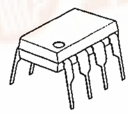
DUAL GENERAL PURPOSE OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

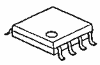
The NJM1458 is a monolithic pair of Internally Compensated High Performance Amplifiers, constructed using the New JRC Planar epitaxial process. They are intended for a wide range of analog applications where board space or weight are important. High common mode voltage range and absence of "latch-up" make the NJM1458 ideal for use as voltage followers. The high gain and wide range of operating voltage provides superior performance in integrator, summing amplifier and general feedback applications.

The NJM1458 is short-circuit protected and require no external components for frequency compensation. The internal 6 dB/octabe roll-off insures stability in closed loop applications. For single amplifier performance, see the NJM741 data sheet.

■ PACKAGE OUTLINE



NJM1458D

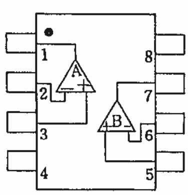


NJM1458M

■ FEATURES

- Operating Voltage (+3V ~ +18V)
- Output Short-Circuit Protection
- Package Outline DIP8, DMP8
- Bipolar Technology

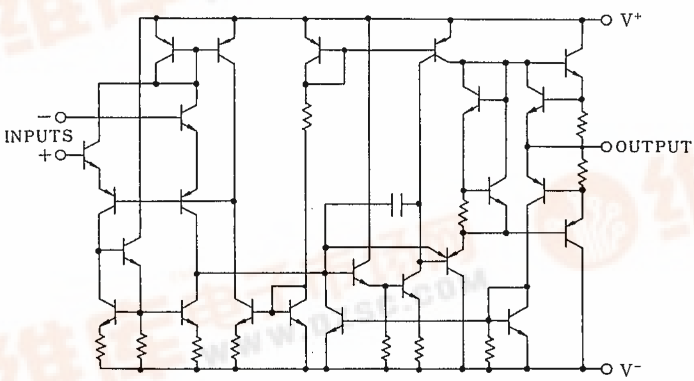
■ PIN CONFIGURATION



NJM1458D
NJM1458M

PIN FUNCTION
1. A OUTPUT
2. A−INPUT
3. A+INPUT
4. V⁻
5. B+INPUT
6. B−INPUT
7. B OUTPUT
8. V⁺

■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+/V^-	±18	V
Input Voltage	V_{IC}	±15	V
Differential Input Voltage	V_{ID}	±30	V
Power Dissipation	P_D	(DIP8) 500	mW
		(DMP8) 300	mW
Operating Temperature Range	T_{opr}	−40∼+85	℃
Storage Temperature Range	T_{stg}	−40∼+125	℃

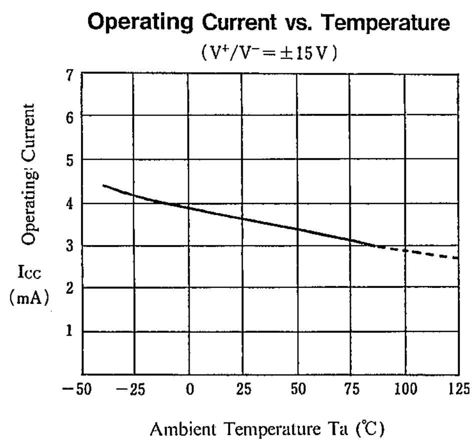
(note) For supply voltage less than ±15V. the absolute maximum input voltage is equal to the supply voltage.

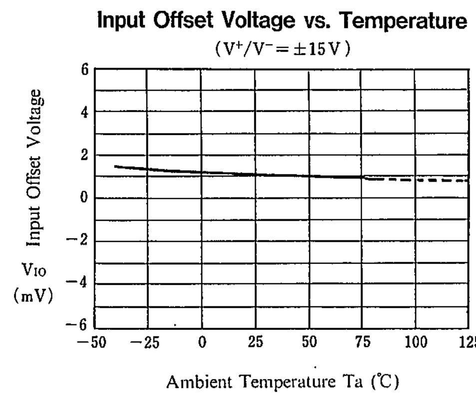
■ ELECTRICAL CHARACTERISTICS

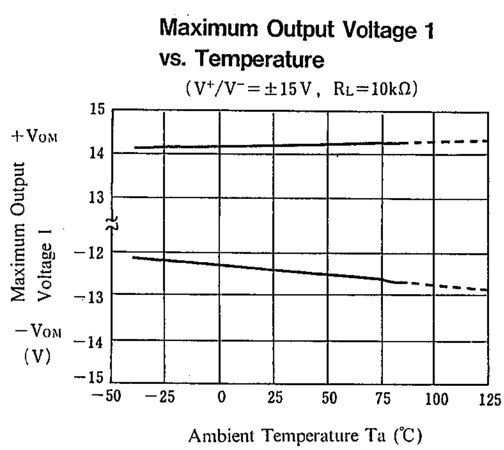
(Ta =25℃, V^+/V^-=±15V)

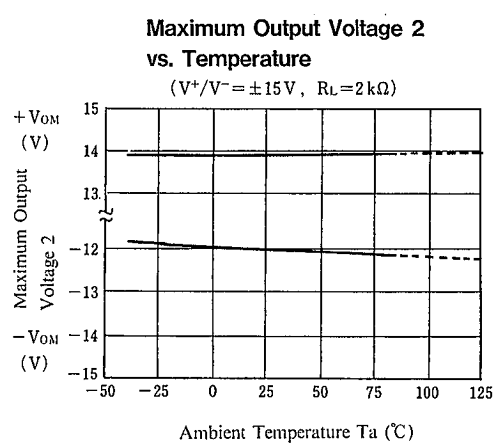
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	$R_S \leqq 10k\Omega$	—	2.0	6.0	mV
Input Offset Current	I_{IO}		—	5	200	nA
Input Bias Current	I_B		—	30	500	nA
Input Resistance	R_{IN}		0.3	1.0	—	MΩ
Large signal Voltage Gain	A_V	$R_L \geqq 2k\Omega$, $V_O = \pm 10V$	86	106	–	dB
Maximum Output Voltage Swing 1	V_{OM1}	$R_L \geqq 10k\Omega$	±12	±14	—	V
Maximum Output Voltage Swing 2	V_{OM2}	$R_L \geqq 2k\Omega$	±10	±13	—	V
Input Common Mode Voltage Range	V_{ICM}		±12	±13	—	V
Common Mode Rejection Ratio	CMR	$R_S \leqq 10k\Omega$	70	90	—	dB
Supply Voltage Rejection Ratio	SVR	$R_S \leqq 10k\Omega$	76.5	90	—	dB
Operating Current	I_{CC}		—	3.3	5.7	mA
Slew Rate	SR	$R_L \geqq 2k\Omega$, $A_V = 1$	—	0.5	—	V/µs
Channel Separation	CS	f=1kHz	—	98	—	dB

■ TYPICAL CHARACTERISTICS









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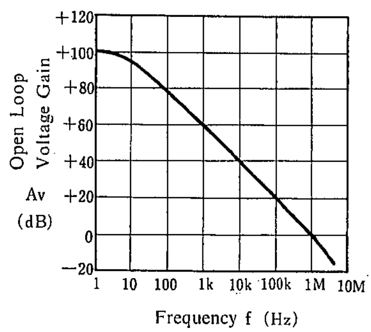
■ TYPICAL CHARACTERISTICS

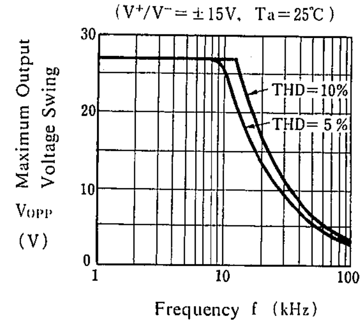
Open Loop Frequency Response

($V^+/V^- = \pm 15V$, $Ta = 25°C$)



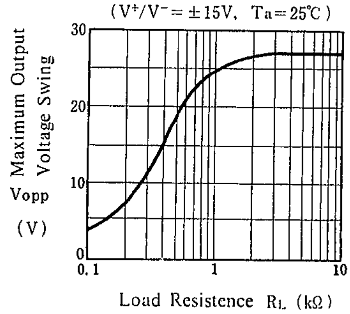
Maximum Output Voltage Swing vs. Frequency

($V^+/V^- = \pm 15V$, $Ta = 25°C$)



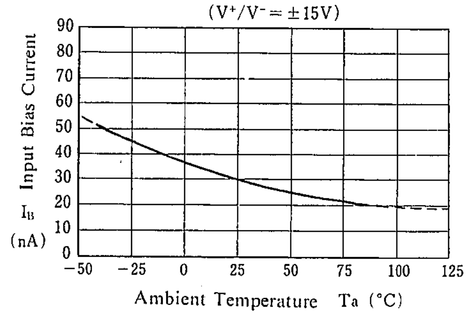
Maximum Output Voltage Swing vs. Load Resistance

($V^+/V^- = \pm 15V$, $Ta = 25°C$)



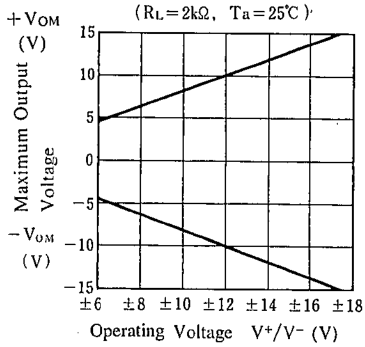
Input Bias Current vs. Temperature

($V^+/V^- = \pm 15V$)



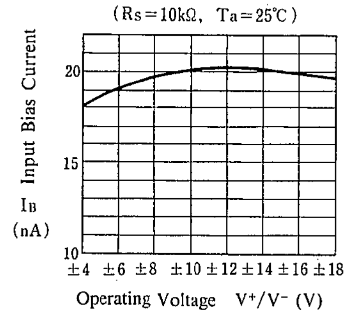
Maximum Output Voltage Swing vs. Operating Voltage

($R_L = 2k\Omega$, $Ta = 25°C$)



Input Bias Current vs. Operating Voltage

($Rs = 10k\Omega$, $Ta = 25°C$)



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