

GS258 Series

Dual Operational Amplifiers

Product Description

The GS258 consists of two independent, high gain, internally frequency compensated operational amplifiers which were designed specifically to operate from a single power supply over a wide range of voltages.

Operation from split power supplies is also possible and the low power supply current drains in independent of the magnitude of the power supply voltage.

Application areas include transducer amplifiers, dc gain blocks and all the conventional op amp circuits, which now can be more easily implemented in single power supply systems. For example, the GS258 can be directly operated off of the standard +5V power supply voltage which is used in digital systems and will easily provide the required interface electronics without requiring the additional $\pm 15\text{V}$ power supplies.

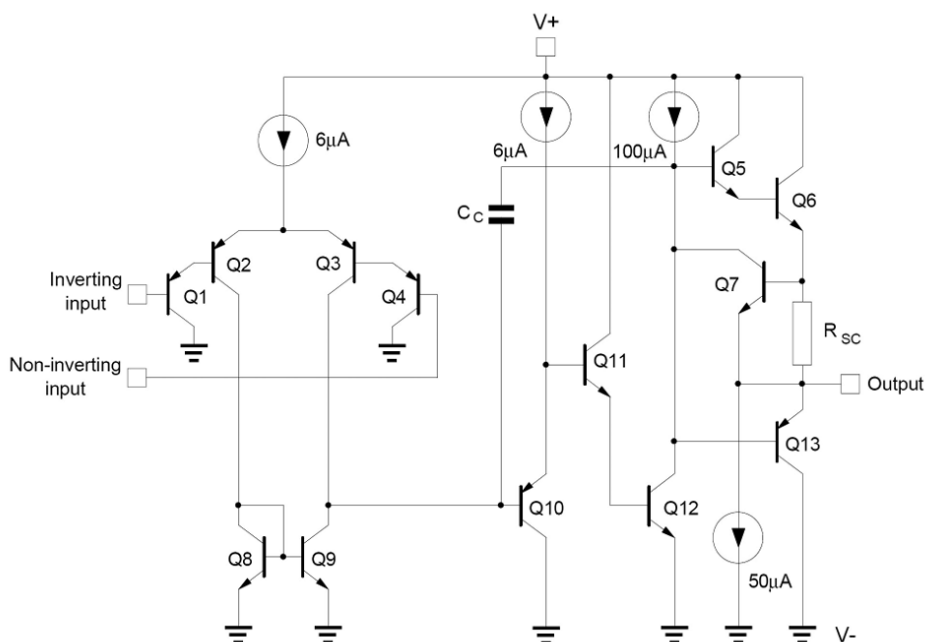
Features

- Wide range of supply voltages 3V to 32V
- Low supply current drain independent of supply
- Supply current 0.5mA (TYP.)
- Low input biasing current
- Low input offset voltage and offset current
- Internally frequency compensation
- RoHS Compliant & Halogen Free

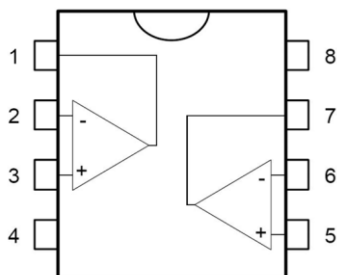
Applications

- Multi-function Printers
- Power Supply
- Motor Control
- Desktop PC and Motherboard
- Inverter
- Air Conditioner

Functional Block Diagram



Packages & Pin Assignments



Pin	Pin Name	I/O	Description
1	OUT1	Output	Output 1
2	IN1-	Input	Negative Input 1
3	IN1+	Input	Positive Input 1
4	V-	—	Negative (lowest) Supply or Ground (for single-supply operation)
5	IN2+	Input	Positive Input 2
6	IN2-	Input	Negative Input 2
7	OUT2	Output	Output 2
8	V+	—	Positive (highest) Supply

Ordering & Marking Information

Ordering Information				
Part Number	Marking Code1	Marking Code2	Package	Quantity/Reel
GS258SF	CHMC D258 S□□□□	258SF □□□□	SOP-8L	4,000 PCS
Marking Information				
□□□□ is GS Code.				

Absolute Maximum Ratings (T_A=25°C, unless otherwise specified.) ¹

Symbol	Parameter	Value		Unit
V _S	Supply Voltage, V _S = ([V+] – [V–])	36 or ±18		V
V _{ID}	Differential Input Voltage Range ²	±32		V
θ _{JA}	Thermal Resistance (Junction to Ambient)	SOP-8L	125	°C/W
θ _{JC}	Thermal Resistance (Junction to Case)	SOP-8L	40	°C/W
T _A	Operating Ambient Temperature Range	-25 to 85		°C
T _J	Junction Temperature	150		°C
T _{STG}	Storage Temperature Range	-65 to +150		°C
ESD	HBM	500		V
Duration of output short circuit (one amplifier) to ground at (or below) T _A = 25°C, V _S ≤ 15 V ³		Unlimited		Sec

NOTE:

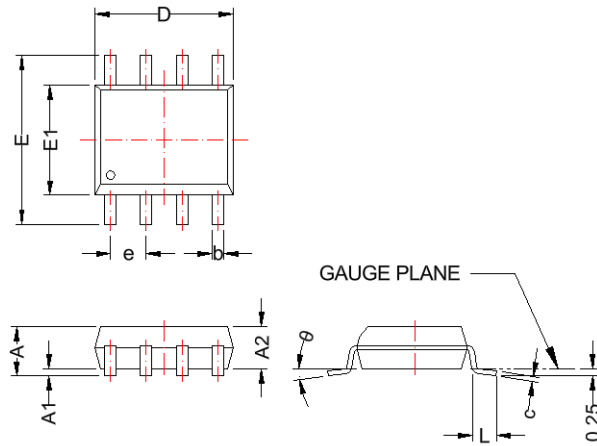
1. Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only, and do not imply functional operation of the device at these or any other conditions beyond those indicated under Recommended Operating Conditions. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.
2. Differential voltages are at IN+, with respect to IN–.
3. Short circuits from outputs to V_S can cause excessive heating and eventual destruction.

Electrical Characteristics (T_A=25°C and V_S=5V, unless otherwise specified.)

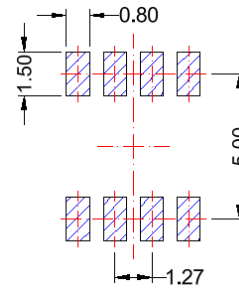
Symbol	Test Conditions	Min	Typ	Max	Unit
V _{IO}	Input Offset Voltage		1	3	mV
		-25~85°C		7	
I _B	Input Bias Current		25	250	nA
		-25~85°C	50	500	
I _{IO}	Input Offset Current		5	50	nA
		-25~85°C		150	
PSRR	Power Supply Rejection Ratio V _S =5V to 30V	65	100		dB
V _{O1} / V _{O2}	Channel Separation f = 1 kHz to 20 kHz		120		dB
V _{CM}	Common-Mode Input Voltage Range V _S =30V		V-	V+-1.5	V
		-25~85°C	V-	V+-2	
CMRR	Common-Mode Rejection Ratio V _{CM} =0V	70	80		dB
A _{OL}	Open-Loop Voltage Gain V _S = 15V; V _O = 1V to 11V; R _L ≥ 2kΩ		50	100	V/mV
		-25~85°C	25		
GBW	Gain Bandwidth Product		1		MHZ
SR	Slew Rate		0.4		V/μs
V _{OH}	High-Level Output Voltage V _S =30V, R _L = 2KΩ V _S =30V, R _L = 10KΩ		26		V
			27	28	
V _{OL}	Low-Level Output Voltage V _S =5V, R _L = 10KΩ		5	20	mV
I _{Source}	Output Source Current V _S = 15V; V _{ID} = 1 V; V _O = 2V	20	40		mA
I _{Sink}	Output Sink Current V _S = 15V; V _{ID} = -1 V; V _O = 2V V _S = 15V; V _{ID} = -1 V; V _O = 200mV	10	20		mA
		12	50		μA
I _{sc}	Short-Circuit Current V _S = 15V		40	60	mA
I _Q	Quiescent Current V _S =30V, R _L =∞ V _S =5V, R _L =∞	-25~85°C	1	3	mA
			0.5	1.2	

SOP-8L

Package Dimension



Recommended Land Pattern



Unit:mm

Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	---	1.80	---	0.071
A1	0.00	0.25	0.000	0.010
A2	1.25	---	0.049	---
b	0.30	0.51	0.011	0.020
c	0.10	0.25	0.004	0.010
D	4.70	5.10	0.185	0.201
E	5.80	6.30	0.228	0.244
E1	3.80	4.00	0.150	0.157
e	1.27 BSC		0.050 BSC	
L	0.40	1.27	0.016	0.050
θ	0°	8°	0°	8°

NOTE:

Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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