1.Description

The UMW NJM4580E is a dual operational amplifier that has been designed optimally for audio applications. Featuring low noise, high gain bandwidth, low harmonic distortion, and high output current, all of which make the device ideally suited for acoustic audio electronics, such as audio preamplifiers and active filters, as well as industrial measurement equipment. Due to its wide operating supply voltage, the UMW NJM4580E also can be used in low-voltage applications.

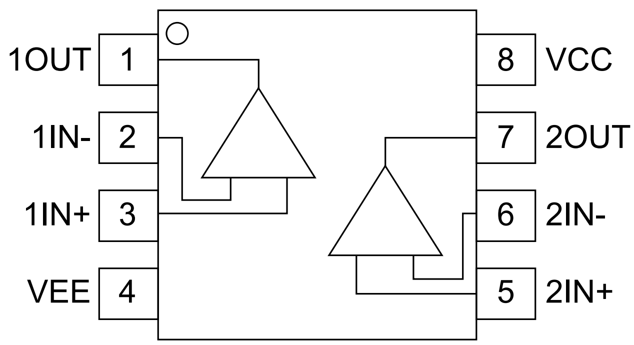
2.Features

- Low Noise Voltage
- Total Harmonic Distortion: 0.0005%
- Slew Rate: 5V/μs
- Wide Bandwidth: 15MHz

3.Applications

- Audio Preamplifiers
- Active Filters
- Headphone Amplifiers
- Industrial Measurement Equipment

4.Pinning Information

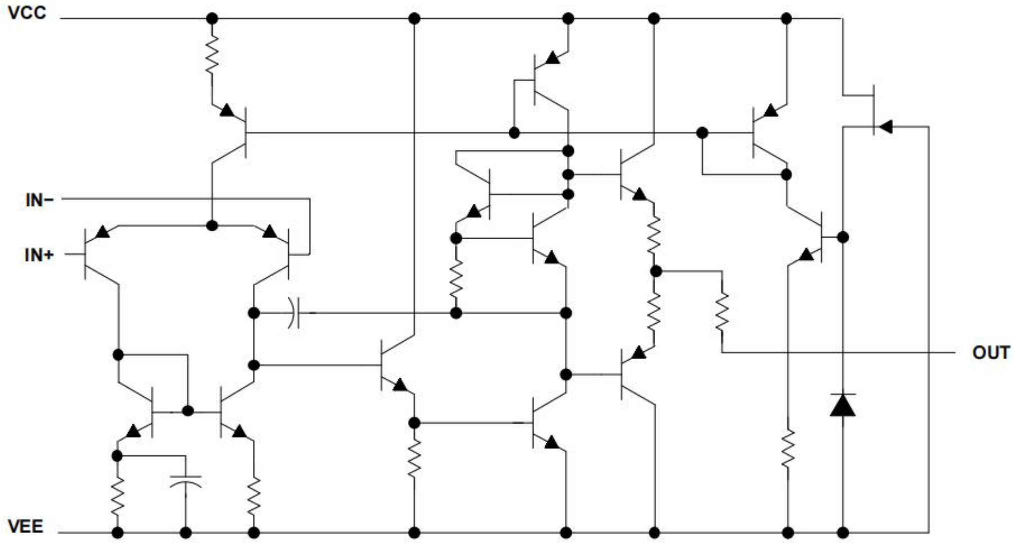


SOP-8

Pin Functions

Pin			Description
Number	Name	I/O	
1	1OUT	O	Output of operational amplifier 1
2	1IN-	I	Negative input of of operational amplifier 1
3	1IN+	I	Positive input of of operational amplifier 1
4	VEE	P	Negative power supply
5	2IN+	I	Positive input of of operational amplifier 2
6	2IN-	I	Negative input of of operational amplifier 2
7	2OUT	O	Output of operational amplifier 2
8	VCC	P	Positive power supply

5.Schematic Diagram



6.Absolute Maximum Ratings (T_A=25°C)

Parameter	Symbol	Ratings	Units
Supply Voltage	V^+/V^-	±18	V
Input Voltage	V_{IC}	±15 (note)	V
Differential Input Voltage	V_{ID}	±30 (note)	V
Output Current	I_O	±50	mA
Power Dissipation	P_D	(SOP8) 250	mW
Operating Temperature Range	T_{opr}	-40 to 85	°C
Storage Temperature Range	T_{stg}	-40 to 125	°C

7.Electrical Characteristics

V_{CC}=15V, V_{EE}=-15V, T_A=25°C, unless otherwise noted.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Power Supply Current	I_{CC}			6	9	mA
Input Offset Voltage	V_{IO}	R_S≤10KΩ		0.3	3	mV
Input Offset Current	I_{IO}			6	205	nA
Input Bias Current	I_B			100	500	nA
Input Common Mode Voltage	V_{ICM}		±12	±13.5		V
Output Voltage Swing	V_{OM}	R_L=10kΩ	±12	±14		V
		R_L=2kΩ	±12	±13		V
Output Current	I_{source}		80		120	mA
	I_{sink}		-80		-120	mA
Large Signal 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			15		MHz
Slew Rate	SR	R_L≥2KΩ		5		V/μS

8.Typical Characterisitics

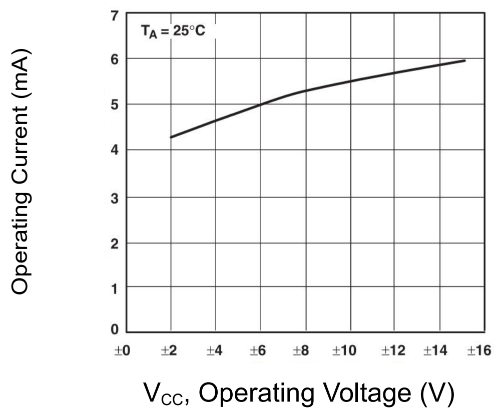


Figure 1: Operating Current vs. Operating Voltage

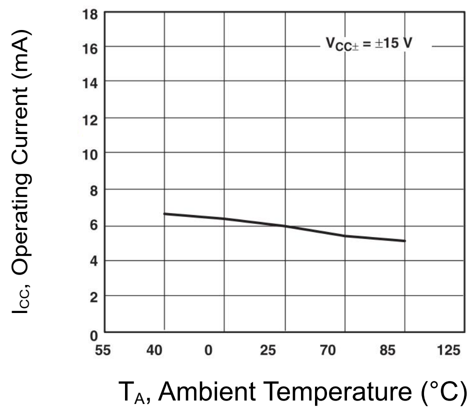


Figure 2: Operating Current vs. Ambient Temperature

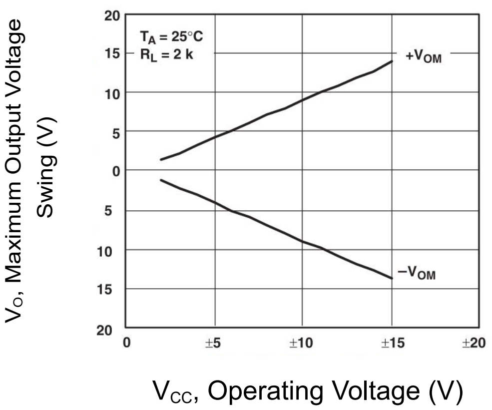


Figure 3: Maximum Output Voltage Swing vs. Operating Voltage

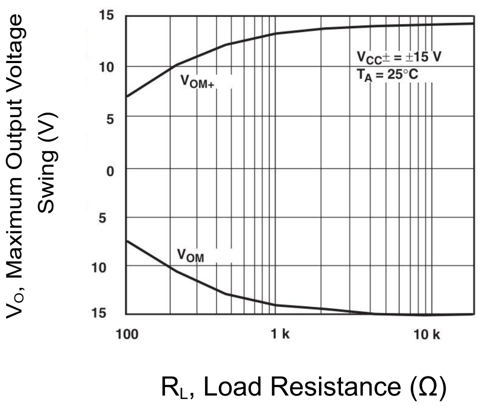


Figure 4: Maximum Output Voltage Swing vs. Load Resistance

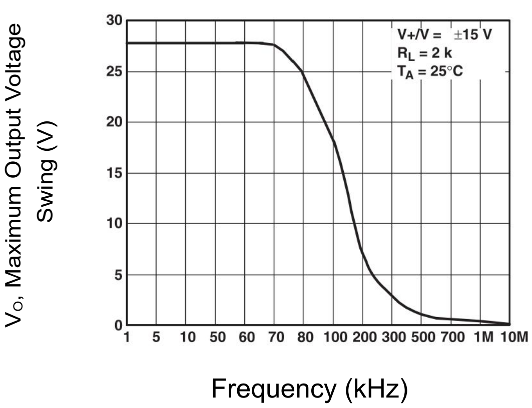


Figure 5: Maximum Output Voltage Swing vs. Frequency

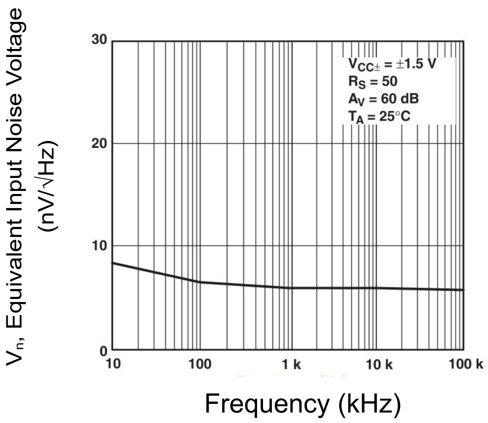
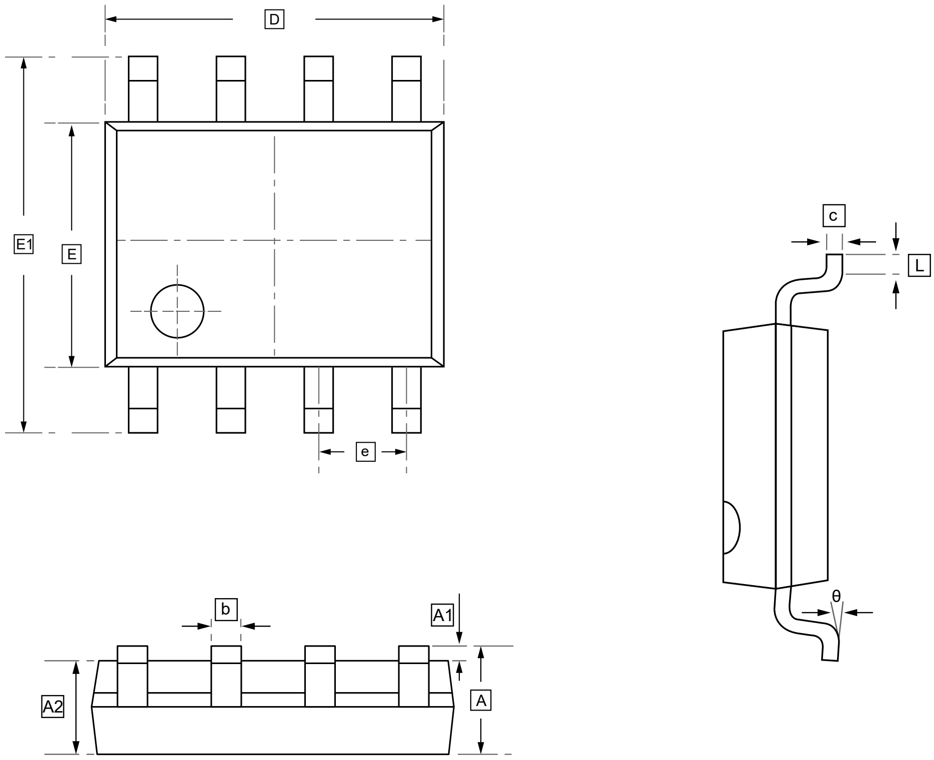


Figure 6: Equivalent Input Noise Voltage vs. Frequency

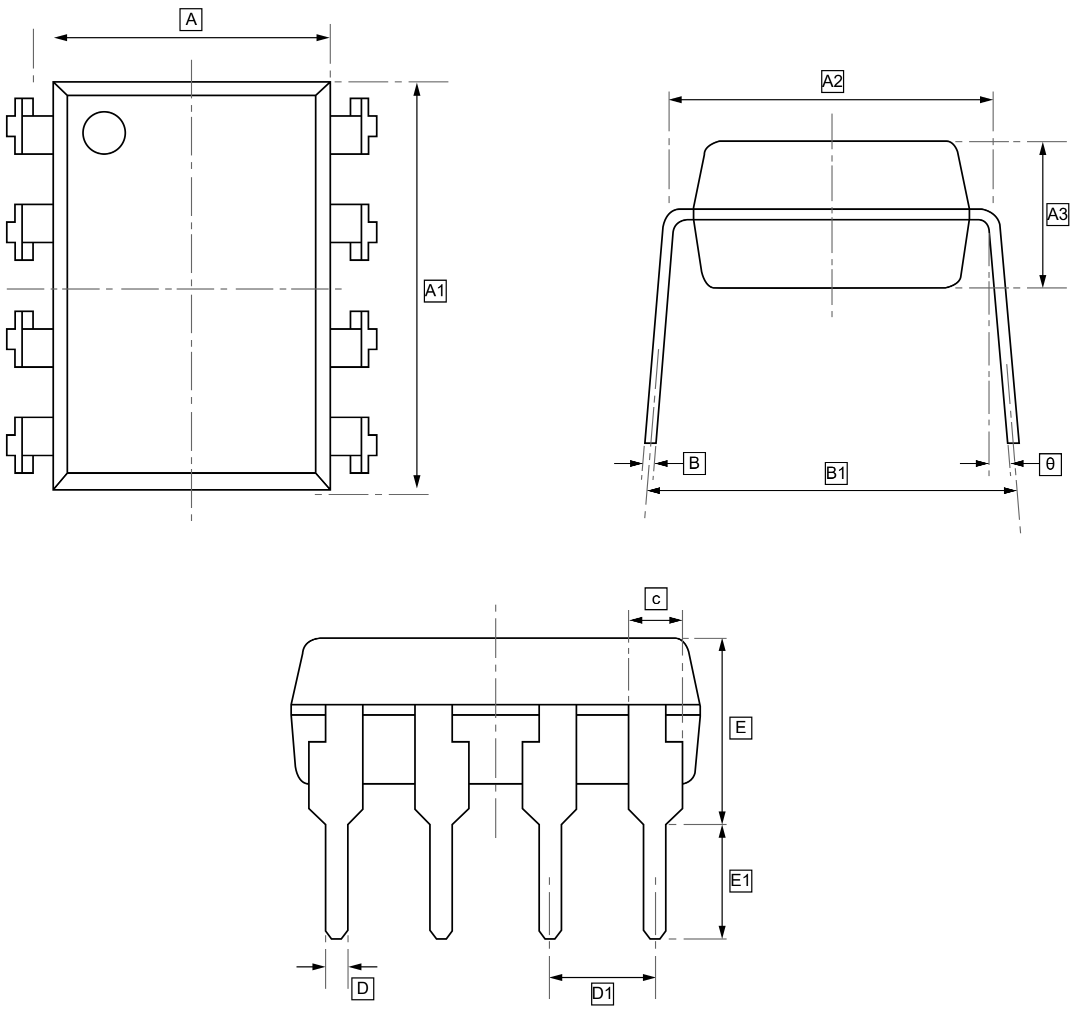
9.1 SOP-8 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	c	D	E	E1	e	L	θ
Min	1.350	0.000	1.350	0.330	0.170	4.700	3.800	5.800	1.270	0.400	0°
Max	1.750	0.100	1.550	0.510	0.250	5.100	4.000	6.200	BSC	1.270	8°

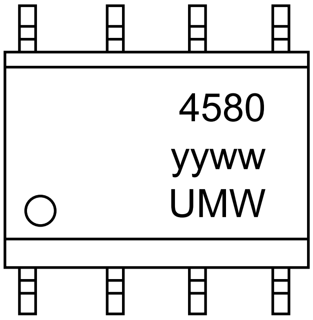
9.2 DIP-8 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	A3	B	B1	θ	c	D	D1	E	E1
Min	6.40	9.56	7.32	3.30	0.25	7.62	5°	1.20	0.50	2.54	4.20	2.80
Max	6.80	9.96	7.92	3.70	TYP	9.50	15°	1.40	TYP	TYP	4.80	TYP

10.Ordering Information



yy: Year Code
ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW NJM4580E	SOP-8	2500	Tape and reel

11.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

When applying our products, please do not exceed the maximum rated values, as this may affect the reliability of the entire system. Under certain conditions, any semiconductor product may experience faults or failures. Buyers are responsible for adhering to safety standards and implementing safety measures during system design, prototyping, and manufacturing when using our products to prevent potential failure risks that could lead to personal injury or property damage.

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