EVVOSEMI®

THINK CHANGE DO

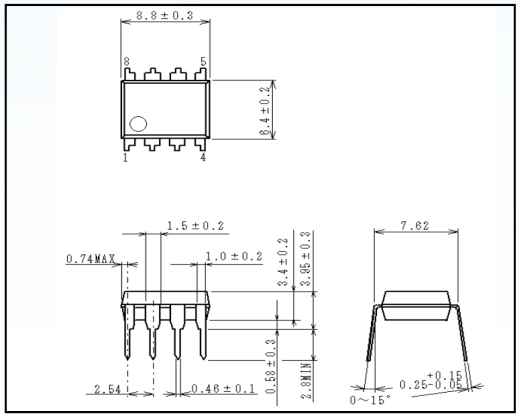
ESD TVS MOS LDO Diode Sensor DC-DC

Product Specification

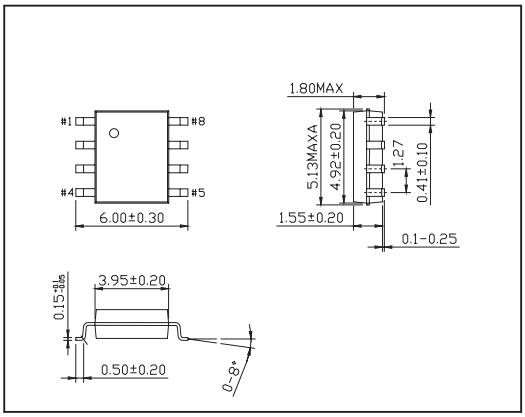
Domestic Part Number	LM358ADR
Overseas Part Number	LM358ADR
Equivalent Part Number	LM358ADR

双运算放大器　　LM358ADR

封装外形图



DIP-8



SOP-8

概述：

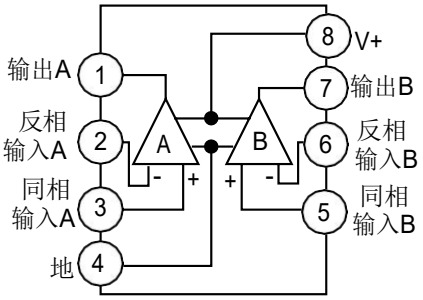
LM358ADR是由两个独立的高增益运算放大器组成。可以是单电源工作，也可以是双电源工作，电源的电流消耗与电源电压大小无关。应用范围包括变频放大器、DC 增益部件和所有常规运算放大电路。

采用 DIP8 或 SOP8 封装形式。

主要特点：

- 可单电源或双电源工作
- 在一个封装内的两个经内部补偿的运算放大器。
- 逻辑电路匹配。
- 功耗小。
- 频率范围宽

功能框图和管脚排列图



极限值（绝对最大额定值，若无其它规定，Tamb=25℃）

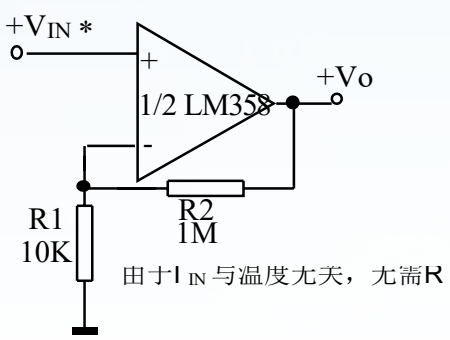
参 数 名 称		数　值	单　位
电源电压		36 或±16	V
差分输入电压		36	V
输入电压		-0.3~36	V
功耗(注 1)	DIP 封装	550	mW
	SOP 封装	530	
输出端对地短路电流（1 放大器）（注 2）（V^+≤15V、Ta=25℃）		持续	
输入电流（V_{IN}<-0.3V）(注 3)		50	mA
工作环境温度		-25~85	℃
贮存温度		-65~150	℃

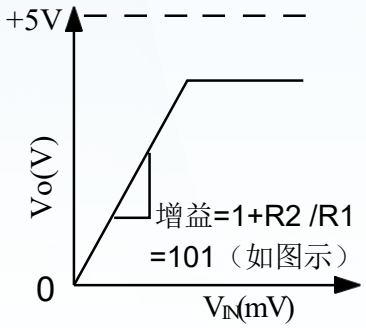
电特性 （若无其它规定，V^+=5.0V）

特 性		测试条件		规 范 值			单位
				最 小	典 型	最 大	
输入失调电压		Ta=25℃			2	5	mV
输入偏流		Ta=25℃，$I_{IN(+)}$或 $I_{IN(-)}$，V_{CM}=0V			45	150	nA
输入失调电流		Ta=25℃，$I_{IN(+)}$ - $I_{IN(-)}$，V_{CM}=0V			3	30	nA
输入共模电压范围		Ta=25℃，V^+=30V		0		V^+-1.5	V
电源电流		在整个温度范围上，R_L=∞在所有运算放大器上，	V^+=30V		1	2	mA
			V^+=5V		0.5	1.2	
大信号电压增益		V^+=15V，Ta=25℃，R_L≥2kΩ（对于 Vo=1~11V）		50	100		V/mV
共模抑制比		DC，Ta=25℃，V_{CM}=0~V^+-1.5V		70	85		dB
电源抑制比		DC，Ta=25℃，V^+=5~30V		65	100		dB
放大器之间的耦合系数		Ta=25℃，f=1~20kHz（所有的输入）			-120		dB
输出源电流		$V_{IN(+)}$=1V,$V_{IN(-)}$=0V,V^+=15V,Vo=2V,Ta=25℃		20	40		mA
输出吸电流		$V_{IN(-)}$=1V,$V_{IN(+)}$=0V,V^+=15V,Vo=2V,Ta=25℃		10	20		mA
		$V_{IN(-)}$=1V,$V_{IN(+)}$=0V,V^+=15V,Vo=200mV,Ta=25℃		12	50		μA
对地短路电流		V^+=15V， Ta=25℃			40	60	mA
输入失调电压						7	mV
输入失调电压漂移		Rs=0Ω			7		μV/℃
输入失调电流		$I_{IN(+)}$ - $I_{IN(-)}$				100	nA
输入失调电流漂移		Rs=0Ω			10		pA/℃
输入偏置电流		$I_{IN(+)}$或 $I_{IN(-)}$			40	300	nA
输入共模电压范围		V^+=30V		0		V^+-2	V
大信号电压增益		V^+=15V，（Vo=1~11V）， R_L≥2kΩ		25			V/mV
输出电压摆幅	V_{OH}	V^+=30V	R_L=2kΩ	26			V
			R_L=10kΩ	27	28		V
	V_{OL}	V^+=5V，R_L=10kΩ			5	20	mV
输出电流	源电流	$V_{IN(+)}$=1V，$V_{IN(-)}$=0V，V^+=15V，Vo=2V		10	20		mA
	吸电流	$V_{IN(-)}$=1V，$V_{IN(+)}$=0V，V^+=15V，Vo=2V		5	8		mA

典型应用

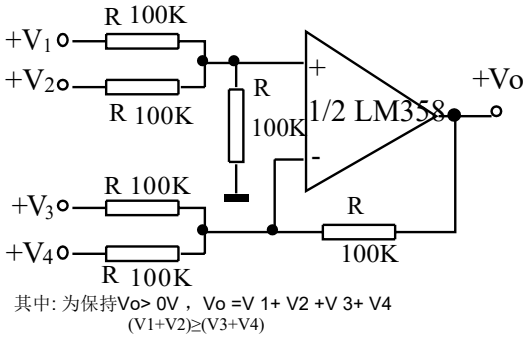
同相直流增益（ 0V输入=0V输出）



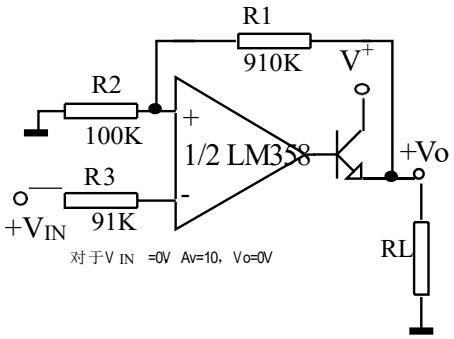


直流求和放大器

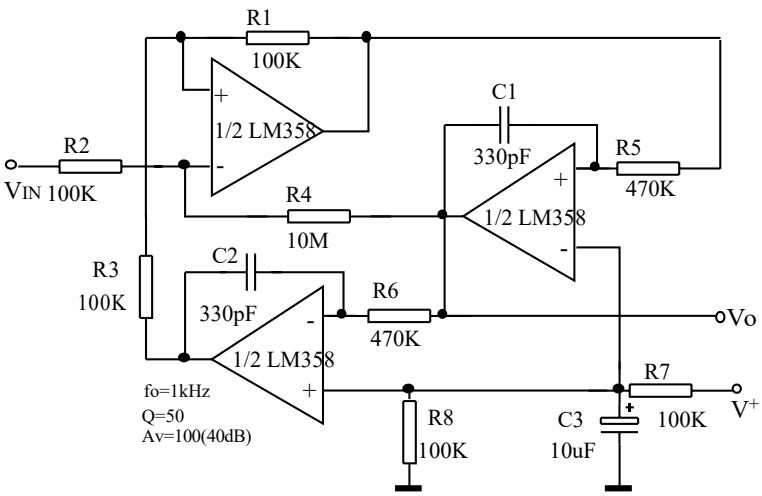
（V IN'S ≥ 0V，并且 Vo≥ 0V）



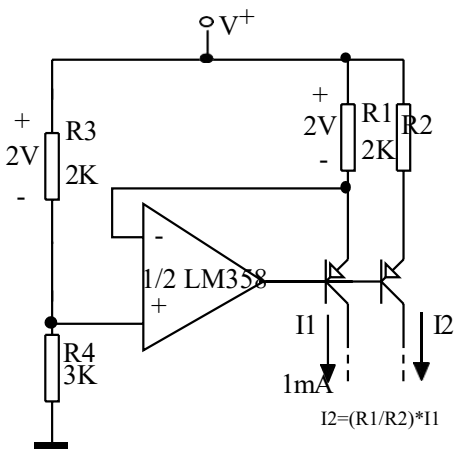
功率放大器



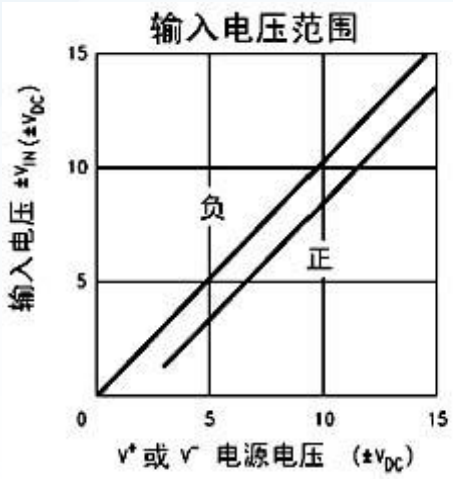
RC 有源带通滤波器

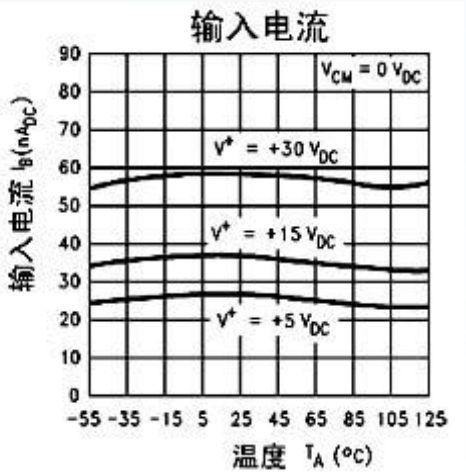


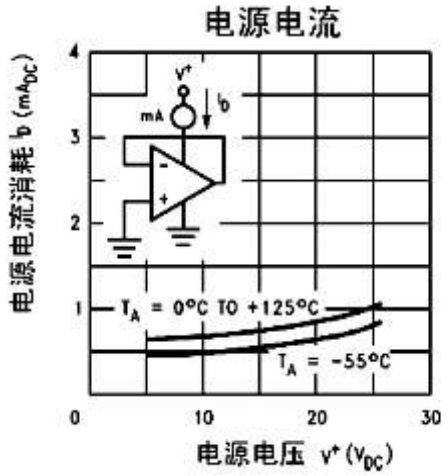
固定电流源

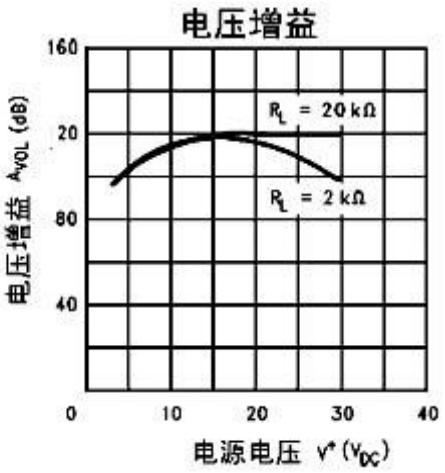


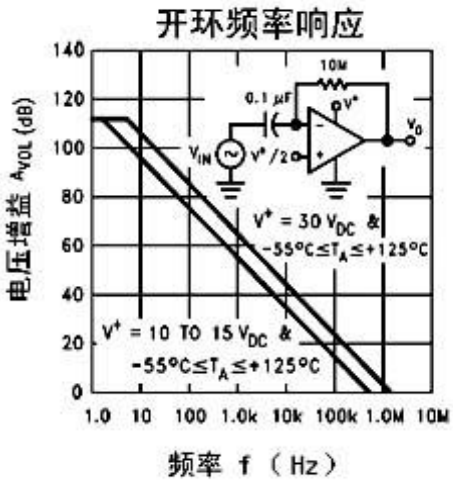
典型特性曲线

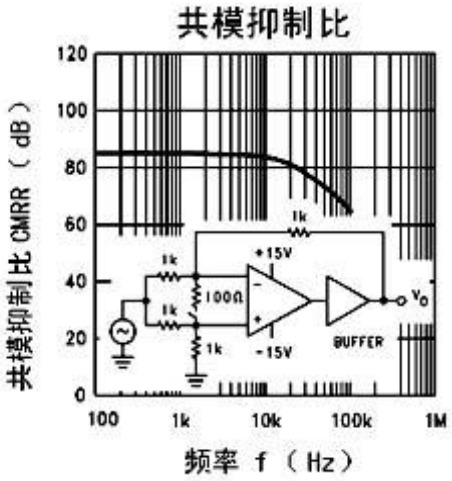

输入电压范围
输入电压 ±VIN (±VDC)
负
正
V+或 V- 电源电压 (±VDC)

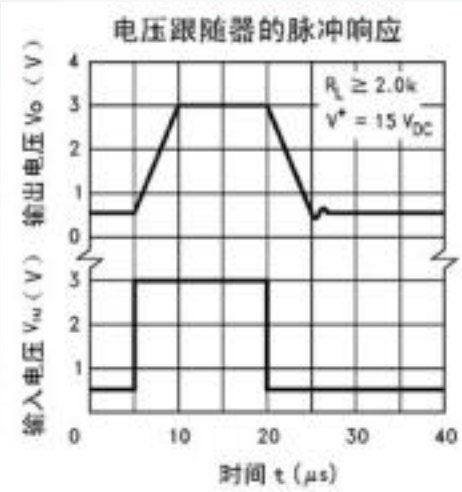

输入电流
VCM = 0 VDC
V+ = +30 VDC
V+ = +15 VDC
V+ = +5 VDC
输入电流 IB (nADC)
温度 TA (°C)

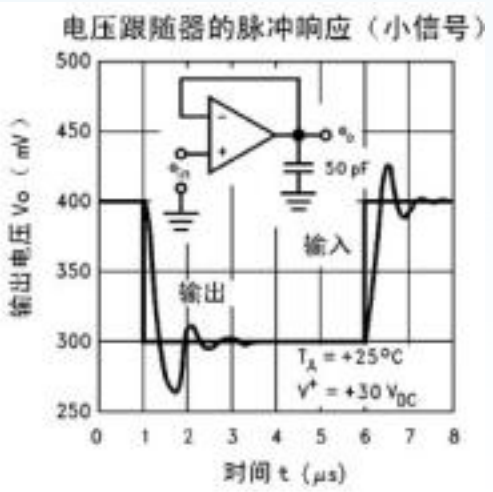

电源电流
电源电流消耗 ID (mADC)
TA = 0°C TO +125°C
TA = -55°C
电源电压 V+ (VDC)

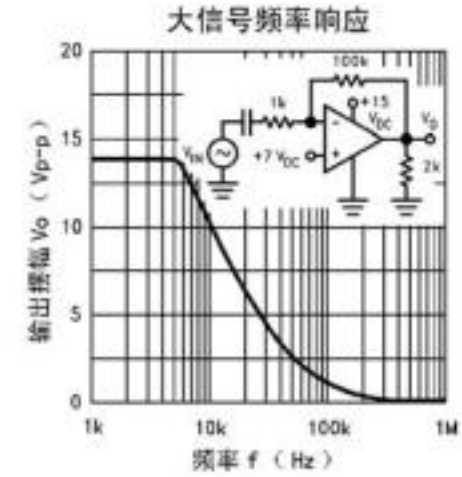

电压增益
电压增益 AVOL (dB)
RL = 20 kΩ
RL = 2 kΩ
电源电压 V+ (VDC)

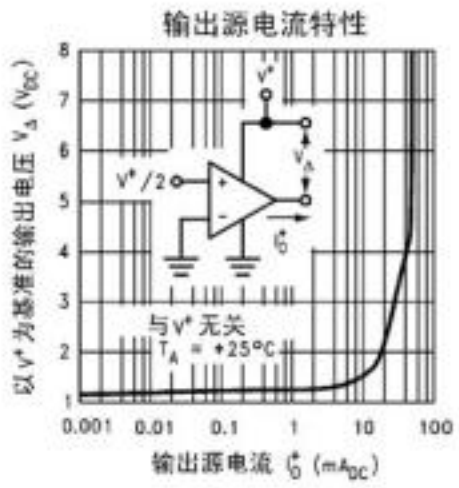

开环频率响应
电压增益 AVOL (dB)
V+ = 30 VDC &
-55°C≤TA≤+125°C
V+ = 10 TO 15 VDC &
-55°C≤TA≤+125°C
频率 f (Hz)

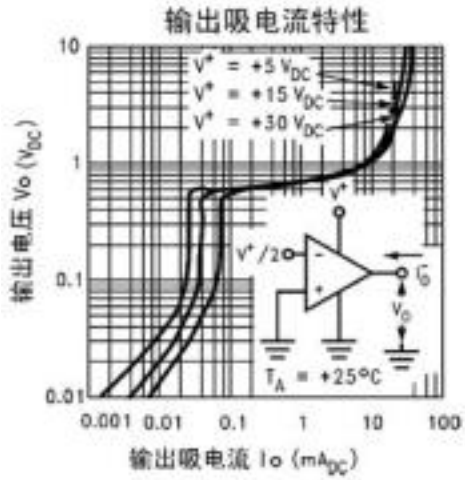

共模抑制比
共模抑制比 CMRR (dB)
+15V
-15V
100Ω
BUFFER
频率 f (Hz)

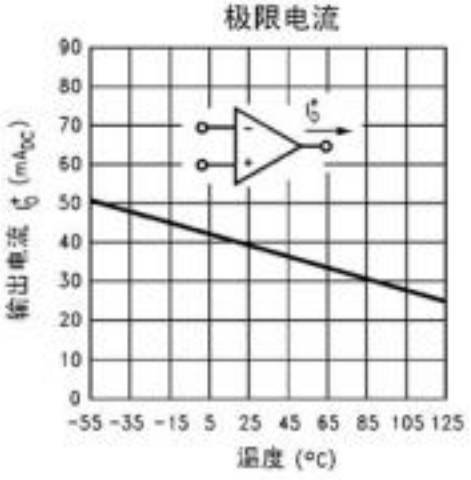

电压跟随器的脉冲响应
$R_L \geq 2.0k$
$V^+ = 15\ V_{DC}$
输入电压 V_{in}（V） 输出电压 Vo（V）
时间 t（μs）


电压跟随器的脉冲响应（小信号）
50 pF
输入
输出
$T_A = +25°C$
$V^+ = +30\ V_{DC}$
输出电压 Vo（mV）
时间 t（μs）


大信号频率响应
100k
1k
+15 V_{DC}
+7 V_{DC}
2k
输出摆幅 Vo（Vp-p）
频率 f（Hz）


输出源电流特性
$V^+/2$
与 V^+ 无关
$T_A = +25°C$
以 V^+ 为基准的输出电压 V_Δ（V_{DC}）
输出源电流 I_O（mA_{DC}）


输出吸电流特性
$V^+ = +5\ V_{DC}$
$V^+ = +15\ V_{DC}$
$V^+ = +30\ V_{DC}$
$V^+/2$
$T_A = +25°C$
输出电压 Vo（V_{DC}）
输出吸电流 Io（mA_{DC}）


极限电流
输出电流 I_O（mA_{DC}）
温度（°C）

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