

## DUAL OPERATIONAL AMPLIFIER

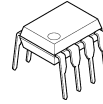
### ■ GENERAL DESCRIPTION

The JRC4558 is a dual high-gain operational amplifier with internal compensation circuit and constructed on a single silicon chip. It offers excellent characteristics by combining the parameters adjusted for a monolithic chip. The channel separation characteristic is suitable for measuring instruments.

### ■ FEATURES

- Operating Voltage (  $\pm 4V \sim \pm 18V$  )
- High Voltage Gain ( 100dB typ. )
- High Input Resistance (  $5M\Omega$  typ. )
- Bipolar Technology
- Package Outline  
DIP8, DMP8, SIP8  
SOP8 JEDEC 150mil,  
SSOP8

### ■ PACKAGE OUTLINE



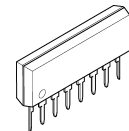
JRC4558D  
( DIP8 )



JRC4558M  
( DMP8 )



JRC4558V  
( SSOP8 )

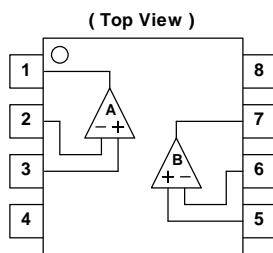


JRC4558L  
( SIP8 )

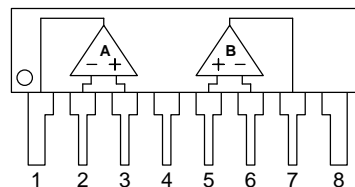


JRC4558E  
( SOP8 )

### ■ PIN CONFIGURATION



JRC4558D, JRC4558M,  
JRC4558E, JRC4558V

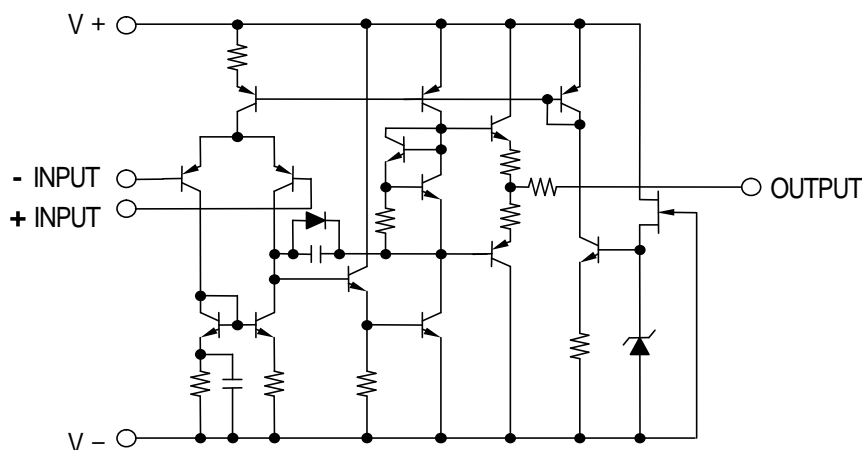


JRC4558L

### PIN FUNCTION

1. OUTPUT (A)
2. - INPUT (A)
3. + INPUT (A)
4. - POWER
5. + INPUT (B)
6. - INPUT (B)
7. OUTPUT (B)
8. + POWER

### ■ EQUIVALENT CIRCUIT ( 1/2 Shown )



# JRC4558

## ■ ABSOLUTE MAXIMUM RATINGS

( Ta=25°C )

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V+/V-	± 18	V
Differential Input Voltage	V <sub>ID</sub>	± 30	V
Input Voltage	V <sub>IC</sub>	± 15 (note1)	V
Power Dissipation	P <sub>D</sub>	( DIP8 ) 500 ( DMP8 ) 300 ( SOP8 ) 300 ( SSOP8 ) 250 ( SIP8 ) 800	mW
Operating Temperature Range	T <sub>opr</sub>	-40~+85	°C
Storage Temperature Range	T <sub>stg</sub>	-40~+125	°C

( note1 ) For supply voltage less than ±15V, the absolute maximum input voltage is equal to the supply voltage.

## ■ ELECTRICAL CHARACTERISTICS

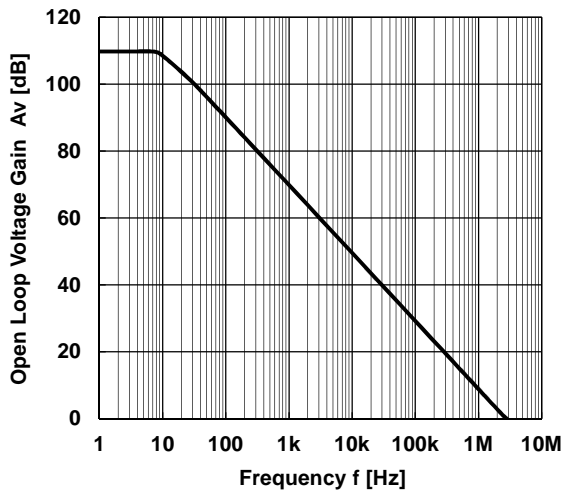
( V+/V- = ±15V, Ta=25°C )

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V <sub>IO</sub>	R <sub>S</sub> ≤ 10kΩ	-	0.5	6	mV
Input Offset Current	I <sub>IO</sub>		-	5	200	nA
Input Bias Current	I <sub>B</sub>		-	25	500	nA
Input Resistance	R <sub>IN</sub>		0.3	5	-	MΩ
Large Signal Voltage Gain	A <sub>V</sub>	R <sub>L</sub> ≥ 2kΩ, V <sub>O</sub> = ±10V	86	100	-	dB
Maximum Output Voltage Swing 1	V <sub>OM1</sub>	R <sub>L</sub> ≥ 10kΩ	± 12	± 14	-	V
Maximum Output Voltage Swing 2	V <sub>OM2</sub>	R <sub>L</sub> ≥ 2kΩ	± 10	± 13	-	V
Input Common Mode Voltage Range	V <sub>ICM</sub>		± 12	14	-	V
Common Mode Rejection Ratio	CMR	R <sub>S</sub> ≤ 10kΩ	70	90	-	dB
Supply Voltage Rejection Ratio	SVR	R <sub>S</sub> ≤ 10kΩ	76.5	90	-	dB
Operating Current	I <sub>CC</sub>		-	3.5	5.7	mA
Slew Rate	SR		-	1	-	V/μs
Equivalent Input Noise Voltage (note2)	V <sub>NI</sub>	RIAA, R <sub>S</sub> = 2.2kΩ, 30kHz LPF	-	1.4	-	μVrms
Gain Bandwidth Product	GB		-	3	-	MHz

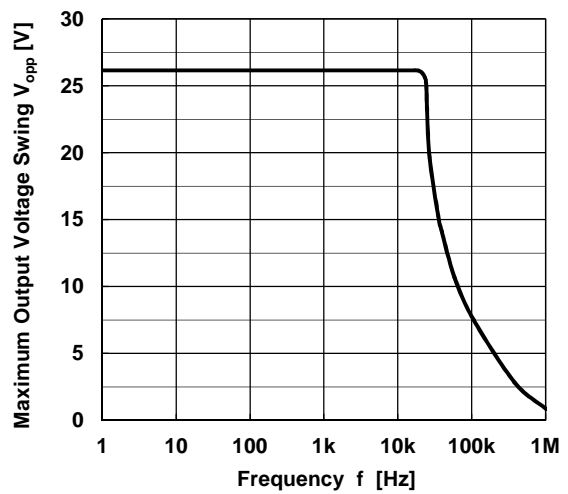
(note2) In regard to Noise Standard, NJRC is preparing for special D Rank type products (V<sub>NI</sub> = 1.8μV max.) except for SSOP package.

## ■ TYPICAL CHARACTERISTICS

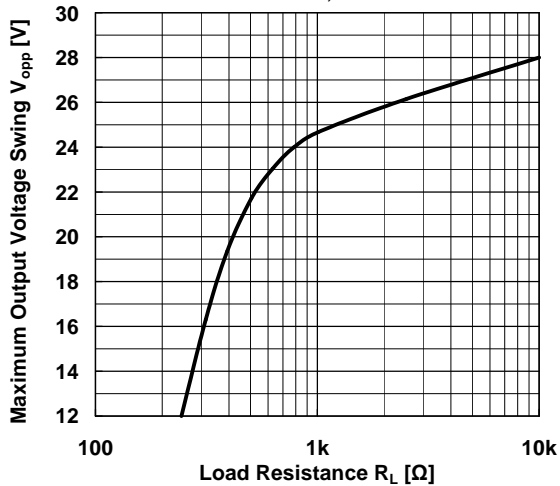
Open Loop Voltage Gain vs. Frequency  
 $V^+/V^-=\pm 15V, R_L=2k\Omega, T_a=25^\circ C$



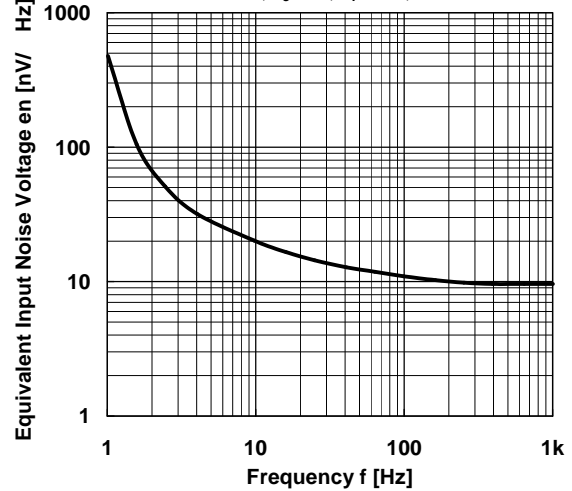
Maximum Output Voltage Swing vs. Frequency  
 $V^+/V^-=\pm 15V, R_L=2k\Omega, T_a=25^\circ C$



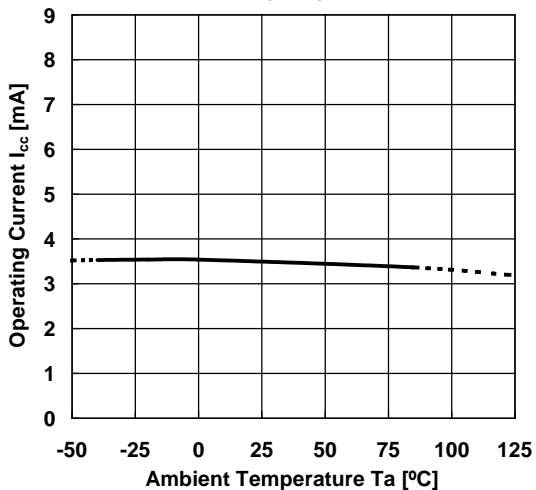
Maximum Output Voltage Swing vs. Load Resistance  
 $V^+/V^-=\pm 15V, T_a=25^\circ C$



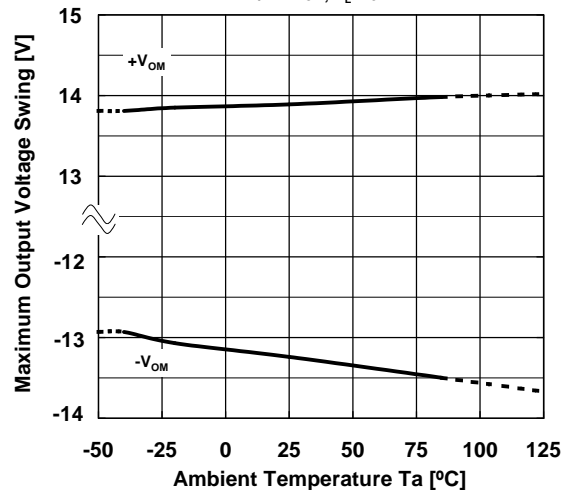
Equivalent Input Noise Voltage vs. Frequency  
 $V^+/V^-=\pm 15V, R_s=50\Omega, A_v=60dB, T_a=25^\circ C$



Operating Current vs. Temperature  
 $V^+/V^-=\pm 15V$



Maximum Output Voltage Swing vs. Temperature  
 $V^+/V^-=\pm 15V, R_L=10k\Omega$



# JRC4558

## ■ TYPICAL CHARACTERISTICS

