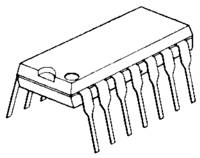
QUAD OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

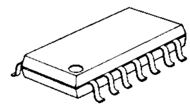
The NJM2058 integrated circuit is a quad high-gain operational amplifier internally compensated and constructed on a single silicon chip using an advanced epitaxial process.

Each amplifier of the NJM2058 has the same electrical characteristics of the NJM4558.

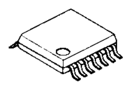
■ PACKAGE OUTLINE



NJM2058D



NJM2058M

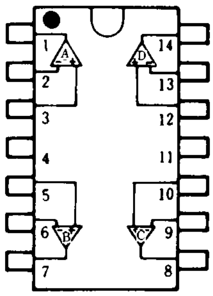


NJM2058V

■ FEATURES

- Operating Voltage (±4V~±18V)
- Package Outline DIP14,DMP14,SSOP14
- Bipolar Technology

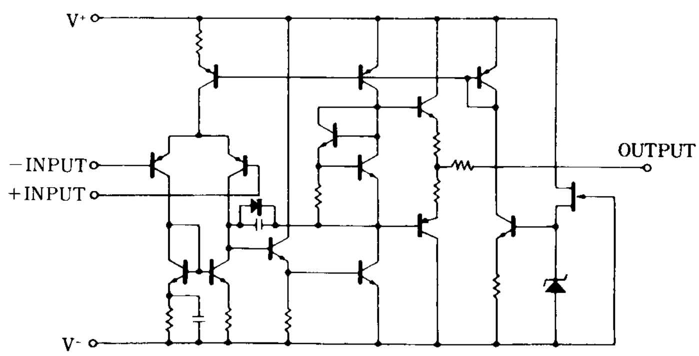
■ PIN CONFIGURATION



NJM2058D
NJM2058M
NJM2058V

PIN FUNCTION
1. A OUTPUT
2. A -INPUT
3. A +INPUT
4. V^+
5. B +INPUT
6. B -INPUT
7. B OUTPUT
8. C OUTPUT
9. C –INPUT
10. C +INPUT
11. V^-
12. D +INPUT
13. D –INPUT
14. D OUTPUT

■ EQUIVALENT CIRCUIT (1/4 Shown)



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25˚C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+/V^-	± 18	V
Differential Input Voltage	V_{ID}	± 30	V
Input Voltage	V_{IC}	± 15 (note1)	V
Power Dissipation	P_D	(DIP14) 700 (DMP14) 700 (note2) (SSOP14) 300	mW
Operating Temperature Range	T_{opr}	-40~+85	˚C
Storage Temperature Range	T_{stg}	-40~+125	˚C

(note1) For supply voltage less than ±15V. the absolute maximum input voltage is equal to the supply voltage.
(note2) At on PC board

■ ELECTRICAL CHARACTERISTICS

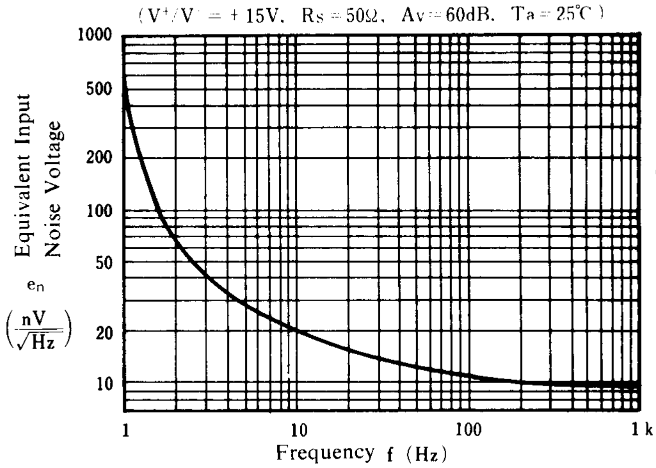
(Ta=25˚C,V^+/V^-=±15V)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	R_S≤10kΩ	-	0.5	6	mV
Input Offset Current	I_{IO}		-	5	200	nA
Input Bias Current	I_B		-	20	500	nA
Input Resistance	R_{IN}		0.3	1	-	MΩ
Large signal Voltage Gain	A_V	R_L≥2kΩ,V_O=±10V	86	100	-	dB
Maximum Output Voltage Swing 1	V_{OM1}	R_L≥10kΩ	± 12	± 14	-	V
Maximum Output Voltage Swing 2	V_{OM2}	R_L≥2kΩ	± 10	± 13	-	V
Input Common Mode Voltage Range	V_{ICM}		± 12	± 14	-	V
Common Mode Rejection Ratio	CMR	R_S≤10kΩ	70	90	-	dB
Supply Voltage Rejection Ratio	SVR	R_S≤10kΩ	76.5	90	-	dB
Operating Current	I_{CC}		-	7	11.3	mA
Slew Rate	SR		-	1	-	V/µs
Equivalent Input Noise Voltage	V_{NI}	RIAA,R_S=2.2kΩ,30kHz LPF	-	1.4	-	µVrms

■ TYPICAL CHARACTERISTICS

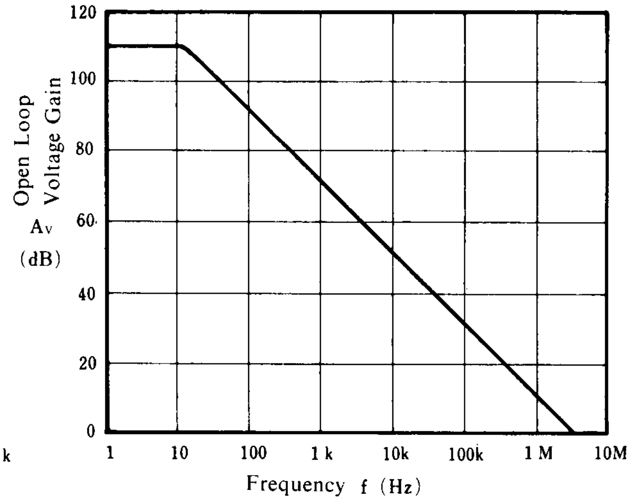
Equivalent Input Noise Voltage vs. Frequency

(V+/V− = ±15V, Rs = 50Ω, Av = 60dB, Ta = 25°C)



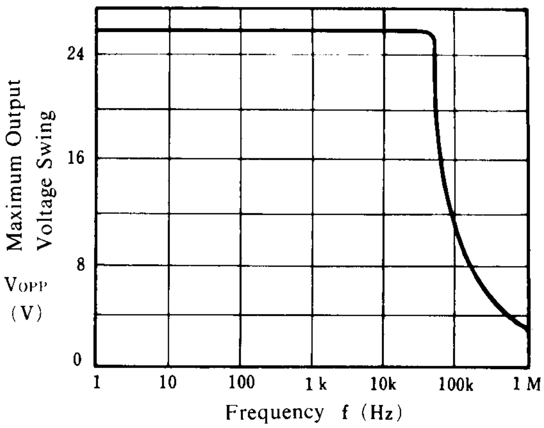
Open Loop Voltage Gain vs. Frequency

(V+/V− = ±15V, RL = 2kΩ, Ta = 25°C)



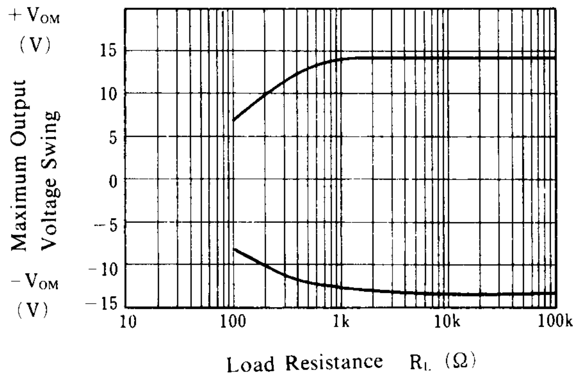
Maximum Output Voltage Swing vs. Frequency

(V+/V− = ±15V, RL = 2kΩ, Ta = 25°C)



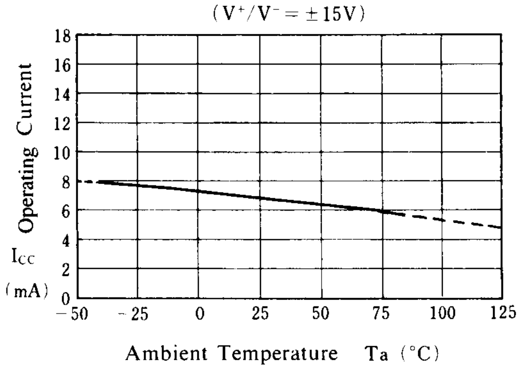
Maximum Output Voltage Swing vs. Load Resistance

(V+/V− = ±15V, Ta = 25°C)



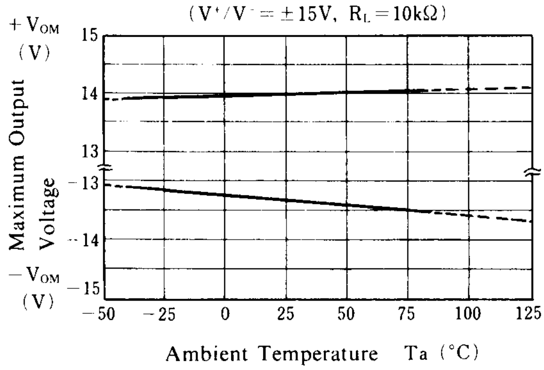
Operating Current vs. Temperature

(V+/V− = ±15V)



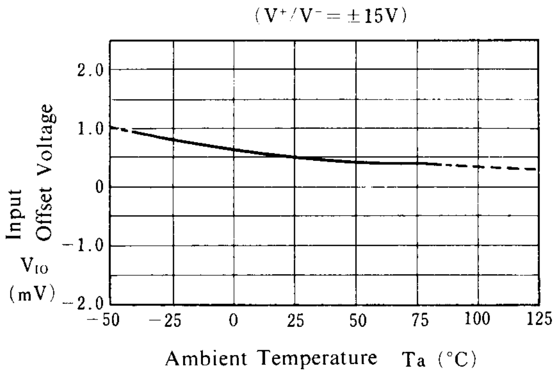
Maximum Output Voltage Swing vs. Tempertature

(V+/V− = ±15V, RL = 10kΩ)

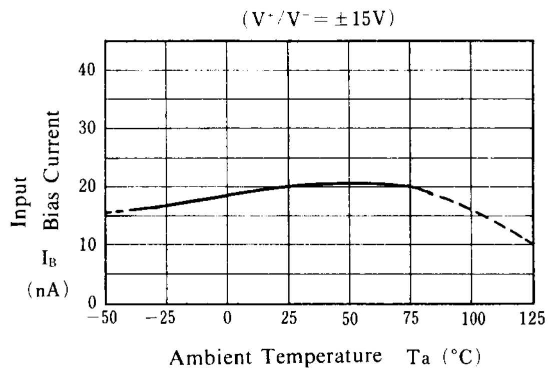


■ TYPICAL CHARACTERISTICS

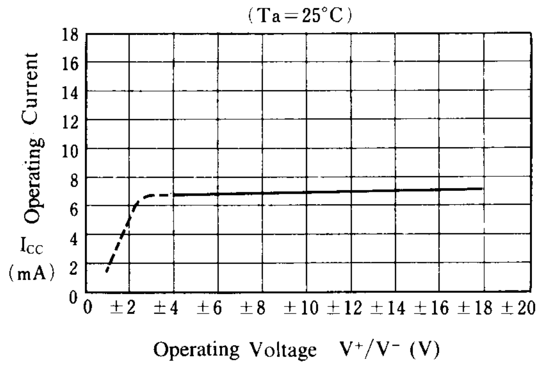
Input Offset Voltage vs. Temperature



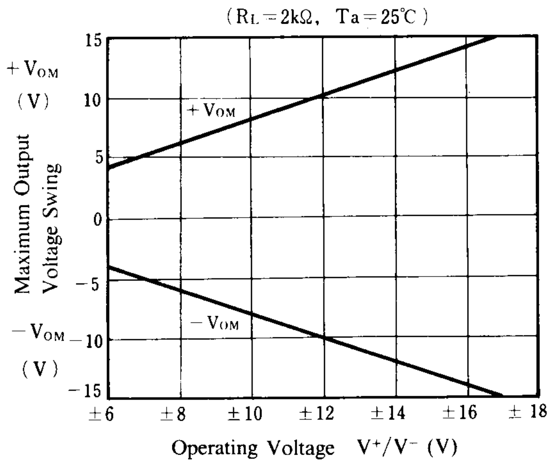
Input Bias Current vs. Temperature



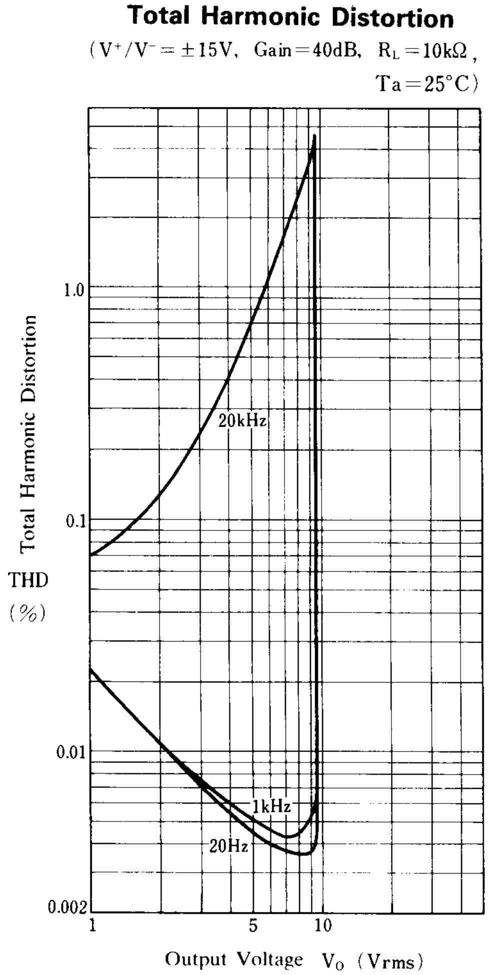
Operating Current vs. Operating Voltage

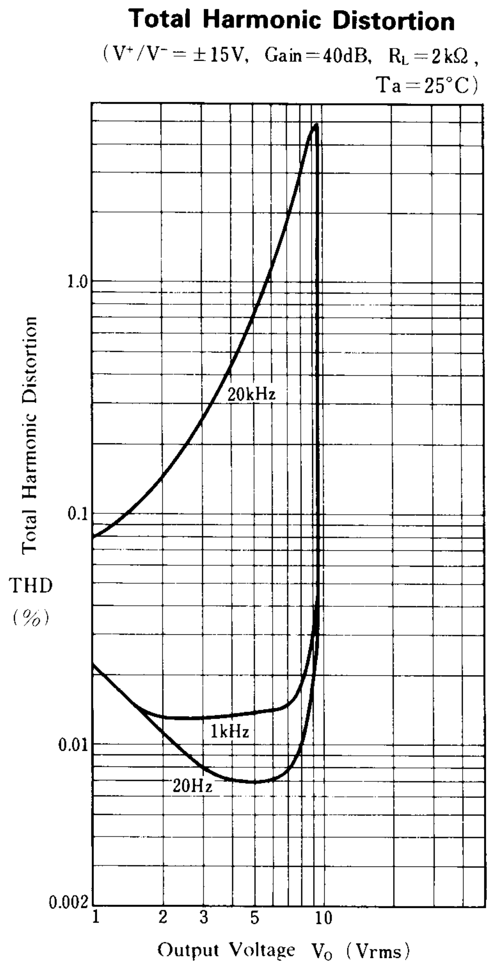


Maximum Output Voltage Swing vs. Operating Voltage



■ TYPICAL CHARACTERISTICS





[CAUTION]
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