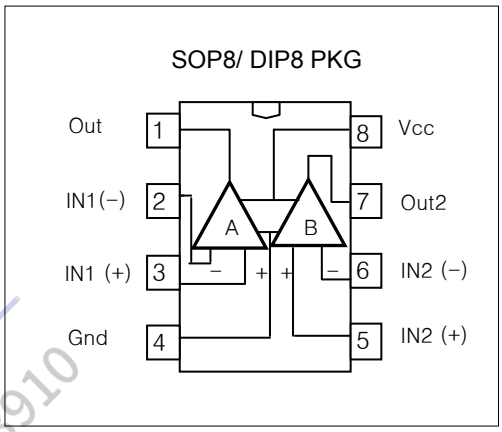
SOP8,DIP8 DUAL OPERATIONAL AMPLIFIERS INTEGRATED CIRCUIT

LM4558

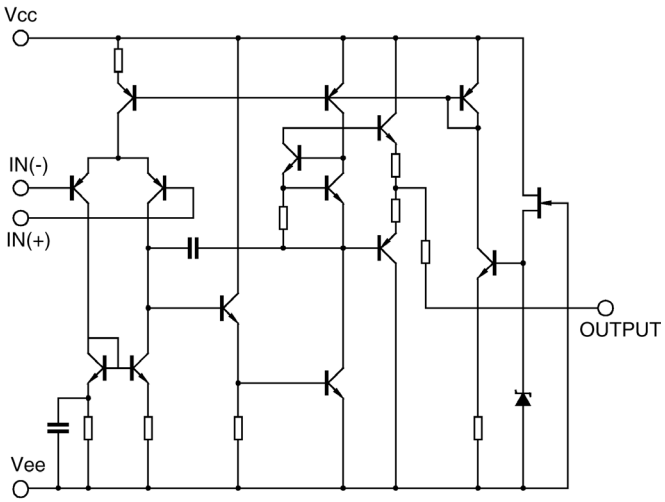


DESCRIPTION

The LM4558 includes two independent, high-growth components. Dual Operational Amplifier with Interior Frequency Compensation It is also suitable for single power supply with wide voltage range. Dual power supply mode, under recommended working conditions, electricity The source current is independent of the supply voltage. Its scope of use includes Sensor amplifier, DC gain module and all other available Operational amplifiers are used for single power supply.

Features

- Internal Frequency Compensation
- High DC voltage gain (about 100 dB)
- Unit gain bandwidth (about 1 MHz)
- Low Input Bias
- Low Input Offset Voltage and Current
- Common mode input voltage range is wide, including grounding
- The input voltage range of differential mode is wide, equal to the voltage norm of power supply.
- Large swing of output voltage (0 to Vcc-1.5V)



ELECTRICAL CHARACTERISTICS

Absolute maximum ratings over operating free-air temperature range.

	Symbol	RATING	UNIT
Supply Voltage	V_{CC}	± 22	V
Differential Input Voltage	$I_{(DIFF)}$	±18	V
Input Voltage	V_I	±15	V
Operating temperature range	Tamb	-0 to 70	^oC
Short temperature range	Tstg	-65 to 150	^oC

Electrical characterisitics at specified free-air temperature,V_{CC}= 15V(unless otherwise noted)

PARAMETER		TEST CONDITIONS*	Symbol	MIN	TYP	MAX	UNIT
Power supply current		RL = ∞	Icc		3.5	5.7	mA
Input offset voltage		RS<10kΩ	V_{IO}	-	2	6.0	mV
Input offset current		Vcm=0V	I_{IO}		5	200	nA
Input bias current		Vcm=0V	I_{BIAS}	-	30	500	nA
Input current	**source current**	V+=1V, V-=0V, Vo=2V	Isource	20	30	-	mA
	sink current	V+=0V, V-=1V, Vo=2V	Isink	-	-50	-20	mA
Input Common Mode Voltage			VI(R)	-	±12	±13	V
Large Signal Voltage Gain		Vo (p-p) =±10V,RL<2kΩ	Gv	80	100	-	dB
Output Voltage Swing		RL>10kΩ	Vo (p-p)	±12	±14	-	V
		RL>2kΩ		±10	±13	-	
Common Mode Rejection Ratio		RS<10kΩ	CMRR	70	90	-	dB
Power supply Rejection Ratio		RS<10kΩ	PSRR	75	90	-	dB

* All characteristics are measured under open-loop conditions with zero common-mode input voltage unless otherwise specified. Full range is 0°C to 70 °c. T_A(min) = 0°C. T_A(max)= 70°C.

TYPICAL PERFORMANCE CHARACTERISTICS

Figure 1. Burst Noise versus Source Resistance

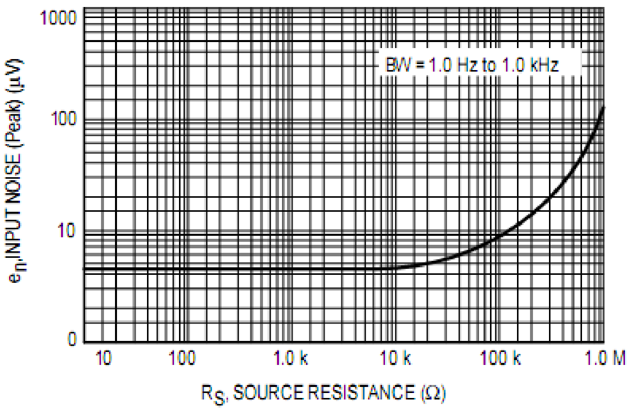


Figure 2. RMS Noise versus Source Resistance

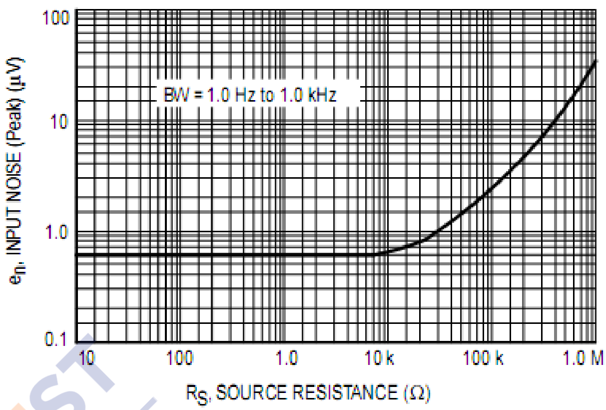


Figure 3. Output Noise versus Source Resistance

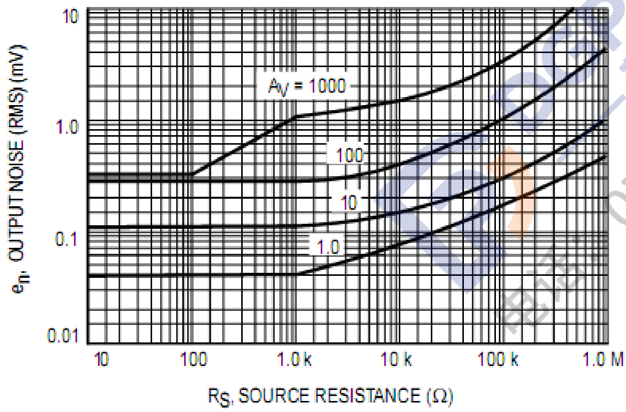


Figure 4. Spectral Noise Density

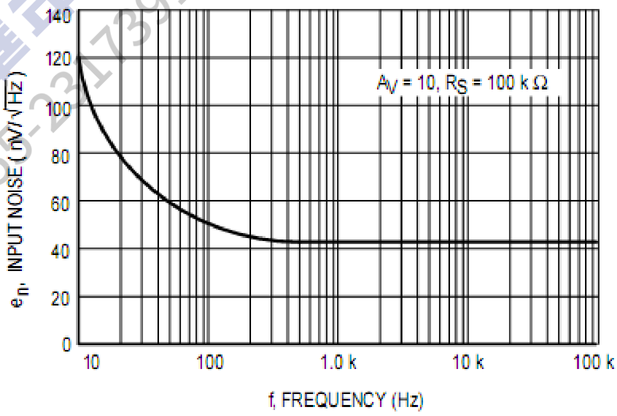


Figure 6. Open Loop Frequency Response

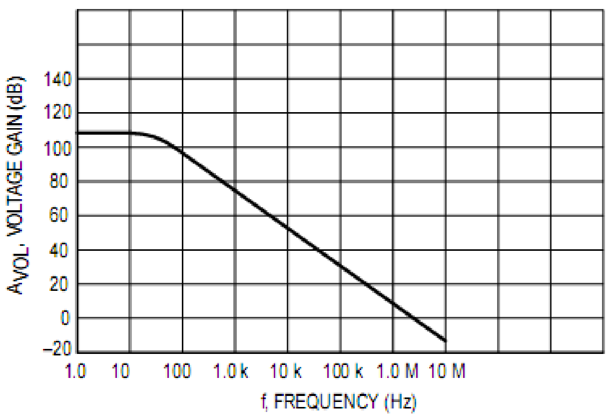
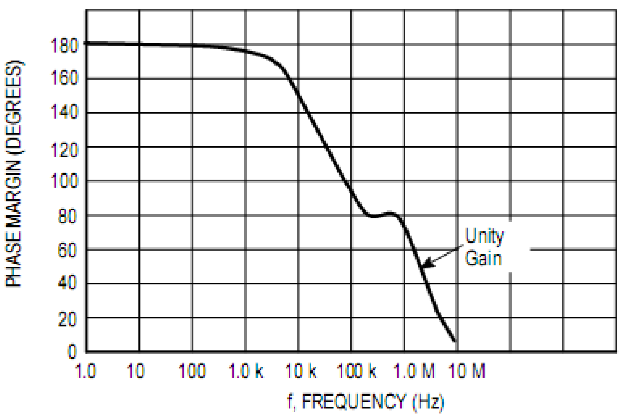


Figure 7. Phase Margin versus Frequency



TYPICAL PERFORMANCE CHARACTERISTICS

Figure 8. Positive Output Voltage Swing versus Load Resistance

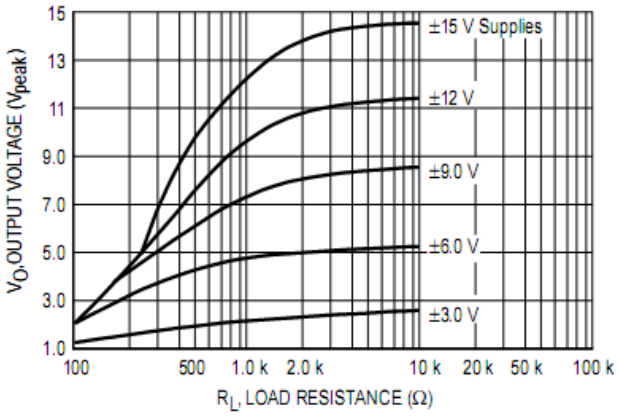


Figure 9. Negative Output Voltage Swing versus Load Resistance

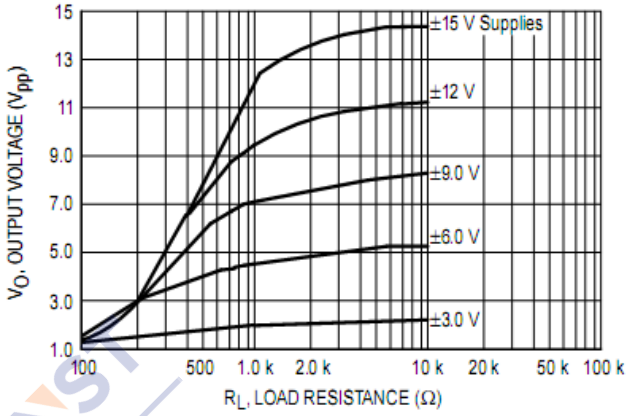


Figure 10. Power Bandwidth (Large Signal Swing versus Frequency)

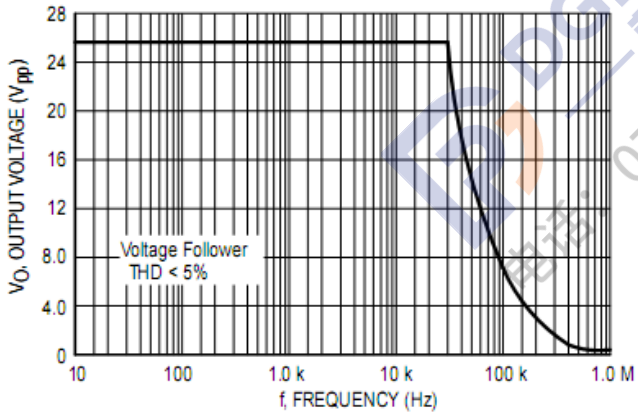
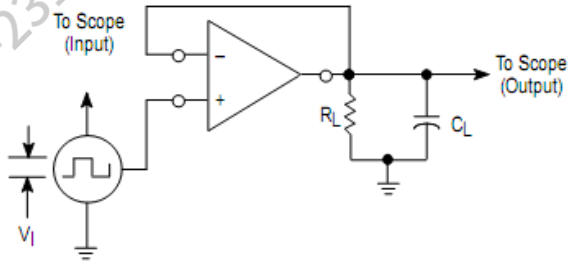
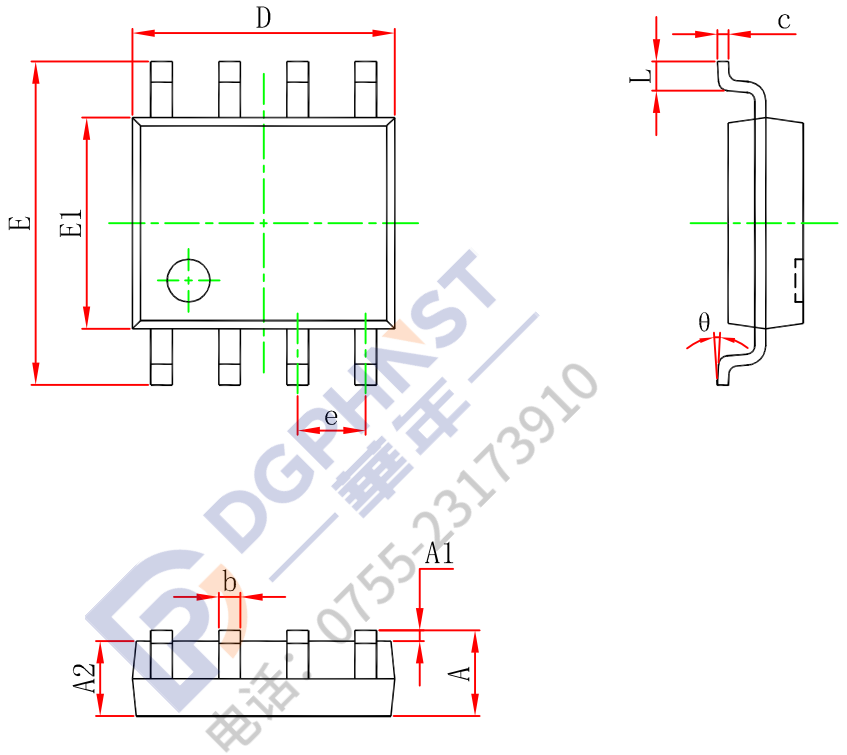


Figure 11. Transient Response Test Circuit



SOP8 Package Outline Dimensions

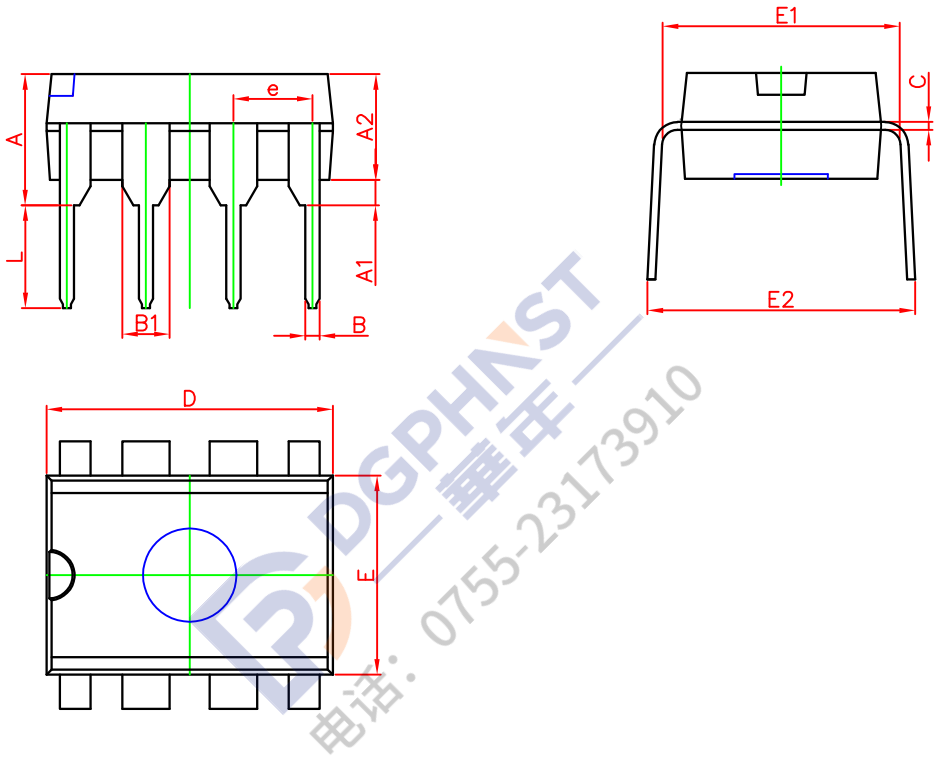
Unit: mm(inch)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	**Max**	**Min**	**Max**
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270（BSC）		0.050（BSC）	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

DIP8 Package Outline Dimensions

Unit: mm(inch)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	3.710	4.310	0.146	0.170
A1	0.510		0.020	
A2	3.200	3.600	0.126	0.142
B	0.380	0.570	0.015	0.022
B1	1.524(BSC)		0.060(BSC)	
C	0.204	0.360	0.008	0.014
D	9.000	9.400	0.354	0.370
E	6.200	6.600	0.244	0.260
E1	7.320	7.950	0.288	0.313
e	2.540(BSC)		0.100(BSC)	
L	3.000	3.600	0.118	0.142
E2	8.400	9.000	0.331	0.354

DISCLAIMER

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