

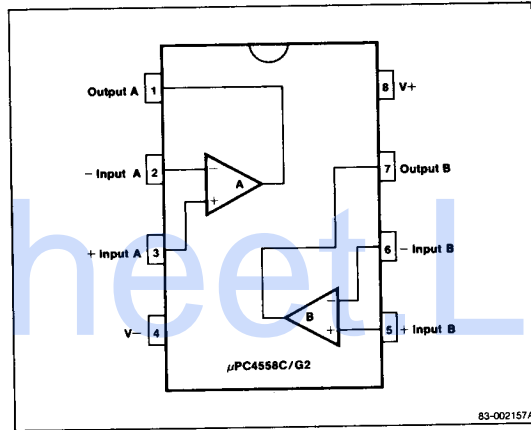
### Description

The  $\mu$ PC4558 is a dual operational amplifier with internal frequency compensation. Using low noise lateral PNP input transistors on the amplifier inputs allows the use of this device for signal processing applications, such as low-noise audio preamplifiers and signal conditioning circuits. The simplified output stage eliminates crossover distortion under any normal load conditions.

### Features

- Internal frequency compensation
- Short-circuit protection
- Large common mode and differential voltage range
- No latch-up
- Low noise
- RC4558 direct replacement

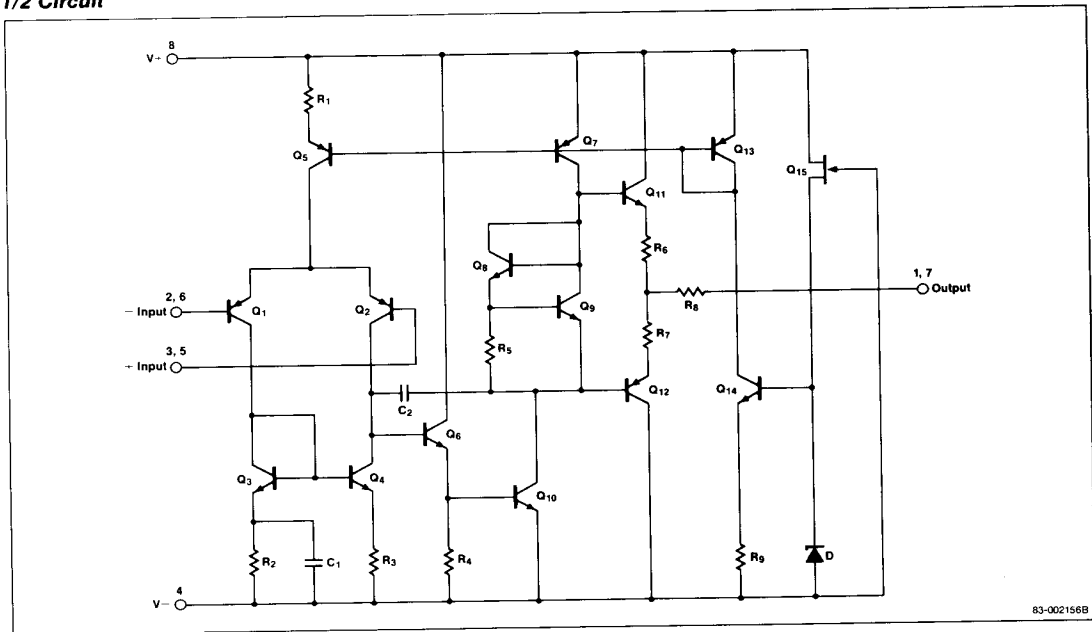
### Pin Configuration



3

### Equivalent Circuit

#### 1/2 Circuit



**Ordering Information**

Part Number	Package	Operating Temperature Range
μPC4558C	Plastic DIP	0°C to +70°C
μPC4558G2	Plastic Miniflat	0°C to +70°C

**Absolute Maximum Ratings**

T<sub>A</sub> = 25°C

Voltage Between V+ and V-	36 V
Power Dissipation, C Package	350 mW
Power Dissipation, G2 Package	440 mW
Differential Input Voltage	±30 V
Input Voltage (Note 1)	±15 V
Output Short Circuit Duration	Indefinite
Operating Temperature Range, C or G2 Package	0 to +70°C
Storage Temperature Range, C or G2 Package	-55 to +125°C

**Note:** 1. For supply voltages less than ±15 V, the absolute maximum input voltage is equal to the supply voltage.

**Comment:** Stress above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

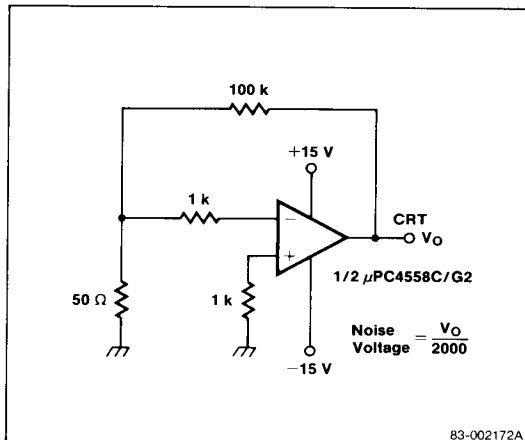
**Electrical Characteristics**

T<sub>A</sub> = 25°C, V<sub>±</sub> = ±15 V

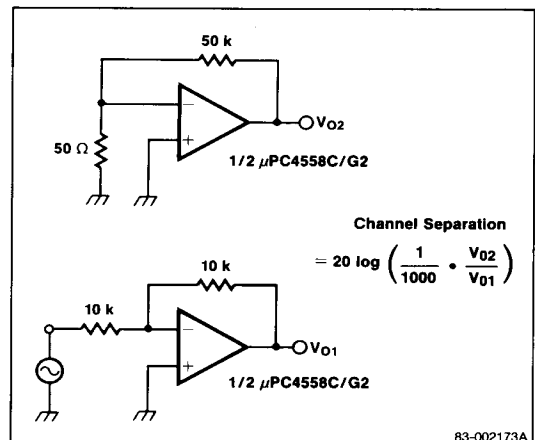
Parameter	Symbol	Limits			Unit	Test Conditions
		Min.	Typ.	Max.		
Input Offset Voltage	V <sub>io</sub>	0.5	6.0		mV	R <sub>S</sub> ≤ 10 kΩ
Input Offset Current	I <sub>io</sub>	5	200		nA	
Input Bias Current	I <sub>b</sub>	60	500		nA	
Large Signal Voltage Gain	A <sub>vOL</sub>	86			dB	R <sub>L</sub> ≥ 2 kΩ, V <sub>O</sub> = ±10 V
Power Consumption	P <sub>D</sub>	90	170		mW	Both channels (see note)
Common Mode Rejection Ratio	CMRR	70	90		dB	R <sub>S</sub> ≤ 10 kΩ
Supply Voltage Rejection Ratio	SVRR	30	150		μV/V	R <sub>S</sub> ≤ 10 kΩ
Output Voltage Swing	V <sub>om</sub>	±12	±14		V	R <sub>S</sub> ≤ 10 kΩ
		±10	±13		V	R <sub>S</sub> ≤ 2 kΩ
Common Mode Input Voltage Range	V <sub>icm</sub>	±12	±14		V	
Slew Rate	SR	1.0			V/μs	A <sub>v</sub> = 1
Input Noise Voltage	e <sub>n</sub>	6			μV <sub>p-p</sub>	R <sub>S</sub> = 1 kΩ, f = 1 Hz to 1 kHz
Channel Separation	CS	105			dB	f = 1 kHz

**Note:** The total of internal power dissipation.

**Noise Measurement Circuit**



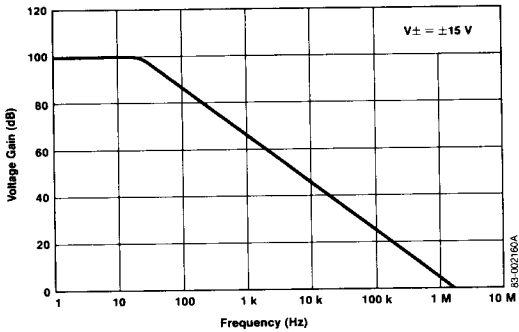
**Channel Separation Measurement Circuit**



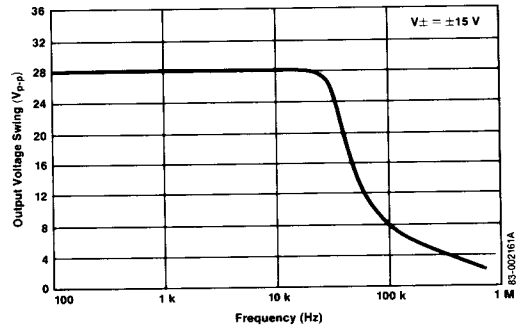
## Operating Characteristics

$T_A = 25^\circ\text{C}$

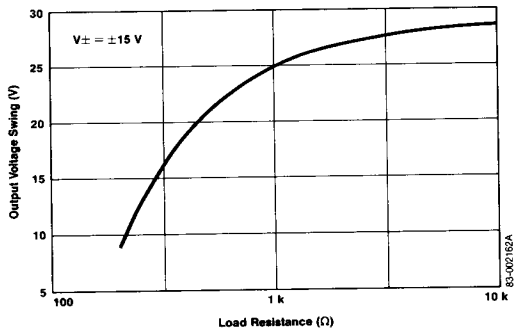
Open Loop Frequency Response



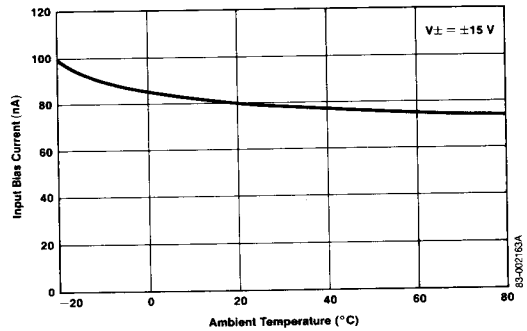
Large Signal Frequency Response



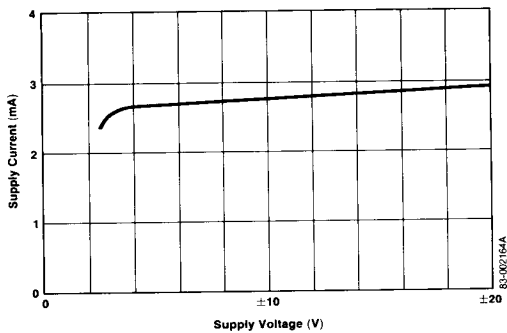
Output Voltage Swing



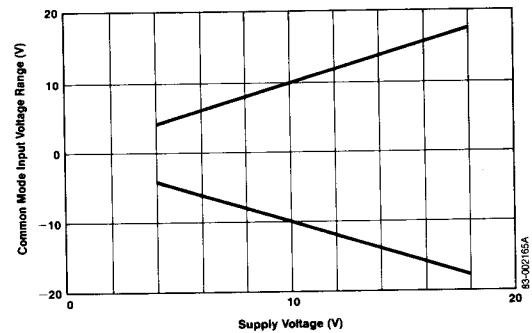
Input Bias Current



Supply Current

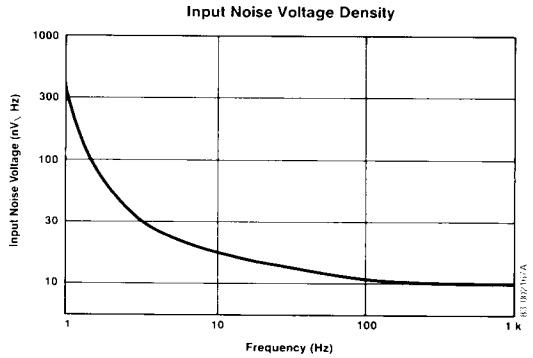
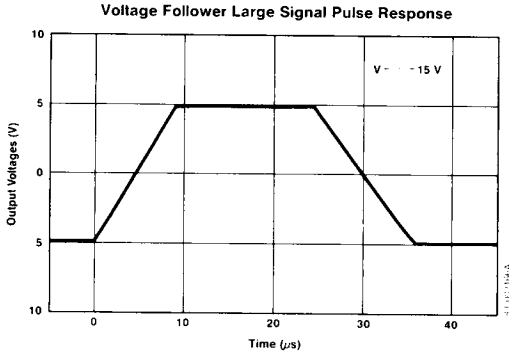


Common Mode Input Voltage Range



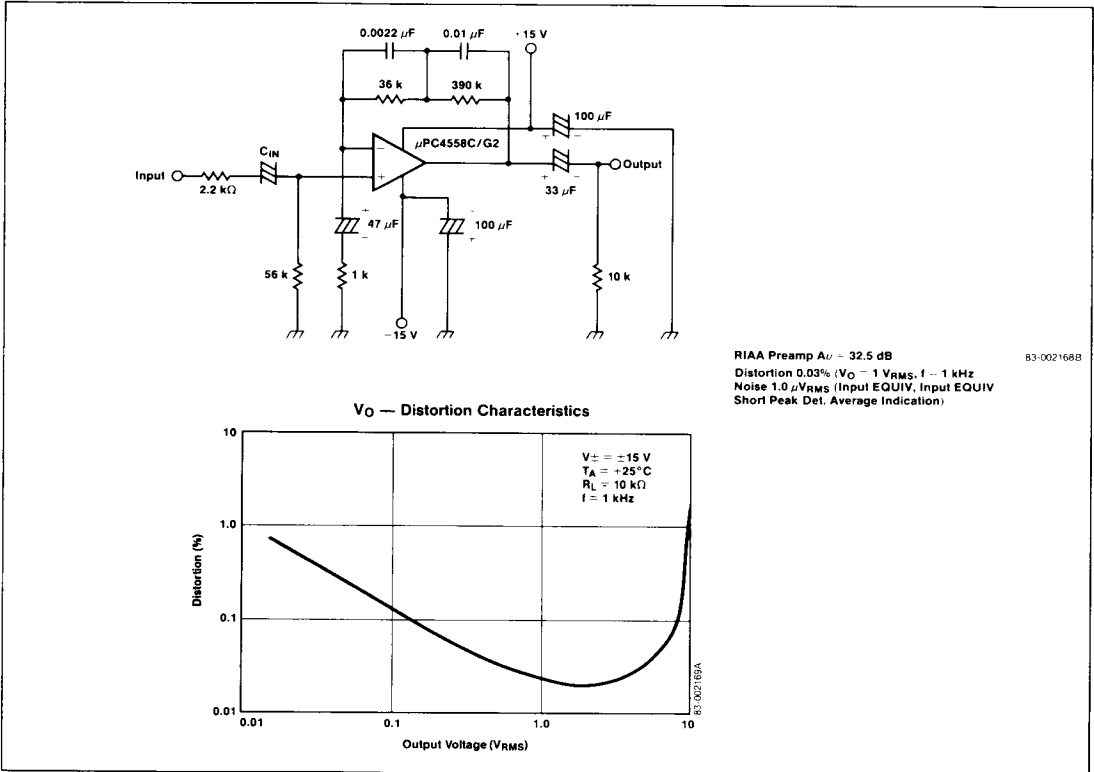
**Operating Characteristics (Cont.)**

$T_A = 25^\circ\text{C}$



**Application Circuit**

**RIAA Preamp**



## Peak Level Meter

This circuit converts the peak voltage (about ±10 mV to ±10 V) of the input signal to a DC voltage (about 0.2 V to 1.3 V) and drives the meter.

Since the output voltage is proportional to the logarithmic value of the peak voltage of the input signal, indication of a much wider dynamic range can be obtained compared to conventional linear indicating methods.

### Peak Level Meter

