

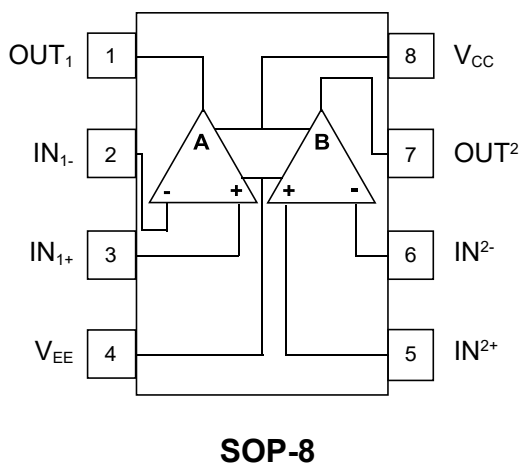
1.Description

UMW JRC4558 is a low noise dual operational amplifier circuit, which can be used as active filter, compensation amplifier, audio preamplifier, equalization amplifier and linear amplifier in electronic instruments.

2.Features

- Phase compensation circuit is included;
- Low noise $V_{NI}=2.5\mu V_{rms}$;
- Speed high frequency bandwidth $BW=3MHz$;
- Package form: DIP8 / SOP8;

3.Functional Block Diagram



Pin Descriptions

Pin	Function	Symbol	Pin	Function	Symbol
1	Output 1	OUT ₁	5	In phase input 2	IN ²⁺
2	Reverse input 1	IN ₁₋	6	Invert input 2	IN ²⁻
3	In-phase input 1	IN ₁₊	7	Output 2	OUT ²
4	Negative power supply	V _{EE}	8	Positive power supply	V _{CC}



4.limit Parameters

$T_{amb}=25^{\circ}\text{C}$ unless otherwise specified.

Parameter Name		Symbol	Rating	Units
Supply voltage		V_{CC}/V_{EE}	± 18	V
Differential mode input voltage		V_{ID}	± 18	V
Common mode input voltage		V_{IC}	± 15	V
Power waste	DIP	P_D	500	mW
	SOP		360	mW
Working environment temperature		T_{amb}	-45 to 85	$^{\circ}\text{C}$
Storage temperature		T_{STG}	-55 to 125	$^{\circ}\text{C}$



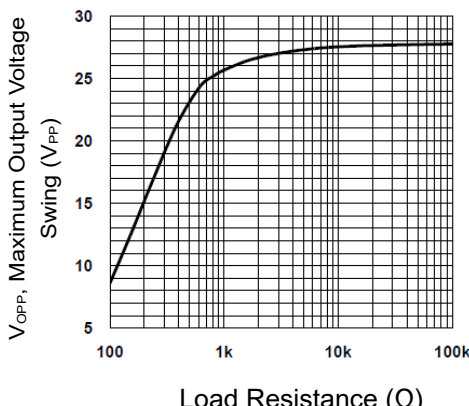
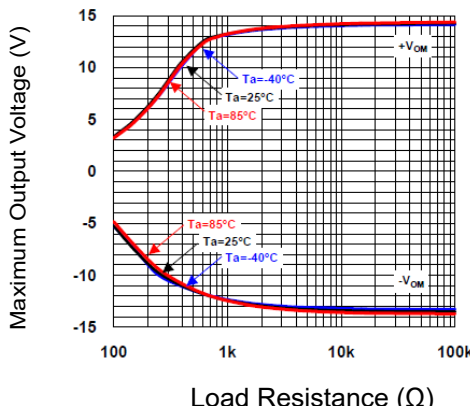
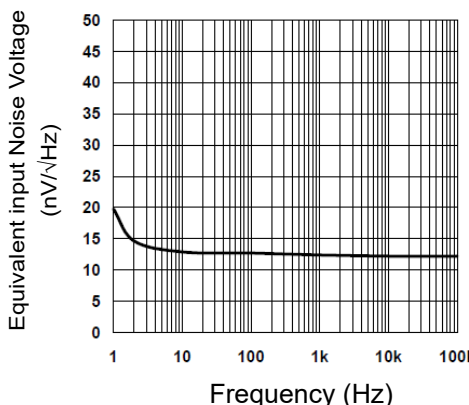
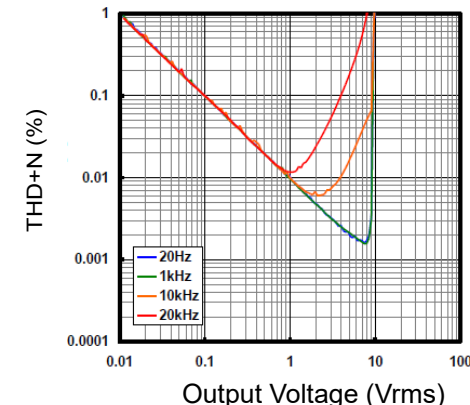
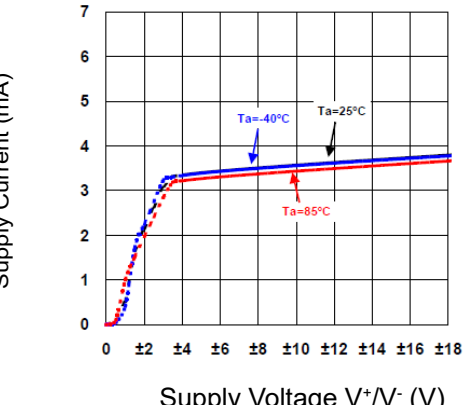
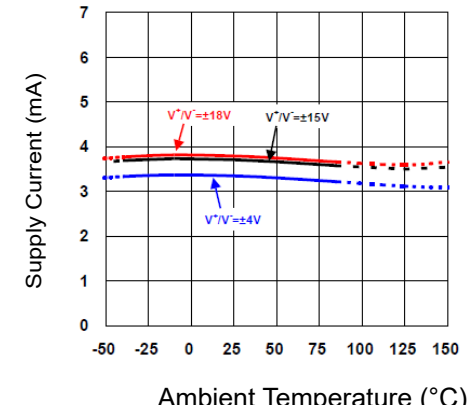
5. Electrical Characteristics

Unless otherwise specified, $T_{amb}=25^{\circ}\text{C}$, $V_{CC}=+15\text{V}$, $V_{EE}=-15\text{V}$.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Supply current	I_{CC}	$R_L=\infty$		3.5	5.7	mA
Input offset current	I_{IO}	$V_{CM}=0\text{V}$		5	200	nA
Input offset voltage	V_{IO}	$R_S<10\text{K}\Omega$		2	6	mV
Input bias current	I_{IB}	$V_{CM}=0\text{V}$		25	600	nA
Common-mode input voltage	V_{IC}		± 12	± 14		V
Maximum output voltage	V_{OM}	$R_L=10\text{K}\Omega$	± 12	± 14		V
		$R_L=2\text{K}\Omega$	± 10	± 13		V
Output short-circuit current	I_{OS}		40		80	mA
Output sink current	I_{OSINK}	$V_O=\pm 10\text{V}$, $R_L=2\text{K}\Omega$	-80		-40	mA
Open-loop voltage gain	A_{VO}		86	100		dB
Common mode rejection ratio	CMRR	$R_S<10\text{K}\Omega$	70	95		dB
Supply voltage rejection ratio	K_{SVR}		77	90		dB
Output voltage slew rate	SR	$A_V=1$, $R_L=2\text{K}\Omega$		1		V/ μS
Unit incremental bandwidth	BW			3		MHz
Equivalent input noise voltage	V_{NI}	$R_S=1\text{K}\Omega$, $f=30\text{Hz}-30\text{KHz}$		2.5		μVrms



6.1 Typical Characteristics

	
Figure 1: Maximum Output Voltage swing vs. Load Resistance	Figure 2: Maximum Output Voltage vs. Load Resistance
	
Figure 3: Voltage Noise vs. Frequency	Figure 4: THD+N vs. output Voltage
	
Figure 5: Supply Current vs. supply Voltage	Figure 6: Supply Current vs. Temperature



6.2 Typical Characteristics

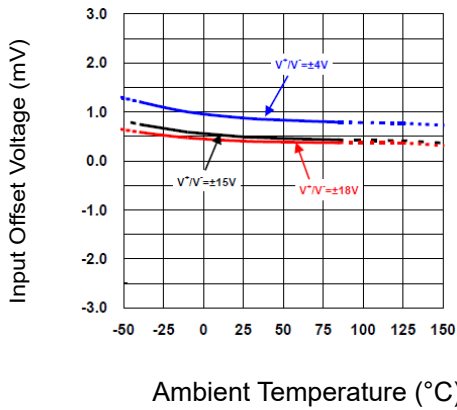


Figure 7: Input Offset Voltage vs. Temperature

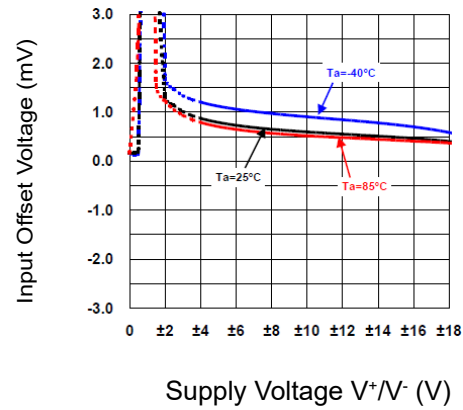


Figure 8: Input Offset Voltage vs. supply Voltage

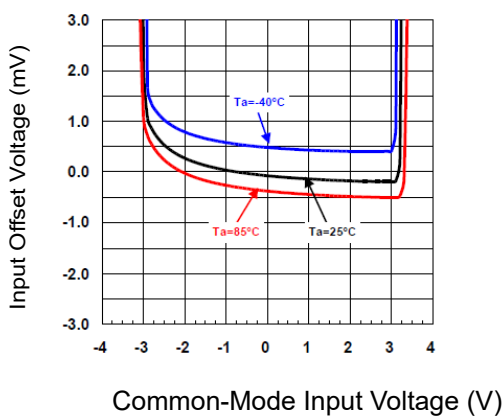


Figure 9: Input Offset Voltage vs. Common-Mode Input Voltage

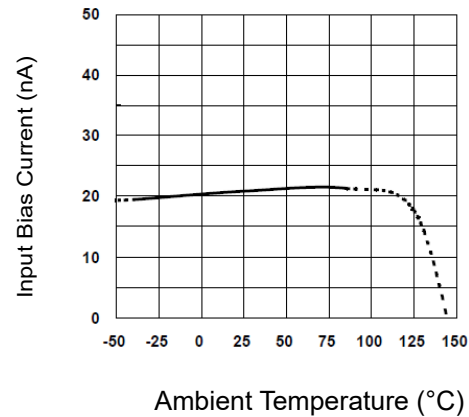


Figure 10: Input Bias Current vs. Temperature

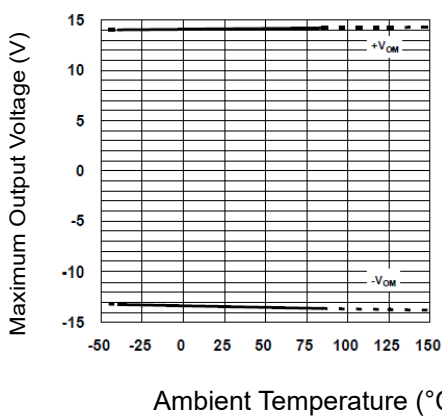


Figure 11: Maximum Output Voltage Swing vs. Temperature

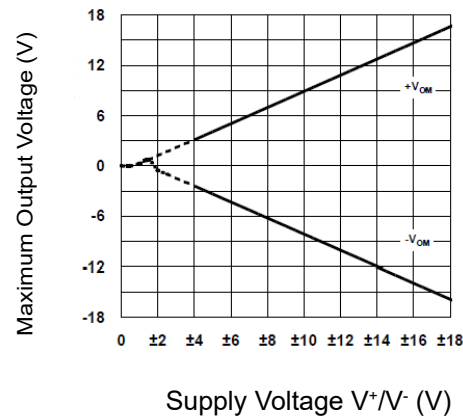


Figure 12: Maximum Output Voltage Swing vs. supply Voltage



6.3 Typical Characteristics

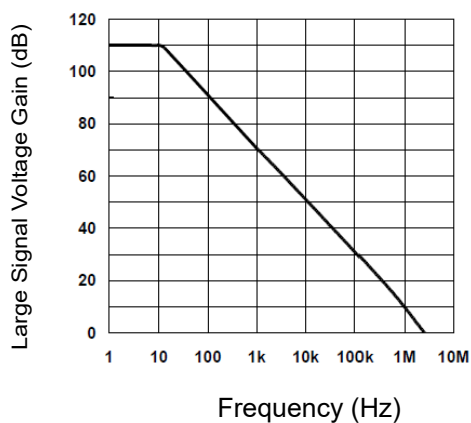


Figure 13: Large Signal Voltage Gain vs. Frequency

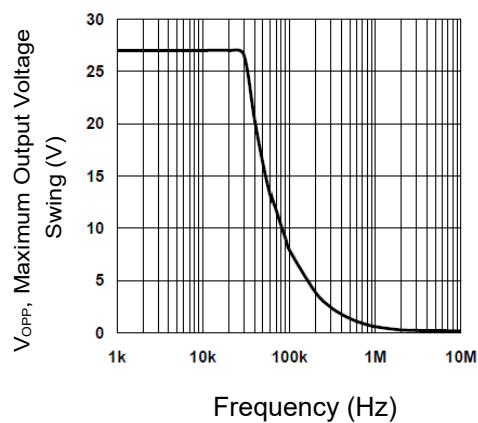
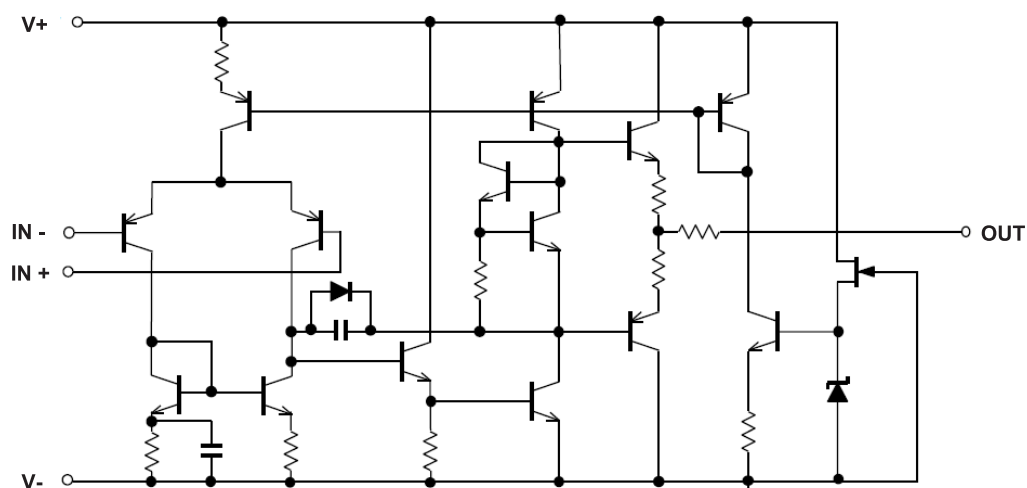


Figure 14: Maximum Output Voltage Swing vs. Frequency

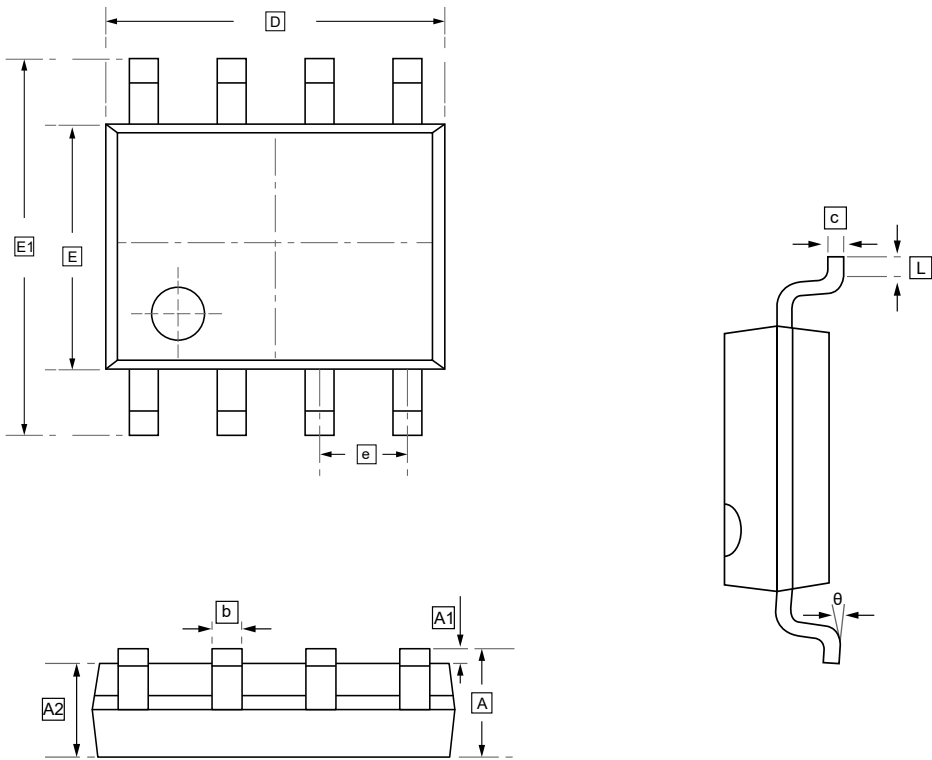
7. Representative Schematic Diagram



(for single operational amplifier)



8.SOP-8 Package Outline Dimensions

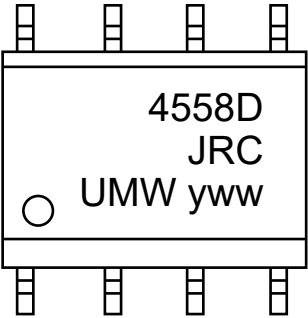


DIMENSIONS (mm are the original dimensions)

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.Ordering Information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW JRC4558D	SOP-8	2500	Tape and reel



10.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.

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