

### ■ FEATURES

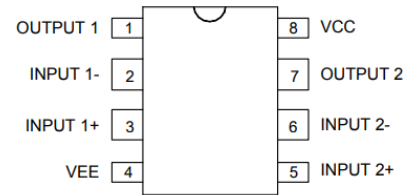
- Operating Voltage                     $\pm 2V \sim \pm 18V$
- Low Input Noise Voltage     $0.8\mu V_{rms}$  typ. (RIAA)
- Wide GBW                            15MHz typ.
- Low Distortion 0.0005% typ.
- Slew Rate                             $5V/\mu s$  typ.
- Bipolar Technology
- Package Outline    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

### ■ GENERAL DESCRIPTION

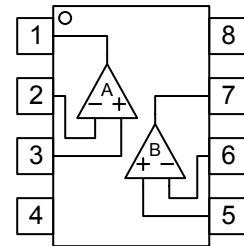
ASOPD4580 is the dual operational amplifier, specially designed for improving the tone control, which is most suitable for the audio application.

Featuring noiseless, higher gain bandwidth, high output current and low distortion ratio, and it is most suitable not only for acoustic electronic parts of audio pre-amp and active filter, but also for the industrial measurement tools. It is also suitable for the head phone amp at higher output current, and further more, it can be applied for the handy type set operational amplifier of general purpose in application of low voltage single supply type which is properly biased of the low voltage source.

### ■ Pin Configuration

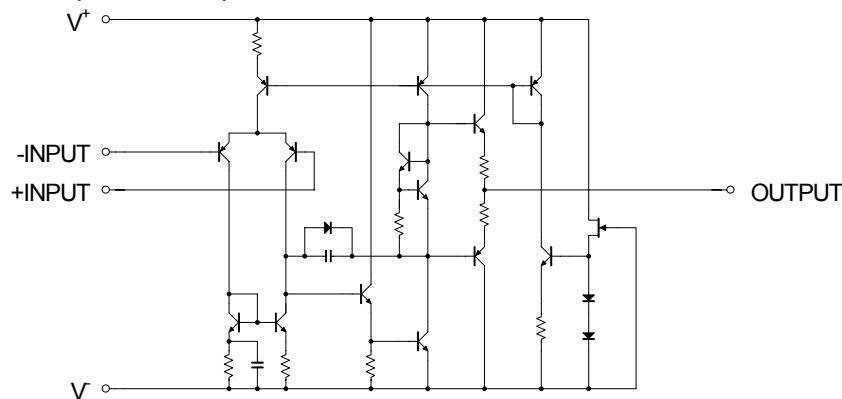


### Top View



Pin No.	Function	Pin No.	Function	Pin No.	Function	Pin No.	Function
1	OUTPUT 1	2	INPUT 1-	3	INPUT 1+	4	VEE
5	INPUT 2+	6	INPUT 2-	7	OUTPUT 2	8	VCC

### ■ EQUIVALENT CIRCUIT ( 1/2 Shown )



**■ ABSOLUTE MAXIMUM RATINGS** ( $T_a=25^{\circ}\text{C}$ , unless otherwise noted.)

PARAMETER		RATING	UNIT
Supply Voltage	$V^+V^-$	$\pm 18$	V
Input Voltage	$V_{IN}$	$\pm 15$ (note1)	V
Differential Input Voltage Range	$V_{ID}$	$\pm 30$	V
Power Dissipation	$P_D$	550 (note2) 820 (note3)	mW
Operating Temperature Range	opr	$-40\sim+85$	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	$-40\sim+125$	$^{\circ}\text{C}$

(note1) For supply voltage less than  $\pm 15\text{V}$ , the absolute maximum input voltage is equal to supply voltage.

(note2) EIA/JEDEC STANDARD Test board (76.2 x 114.3 x 1.6mm, 2layers, FR-4) mounting

(note3) EIA/JEDEC STANDARD Test board (76.2 x 114.3 x 1.6mm, 4layers, FR-4) mounting

**■ RECOMMENDED OPERATING CONDITIONS** ( $T_a=25^{\circ}\text{C}$ )

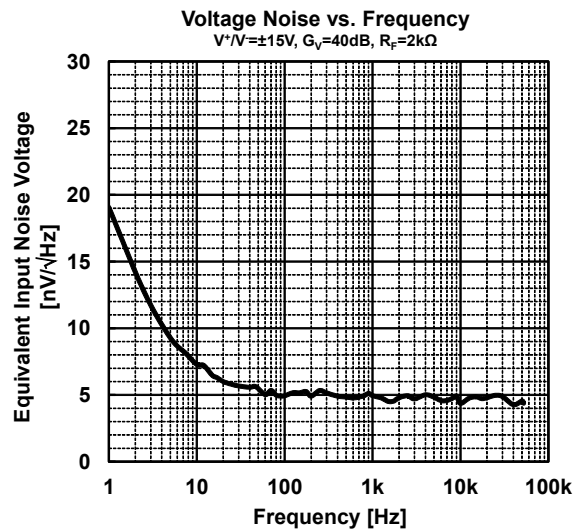
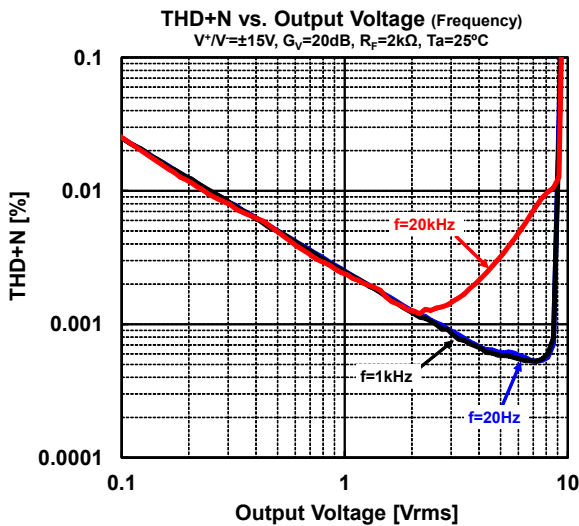
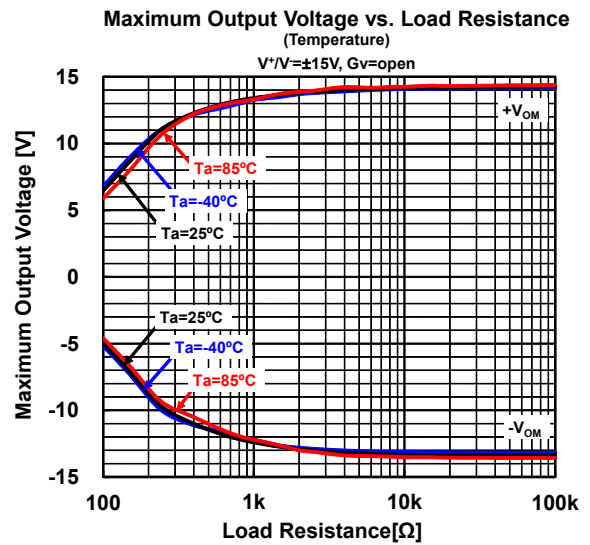
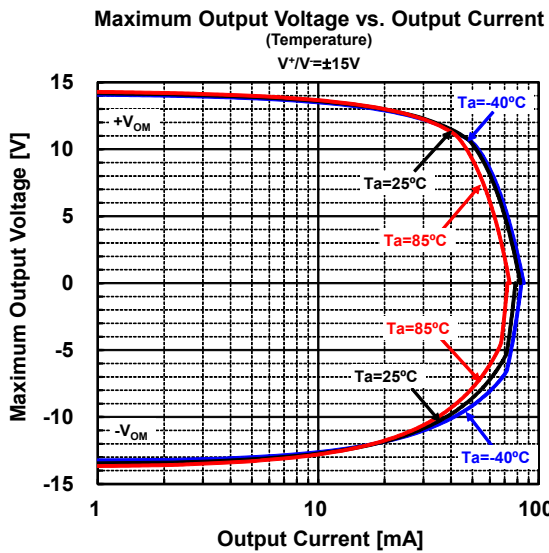
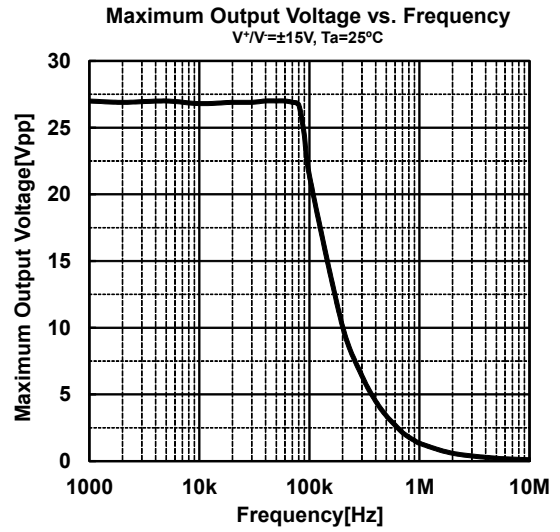
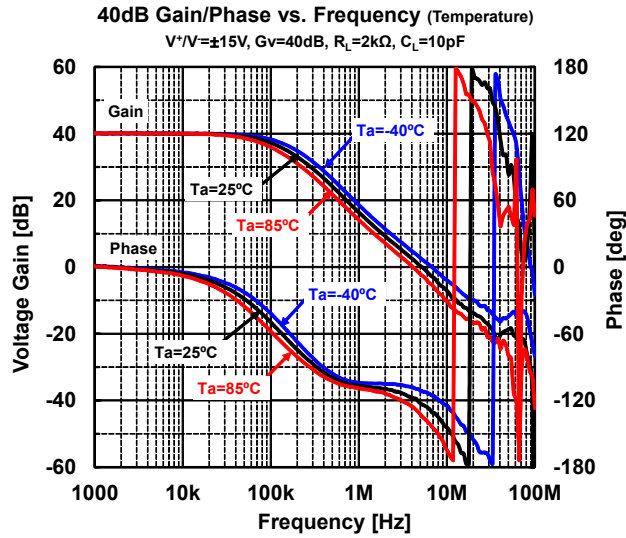
PARAMETER		CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	$V^+V^-$		$\pm 2$		$\pm 18$	V

**■ ELECTRICAL CHARACTERISTICS** ( $V^+V^-=\pm 15\text{V}$ ,  $T_a=25^{\circ}\text{C}$ , unless otherwise noted.)

PARAMETER		TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	$V_{IO}$	$R_S \leq 10\text{k}\Omega$	-	0.3	3	mV
Input Offset Current	$I_{IO}$		-	5	200	nA
Input Bias Current	$I_B$		-	100	500	nA
Voltage Gain	$A_V$	$R_L \geq 2\text{k}\Omega, V_O = \pm 10\text{V}$	90	110	-	dB
Maximum Output Voltage	$V_{OM}$	$R_L \geq 2\text{k}\Omega$	$\pm 12$	$\pm 13.5$	-	V
Common Mode Input Voltage Range	$V_{ICM}$		$\pm 12$	$\pm 13.5$	-	V
Common Mode Rejection Ratio	CMR	$R_S \leq 10\text{k}\Omega$	90	110	-	dB
Supply Voltage Rejection Ratio	SVR	$R_S \leq 10\text{k}\Omega$	90	110	-	dB
Supply Current	$I_{CC}$		-	6	9	mA
Slew Rate	SR	$R_L \geq 2\text{k}\Omega$	-	5	-	V/ $\mu\text{s}$
Gain Bandwidth Product	GB	$f = 10\text{kHz}$	-	15	-	MHz
Total Harmonic Distortion	THD	$A_V = 20\text{dB}, V_O = 5\text{V}, R_L = 2\text{k}\Omega, f = 1\text{kHz}$		0.0005	-	%
Equivalent Input Noise Voltage	$V_{NI}$	RIAA, $R_S = 2.2\text{k}\Omega, 30\text{kHz LPF}$	-	0.8	-	$\mu\text{Vrms}$

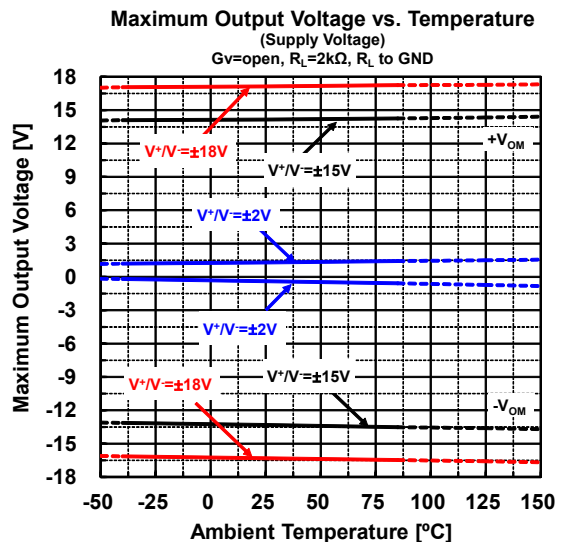
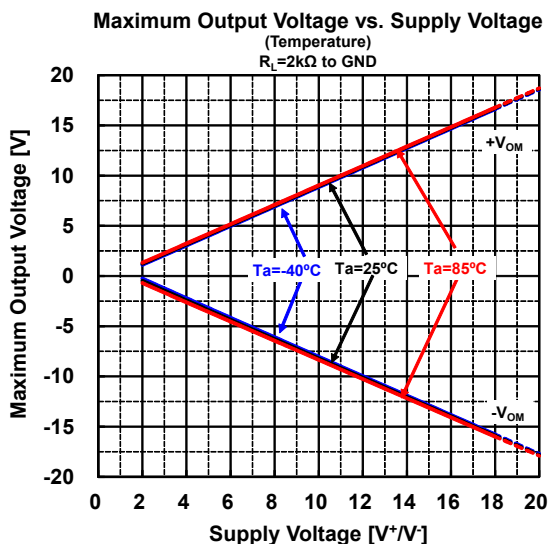
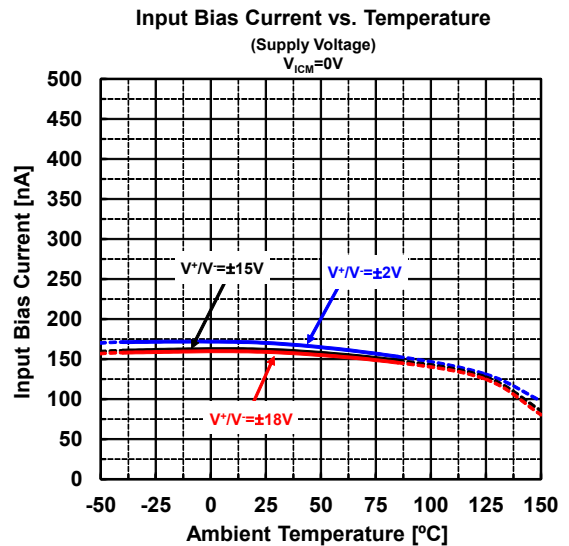
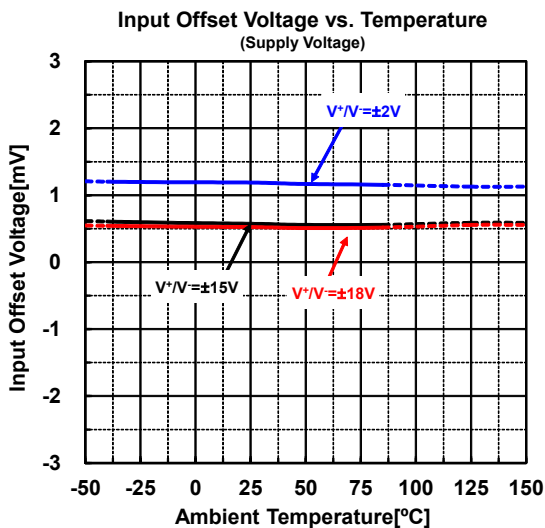
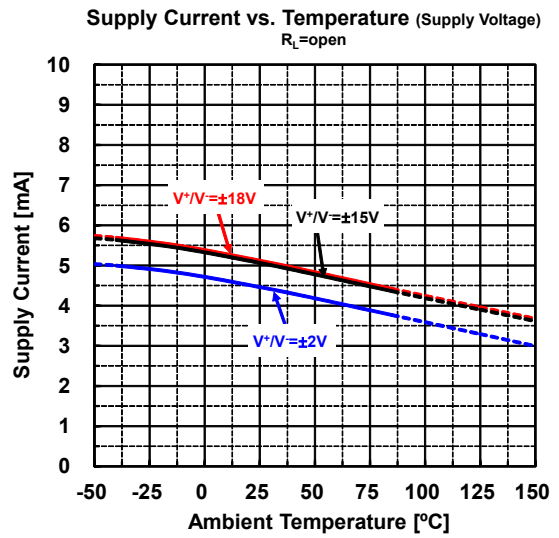
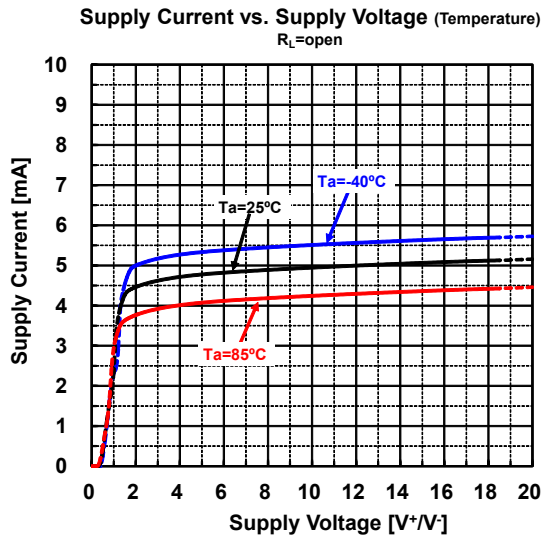


### ■ TYPICAL CHARACTERISTICS

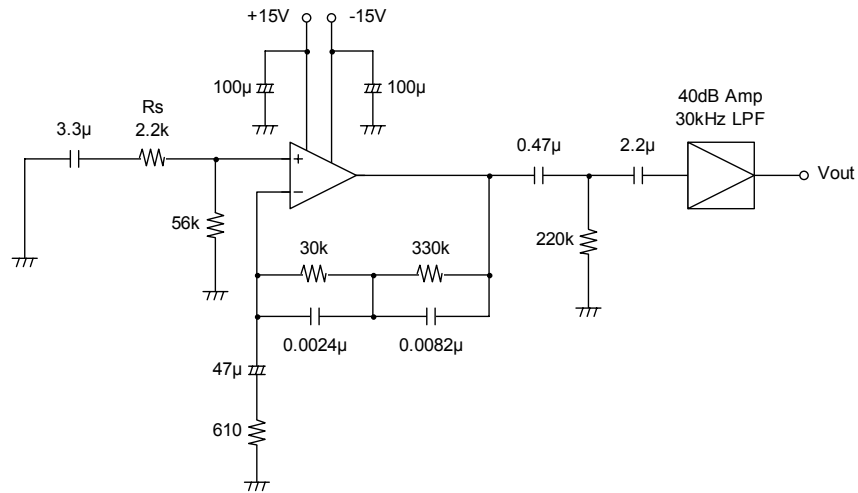




### TYPICAL CHARACTERISTICS

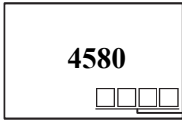


■ Noise Voltage (RIAA) measurement circuit

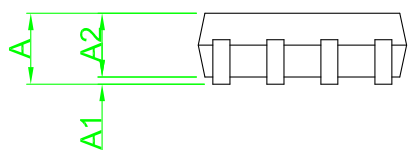
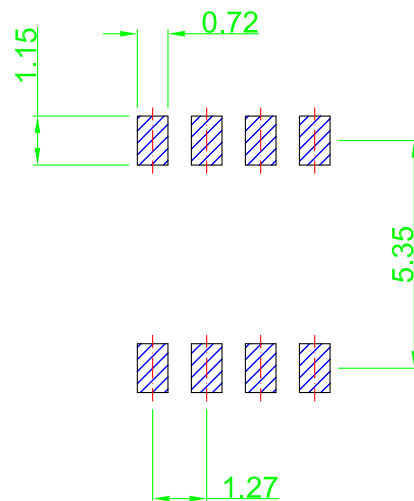
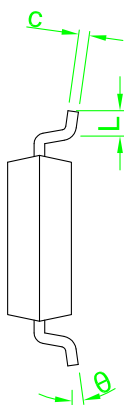
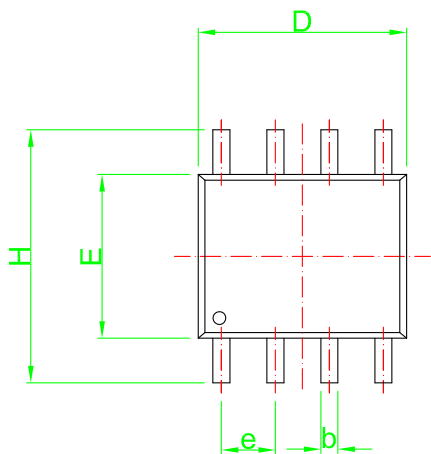


### Ordering and Marking Information

Device	Marking	Package	Packaging	Quantity
ASOPD4580S-R	4580	SOP8L	Tape&Reel	4000/Reel
ASOPD4580N-T	4580	DIP8L	Tube	50/Tube

PACKAGE	MARKING
<p>SOP-8L</p> <p>DIP-8L</p>	 <p>blank : Lead Free</p> <p>→ Date Code</p>

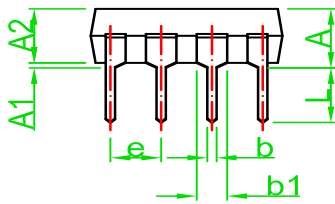
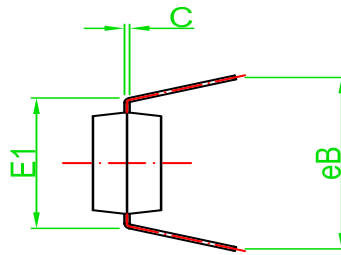
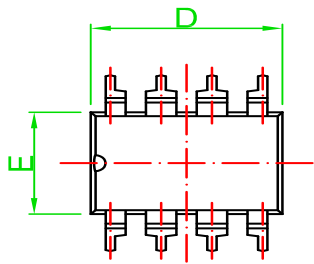
### ■ Package Dimension



**SOP8**

Recommended Land Pattern

Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	---	1.75	---	0.069
A1	0.00	0.26	0.000	0.010
A2	1.30	1.70	0.051	0.067
b	0.30	0.55	0.012	0.022
C	0.15	0.35	0.006	0.014
D	4.80	5.00	0.189	0.197
E	3.80	4.00	0.150	0.157
e	1.27 TYP		0.050 TYP	
H	5.70	6.30	0.224	0.248
L	0.45	0.85	0.018	0.033
$\theta$	0°	8°	0°	8°



### DIP8

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.60	4.80	0.142	0.210
A1	0.38	---	0.015	---
A2	3.05	3.65	0.120	0.210
b	0.36	0.51	0.014	0.020
b1	1.14	1.78	0.045	0.070
C	0.20	0.36	0.008	0.014
D	9.02	10.16	0.355	0.400
E	6.10	7.11	0.240	0.280
E1	7.45	8.26	0.300	0.325
e	2.54 BSC		0.100 BSC	
eB	7.62	10.92	0.300	0.430
L	2.92	3.81	0.115	0.150





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