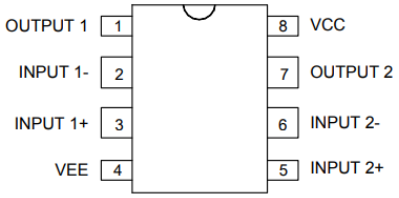
■ GENERAL DESCRIPTION

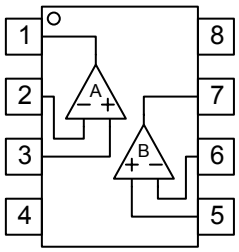
ASOPD4580 is the dual operational amplifier, specially designed for improving the tone control, which is most suitable for the audio application.

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

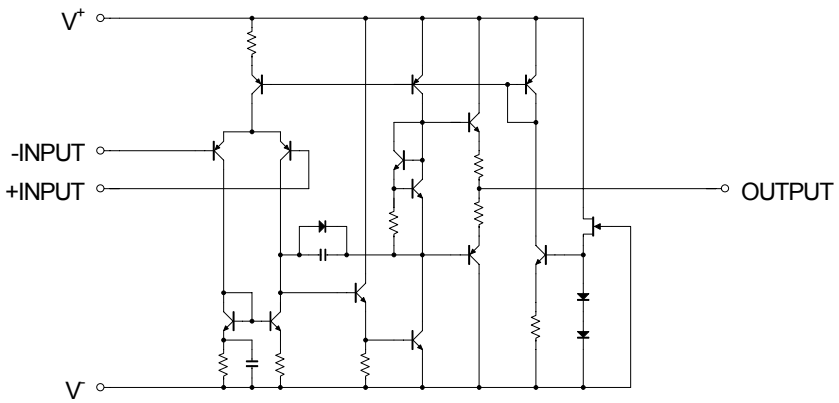


■ FEATURES

- Operating Voltage ±2V~±18V
- Low Input Noise Voltage 0.8μVrms typ. (RIAA)
- Wide GBW 15MHz typ.
- Low Distortion 0.0005% typ.
- Slew Rate 5V/μs typ.
- Bipolar Technology
- Package Outline SOP8 ,DIP8

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 (Ta=25°C, unless otherwise noted.)

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

(note1) For supply voltage less than ±15V, 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

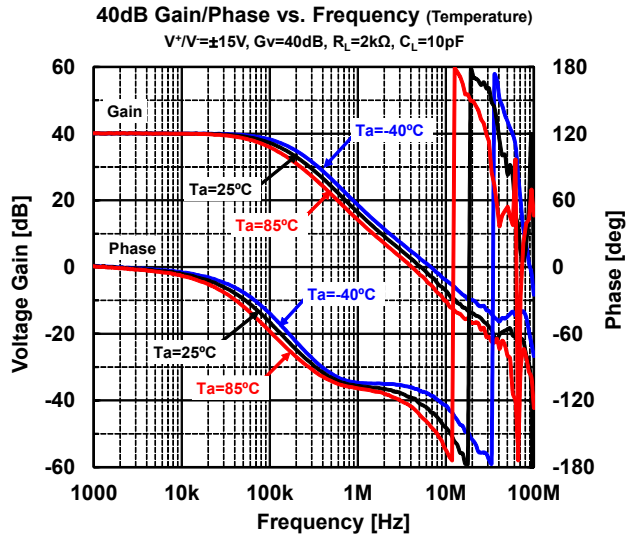
■ RECOMMENDED OPERATING CONDITIONS (Ta=25°C)

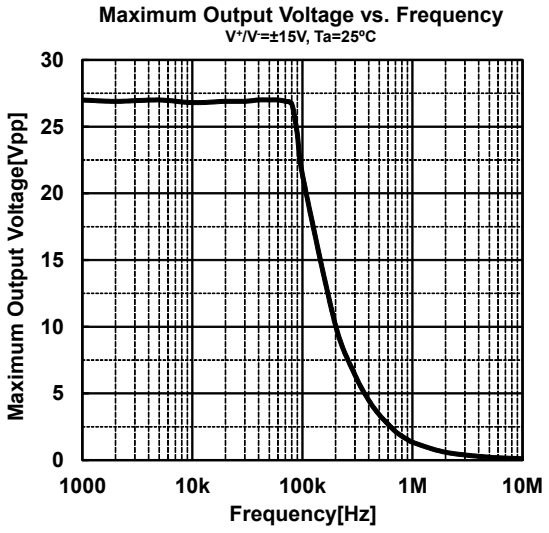
PARAMETER		CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V^+/V^-		±2		±18	V

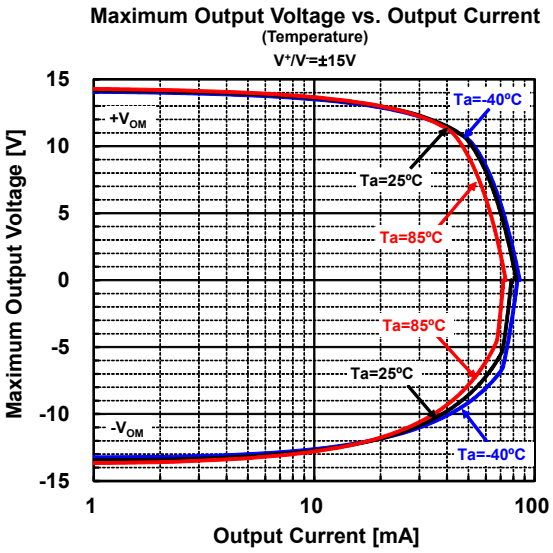
■ ELECTRICAL CHARACTERISTICS (V^+/V^-=±15V, Ta=25°C, unless otherwise noted.)

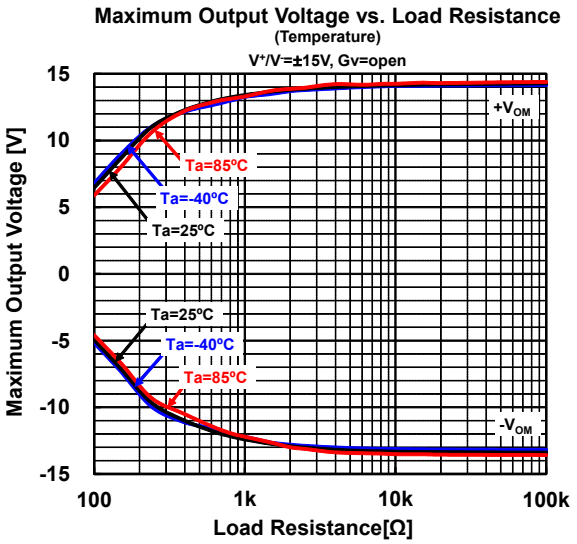
PARAMETER		TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	R_S≤10kΩ	-	0.3	3	mV
Input Offset Current	I_{IO}		-	5	200	nA
Input Bias Current	I_B		-	100	500	nA
Voltage Gain	A_V	R_L≥2kΩ,V_O=±10V	90	110	-	dB
Maximum Output Voltage	V_{OM}	R_L≥2kΩ	±12	±13.5	-	V
Common Mode Input Voltage Range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

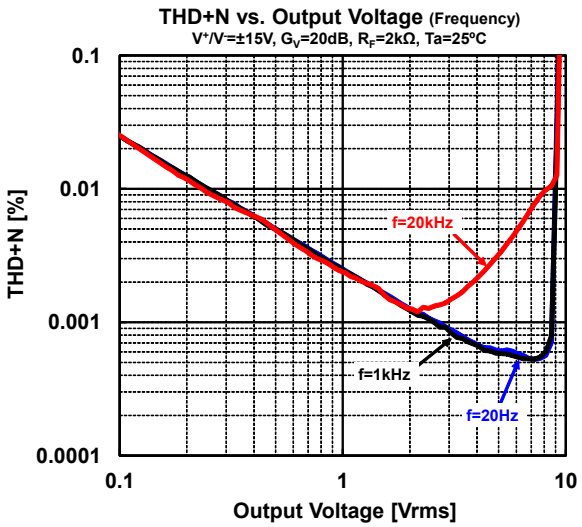
■ TYPICAL CHARACTERISTICS

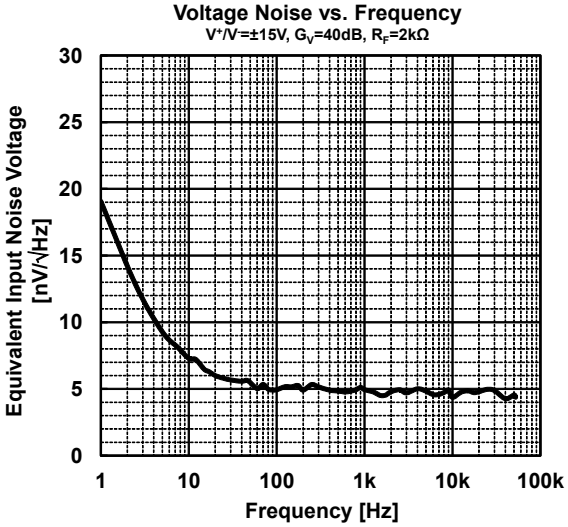






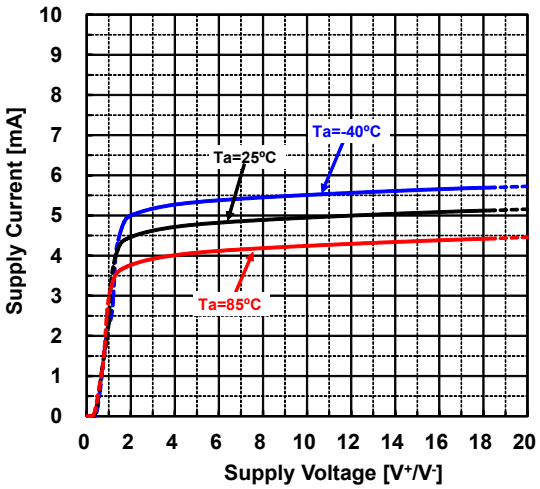




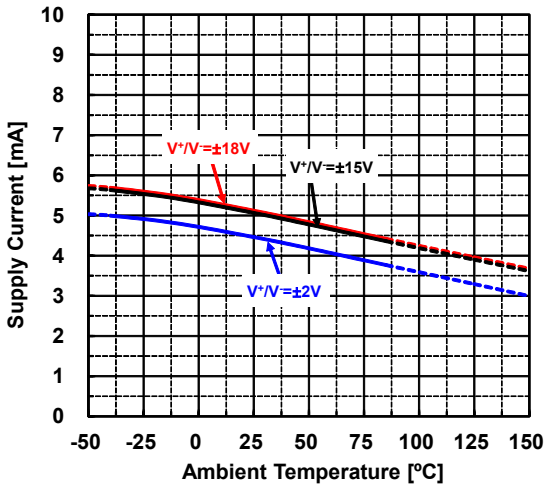


■ TYPICAL CHARACTERISTICS

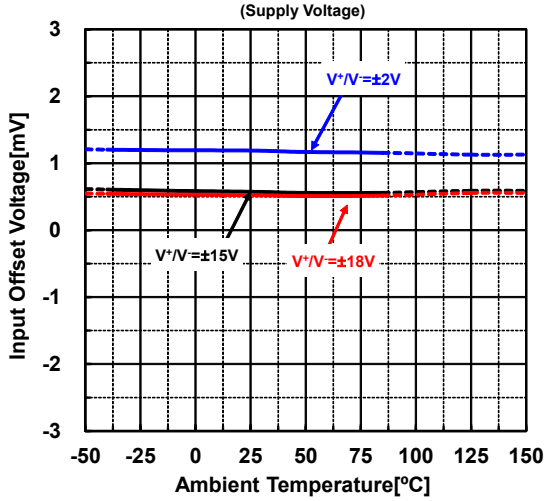
Supply Current vs. Supply Voltage (Temperature)
R_L=open



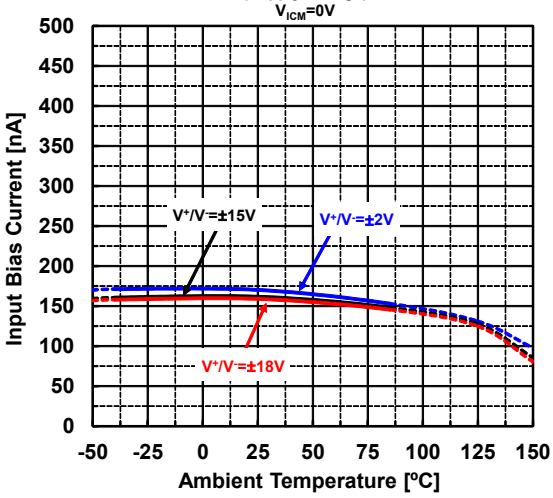
Supply Current vs. Temperature (Supply Voltage)
R_L=open



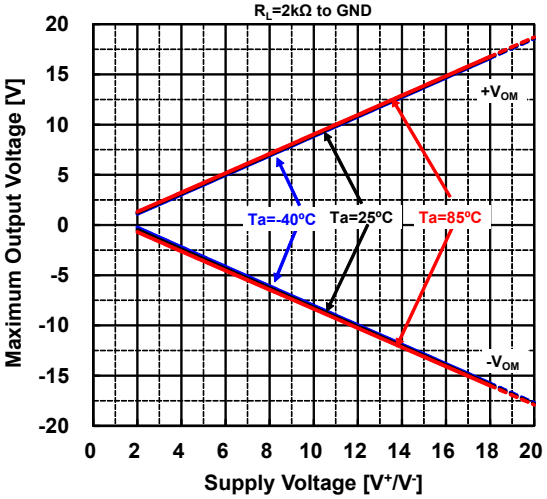
Input Offset Voltage vs. Temperature
(Supply Voltage)



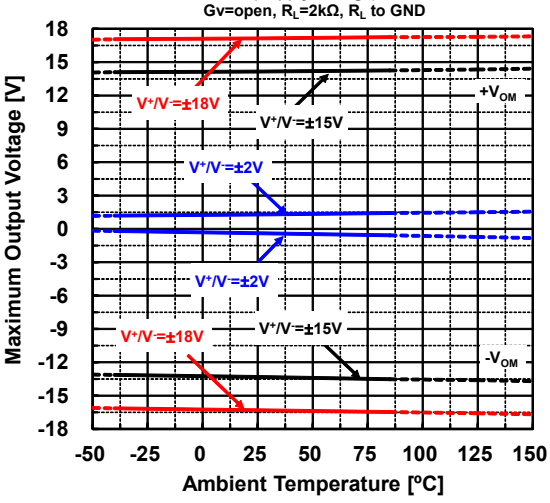
Input Bias Current vs. Temperature
(Supply Voltage)
V_{ICM}=0V



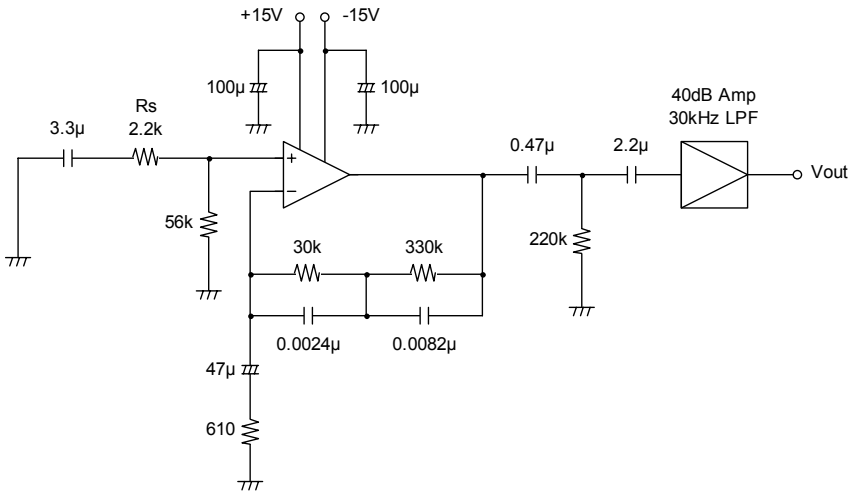
Maximum Output Voltage vs. Supply Voltage
(Temperature)
R_L=2kΩ to GND



Maximum Output Voltage vs. Temperature
(Supply Voltage)
Gv=open, R_L=2kΩ, R_L to GND

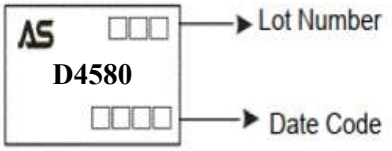


■ **Noise Voltage (RIAA) measurement circuit**

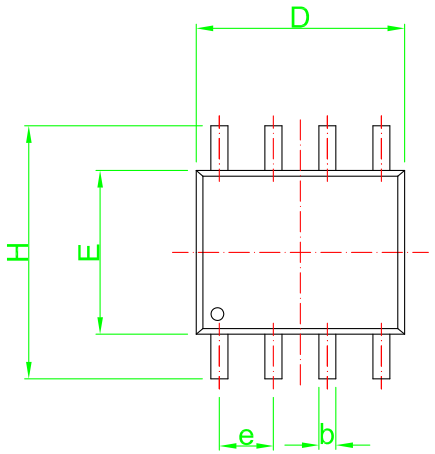


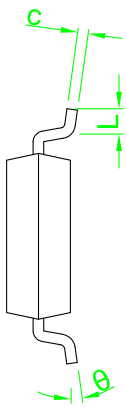
Ordering and Marking Information

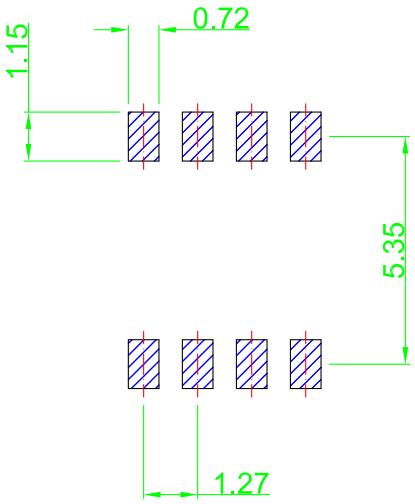
Device	Marking	Package	Packaging	Quantity
ASOPD4580S-R	D4580	SOP8L	Tape&Reel	2500/Reel
ASOPD4580N-T	D4580	DIP8L	Tube	50/Tube

PACKAGE	MARKING
SOP-8L DIP-8L	

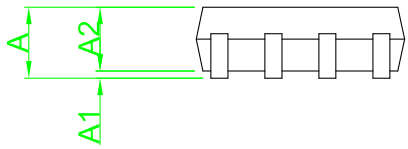
■Package Dimension





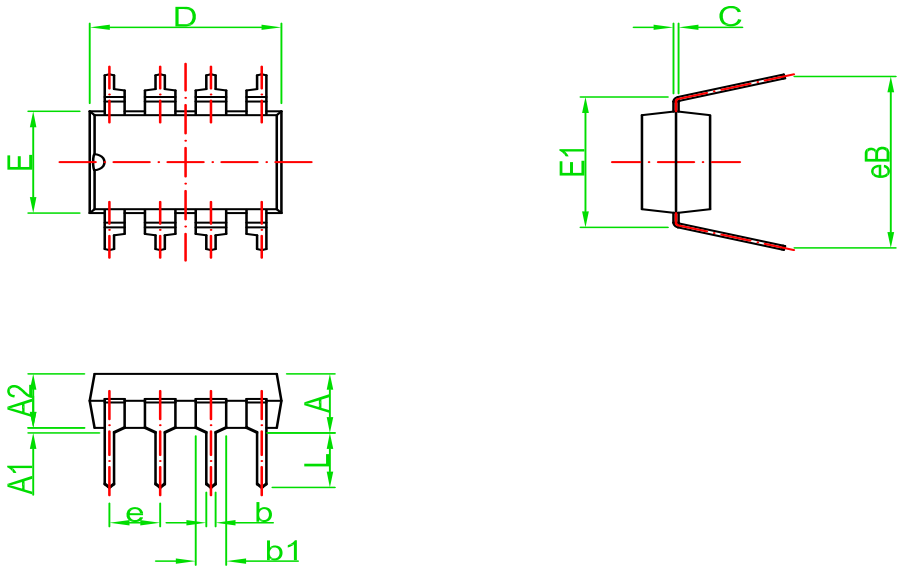


Recommended Land Pattern



SOP8

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
θ	0°	8°	0°	8°



DIP8

Symbol	Dimensions In Millmeters		Dimensions In Inches	
	M	M	M	M
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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