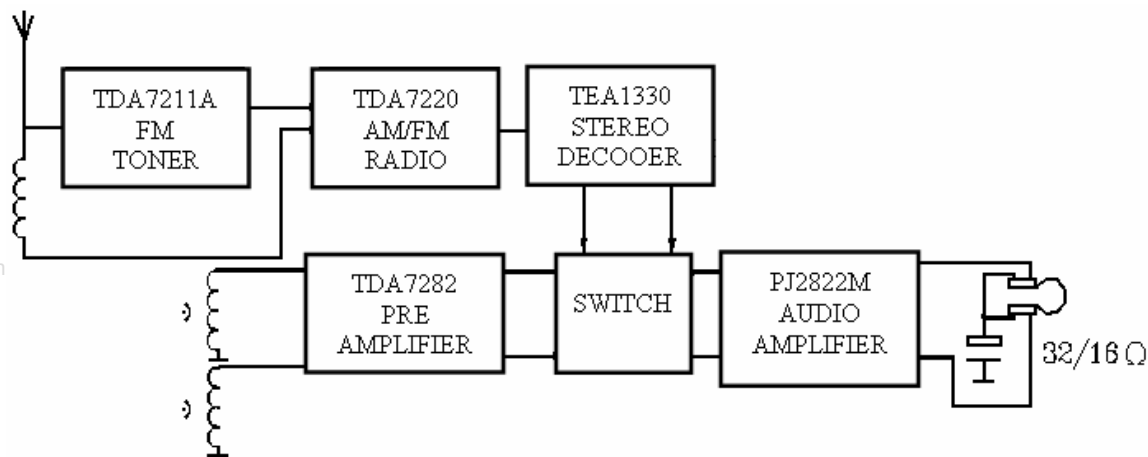
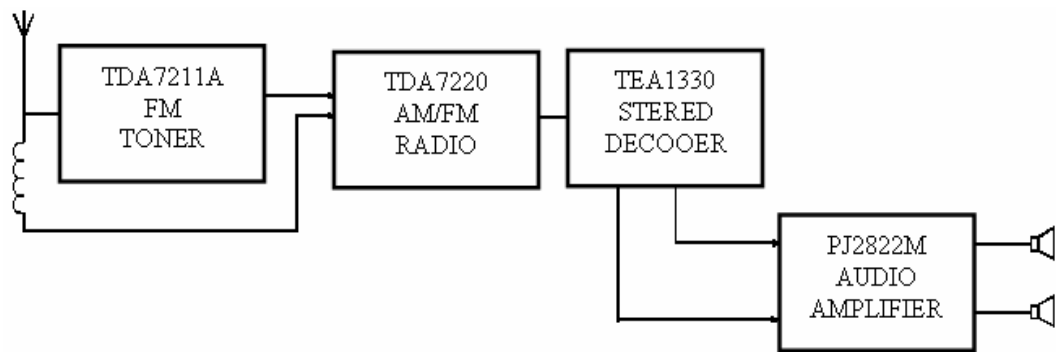


Figure 5. PORTABLE RADIO CASSETTE PLAYERS



Type	Supply Voltage
TDA7220	1.5V to 6V
TDA7211A	1.2V to 6V
TEA1330	3V to 6V
TDA7282	1.5V to 6V
PJ2822M	1.8V to 6V

Figure 6. PORTABLE STEREO RADIO



Type	Supply Voltage
TDA7220	1.5V to 6V
TDA7211A	1.2V to 6V
TEA1330	3V to 6V
PJ2822M	1.8V to 6V

Figure 7. APPLICATION IN PORTABLE RADIO RECEIVERS

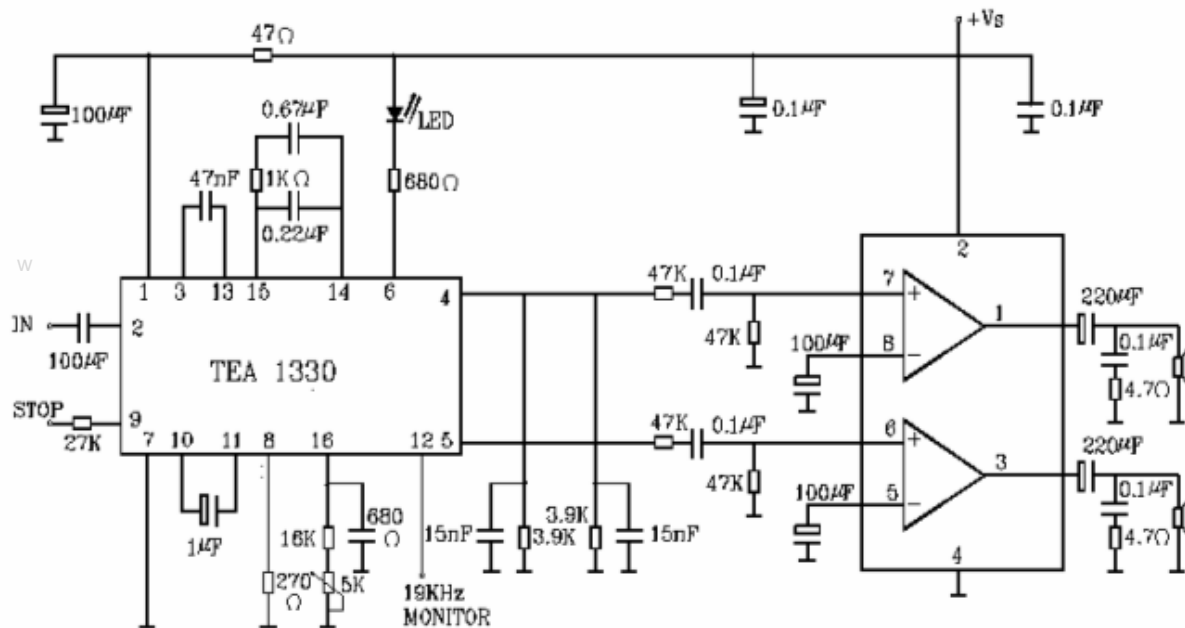


Figure 8. 3V STEREO CASSETTE PLAYER WITH MOTOR SPEED CONTROL

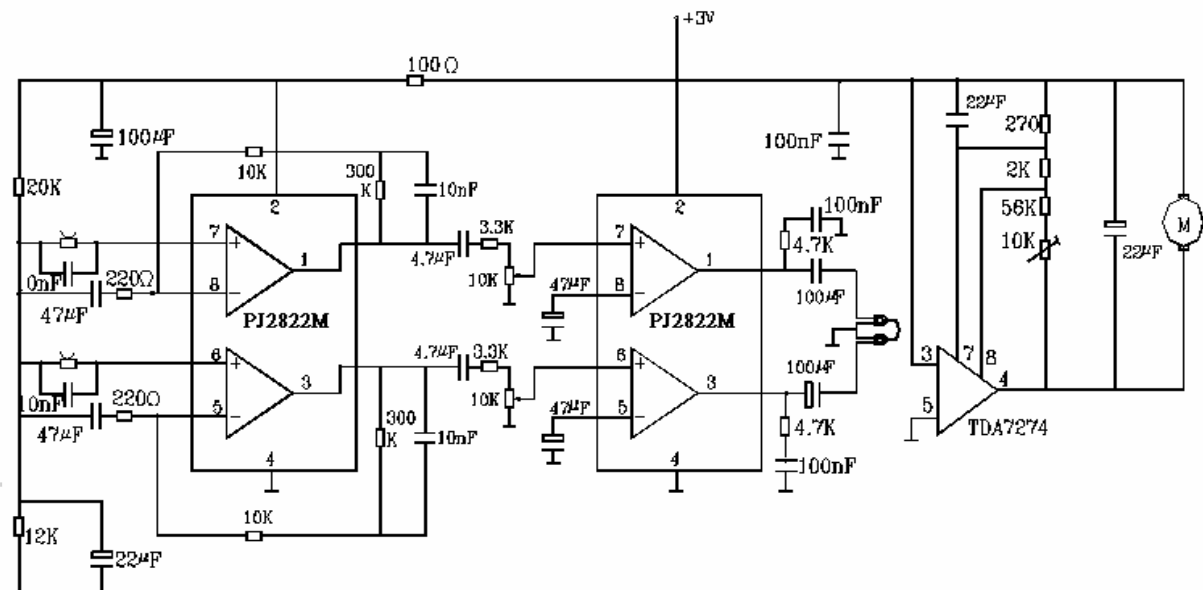


Figure 9. Quiescent Current versus Supply Voltage

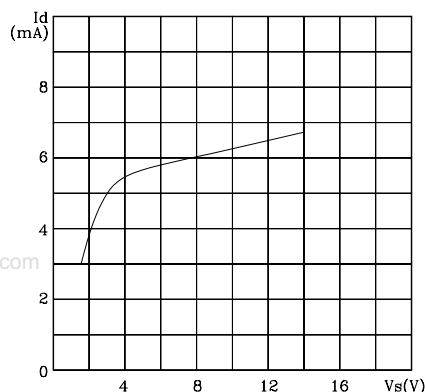


Figure 10. Supply Voltage Rejection versus Frequency

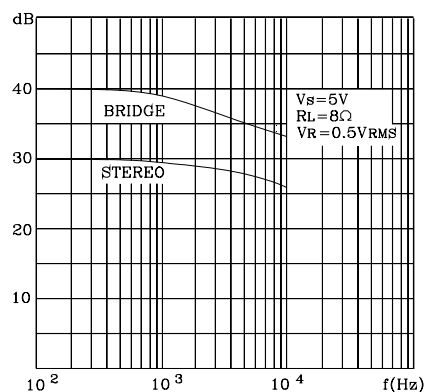


Figure 11. Output Power versus Supply Voltage
(THD=10%, f=1KHz Stereo)

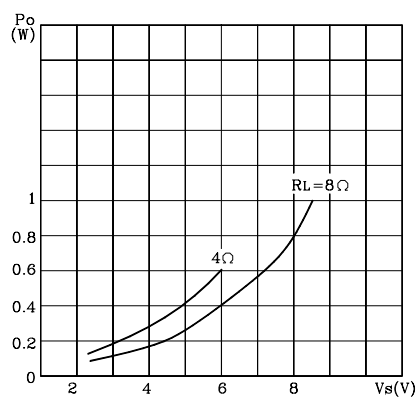


Figure 12. Distorsion versus Output Power (Stereo)

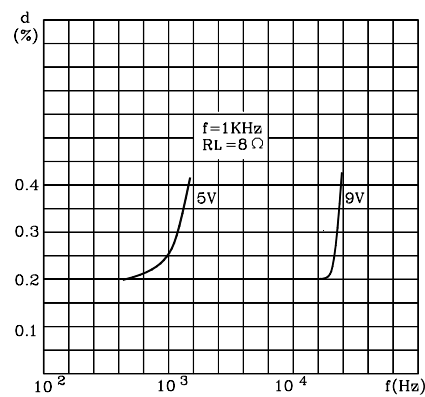


Figure 13. Distorsion versus Output Power (Stereo)

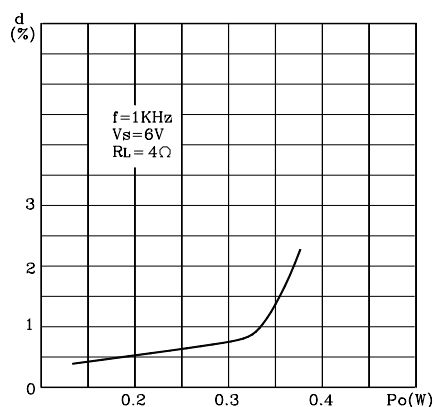


Figure 14. Output Power versus Supply Voltage (Bridge)

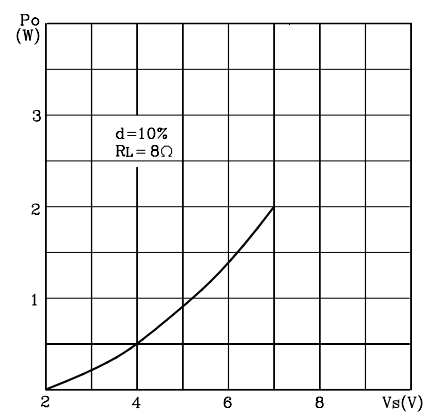


Figure 15. Distorsion versus Output Power (Bridge)

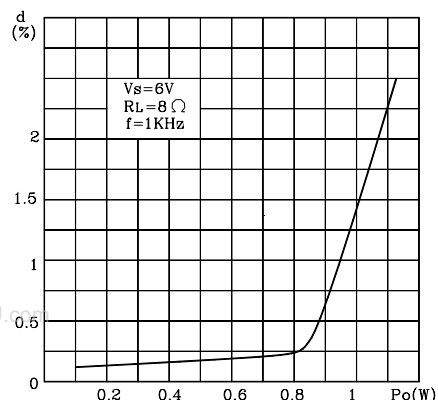


Figure 16. Total Power Dissipation versus Output Power (Bridge)

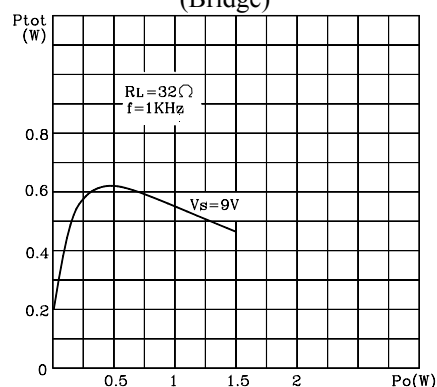


Figure 17. Total Power Dissipation versus Output Power (Bridge)

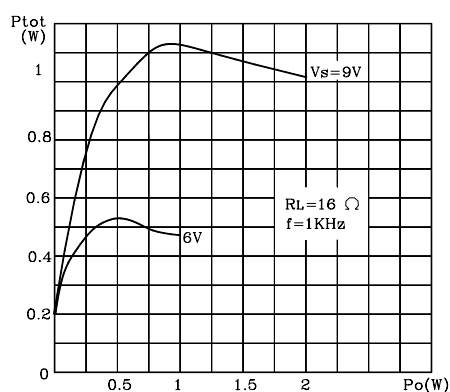


Figure 18. Total Power Dissipation versus Output Power (Bridge)

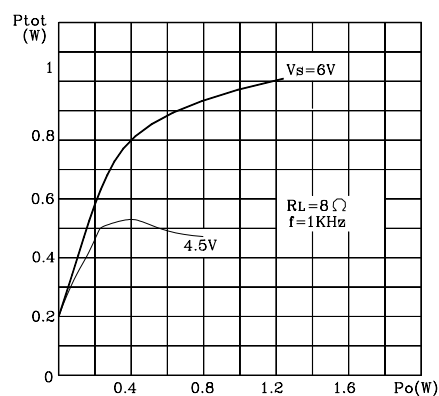
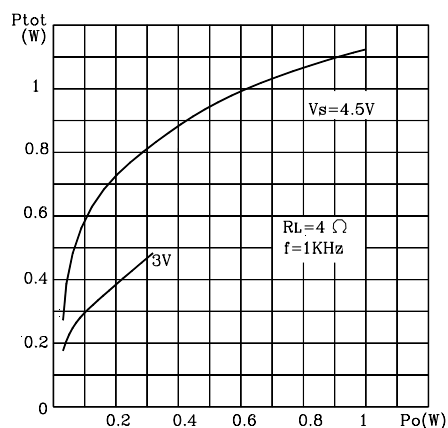
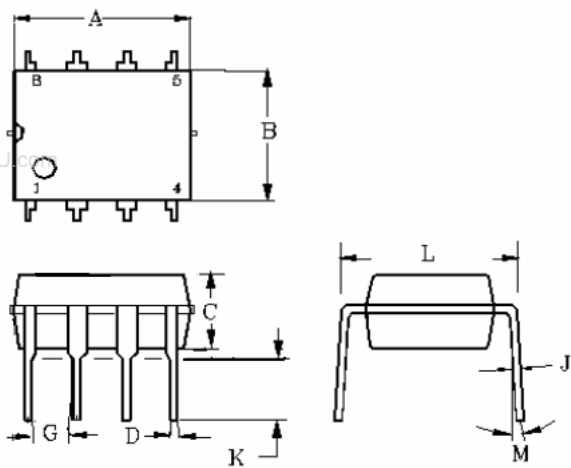


Figure 19. Total Power Dissipation versus Output Power (Bridge)



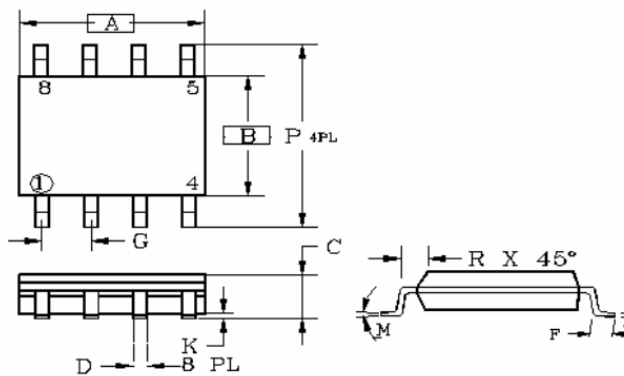
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DIP-8



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.07	9.32	0.357	0.367
B	6.22	6.48	0.245	0.255
C	3.18	4.43	0.125	0.135
D	0.35	0.55	0.019	0.020
G	2.54BSC		0.10BSC	
J	0.29	0.31	0.011	0.012
K	3.25	3.35	0.128	0.132
L	7.75	8.00	0.305	0.315
M	-	10°	-	10°

SOP-8



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.196
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27BSC		0.05BSC	
K	0.10	0.25	0.004	0.009
M	0°	7°	0°	7°
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019