

# GP4558

## DUAL OPERATIONAL AMPLIFIER

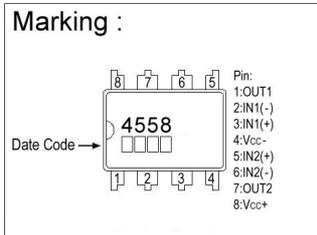
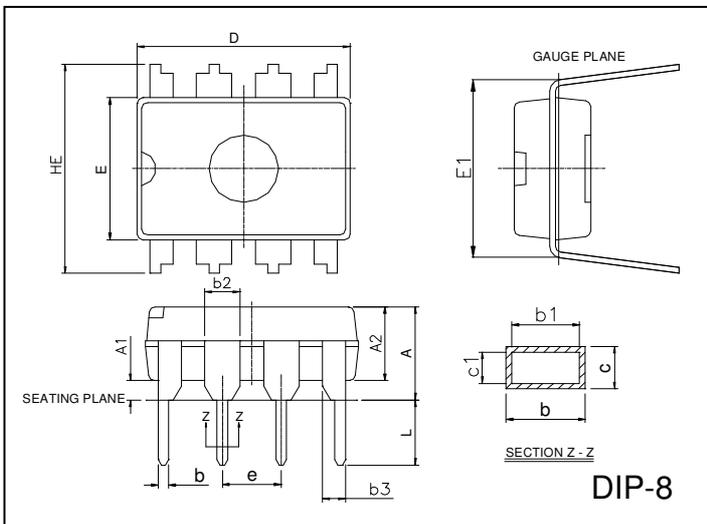
### Description

The GP4558 is a monolithic integrated circuit designed for dual operational amplifier.

### Features

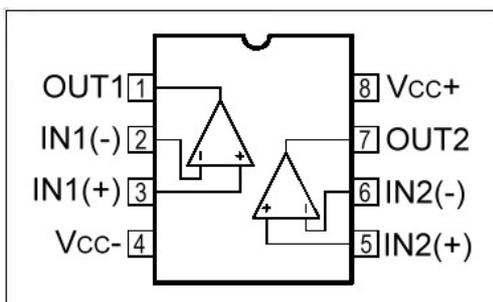
- No frequency compensated required
- No latch-up
- Large common mode and differential voltage range
- Parameter tracking over temperature range
- Gain and phase match between amplifiers
- Internally frequency compensated
- Low noise input transistors

### Package Dimensions

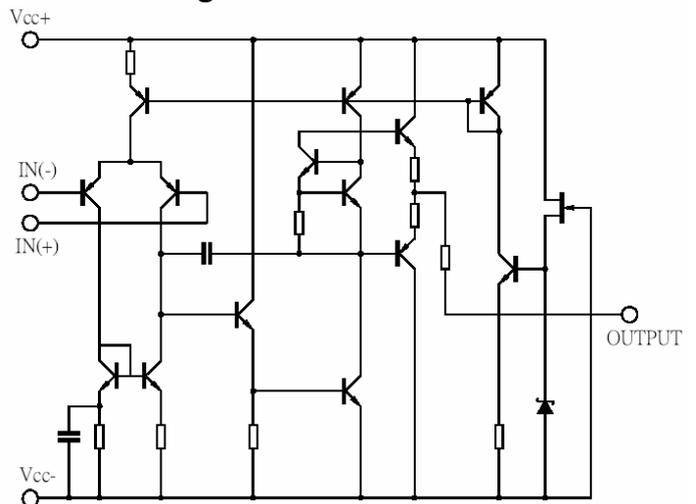


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	-	0.5334	c1	0.203	0.279
A1	0.381	-	D	9.017	10.16
A2	2.921	4.953	E	6.096	7.112
b	0.356	0.559	E1	7.620	8.255
b1	0.356	0.508	e	2.540 BSC	
b2	1.143	1.778	HE	-	10.92
b3	0.762	1.143	L	2.921	3.810
c	0.203	0.356			

### Pin Configurations



### Block Diagram



## Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	VALUE	Unit
Supply Voltage	VCC	±22	V
Differential Input Voltage	VI(DIFF)	±18	V
Input Voltage	VI	±15	V
Power Dissipation	PD	600	mW
Operating Temperature Range	TOPR	0 ~ +70	°C
Storage Temperature Range	TSTG	-65 ~ +150	°C

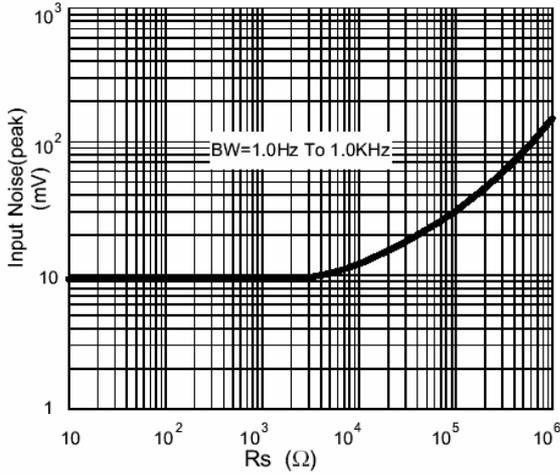
## Electrical Characteristics (VCC=15V Vee=-15V, TA=25°C)

Parameter	SYMBOL	Test Conditions	Min	Typ.	Max	Unit
Supply Current, all Amp, no load	ICC		-	2.3	4.5	mA
Input Offset Voltage	VIO	Rs<10kΩ	-	2	6	mV
Input Offset Current	IIO		-	5	200	nA
Input Bias Current	IBIAS		-	30	500	nA
Common Mode Input Voltage	VI(R)		±12	±13		V
Large Signal Voltage Gain	GV	VO(P-P)=±10V, RL≤2kΩ	20	200	-	V/mV
Output Voltage Swing	VO(P-P)	RL≥10kΩ	-	±12	±14	V
Common Mode Rejection Ratio	CMRR	Rs≤10kΩ	70	90	-	dB
Supply Voltage Rejection Ratio	PSRR	Rs≤10kΩ	76	90	-	dB
Power Consumption	Pc		-	70	170	mV
Slew Rate	SR	Vi=±10V, RL≥2kΩ, CL≤100pF	1.2	2.2	-	V/μs
Rise Time	TRIS	Vi=±20mV, RL≥2kΩ, CL≤100pF	-	0.3	-	μs
Overshoot	OS	Vi=±20mV, RL≥2kΩ, CL≤100pF	-	15	-	%
Input Resistance	Ri		0.3	2	-	MΩ
Output Resistance	Ro		-	75	-	Ω
Total Harmonic Distortion	THD	f=1kHz, Av=20dB, RL=2kΩ, VO= 2VPP, CL=100pF	-	0.008	-	%
Channel Separation	Vo1/Vo2		-	120	-	dB

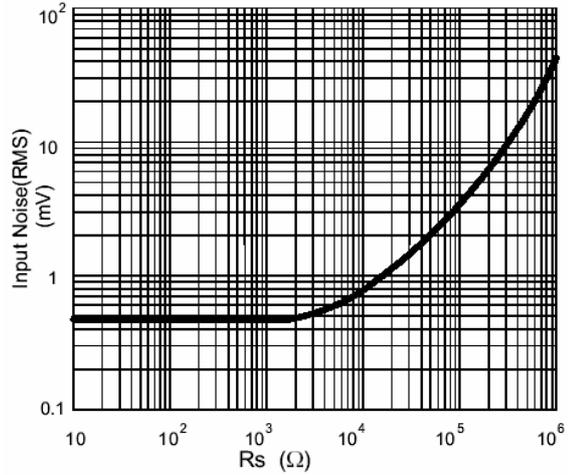
## Frequency Characteristics (VCC=15V Vee=-15V, TA=25°C)

Parameter	SYMBOL	Test Conditions	Min	Typ.	Max	Unit
Unity Gain Bandwidth	BW		2.0	2.8	-	MHz

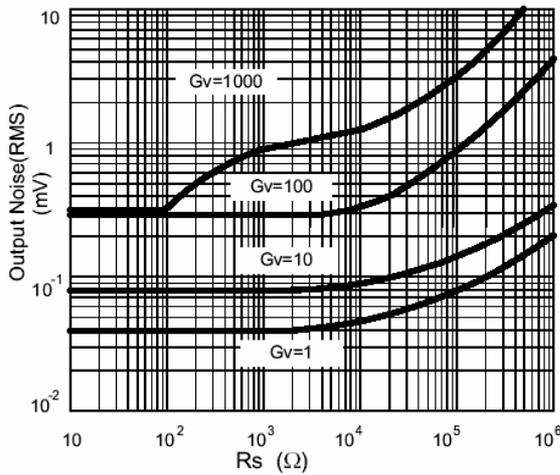
**Typical Performance Characteristics**



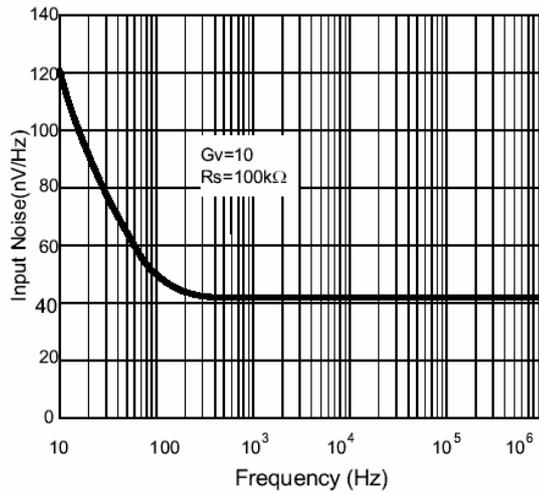
**Fig 1. Burst Noise vs. Rs**



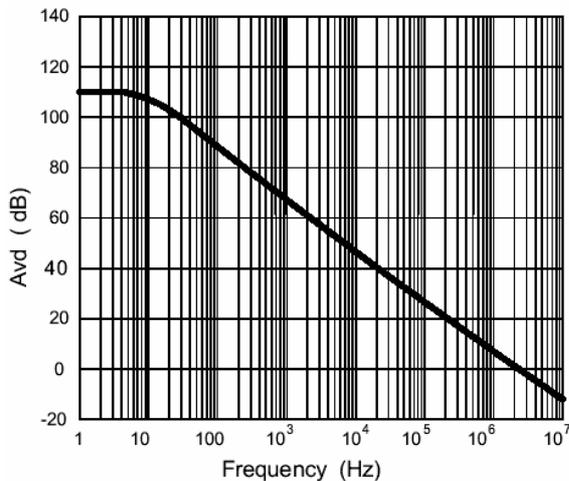
**Fig 2. RMS Noise vs. Rs**



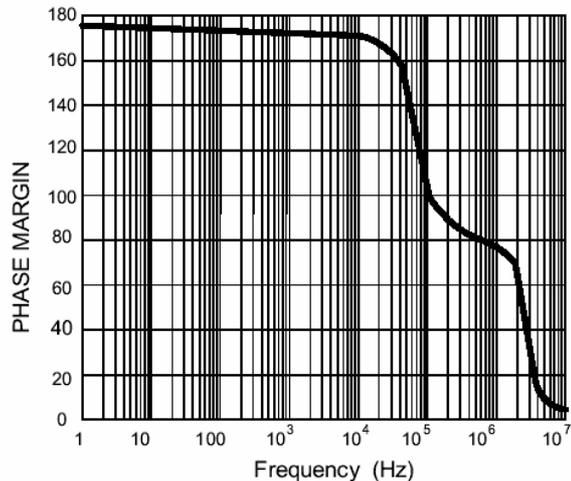
**Fig 3. Output Noise vs. Rs**



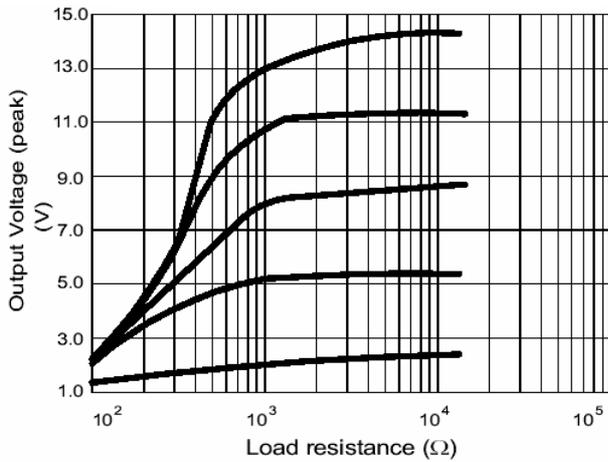
**Fig 4. Spectral Noise vs. Density**



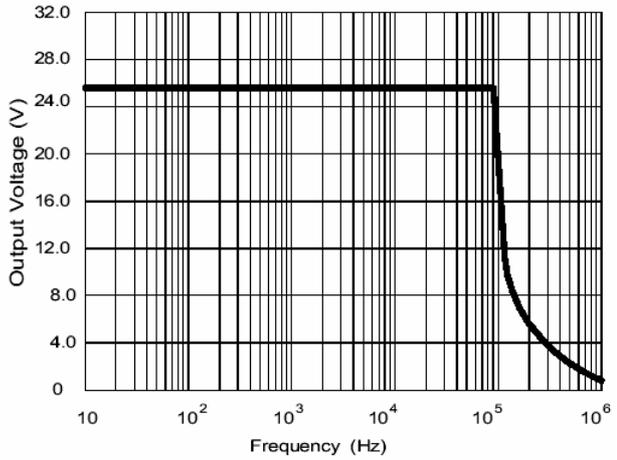
**Fig 5. Open Loop Frequency Response**



**Fig 6. Phase Margin vs. Frequency**



**Fig 7. Positive Output Voltage Swing vs. Load Resistance**



**Fig 8. Power Bandwidth (Large Signal)**

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