290mW 8Ω 立体声耳机音频功率放大器电路 HM4800

概述：

HM4800 是一块AB类立体声耳机音频功率放大器电路。HM4800在5V电源时输出功率最高可达290mW， 8Ω 负载，失真小于10% (THD+N)。适合在便携式数字音响设备中作功率放大用。

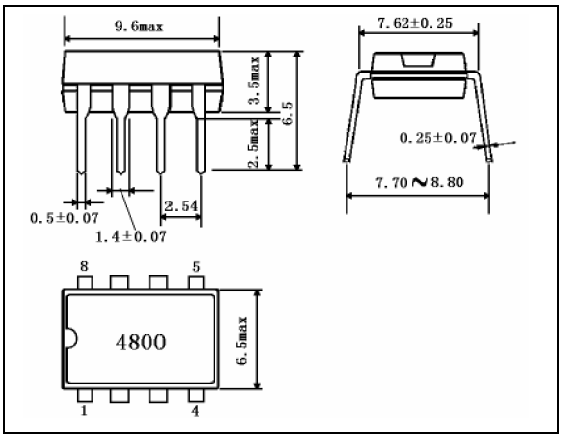
主要特点：

- 电源电压：
  - 单电源： 3V to 7V
  - 双电源： ±1.5V to 3.5V
- 高信噪比： 100dB
- 转速快： 5V/μs
- 失真低 -65dB
- 总谐波失真+噪声为10% 的输出功率
  - 8Ω 290mW
  - 16Ω 190mW
- 输出电压振幅大
- 电源抑制比好
- 低功耗
- 短路断电
- 工作温度范围宽
- 无开关噪声

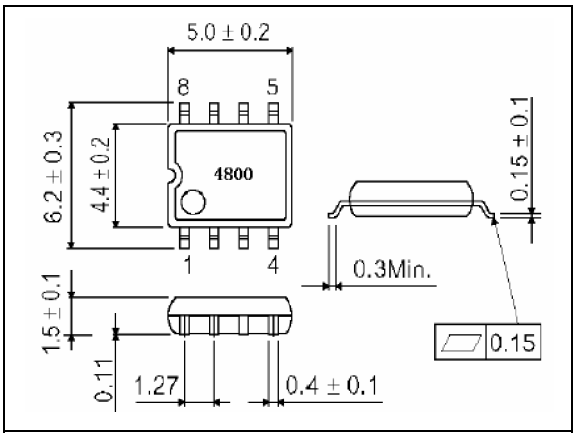
应用：

- 便携式数字音响系统
- 个人电脑
- 话筒前置放大器

封装外形图：

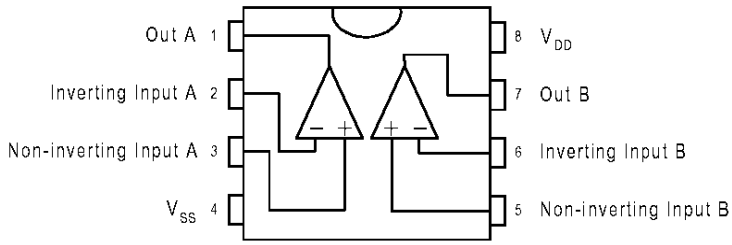


DIP8



SOP8

管脚排列图：



极限值：

参数名称	符号	数值	单位
电源电压	V_{DD}	5	V
输出短路持续时间 Ta=25°C,P_{TOT}=1W	Tsc(o)	20	S
工作电压范围	Ta	-40~+85	°C
最大结温	T_J	150	°C
贮存温度范围	Tstg	-65~+150	°C
焊接温度，10 秒	Ts	260	°C
静电放电电压	V_{ESD}	-3000~+3000*	V

*人体模式： C=100pF,R=1500Ω

热阻特性：

参数名称		符号	数值	单位
结温对环境热阻	DIP8	R_{THJA}	109	K/W
	SOP8		210	

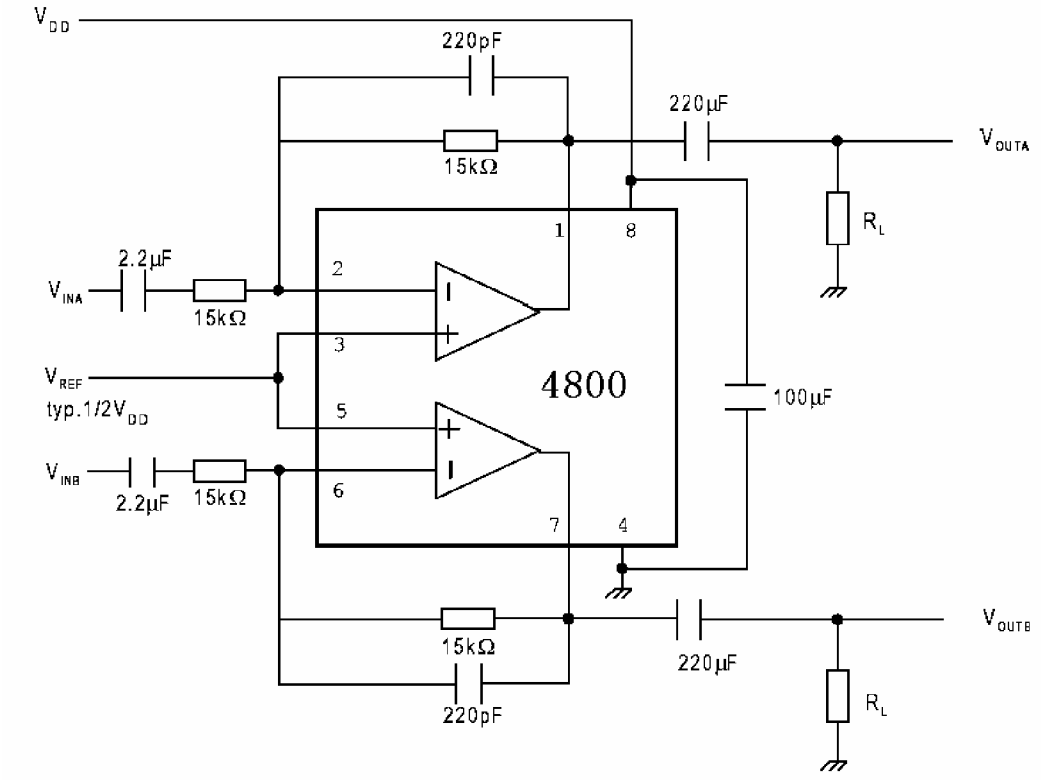
电特性：

(若无其它规定： Ta=25°C, f=1KHz)

参数名称	符号	测试条件	最小	典型	最大	单位
电源电压	V_{DD}		2.7		5.5	V
V_{DD}=5V						
工作电流	I_{DD}	No Load		2.5		mA
输入失调电压				5	50	mV
交流特性						
总谐波失真+信噪比	(THD+N) /S	P_O=200mW,R_L=8Ω,f=1kHz P_O=120mW,R_L=16Ω,f=1kHz		0.1 0.05		%
信噪比	S/N	(THD+N)/S=0.2%,f=1kHz R_L=8Ω R_L=16Ω		210 140		mW

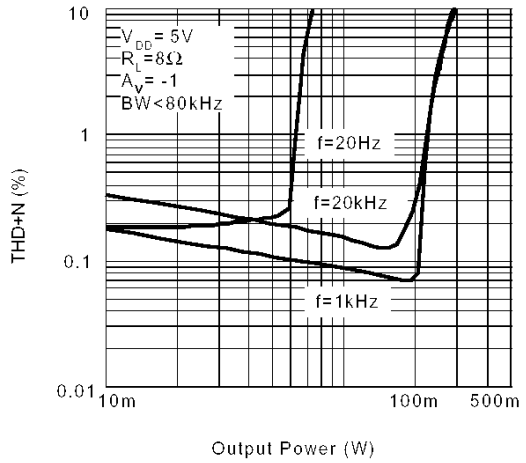
参数名称	符号	测试条件	Min	Typ	Max	Unit
交流特性						
输出功率	PO	(THD+N)/S=10%,f=1kHz RL=8Ω RL=16Ω		290 190		mW
电源抑制比	PSRR	CB=2.2μF,VRIPPLE=200mVrms F=120Hz		55		dB
噪声	VN	RL=8Ω		20		rms
VDD=3V						
工作电流	IDD	No Load		2.2		mA
输入失调电压	VI(OS)			5		mV
交流特性						
总谐波失真+信噪比	(THD+N) /S	PO=50mW,RL=8Ω,f=1kHz PO=40mW,RL=8Ω,f=1kHz		0.15		%
输出功率	PO	(THD+N)/S=0.2%,f=1kHz RL=8Ω RL=16Ω		60 45		mW
输出功率	PO	(THD+N)/S=10%,f=1kHz RL=8Ω RL=16Ω		90 65		mW

测试及应用图：

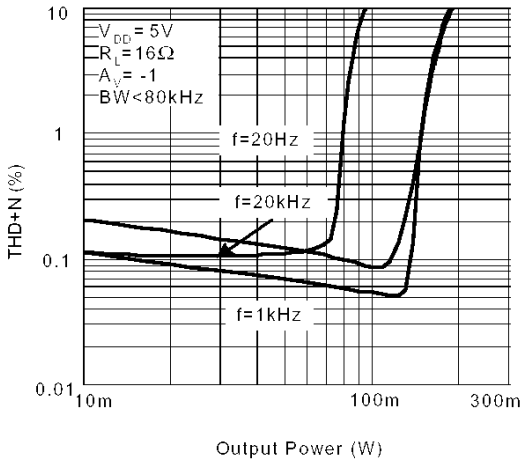


典型曲线：

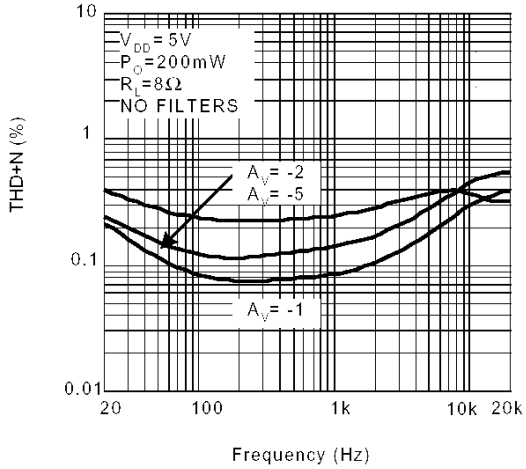
THD+N vs Output Power



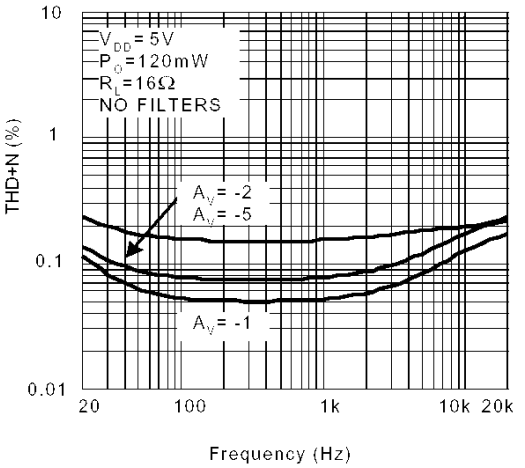
THD+N vs Output Power



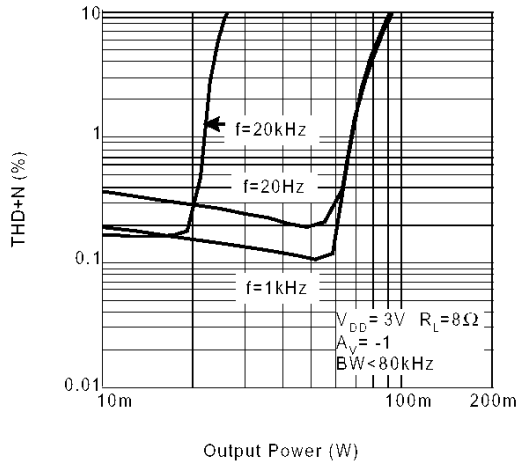
THD+N vs Frequency



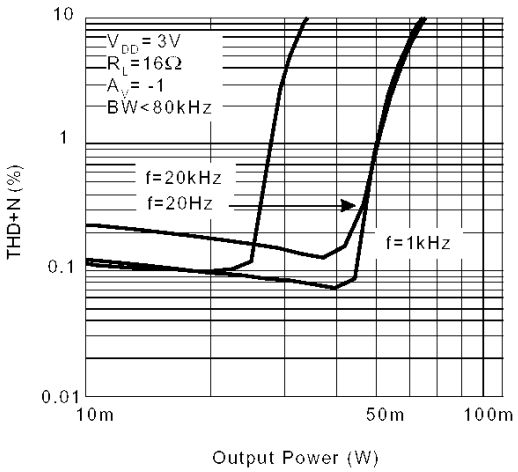
THD+N vs Frequency



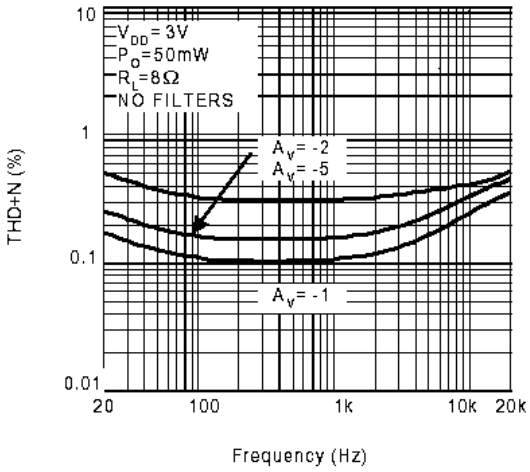
THD+N vs Output Power



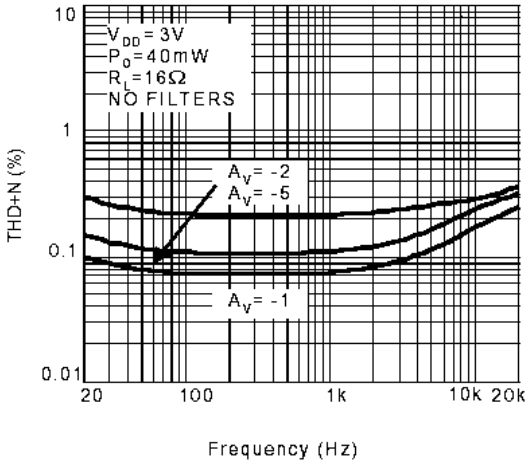
THD+N vs Output Power



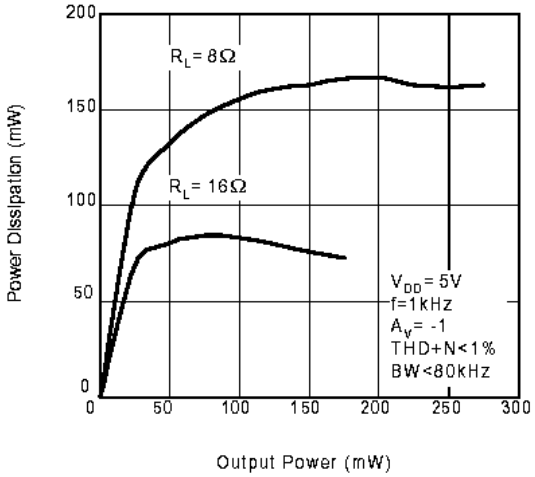
THD+N vs Frequency



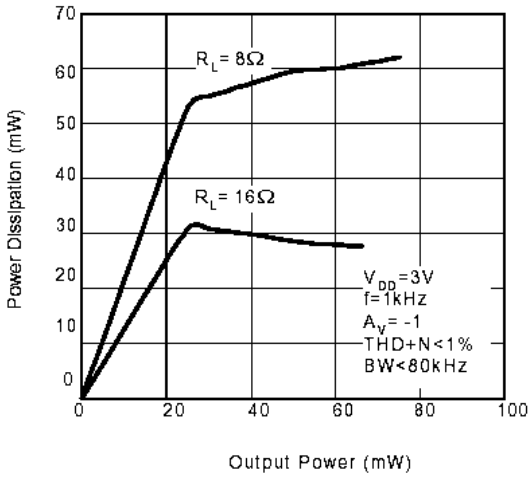
THD+N vs Frequency



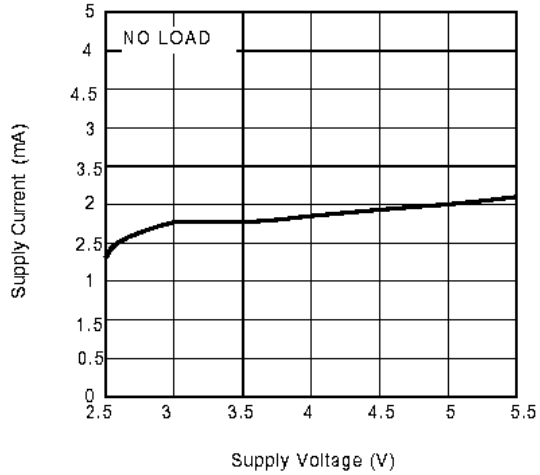
Power Dissipation vs Output Power



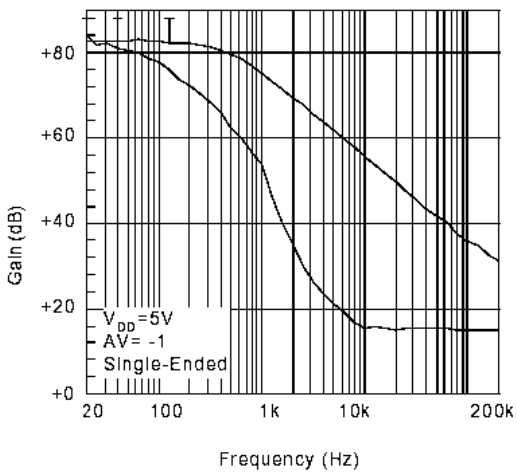
Power Dissipation vs Output Power



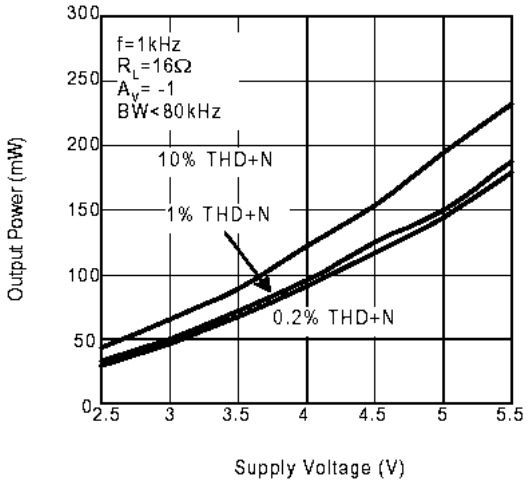
Supply Current vs Supply Voltage



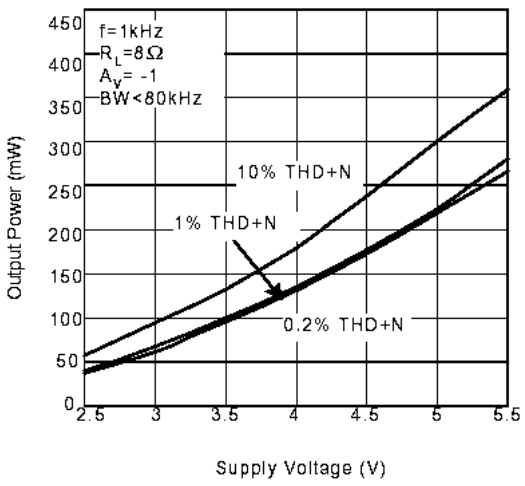
Open Loop Frequency Response



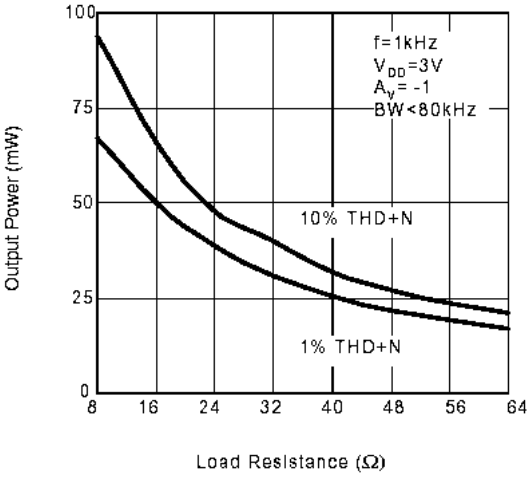
Output Power vs Supply Voltage



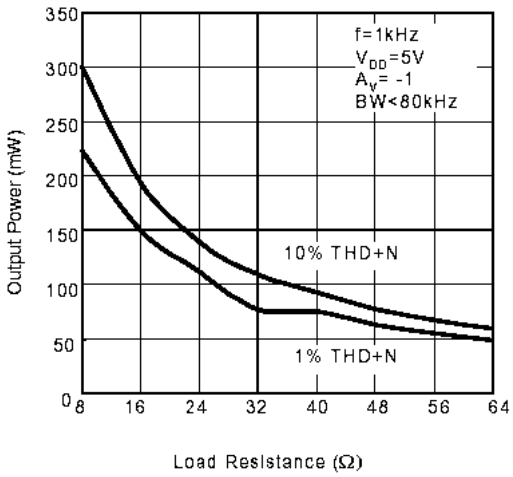
Output Power vs Supply Voltage



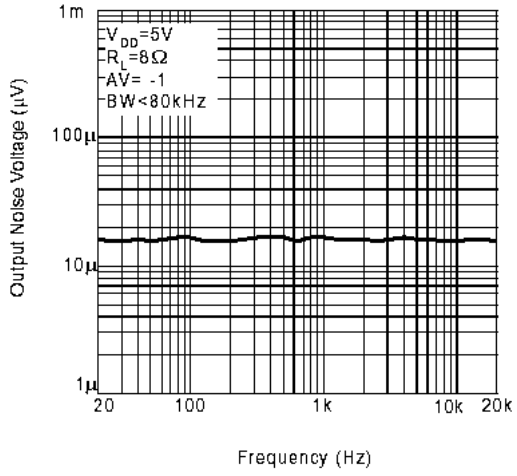
Output Power vs Load Resistance



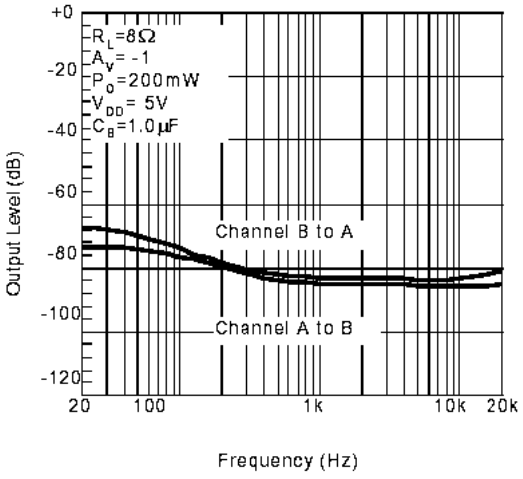
Output Power vs Load Resistance



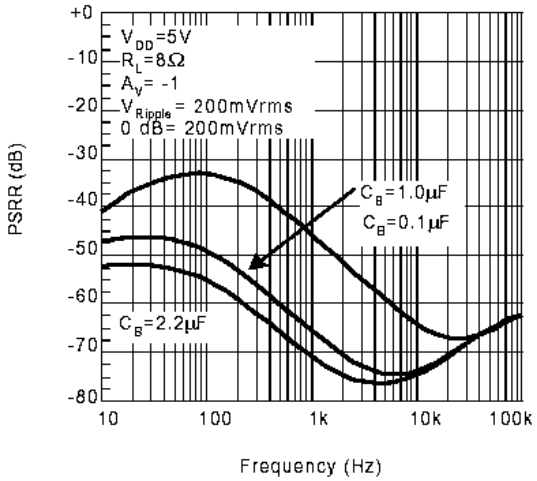
Noise Floor



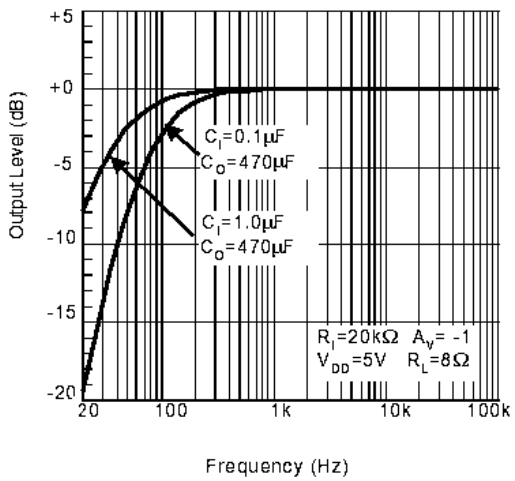
Channel Separation



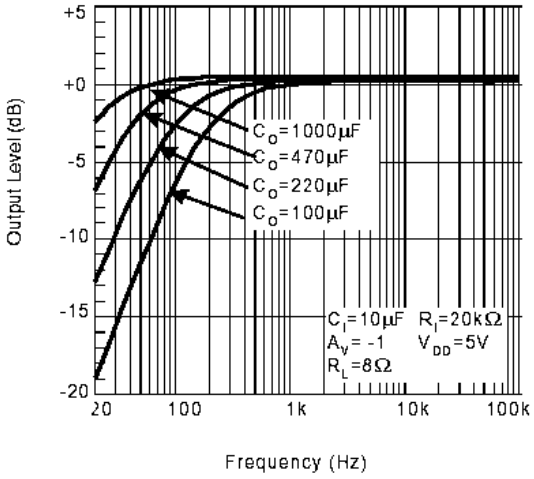
Power Supply Rejection Ratio



Typical Application Frequency Response



Frequency Response vs Output Capacitor Size



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