

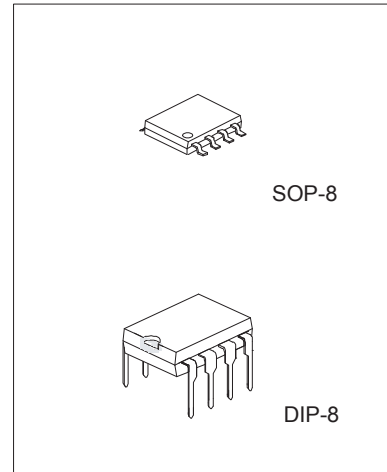
## Dual Operational Amplifier

### DESCRIPTION

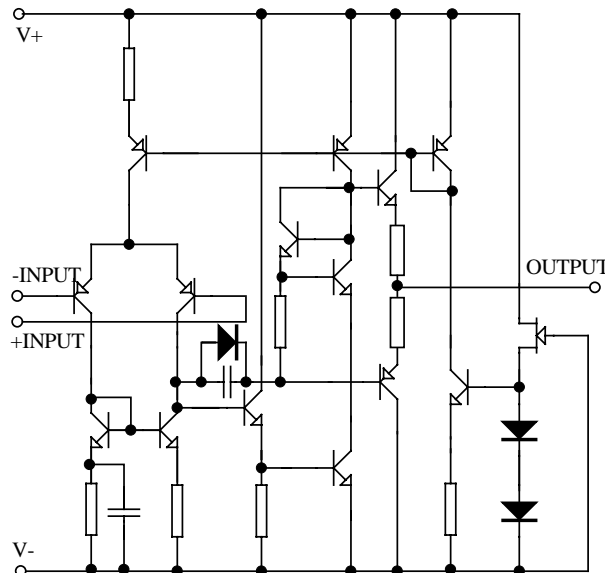
The CO4580 is a high performance monolithic dual operational amplifier

### FEATURES

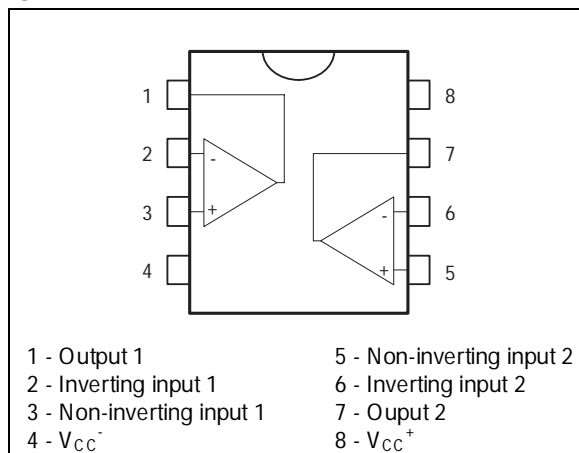
Operating Voltage	( $\pm 2V \sim \pm 18V$ )
Low Input Noise Voltage	( $0.8\mu V_{rms}$ typ.)
Wide Gain Bandwidth Product	( $15MHz$ typ.)
Low Distortion	( $0.0005\%$ typ.)
Slew Rate	( $5V/\mu s$ typ.)
Package Outline	DIP8, SOP8
Bipolar Technology	



### BLOCK DIAGRAM



### PIN CONFIGURATION

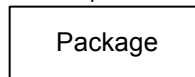


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## Dual Operational Amplifier

### ORDERING INFORMATION

CO4580N



Blank SO-8  
 N=PDIP8  
 A=SO-8 & taping

### MAXIMUM RATINGS

(Ta=25 °C)

PARAMETER	SYMBOL	LIMITS	UNIT
Supply Voltage	V <sub>CC</sub>	±18	V
Differential input voltage	V <sub>I(DIFF)</sub>	±30	V
Output Current	I <sub>O</sub>	±50	mA
Input Voltage	V <sub>I</sub>	±15	V
Power dissipation P-DIP 8 SOP 8	P <sub>D</sub>	800 300	mW
Operating temperature	TOPR	-40~+85	°C
Storage temperature	TSTG	-40~+125	°C

### ELECTRICAL CHARACTERISTICS

(Ta=25 °C, V<sub>+</sub>/V<sub>-</sub>=±15V)

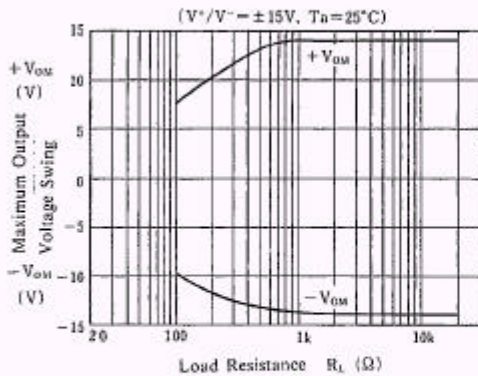
PARAMETER	SYMBOL	TEST CONDUCTION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V <sub>IO</sub>	R <sub>S</sub> 10KΩ	-	0.5	3	mV
Input Offset Current	I <sub>IO</sub>		-	5	200	nA
Input Bias Current	I <sub>B</sub>		-	100	500	nA
Large Signal Voltage Gain	A <sub>v</sub>	R <sub>L</sub> 2KΩ, V <sub>o</sub> =±10V	90	110	-	dB
Output Voltage Swing	V <sub>OM</sub>	R <sub>L</sub> =2KΩ	±12	±13.5	-	V
Input Common Mode Voltage Range	V <sub>ICM</sub>		±12	±13.5	-	V
Common Mode Rejection Ratio	CMR	R <sub>S</sub> 10KΩ	80	110	-	dB
Supply Voltage Rejection Ratio	SVR	R <sub>S</sub> 10KΩ	80	110	-	dB
Operating Current	I <sub>CC</sub>		-	6	9	mA
Slew Rate	SR	R <sub>L</sub> 2KΩ	-	5	-	V/μs
Gain Bandwidth Product	GB	f=10KHZ	-	15	-	MHz
Total Harmonic Distortion	THD	A <sub>v</sub> =20dB, V <sub>o</sub> =5V, R <sub>L</sub> =2KΩ, f=1KHZ	-	0.0005	-	%
Input Noise Voltage	V <sub>NI</sub>	RIAA R <sub>s</sub> =2.2KΩ, 30KHZLPF	-	0.8	-	μV <sub>rms</sub>

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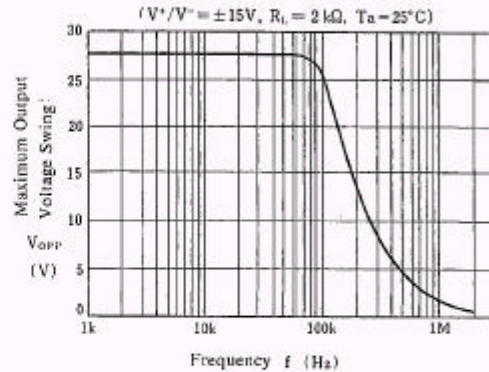
## Dual Operational Amplifier

### ■ TYPICAL CHARACTERISTICS

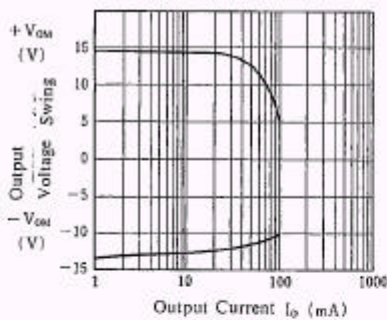
**Maximum Output Voltage Swing vs. Load Resistance**



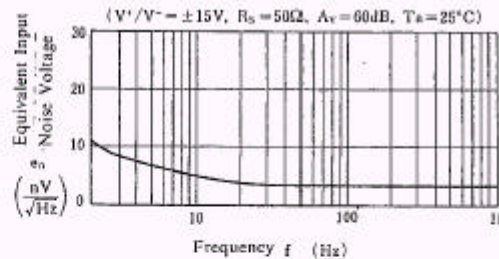
**Maximum Output Voltage Swing vs. Frequency**



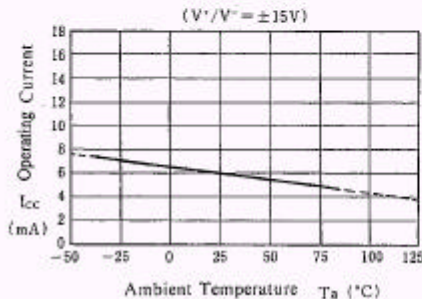
**Output Voltage Swing vs. Output Current**



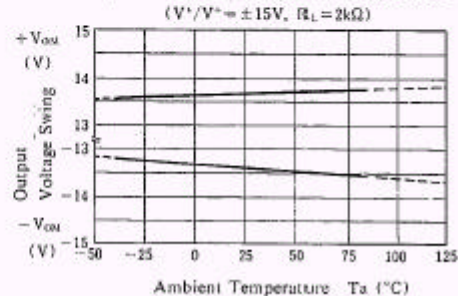
**Equivalent Input Noise Voltage vs. Frequency**



**Operating Current vs. Temperature**



**Output Voltage Swing vs. Temperature**

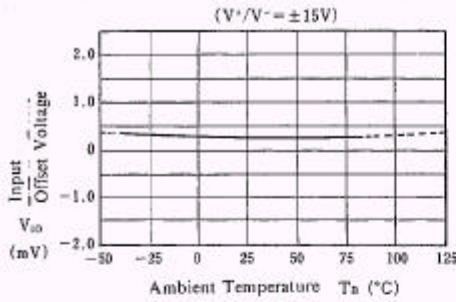


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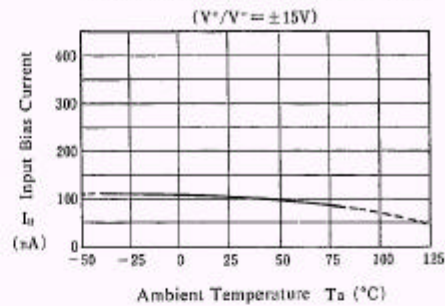
## Dual Operational Amplifier

### TYPICAL CHARACTERISTICS

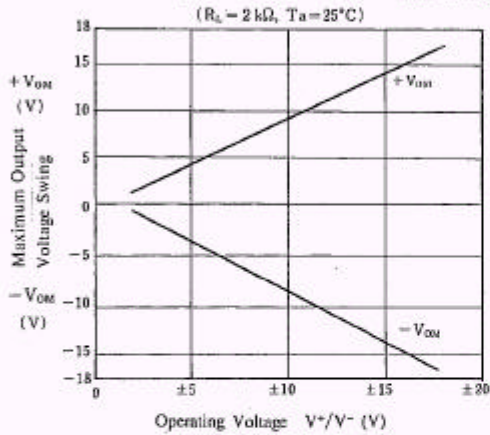
**Input Offset Voltage vs. Temperature**



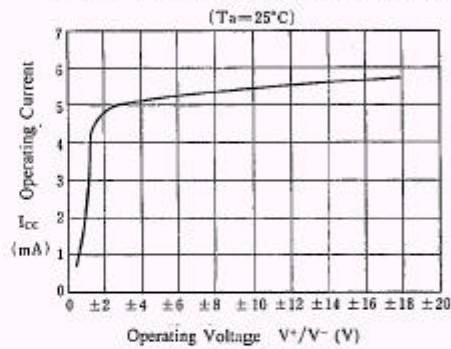
**Input Bias Current vs. Temperature**



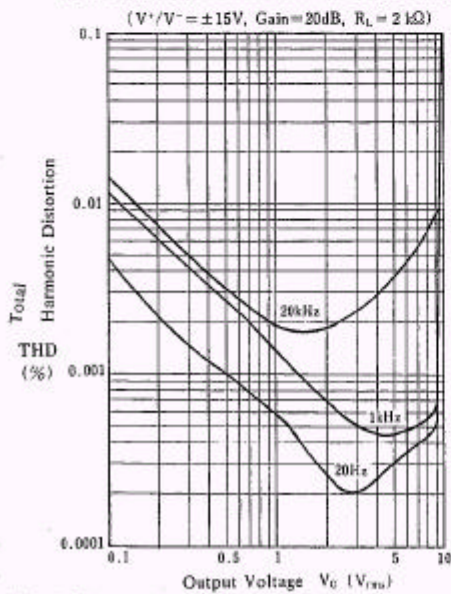
**Maximum Output Voltage Swing vs. Operating Voltage**



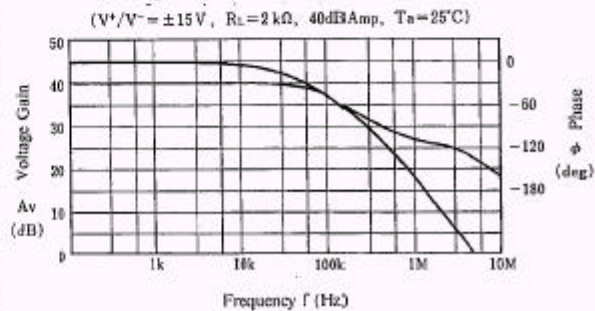
**Operating Current vs. Operating Voltage**



**Total Harmonic Distortion vs. Output Voltage**



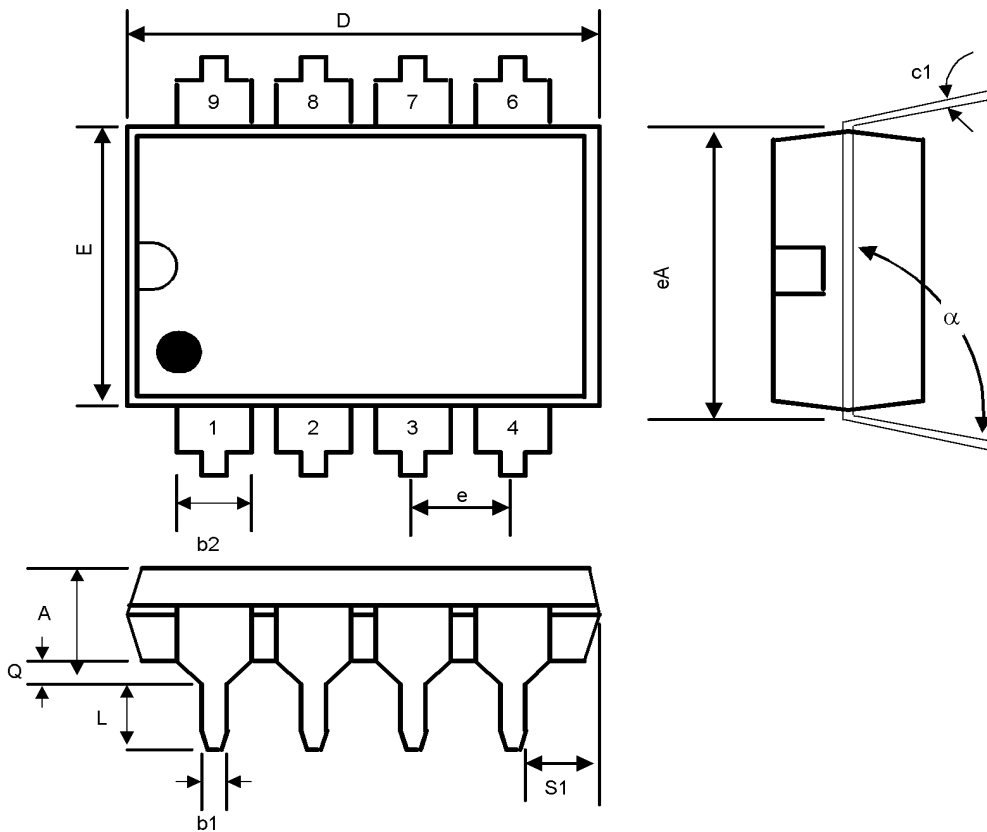
**Voltage Gain, Phase vs. Frequency**



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## Dual Operational Amplifier

### Package Outlines : DIP-8

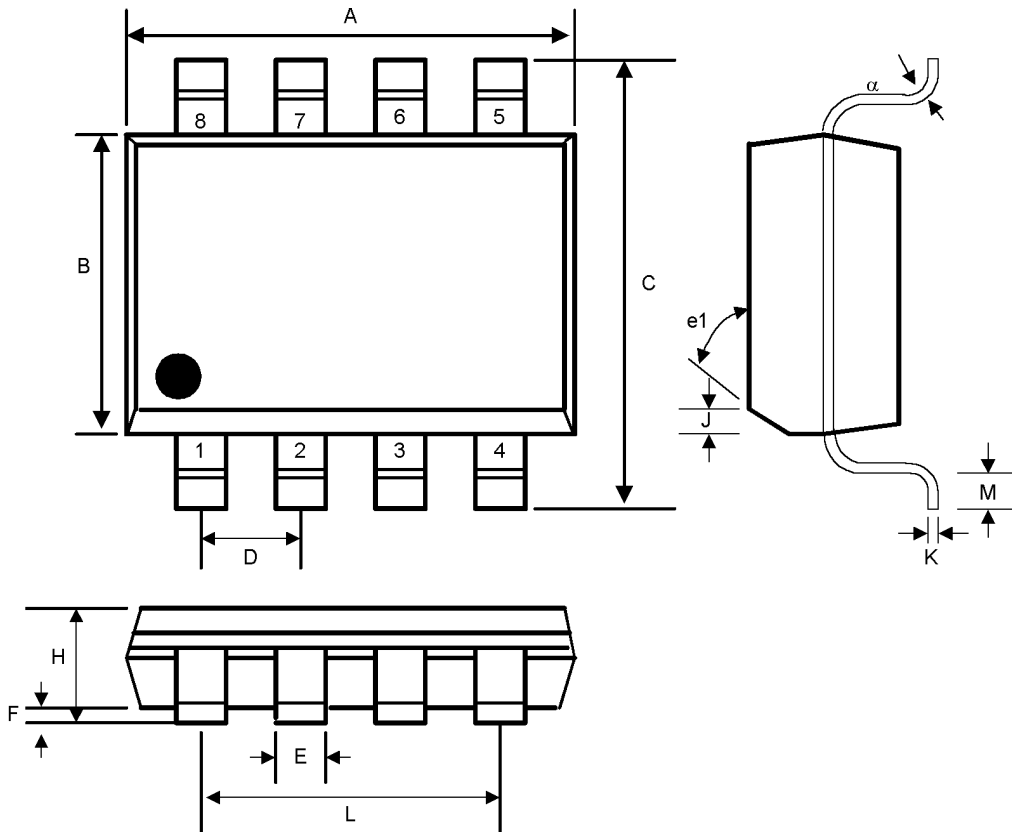


SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN	MAX	MIN	MAX	
A	-	0.200	-	5.08	-
b1	0.014	0.023	0.36	0.58	-
b2	0.045	0.065	1.14	1.65	-
c1	0.008	0.015	0.20	0.38	-
D	0.355	0.400	9.02	10.16	-
E	0.220	0.310	5.59	7.87	-
e	0.100 BSC		2.54 BSC		-
eA	0.300 BSC		7.62 BSC		-
L	0.125	0.200	3.18	5.08	-
Q	0.015	0.060	0.38	1.52	-
s1	0.005	-	0.13	-	-
$\alpha$	90 <sup>0</sup>	105 <sup>0</sup>	90 <sup>0</sup>	105 <sup>0</sup>	-

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## Dual Operational Amplifier

### Small Outline SOP-8



SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN	MAX	MIN	MAX	
A	0.188	0.197	4.80	5.00	-
B	0.149	0.158	3.80	4.00	-
C	0.228	0.244	5.80	6.20	-
D	0.050 BSC		1.27 BSC		-
E	0.013	0.020	0.33	0.51	-
F	0.004	0.010	0.10	0.25	-
H	0.053	0.069	1.35	1.75	-
J	0.011	0.019	0.28	0.48	-
K	0.007	0.010	0.19	0.25	-
M	0.016	0.050	0.40	1.27	-
L	0.150 REF		3.81 REF		-
e1	45°		45°		-
α	0°	8°	0°	8°	-

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