

## 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.

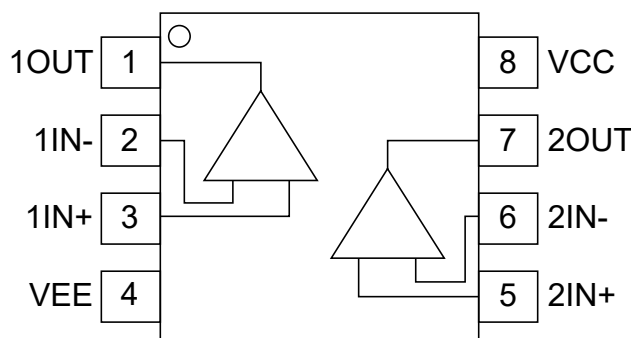
## 2. Features

- Low Noise Voltage
- Total Harmonic Distortion: 0.0005%
- Slew Rate: 5V/μs
- Wide Bandwidth: 10MHz

## 3. Applications

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

## 4. Pinning Information



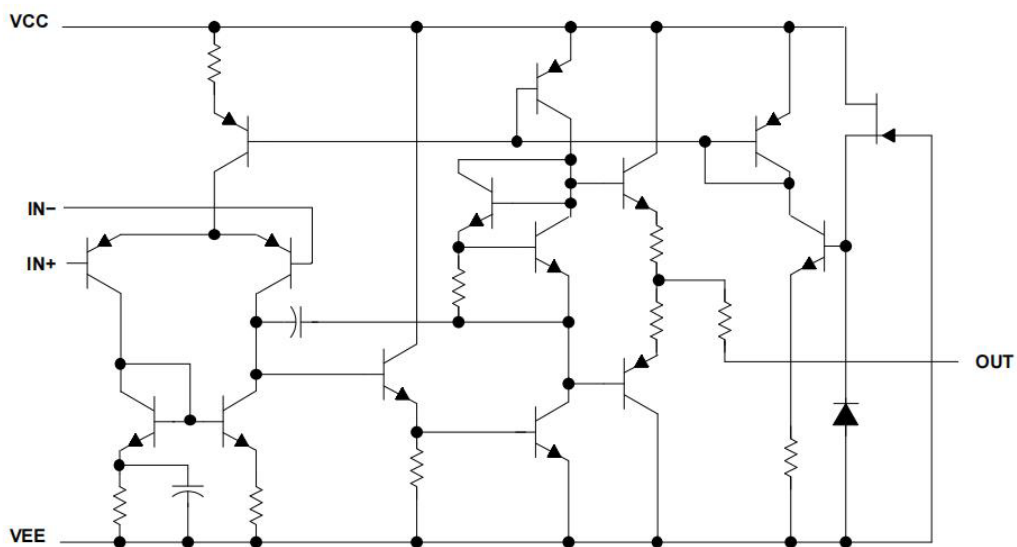
**SOP-8**



## 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 ( $T_A=25^\circ\text{C}$ )

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

## 7. Electrical Characteristics

$V_{CC}=15\text{V}$ ,  $V_{EE}=-15\text{V}$ ,  $T_A=25^\circ\text{C}$ , unless otherwise noted.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Power Supply Current	$I_{CC}$			6		mA
Input Offset Voltage	$V_{IO}$	$R_S \leq 10\text{k}\Omega$		$\pm 0.3$	$\pm 3$	mV
Input Offset Current	$I_{IO}$				$\pm 200$	nA
Input Bias Current	$I_B$				$\pm 500$	nA
Input Common Mode Voltage	$V_{ICM}$			$\pm 12$	$\pm 13$	V
Output Voltage Swing	$V_{OM}$	$R_L = 10\text{k}\Omega$	$\pm 12$	$\pm 14$		V
		$R_L = 2\text{k}\Omega$	$\pm 10$	$\pm 13$		V
Output Current	$I_{source}$		80		120	mA
	$I_{sink}$		-150		-120	mA
Large Signal Voltage Gain	$A_{OL}$	$V_O = \pm 10\text{V}$ , $R_L < 2\text{k}\Omega$		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	SR	$R_L \geq 2\text{k}\Omega$		5		V/ $\mu\text{s}$

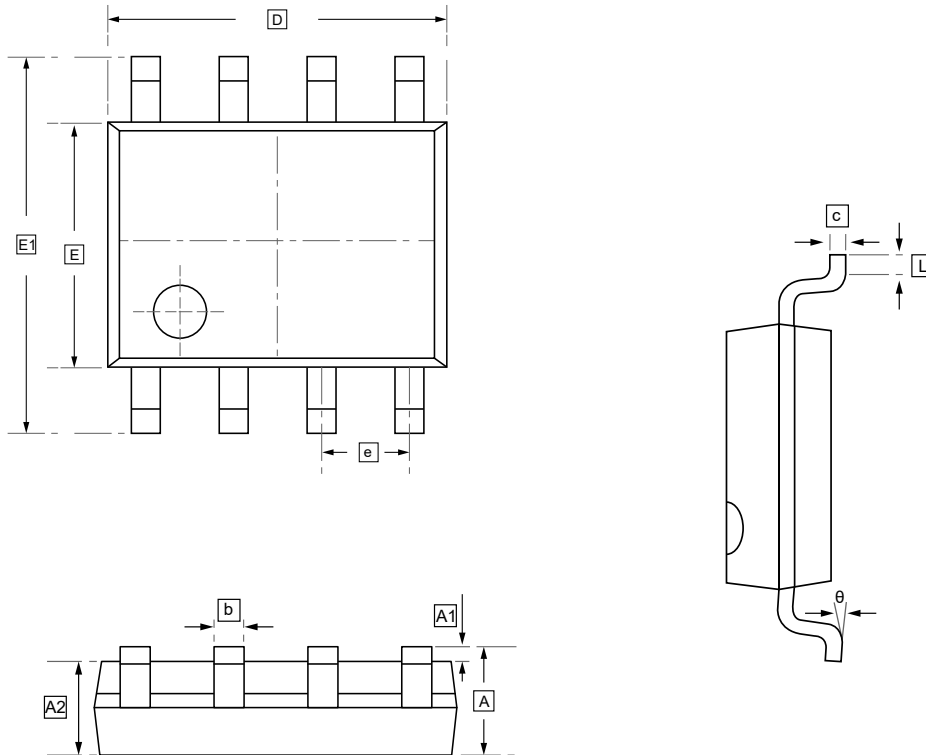


## 8. Typical Characteristics

<p>Figure 1: Operating Current vs. Operating Voltage</p>	<p>Figure 2: Operating Current vs. Ambient Temperature</p>
<p>Figure 3: Maximum Output Voltage Swing vs. Operating Voltage</p>	<p>Figure 4: Maximum Output Voltage Swing vs. Load Resistance</p>
<p>Figure 5: Maximum Output Voltage Swing vs. Frequency</p>	<p>Figure 6: Equivalent Input Noise Voltage vs. Frequency</p>



## 9.1 SOP-8 Package Outline Dimensions

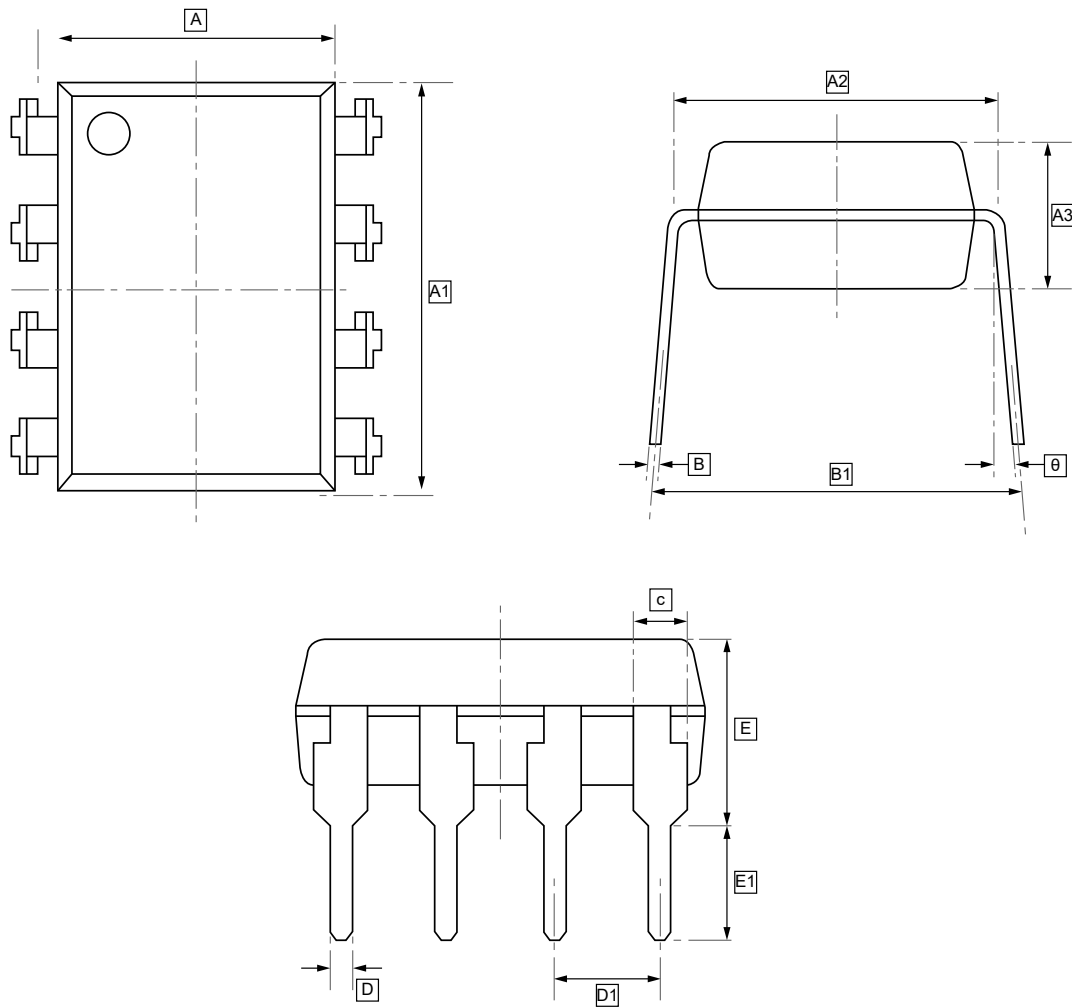


### DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	c	D	E	E1	e	L	$\theta$
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

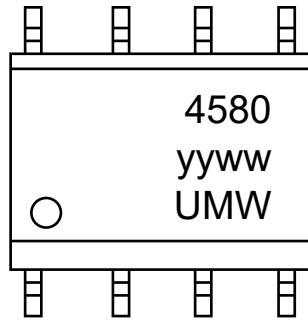


### DIMENSIONS (mm are the original dimensions)

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**

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