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AUK Semiconductor

S4580

Dual OP AMP

Description

S4580 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 input low voltage source.

Features

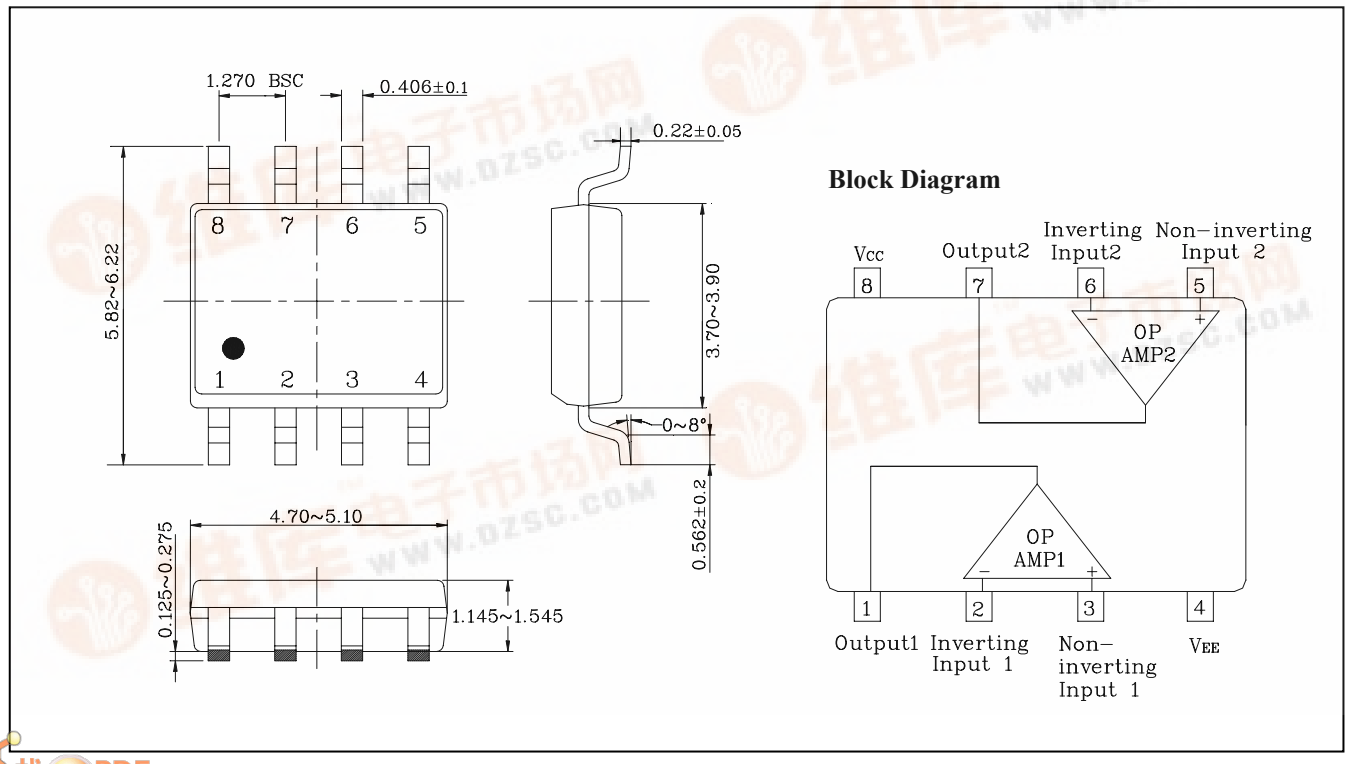
- Operating voltage. (±2V ~ ±18V)
- Low input noise voltage. (0.8 μV rms typ.)
- Wide gain bandwidth product. (15MHz typ.)
- Low distortion. (0.0005% typ.)
- Slew rate. (5V/μs typ.)

Ordering Information

Type NO.	Marking	Package Code
S4580	S4580	SOP-8

Outline Dimensions

unit : mm



Block Diagram

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Absolute maximum ratings

Ta = 25 °C

Characteristic	Symbol	Ratings	Unit
Supply voltage	V_{CC}	±18	V
Differential input voltage	V_{ID}	±30	V
Input voltage	V_{IC}(note)	±15	V
Output current	I_O	±50	mA
Power Dissipation	P_D	300	mW
Operating temperature	T_{opr}	-40 ~ +85	°C
Storage temperature	T_{stg}	-40 ~ +125	°C

(note) For supply voltage less than ±15V, the absolute maximum input voltage is equal to the supply voltage.

Electrical Characteristics

(Unless otherwise specified. V_{CC} = +15V, V_{EE}= − 15V and Ta = 25 °C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input offset voltage	V_{IOS}	Rg ≤ 10 kΩ	-	0.5	3	mV
Input offset current	I_{IOS}	-	-	5	200	nA
Input bias current	I_{IB}	-	-	100	500	nA
Input common mode Voltage Range	V_{ICR}	-	±12	±13.5	-	V
Maximum Output Voltage	V_{OM}	R_L≥ 2 kΩ	±12	±13.5	-	V
Large signal Voltage Gain	G_V	Vout=±10V, RL≥ 2 kΩ	90	110	-	dB
Common mode rejection ratio	CMRR	Rg ≤ 10 kΩ	80	110	-	dB
Power supply voltage rejection ratio	PSRR	Rg ≤ 10 kΩ	80	110	-	dB
Slew Rate	SR	R_L≥ 2 kΩ	-	5.0	-	V/us
Supply Current	I_{CC}	-	-	6.0	9.0	mA
Equivalent input noise voltage	V_{NI}	RIAA, R_S=2.2 kΩ, f=30 kHz LPF	-	0.8	-	uVrms
Total harmonic distortion	THD	A_V=20dB, V_O=5V, R_L=2 kΩ f=1KHz	-	0.0005	-	%
Gain bandwidth product	GB	f=10KHz	-	15	-	MHz

Electrical Characteristic Curves

Fig. 1 G_V - f

(V_{CC}/V_{EE}=±15V,R_L=2 kΩ,40dBAmp,Ta=25℃)

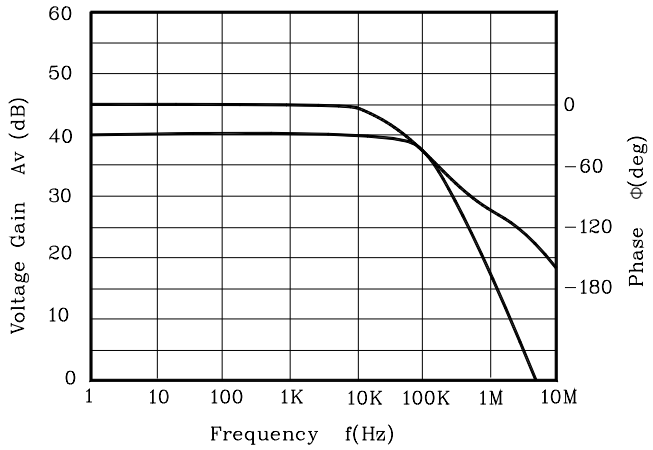


Fig. 2 V_{OP-P} - f

(V_{CC}/V_{EE}=±15V,R_L=2 kΩ,Ta=25℃)

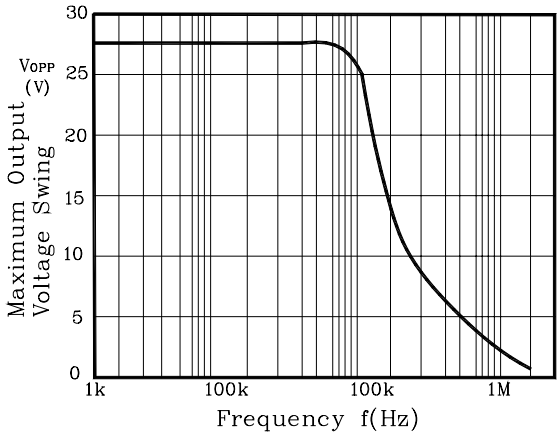


Fig. 3 I_{IB} - T_a

(V_{CC}/V_{EE}=±15V)

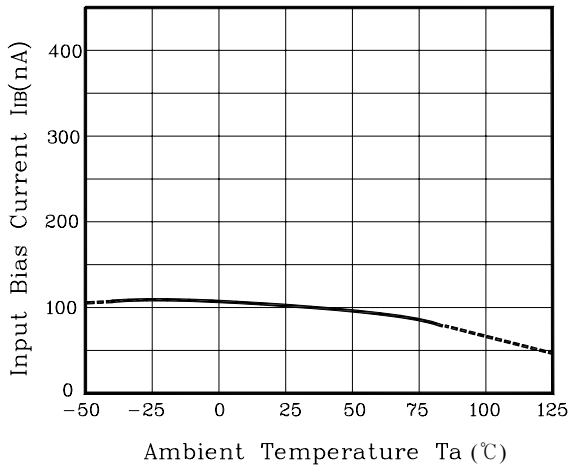


Fig. 4 V_{OM} - V_{CC}/V_{EE}

(R_L=2 kΩ,Ta=25℃)

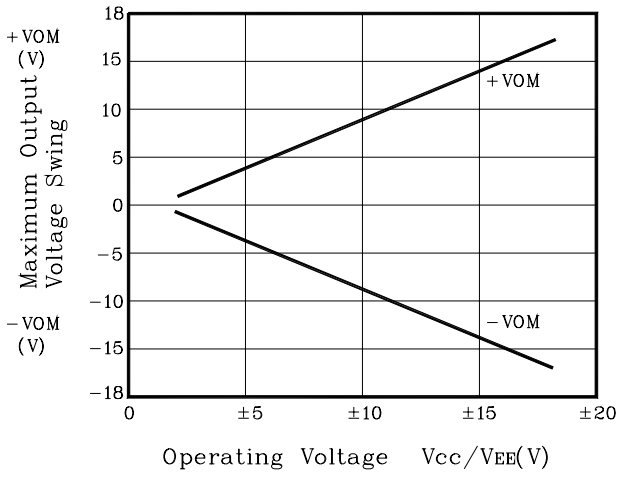


Fig. 5 V_{OM} - R_L

(V_{CC}/V_{EE}=±15V,Ta=25℃)

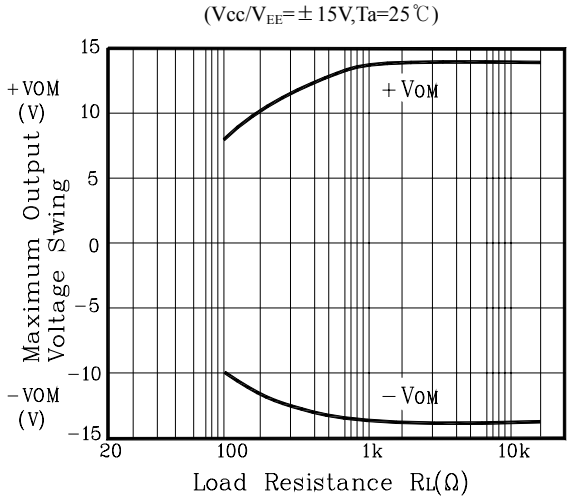
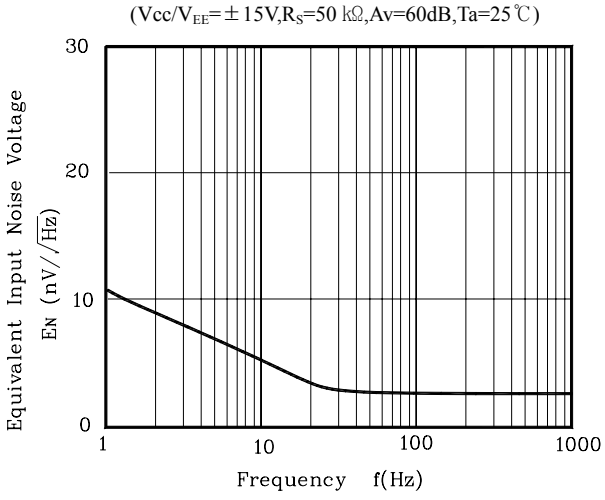


Fig. 6 E_N - f

(V_{CC}/V_{EE}=±15V,R_S=50 kΩ,Av=60dB,Ta=25℃)



Electrical Characteristic Curves

Fig. 7 V_{OM} - T_a

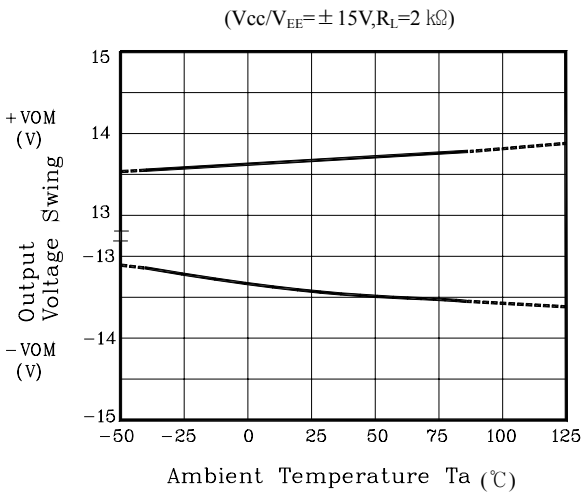


Fig. 8 I_{CC} - Ta

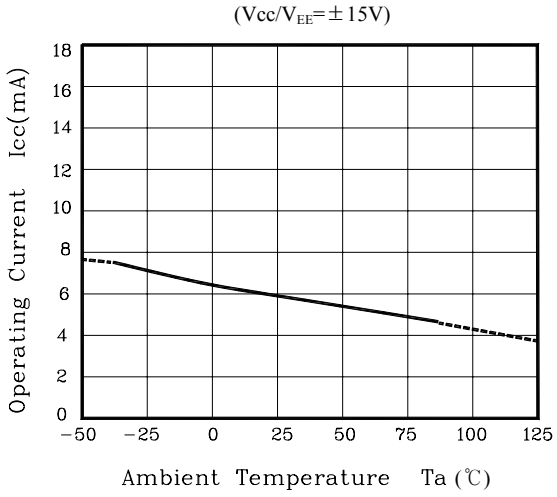


Fig. 9 V_{IOS} - Ta

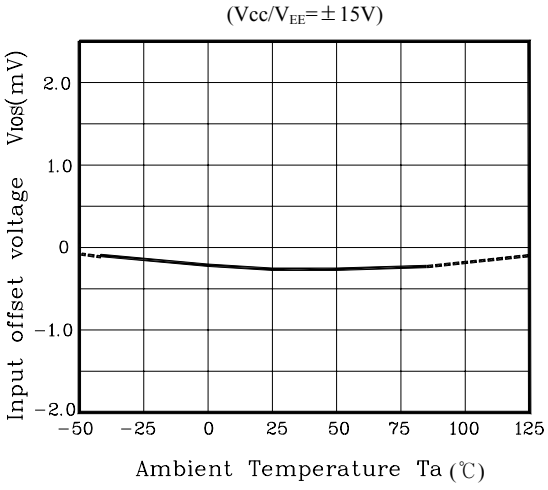
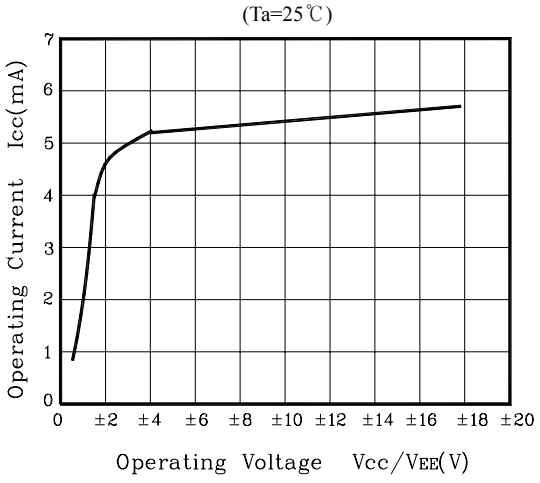


Fig. 10 I_{CC} - Vcc



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