

## Dual op amp

### Overview

The JR4558 IC is a low-noise, dual-channel, high-gain operational amplifier, using an advanced epitaxy process, internally compensated and built on a single silicon die.

It is suitable for single-supply use with a wide supply voltage range, and also for dual-supply operation, where supply current is independent of supply voltage under recommended operating conditions. Its uses include active filters, compensation amplifiers, audio preamplifiers, equalization amplifiers, and various linear amplifiers in electronic instrumentation.

The JR4558 is available in SOP-8 and DIP-8 packages.

### Main features

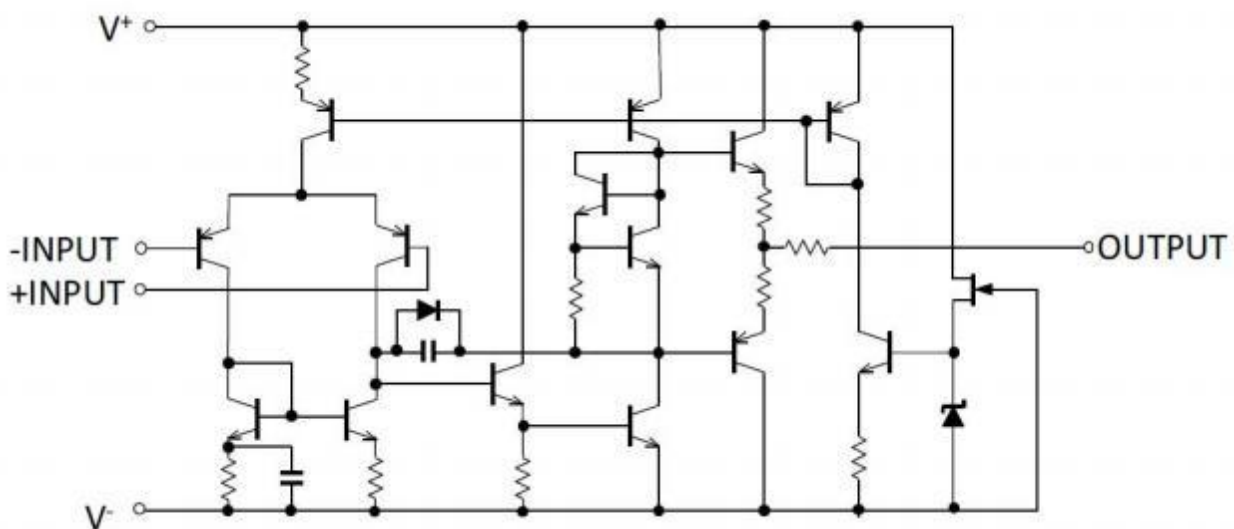
- Built-in phase compensation loop
- High DC voltage gain (about 100dB)

- Unity Gain Bandwidth (about 3.5MHz)
- High input impedance (about 5MΩ)
- Bipolar process
- Low input bias current
- Low input offset voltage and offset current
- Wide common-mode input voltage range, including ground
- Differential mode input voltage range is wide, equal to the supply voltage range
- Large output voltage swing (0 to  $V_{cc}-1.5V$ )

### Main application areas

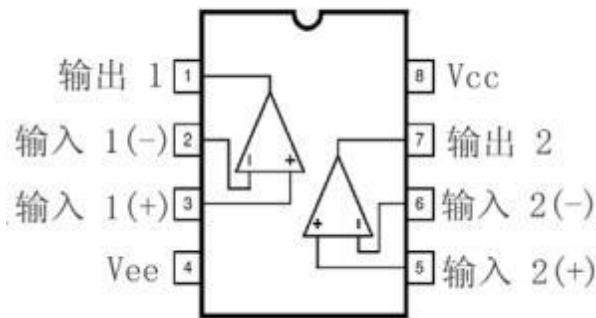
- Active filter
- Compensation amplifier
- Audio preamplifier
- Electronic Instrumentation

### Equivalent circuit diagram (one channel only):



**Pin Description**

JR4558 is available in SOP8 and DIP8 packages.



Pin No.	Pin name	I/O	Description
1	OUT1	O	The first op amp output.
2	IN1 (-)	I	The first op amp negative input.
3	IN1 (+)	I	The positive input of the first op amp.
4	Vee	P	land
5	IN2(+)	I	The positive input of the second op amp.
6	IN2 (-)	I	The second op amp negative input.
7	OUT2	O	The second op amp output.
8	Vcc	P	voltage

**Limit parameters**

Parameter	Logo	Value
voltage	Vcc/Vee	±18V
Differential input voltage	VI(DIFF)	±18V
Input voltage	VI	±15V
Working ambient temperature range	Tamb	-40~+85°C
Storage temperature range	Tstg	-65~+150°C

Recommended working conditions (if not otherwise specified, Tamb=25°C)

Parameter	logo	Testing condition	Min	Typical value	Max	Unit
Working voltage	Vcc/Vee		±4		±18	V

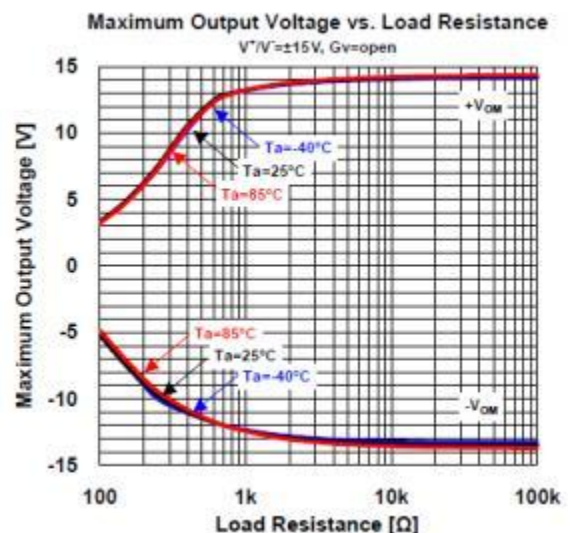
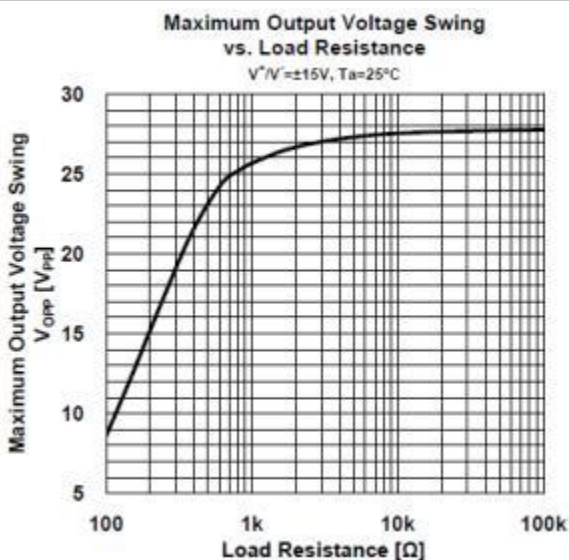
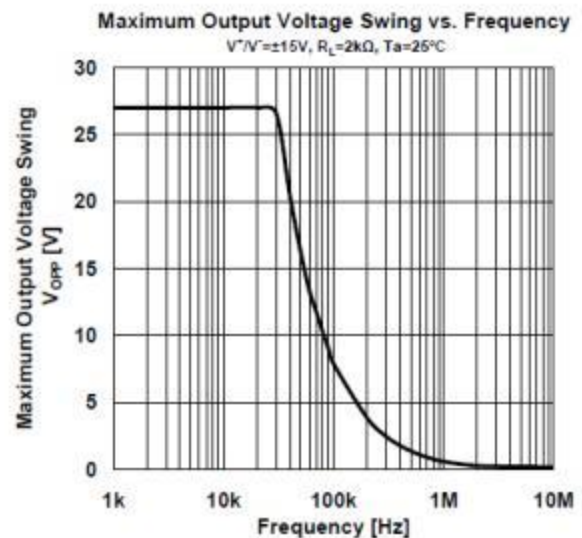
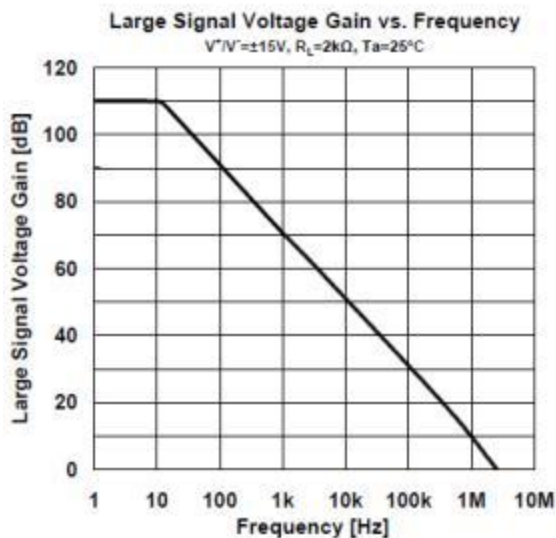
**Electrical Characteristics**

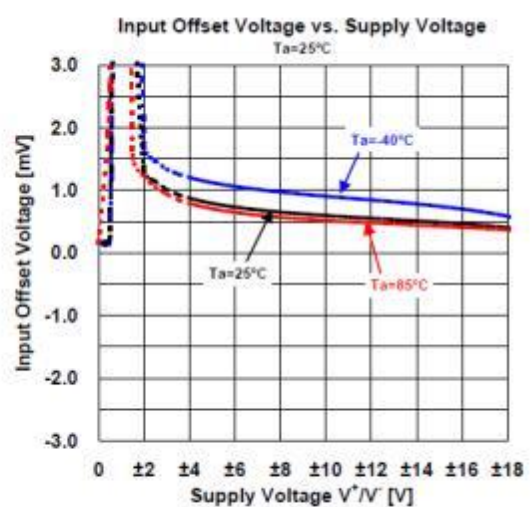
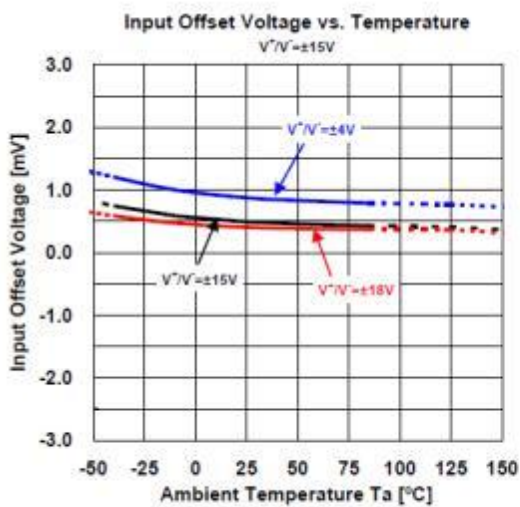
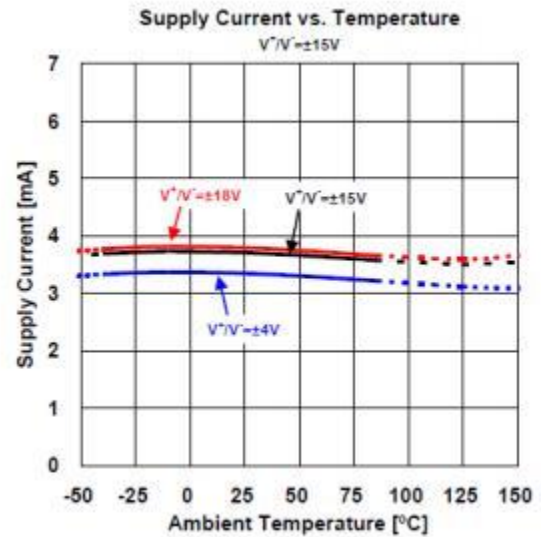
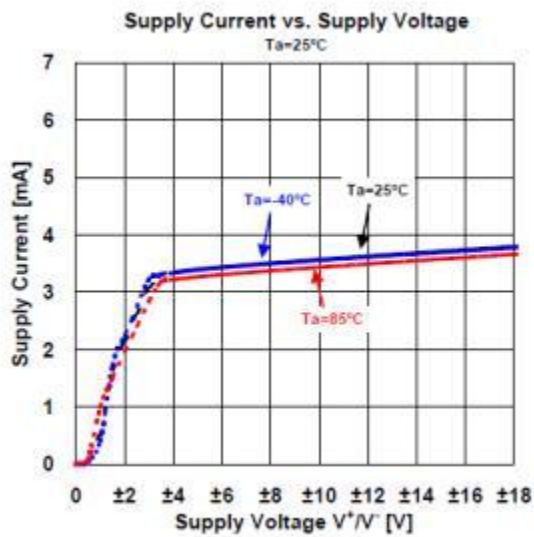
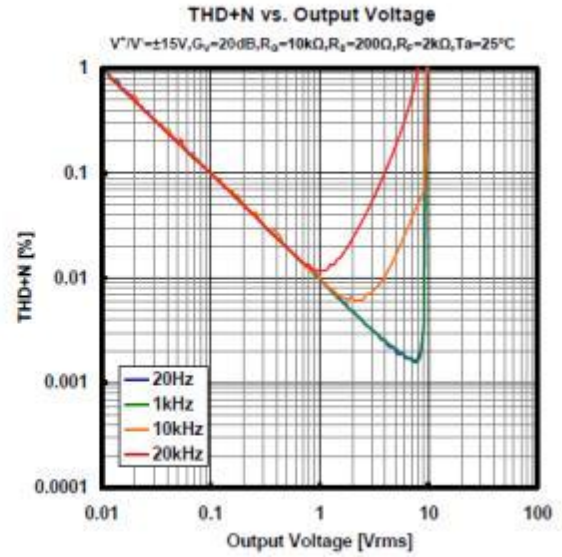
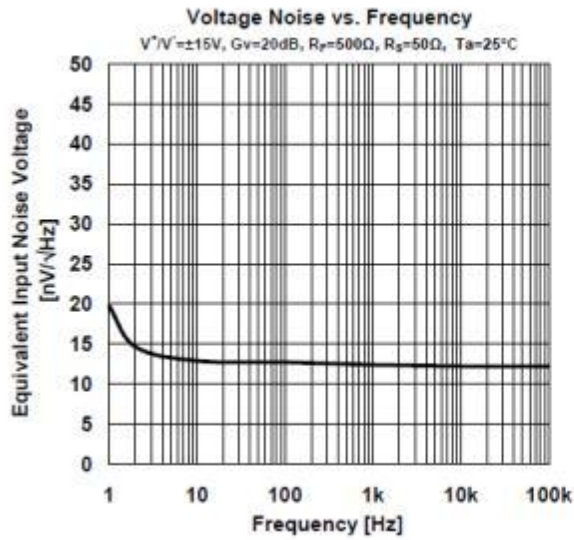
Condition: (Vcc/Vee =±15V unless otherwise specified)

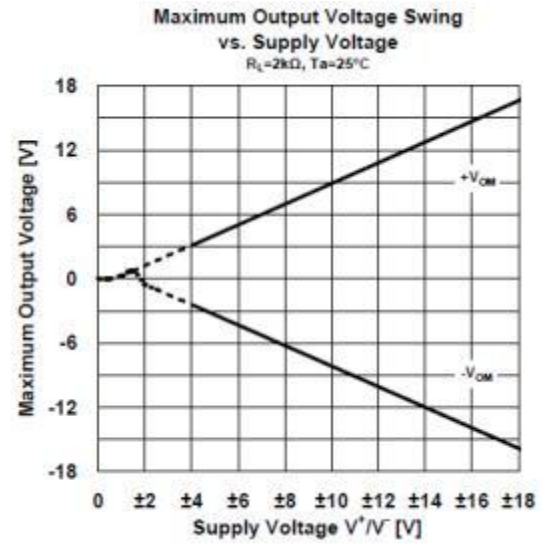
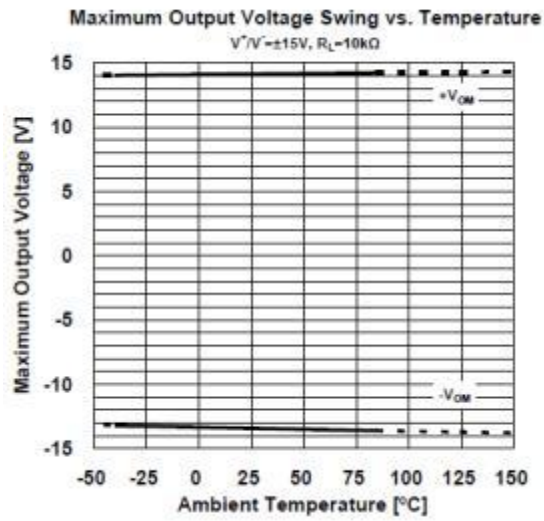
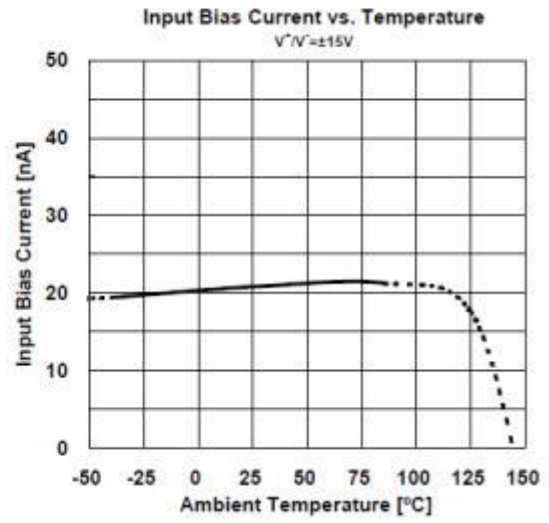
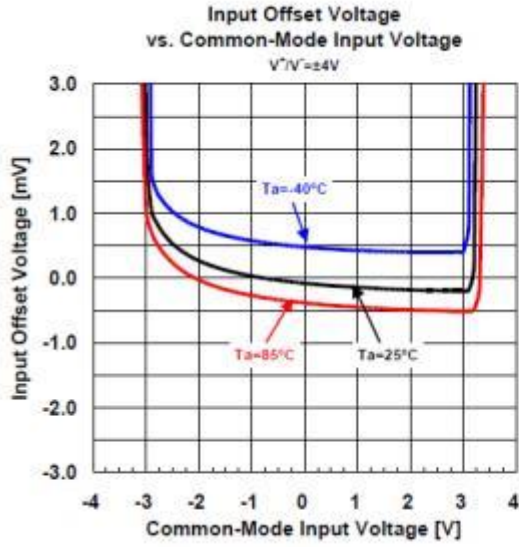
Parameter	Logo	Testing Condition	Min	Typical value	Max	Unit
supply current	Icc	RL = ∞		3.5	5.7	mA
Input offset voltage	VIO	RS<10kΩ		2	6.0	mV

Input offset current	IIO	Vcm=0V		5	200	nA
Input bias current	IBIAS	Vcm=0V		30	500	nA
Output current	source current	Isource		40	80	mA
	sink current	Isink		-80	-50	mA
Input Common Mode Voltage Range	VI( R )			±12	±13	V
Large signal voltage gain	Gv	Vo (p-p) =±10V,RL<2kΩ	80	100		dB
Output voltage swing	Vo (p-p)	RL> 10kΩ	±12	±14		V
		RL>2kΩ	±10	±13		
Common Mode Rejection Ratio	CMRR	RS< 10kΩ	70	95		dB
Supply Voltage Rejection Ratio	PSRR	RS< 10kΩ	75	100		dB
Slew rate	SR			1.5		V/uS
Gain Bandwidth Product	GBP			3.5		MHz

### Typical performance

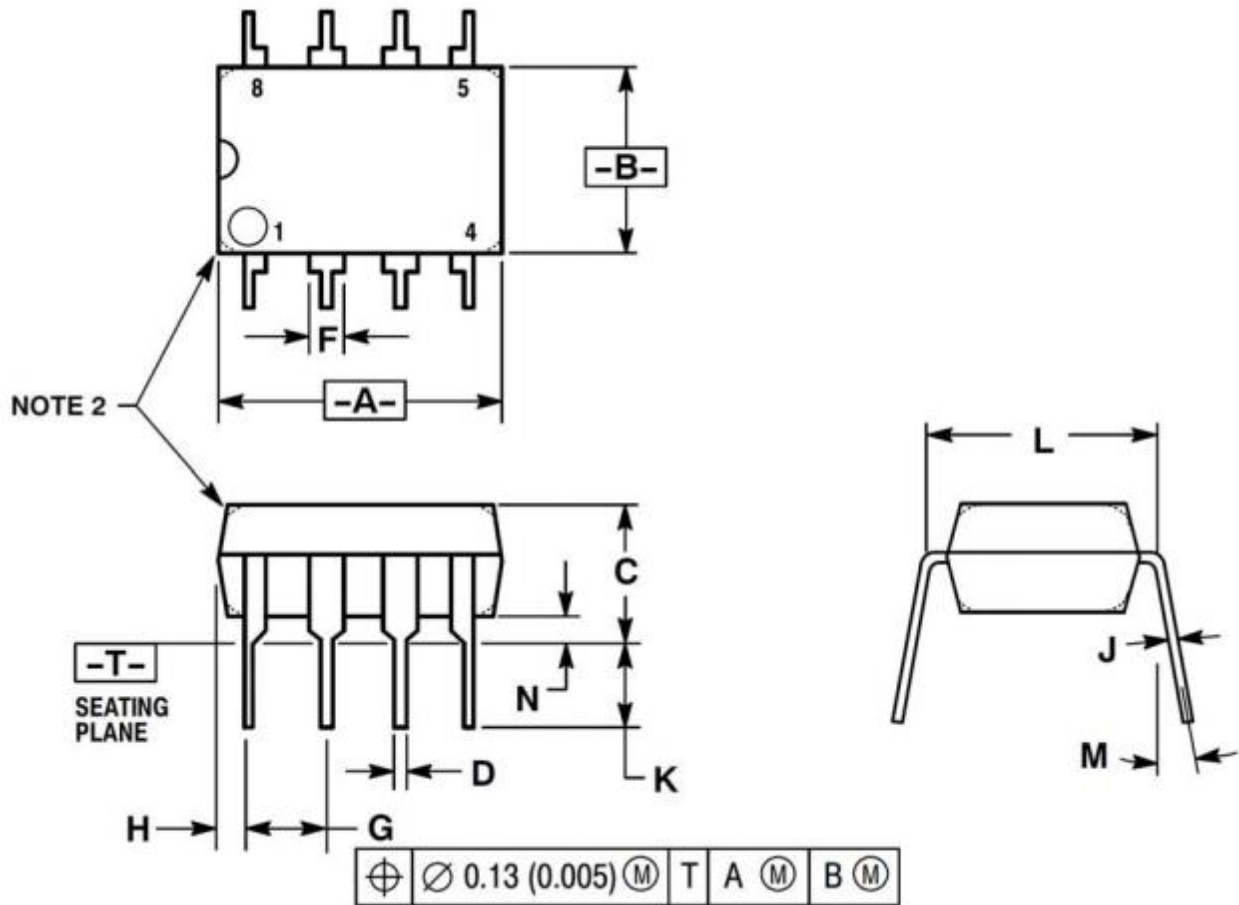






## Package Mechanical Data:

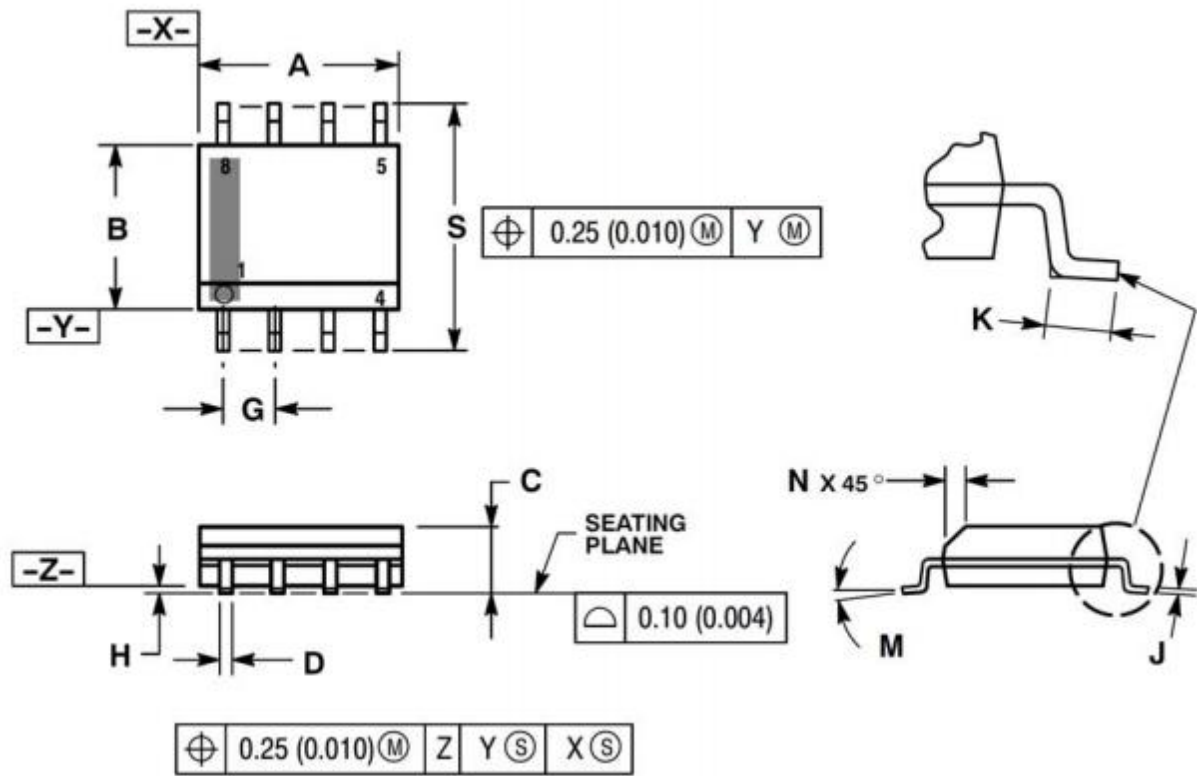
8-Pin Plastic DIP



Note: 1. The L dimension is the dimension when the pins are parallel; 2. The shape has two rounded corners and square corners.

label	Millimeter		Inch	
	MIN	MAX	MIN	MAX
A	9.4	10.16	0.37	0.4
B	6.1	6.6	0.24	0.26
C	3.94	4.45	0.155	0.175
D	0.38	0.51	0.015	0.02
F	1.02	1.78	0.04	0.07
G	2.54		0.1	
H	0.76	1.27	0.03	0.05
J	0.2	0.3	0.008	0.012
K	2.92	3.43	0.115	0.135
L	7.62		0.3	
M	...	10°	...	10°
N	0.76	1.01	0.03	0.04

### 8-Pin Plastic SOP



label	MM		Inch	
	MIN	MAX	MIN	MAX
A	4.8	5	0.189	0.197
B	3.8	4	0.15	0.157
C	1.35	1.75	0.053	0.069
D	0.33	0.51	0.013	0.02
G	1.27		0.05	
H	0.1	0.25	0.004	0.01
J	0.19	0.25	0.007	0.01
K	0.4	1.27	0.016	0.05
M	0°	8°	0°	8°
N	0.25	0.5	0.01	0.02
S	5.8	6.2	0.228	0.244