

The TDA2822M 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

8-DIP



- |                  |            |
|------------------|------------|
| 1.OUTPUT(1)      | 5.INPUT(2) |
| 2.SUPPLY VOLTAGE | 6.INPUT(2) |
| 3.OUTPUT(2)      | 7.INPUT(1) |
| 4.GROUND         | 8.INPUT(1) |

### Absolute Maximum Ratings

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

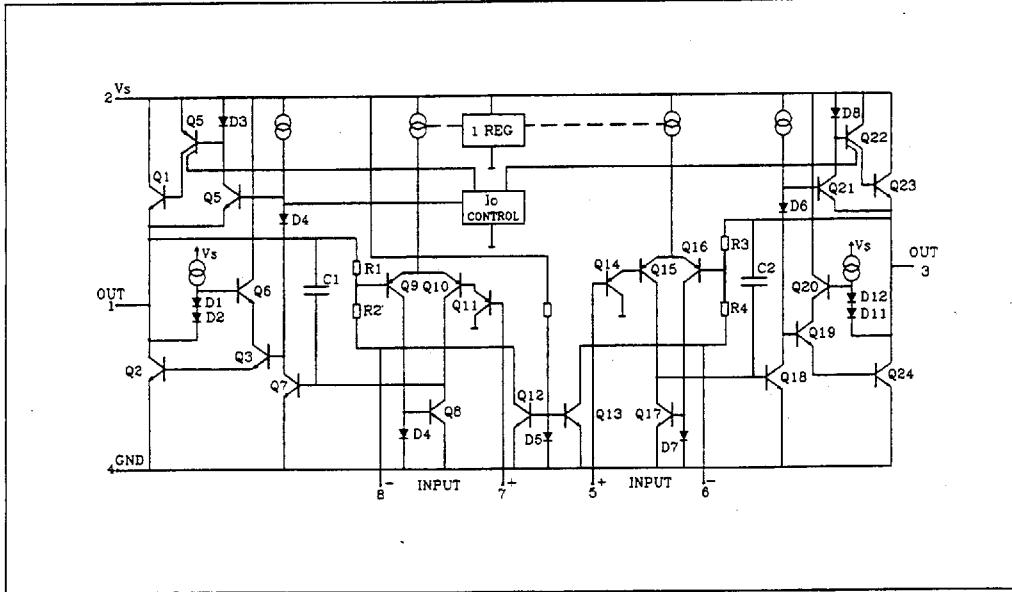
### Thermal Data

Symbol	Parameter	Value	Units
Rthj-amb	Thermal Resistance Junction-ambient Max.	100	°C/W
Rthj-case	Thermal Resistance Junction-pin(4) Max.	70	°C/W

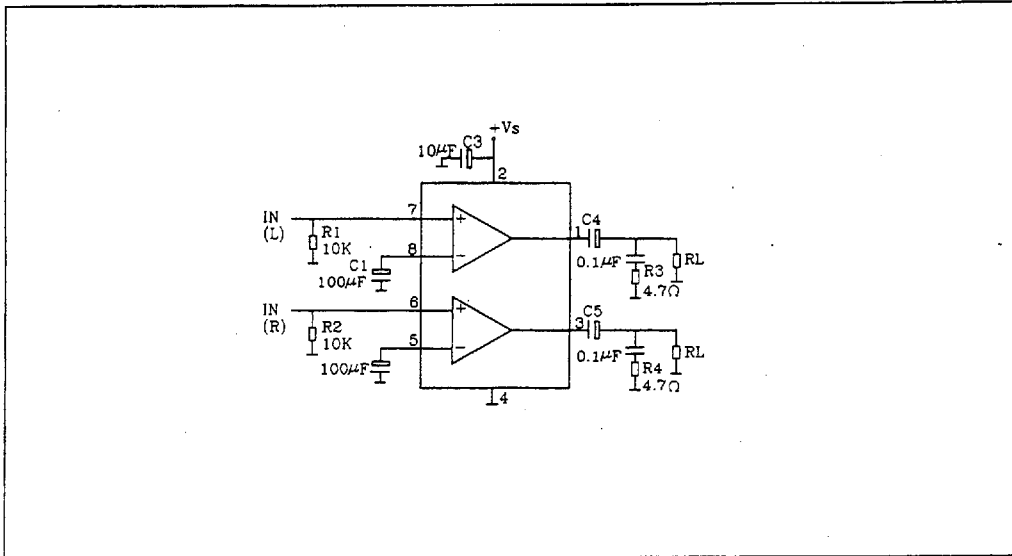
**Electrical Characteristics** ( $V_S=6V$ ,  $T_{amb}=25^\circ C$ , unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
<b>STEREO</b> (test circuit of Figure 1)						
$V_S$	Supply Voltage		1.8		15	V
$V_O$	Quiescent Output Voltage			2.7		V
		$V_S=3V$		1.2		V
$I_D$	Quiescent Drain Current			6	9	mA
$I_B$	Input Bias Current			100		nA
$P_O$	Output Power (each channel) ( $f=1KHz$ , $d=10\%$ )	$R_L=32\Omega$ $V_S=9V$ $V_S=6V$ $V_S=4.5V$ $V_S=3V$ $V_S=2V$ $R_L=16\Omega$ $V_S=6V$ $R_L=8\Omega$ $V_S=9V$ $V_S=6V$ $R_L=4\Omega$ $V_S=6V$ $V_S=4.5V$ $V_S=3V$	90	120		mW
			15	20		
				5		
			170	220		
				1000		
			300	380		
			450	650		
				320		
				110		
$d$	Distortion ( $f=1KHz$ )	$R_L=32\Omega$ $P_O=40mW$ $R_L=16\Omega$ $P_O=75mW$ $R_L=8\Omega$ $P_O=150mW$		0.2		%
				0.2		%
				0.2		%
$G_V$	Close Loop Voltage Gain	$f=1KHz$	36	39	41	dB
$\Delta G_V$	Channel Balance				$\pm 1$	dB
$R_i$	Input Resistance	$f=1KHz$	100			K $\Omega$
$e_N$	Total Input Noise	$R_S=10K\Omega$ B=Curve A B=22Hz to 22KHz		2		$\mu V$
				2.5		$\mu V$
SVR	Supply Voltage Rejection	$f=100Hz$ , $C_1=C_2=100\mu F$		24	30	dB
$C_S$	Channel Separation	$f=1KHz$			50	dB
<b>BRIDGE</b> (test circuit of Figure 2)						
$V_S$	Supply Voltage		1.8		15	V
$I_D$	Quiescent Drain Current	$R_L=\infty$				
$V_{OS}$	Output Offset Voltage (between the outputs)	$R_L=8\Omega$				
$I_B$	Input Bias Current					
$P_O$	Output Bias Current	$R_L=32\Omega$ $V_S=9V$ $V_S=6V$ $V_S=4.5V$ $V_S=3V$ $V_S=2V$ $R_L=16\Omega$ $V_S=9V$ $V_S=6V$ $V_S=3V$ $R_L=8\Omega$ $V_S=6V$ $V_S=4.5V$ $V_S=3V$ $R_L=4\Omega$ $V_S=4.5V$ $V_S=3V$ $V_S=2V$	320	1000		mW
				400		
				200		
			50	65		
				8		
				2000		
				800		
				120		
			900	1350		
				700		
				220		
			200	1000		
				350		
				80		
$d$	Output Power ( $f=1KHz$ , $d=10\%$ )	$P_O=0.5W$ , $R_L=8\Omega$ , $f=1KHz$		0.2		%
$G_V$	Closed Loop Voltage Gain	$f=1KHz$		39		dB
$R_i$	Input Resistance	$f=1KHz$	100			K $\Omega$
$e_N$	Total Input Noise	$R_S=10K\Omega$ B=Curve A B=22Hz to 22KHz		2.5		$\mu V$
				3		$\mu V$
SVR	Supply Voltage Rejection	$f=100Hz$		40		dB
B	Power Bandwidth (-3dB)	$R_L=8\Omega$ , $P_O=1W$		120		KHz

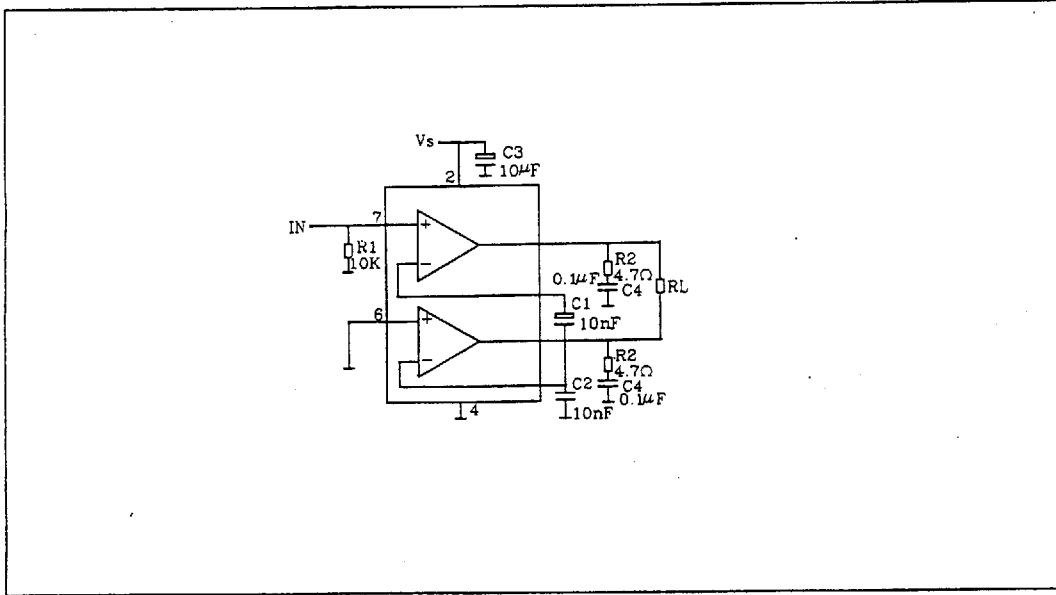
**Schematic Diagram**



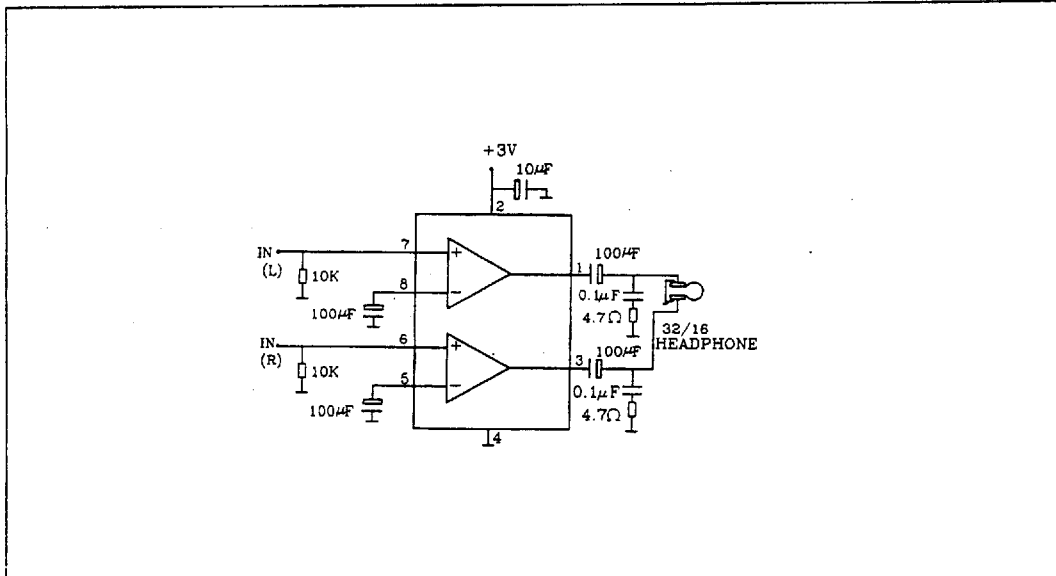
**Figure 1: Test Circuit (Stereo)**



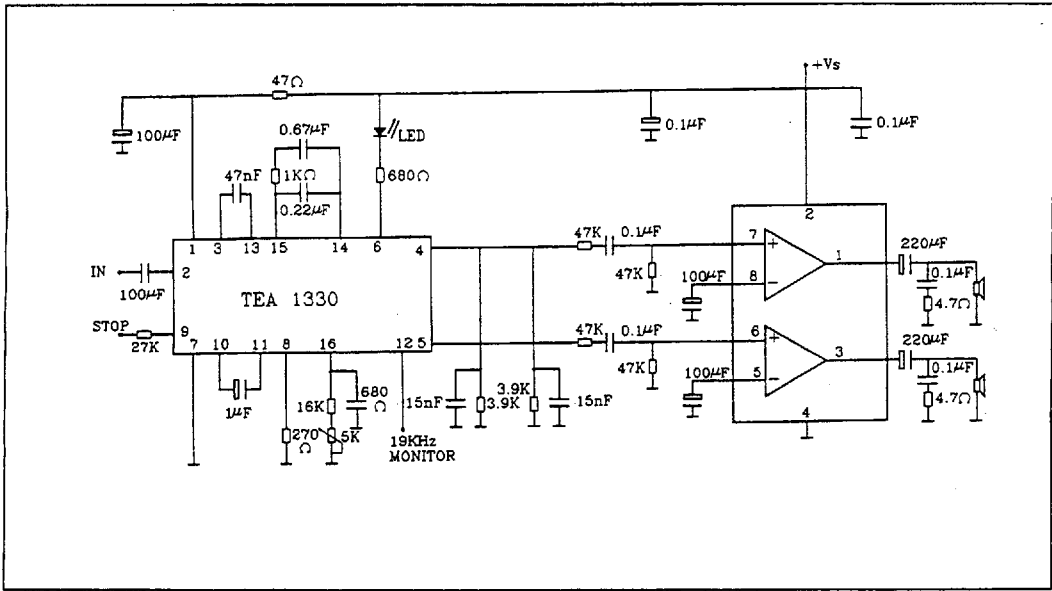
**Figure 2. Test Circuit (Bridge)**



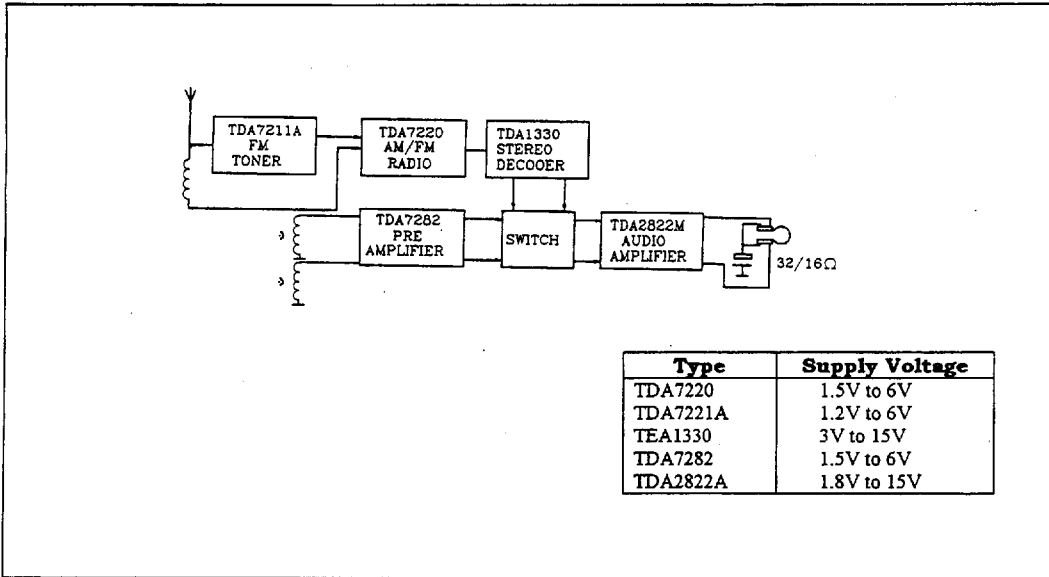
**Figure 3. Typical Application in Portable Players**



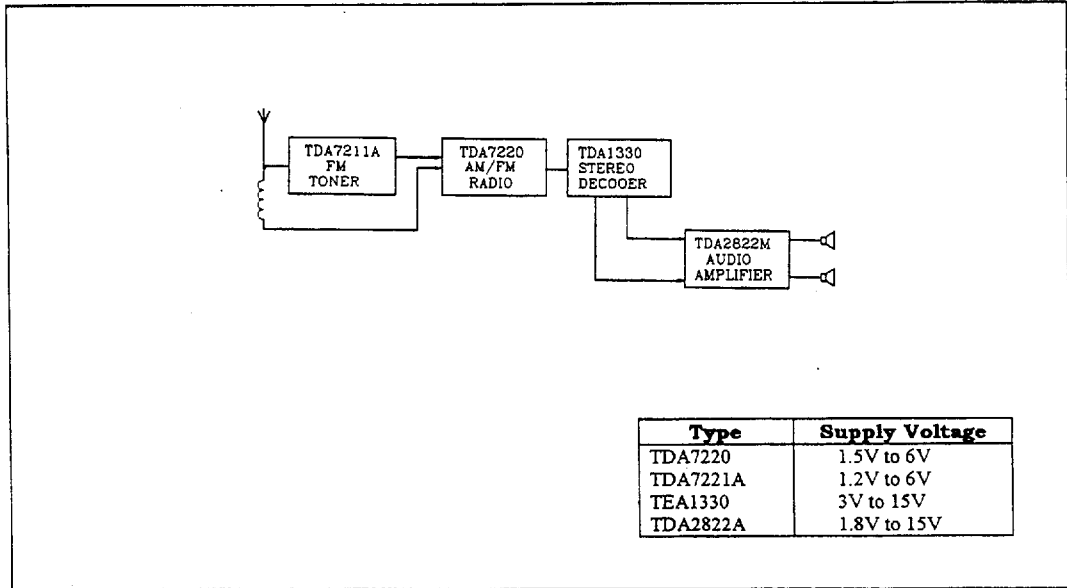
**Figure 4. Application in Portable Radio Receivers**



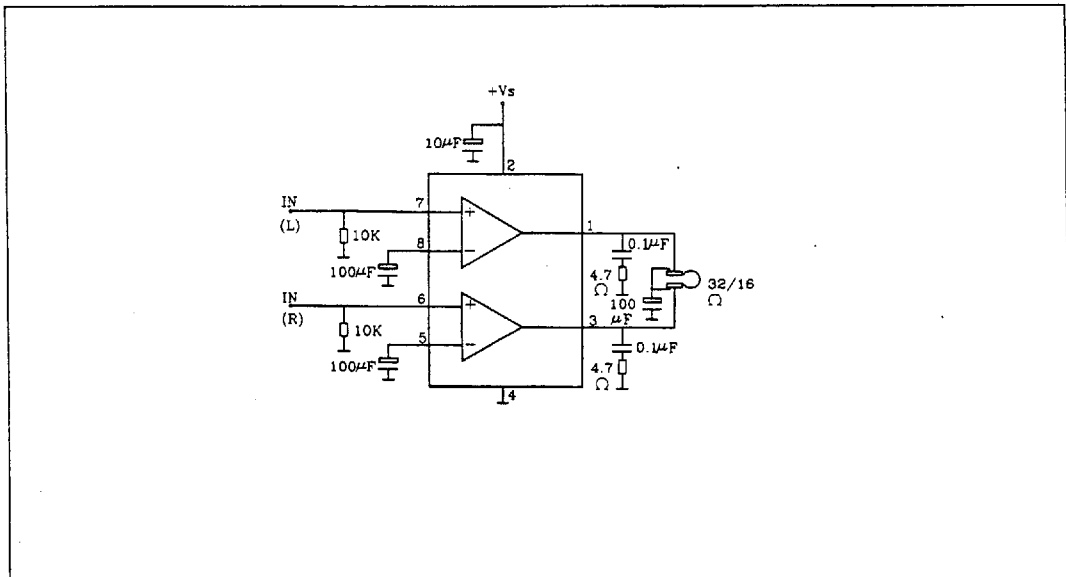
**Figure 5. Portable Radio Cassette Players**



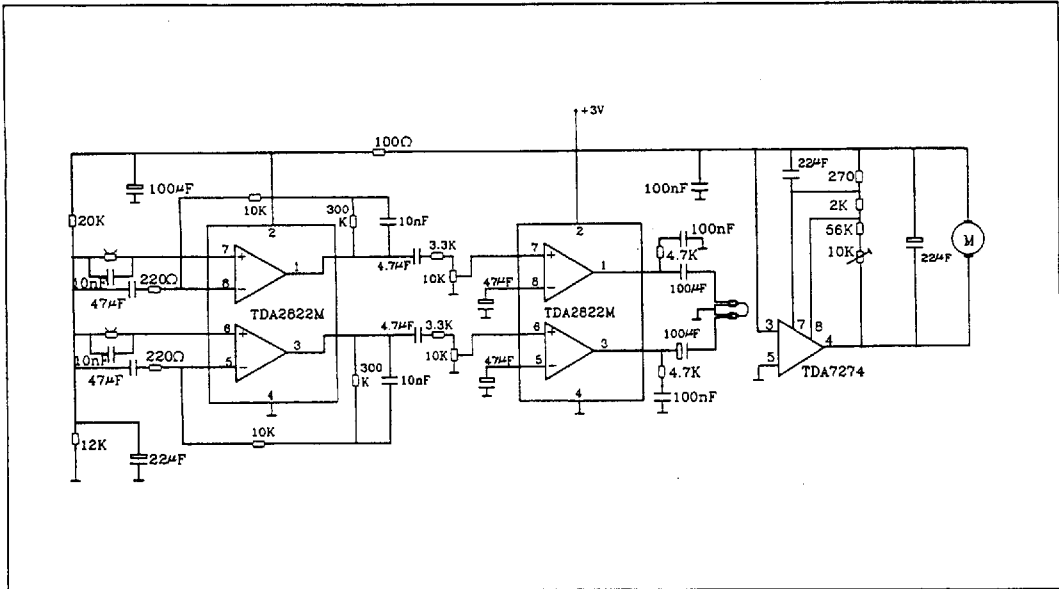
**Figure 6. Portable Stereo Radio**



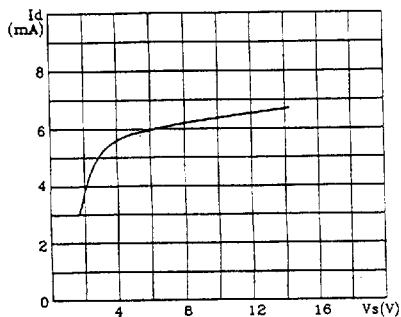
**Figure 7. Low Cost Application in Portable Players (using only one 100  $\mu$ F output capacitor)**



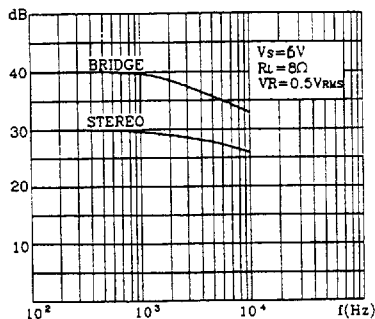
**Figure 8.3V Stereo Cassette Player with Motor Speed Control**



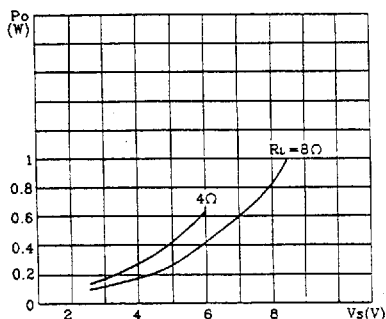
**Figure 9. Quiescent Current versus Supply Voltage**



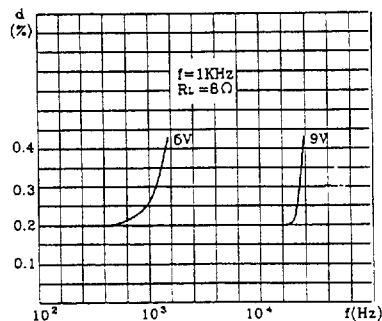
**Figure 10. Supply Voltage Rejection versus Frequency**



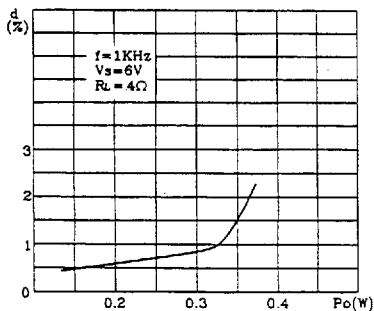
**Figure 11. Output Power versus Supply Voltage (THD=10%, f=1KHz Stereo)**



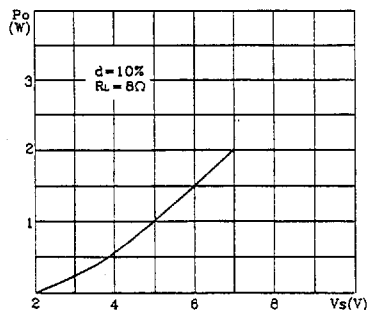
**Figure 12. Distortion versus Output Power (Stereo)**



**Figure 13. Distortion versus Output Power (Stereo)**

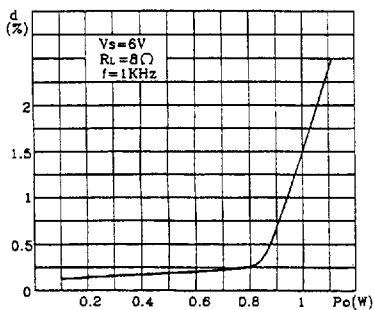


**Figure 14. Output Power versus Supply Voltage (Bridge)**

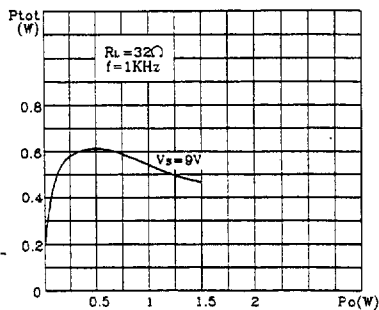




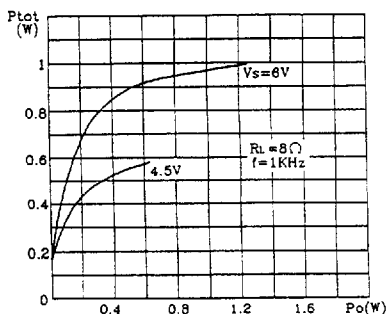
**Figure 15. Distorsion versus Output Power (Bridge)**



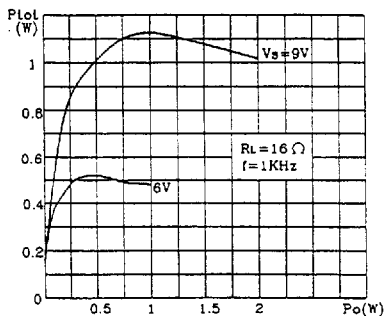
**Figure 16. Total Power Dissipation versus Output Power (Bridge)**



**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)**

