UMW JRC4558D

Double operational amplifier

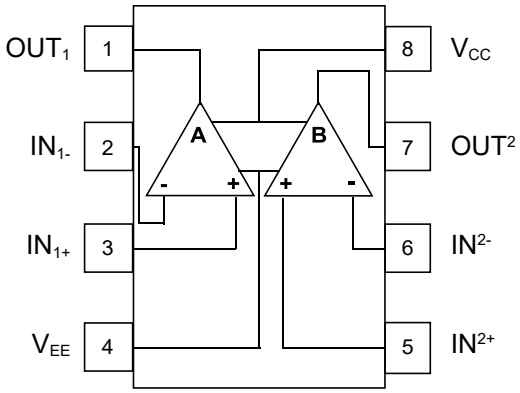
1.Description

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}=2.5μVrms;
- Speed high frequency bandwidth BW=3MHz;
- Package form: DIP8 / SOP8;

3.Functional Block Diagram



SOP-8

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°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	°C
Storage temperature		T_{STG}	-55 to 125	°C

5.Electrical Characteristics

Unless otherwise specified, T_{amb}=25°C, V_{CC}=+15V, V_{EE}=-15V.

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

6.1 Typical Characterisitics

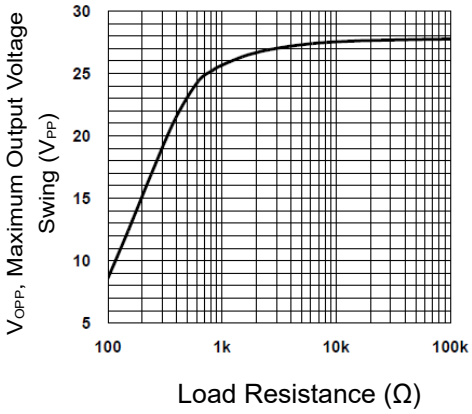


Figure 1: Maximum Output Voltage swing vs. Load Resistance

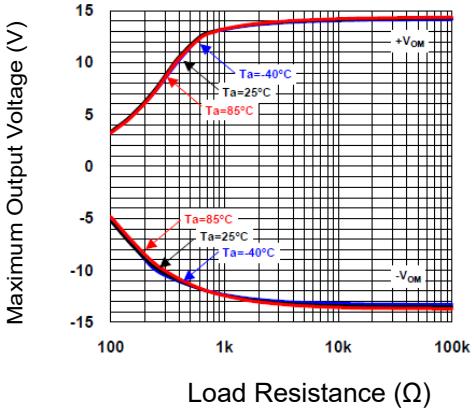


Figure 2: Maximum Output Voltage vs. Load Resistance

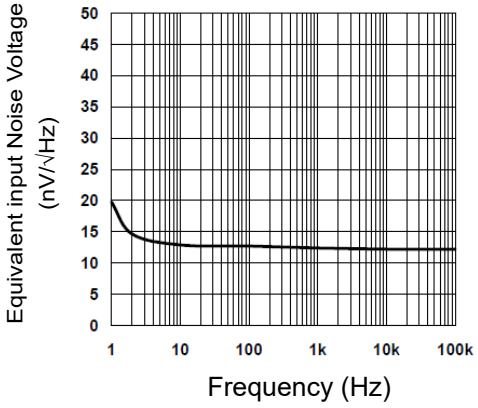


Figure 3: Voltage Noise vs. Frequency

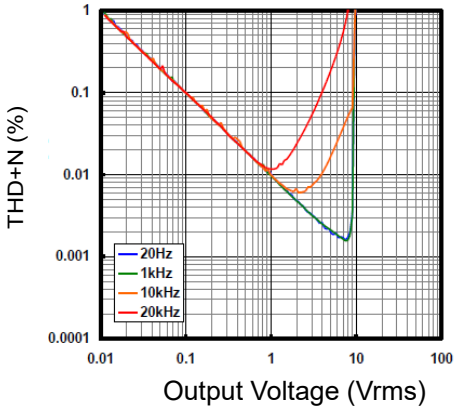


Figure 4: THD+N vs. output Voltage

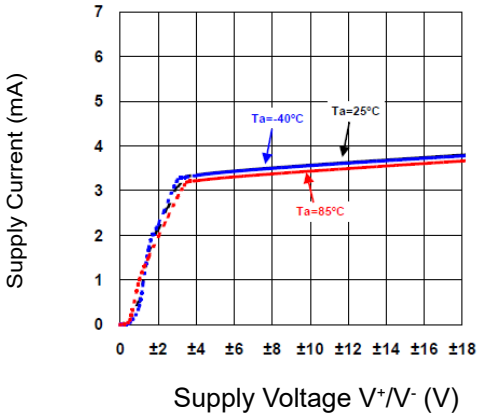


Figure 5: Supply Current vs. supply Voltage

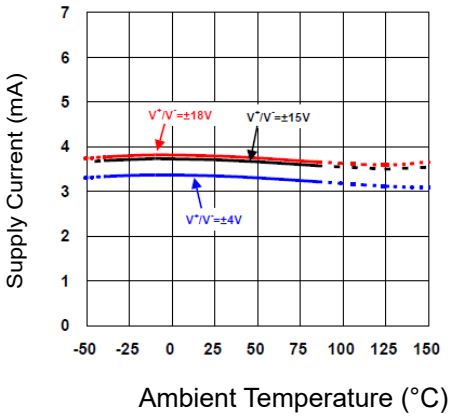


Figure 6: Supply Current vs. Temperature

6.2 Typical Characterisitics

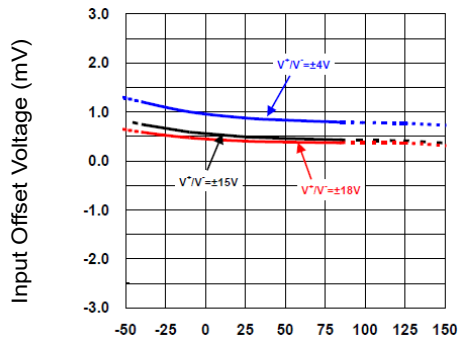


Figure 7: Input Offset Voltage vs. Temperature

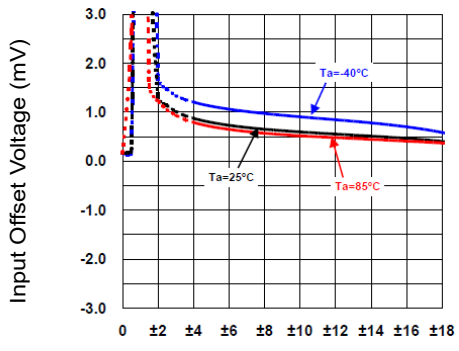


Figure 8: Input Offset Voltage vs. supply Voltage

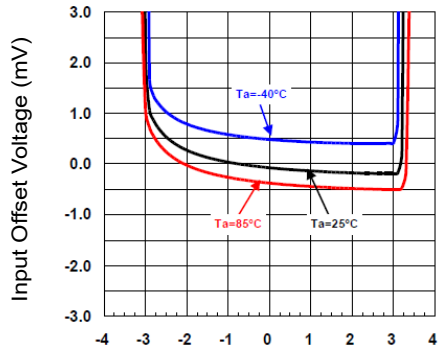


Figure 9: Input Offset Voltage vs. Common-Mode Input Voltage

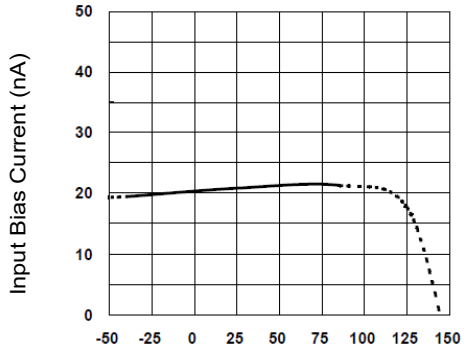


Figure 10: Input Bias Current vs. Temperature

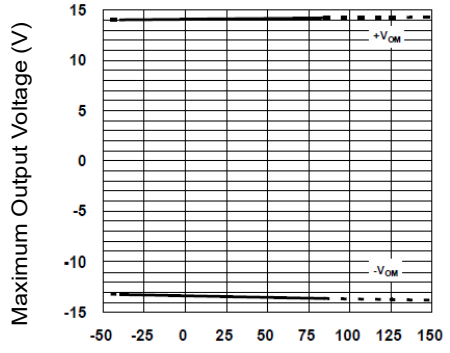


Figure 11: Maximum Output Voltage Swing vs. Temperature

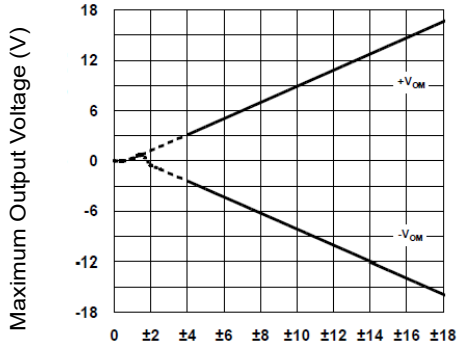


Figure 12: Maximum Output Voltage Swing vs. supply Voltage

6.3 Typical Characterisitics

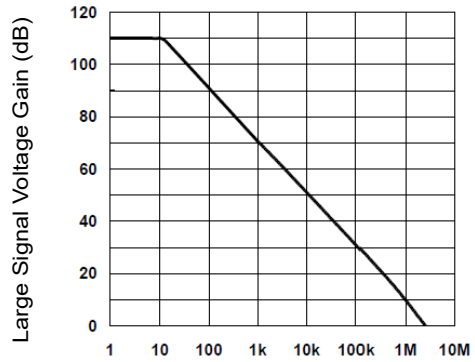


Figure 13: Large Signal Voltage Gain vs. Frequency

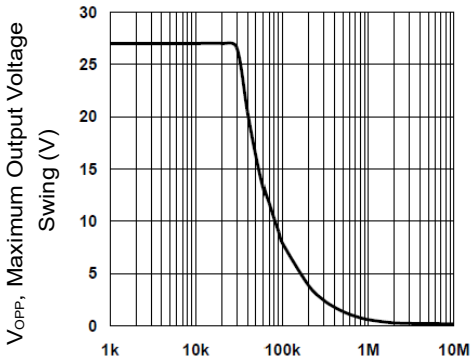
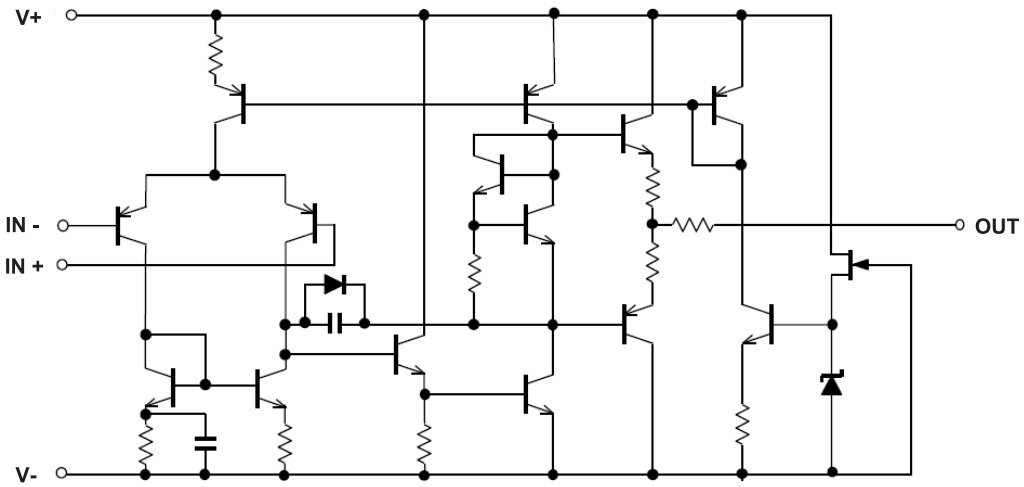


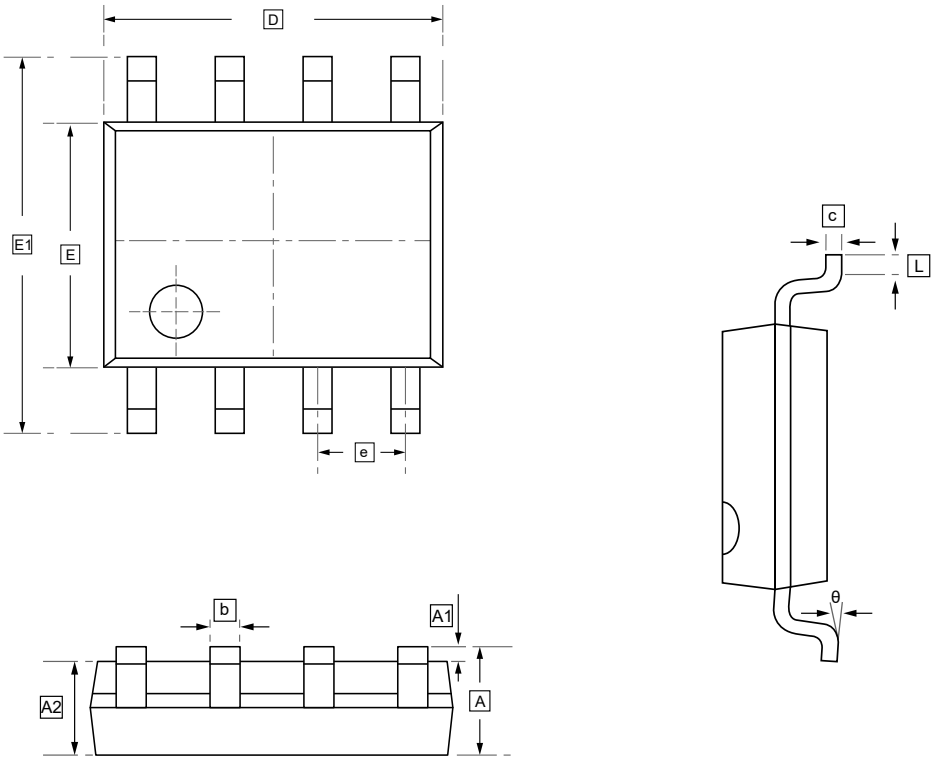
Figure 14: Maximum Output Voltage Swing vs. Frequency

7.Representative Schematic Diagram



(for single operational amplifier)

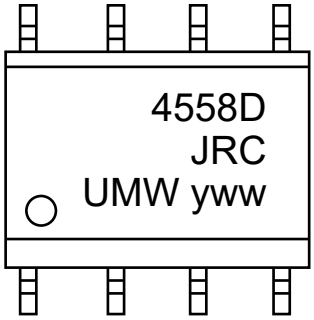
8.SOP-8 Package Outline Dimensions



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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