



Dual Operational Amplifiers for Audio Signals

Description

SKI4580 is a dual operational amplifier specifically designed for improved tone control, ideally suited for audio applications.

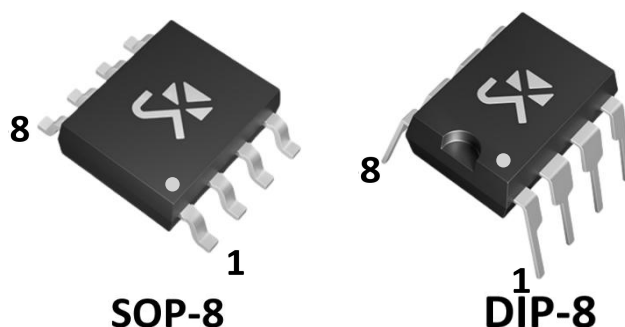
It features low noise, high gain-bandwidth product, high output current, and low distortion. It is optimally suited for acoustic electronic components such as audio preamplifier and active filters, as well as industrial measurement instruments. It is also suitable for headphone amplifiers requiring high output current.

SKI4580 is available in SOP-8 and DIP-8 packages.

Features

- Low input noise voltage, internal ESD protection
- Low distortion ratio: approximately 0.0005%
- Slew rate: $5\text{V}/\mu\text{s}$
- Unit gain bandwidth product: 10MHz
- Supply voltage: Single supply: 4V to 40V
- Dual supply (absolute maximum): $\pm 2\text{V}$ to $\pm 22\text{V}$

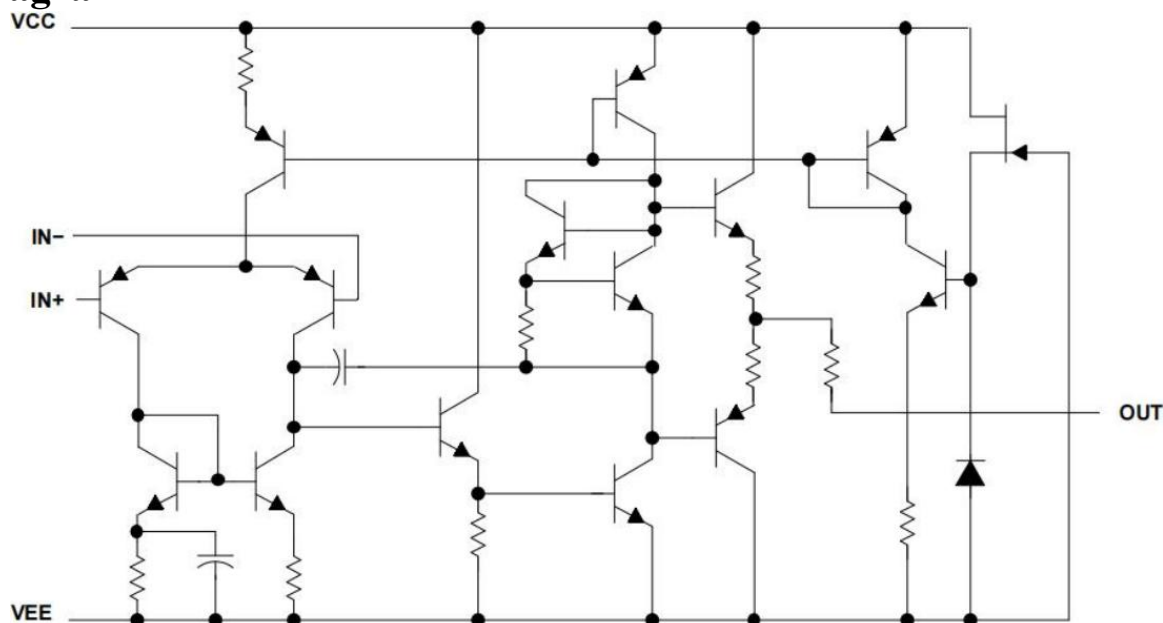
Package Outline Drawing



Applications

- Active Filters
- Compensation Amplifiers
- Audio Preamplifiers
- Headphone Amplifiers
- Low Voltage Handheld Electronic Instruments

Block Diagram





SKI4580

Ordering Information

Type	Marking	Package
SKI4580-D8	4580	DIP-8
SKI4580-P8	4580	SOP-8

Pin Description

Pin Number	Pin Name	I/O	Description	Pin Configuration Diagram
1	1OUT	O	Channel 1 Output	
2	1IN-	I	Channel 1 Inverting Input	
3	1IN+	I	Channel 1 Non-Inverting Input	
4	V _{EE}	P	Negative Power Supply	
5	2IN+	I	Channel 2 Non-Inverting Input	
6	2IN-	I	Channel 2 Inverting Input	
7	2OUT	O	Channel 2 Output	
8	V _{CC}	P	Positive Power Supply	

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Supply Voltage	V _{CC}	±22	V
Differential Input Voltage	V _{ID}	±20	V
Maximum Operating Junction Temperature	T _J	150	°C
Operating Ambient Temperature	T _A	-20~+85	°C
Storage Temperature	T _{STG}	-55~+150	°C
Lead Temperature(Soldering , 10 s)	T _W	260	°C

Electrical Characteristics(T_A=25°C, V_{CC}=15V,V_{EE}=-15V unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Supply Current(per channel)	I _{CC}	V _O =0V,R _L =∞	-	6	-	mA
Input Offset Voltage	V _{IO}	V _O =0V	-	±0.3	±3	mV
Input Offset Current	I _{IO}	V _O =0V	-	-	±200	nA
Input Bias Current	I _B	V _O =0V	-	-	±500	nA
Input Common-mode Voltage	V _{ICM}		-	±12	±13	V
Output Voltage swing	V _{OM}	R _L =10KΩ	±12	±14	-	V
		R _L =2KΩ	±10	±13	-	
Output Current	I _{SOURCE}		80	-	120	mA
	I _{SINK}		-150	-	-120	mA
Open-Loop Voltage Gain	A _{OL}	V _O =±10V,R _L <2KΩ	-	100	-	V/mV
Common Mode Rejection Ratio	CMRR		-	100	-	dB
Power Supply Rejection Ratio	PSRR		-	100	-	dB
Gain Bandwidth Product	GBWP		-	10	-	MHz
Slew Rate	S _R		-	5	-	V/uS



Typical Characteristics

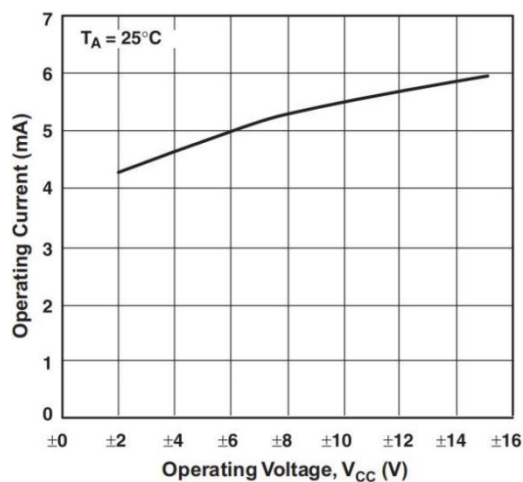


Fig 1. Operating Current vs Operating Voltage

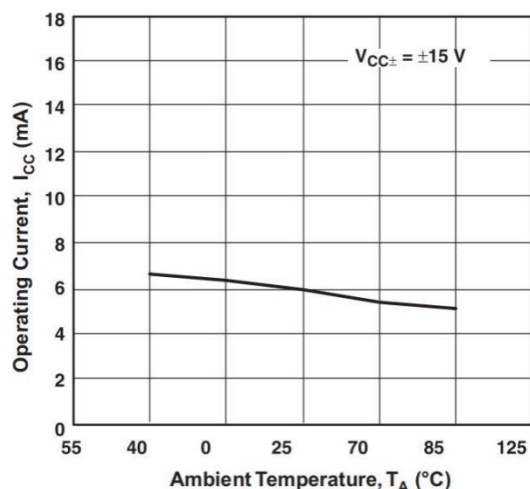


Fig 2. Operating Current vs Ambient Temperature

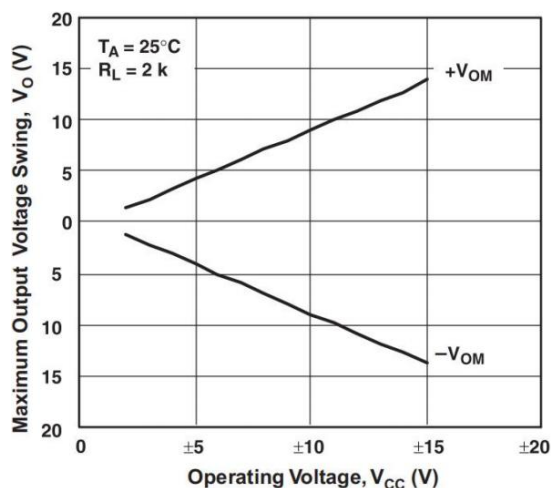


Fig 3. Maximum Output Voltage Swing vs Operating voltage

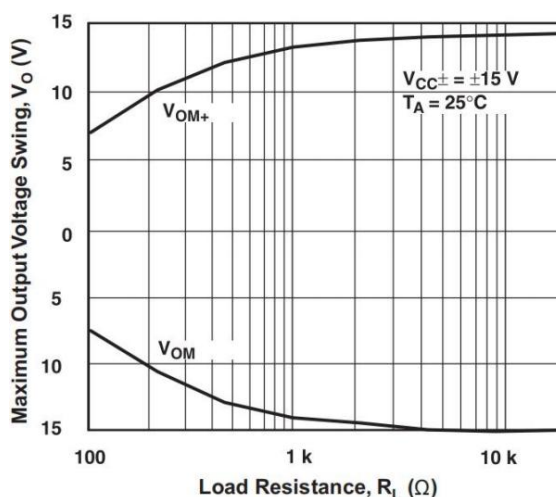


Fig 4. Maximum Output Voltage Swing vs Load Resistance

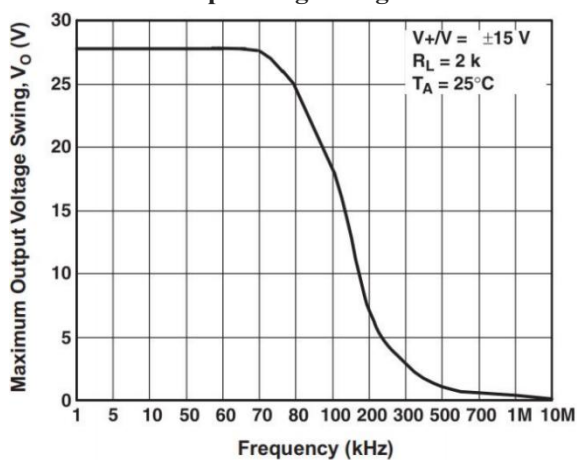


Fig 5. Maximum Output Voltage Swing vs Frequency

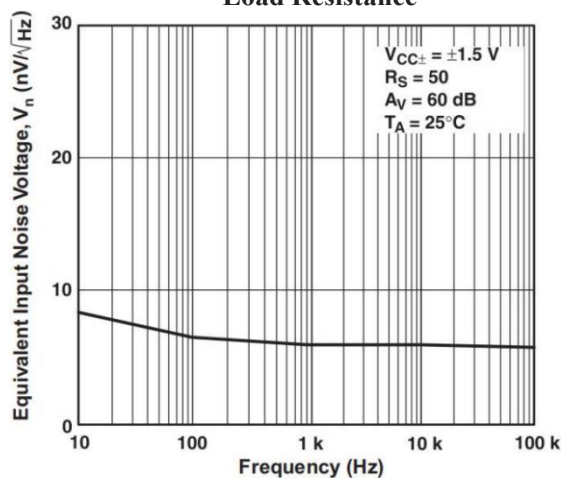


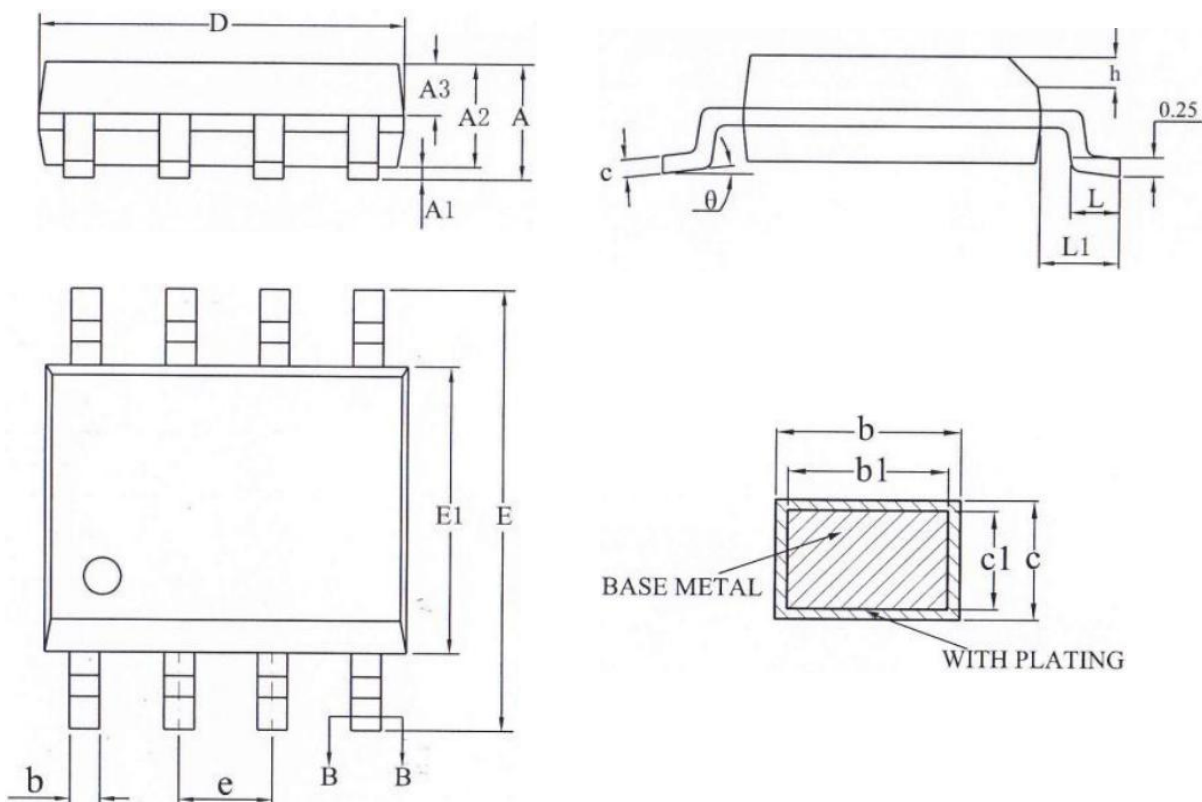
Fig 6. Equivalent Input Noise Voltage vs Frequency



Package Information

SOP-8

Dimensions in mm



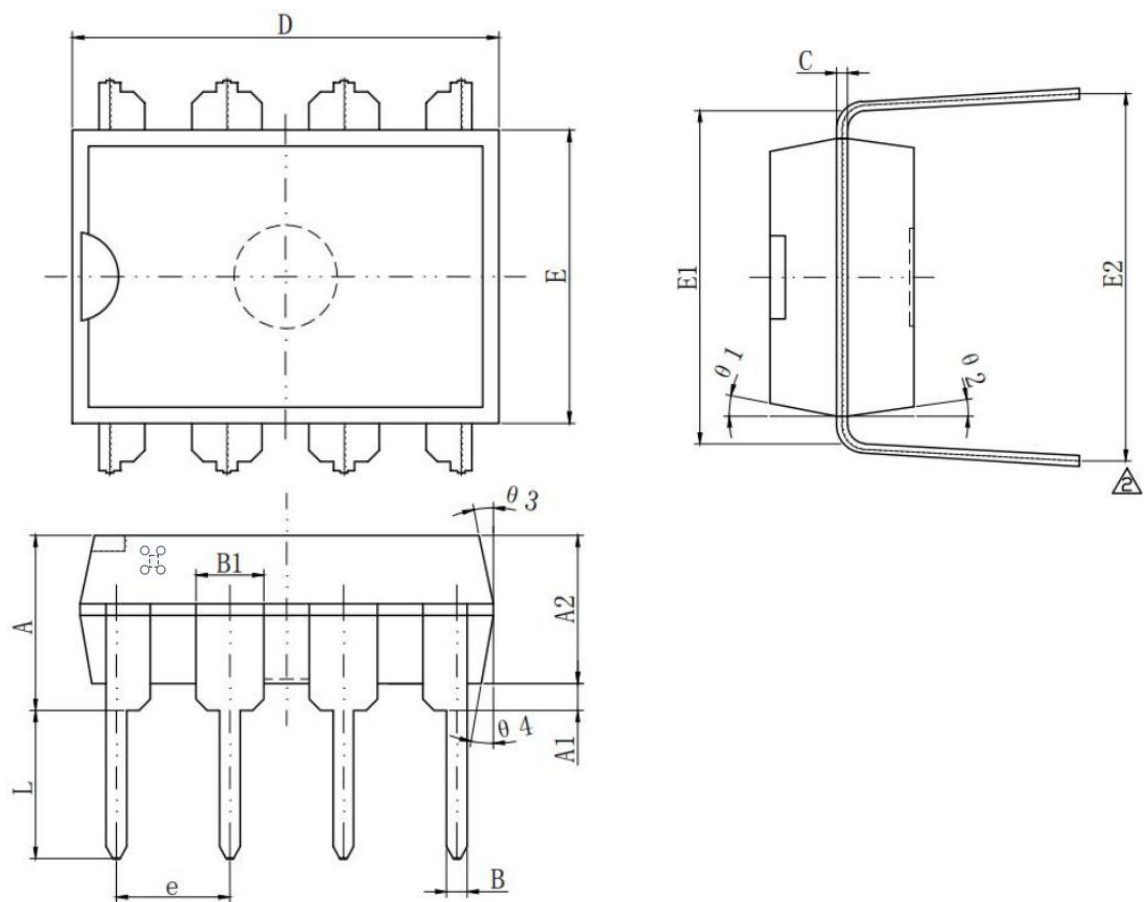
Symbol	Dimensions In Millimeters			Symbol	Dimensions In Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	1.75	D	4.80	4.90	5.00
A1	0.10	-	0.225	E	5.80	6.00	6.20
A2	1.30	1.40	1.50	E1	3.80	3.90	4.00
A3	0.60	0.65	0.70	e	1.27 BSC		
b	0.39	-	0.47	h	0.25	-	0.50
b1	0.38	0.41	0.44	L	0.50	-	0.80
c	0.20	-	0.24	L1	1.05 (REF)		
c1	0.19	0.20	0.21	θ	0°	-	8°



Package Information

DIP-8

Dimensions in mm



Symbol	Dimensions In Millimeters			Symbol	Dimensions In Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	3.75	3.90	4.15	E1	7.35	7.62	7.85
A1	0.60	-	-	E2	8.00	8.40	8.80
A2	3.15	3.30	3.40	e	2.54 (BSC)		
B	0.38	0.46	0.56	L	3.00	3.30	3.60
B1	1.52 (BSC)			θ1	10°	-	14°
C	0.20	0.25	0.34	θ2	8°	-	12°
D	9.00	9.25	9.40	θ3	10°	-	14°
E	6.20	6.35	6.50	θ4	8°	-	12°



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