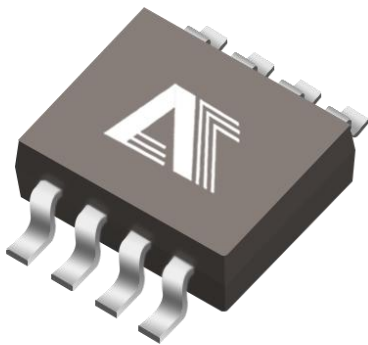




Operational amplifier

JRC4558D

Product Data Sheet

AOTE DCC
RELEASE

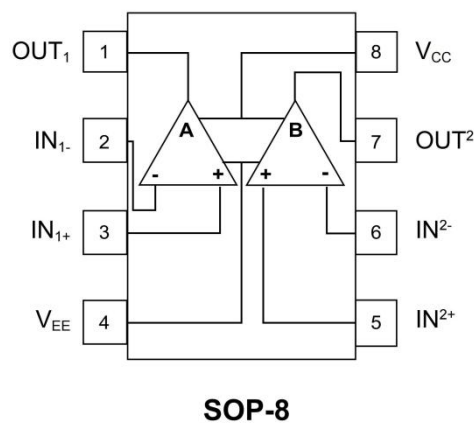
◆ Summary :

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.

◆ Product features

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

◆ 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}

◆ **limit Parameters**

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

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

◆ 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		
		$R_L=2\text{K}\Omega$	± 10	± 13		
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	
Open-loop voltage gain	A_{VO}		86	100		dB
Common mode rejection ratio	CMRR	$R_S<10\text{K}\Omega$	70	95		
Supply voltage rejection ratio	KSVR		77	90		
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

◆ Typical Characteristics

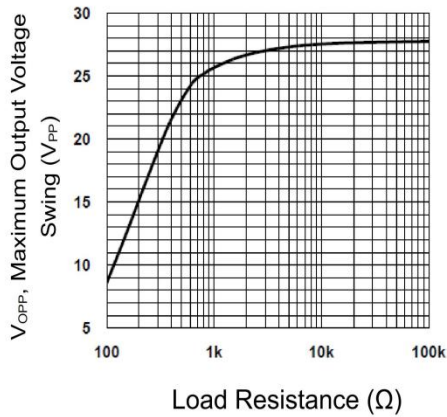


Figure 1: Maximum Output Voltage swing vs. Load Resistance

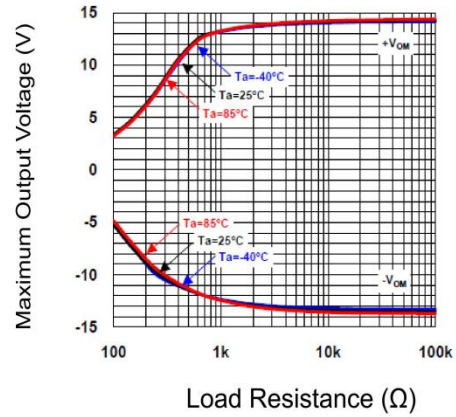


Figure 2: Maximum Output Voltage vs. Load Resistance

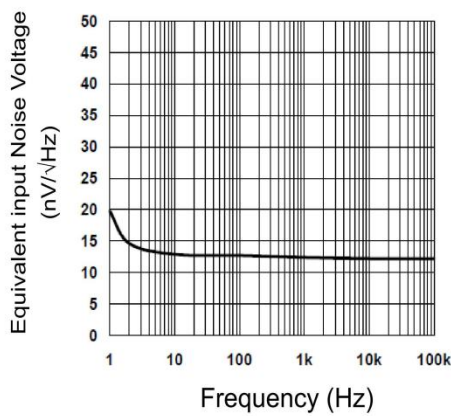


Figure 3: Voltage Noise vs. Frequency

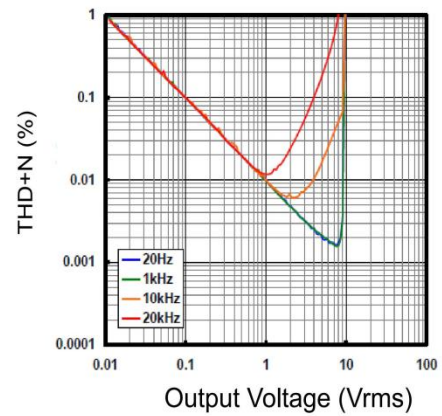


Figure 4: THD+N vs. output Voltage

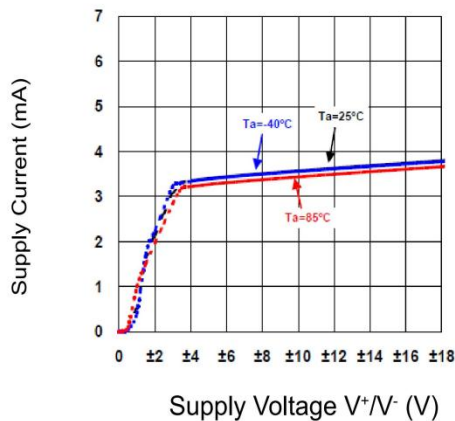


Figure 5: Supply Current vs. supply Voltage

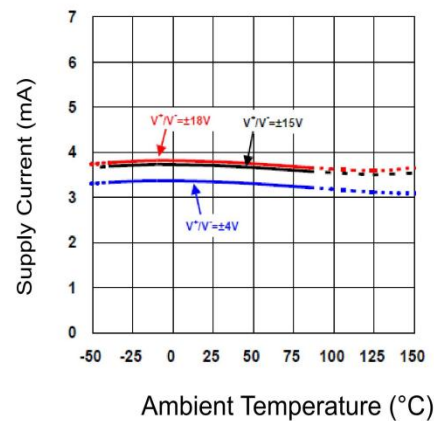


Figure 6: Supply Current vs. Temperature

◆ Typical Characteristics

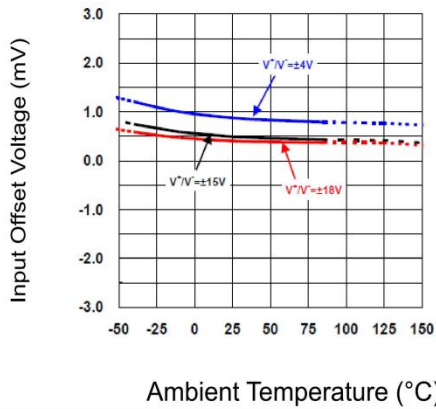


Figure 7: Input Offset Voltage vs. Temperature

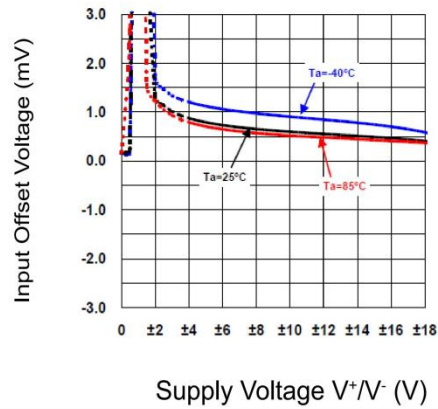


Figure 8: Input Offset Voltage vs. supply Voltage

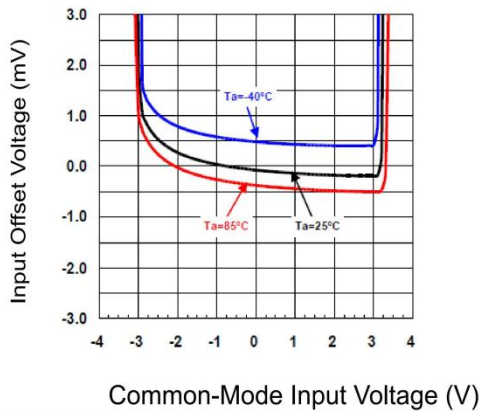


Figure 9: Input Offset Voltage vs. Common-Mode Input Voltage

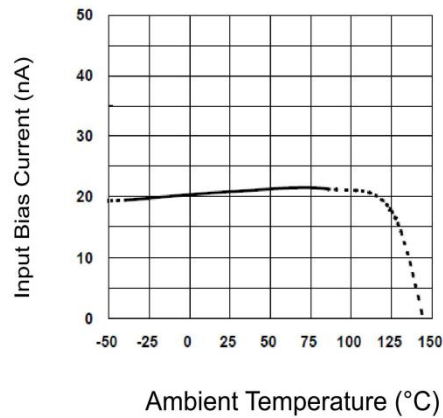


Figure 10: Input Bias Current vs. Temperature

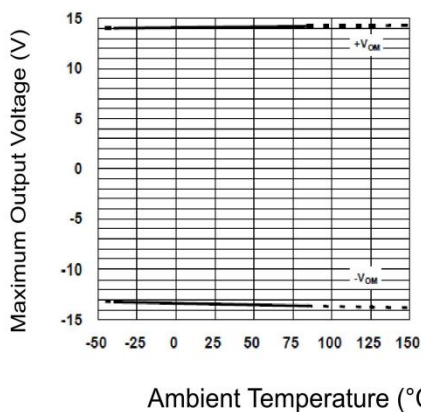


Figure 11: Maximum Output Voltage Swing vs. Temperature

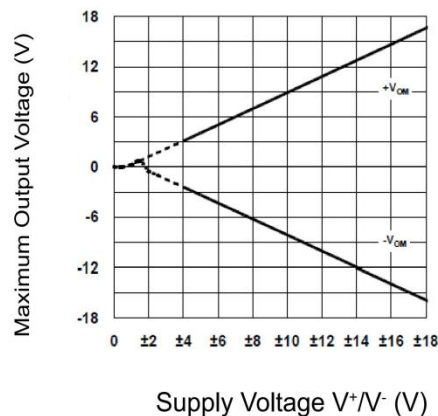
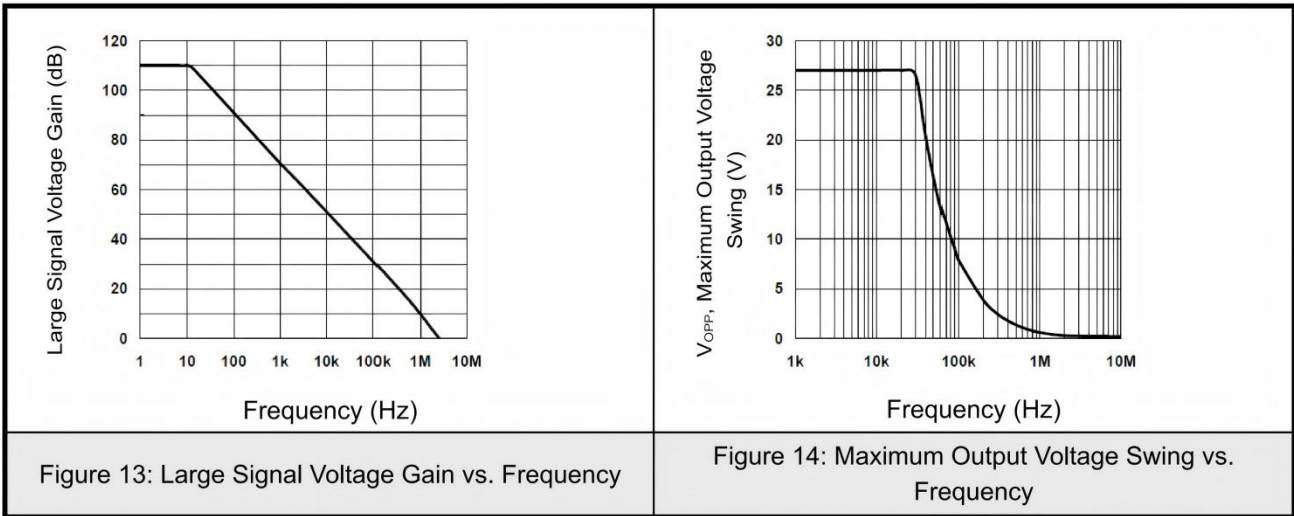
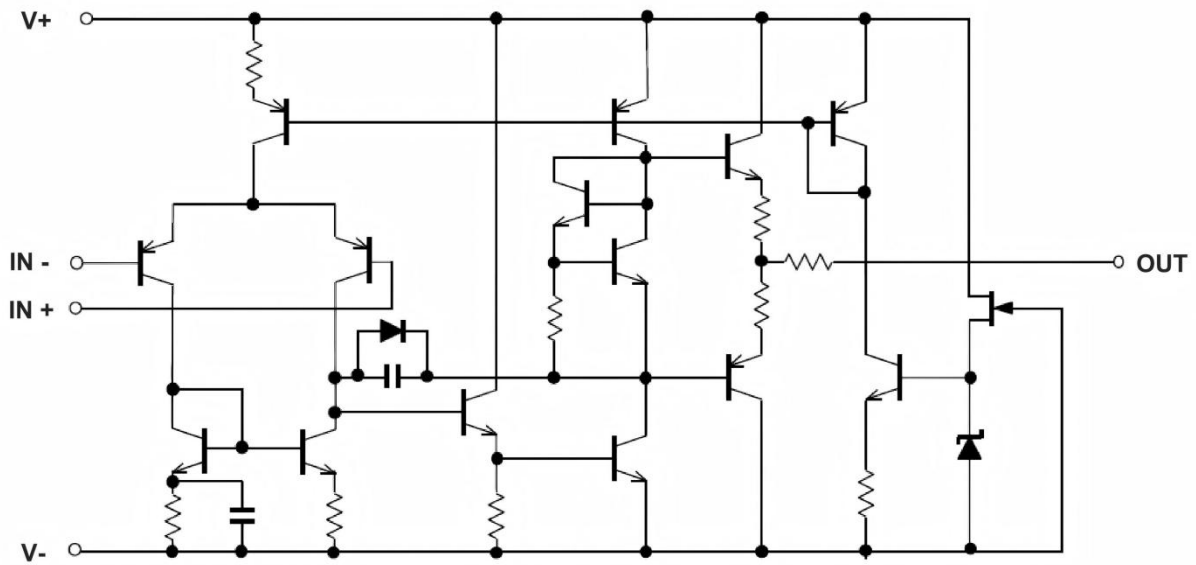


Figure 12: Maximum Output Voltage Swing vs. supply Voltage

◆ **Typical Characteristics**



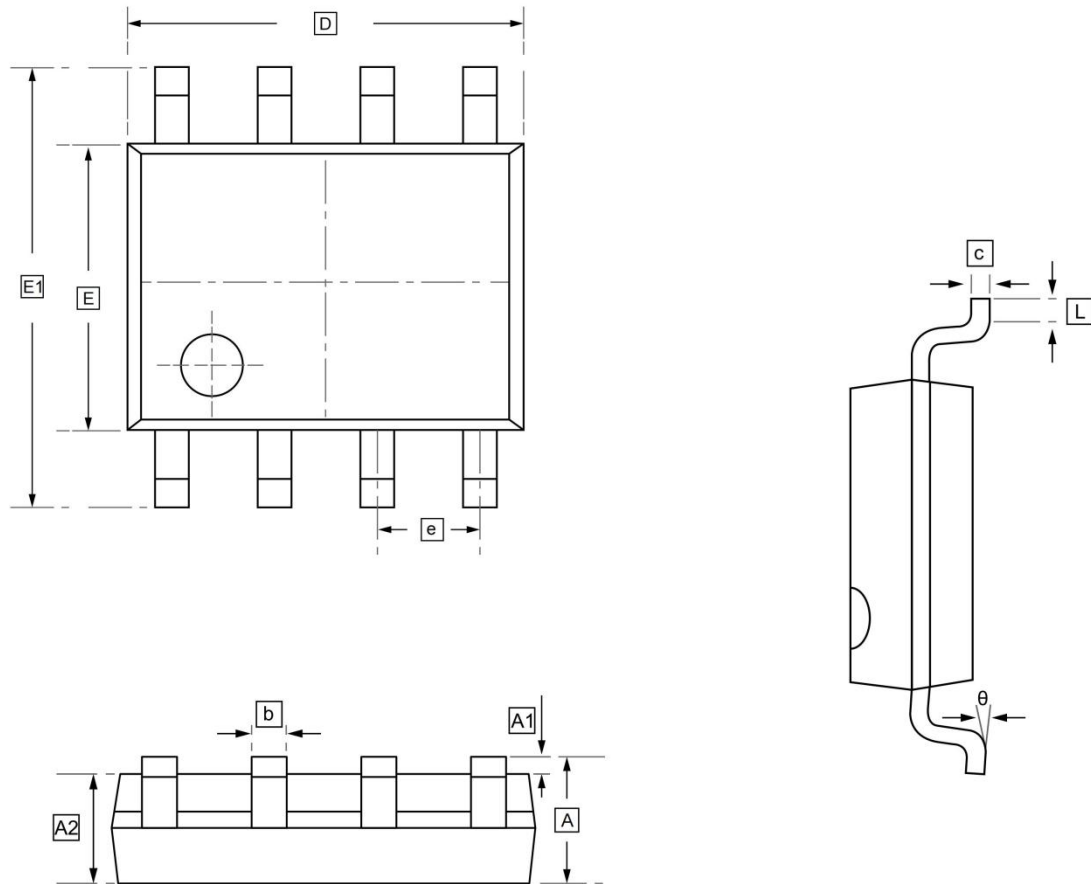
◆ **Representative Schematic Diagram**



(for single operational amplifier)

◆ Package outline dimensions

SOP8



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°

◆ Attention

- AOTE implements dynamic technical updates. Specifications are subject to change. Refer to the official website for the latest version.
- Users must strictly adhere to specified conditions. Failures caused by misuse (overload, high temperature, incompatible circuits) are excluded from warranty.
- Contact technical support for customized validation in critical applications (medical devices, industrial control).
- This document is valid until December 31, 2026. Updates will be notified on the official website.
- For further clarification on technical specifications or application solutions, please contact us through official channels: