DUAL OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJM14558 is a dual operational amplifier, which can operate from ±2V supply. The features are low offset voltage, low bias current and low current consumption.

The package lineup is DIP, DMP and others, so that the NJM14558 is suitable for portable audio and any kind of signal amplifier.
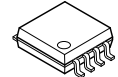
■ FEATURES

- Operating Voltage   ±2.0V~±7.0V
- Input Offset Voltage   3mV max.
- Slew Rate   2.5V/μs typ.
- Bipolar Technology
- Package Outline   DIP8, DMP8, SOP8 JEDEC 150mil
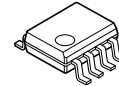 SSOP8,SIP8,
  MSOP8 (VSP8)MEET JEDEC MO-187-DA
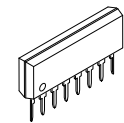
■ PACKAGE OUTLINE
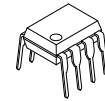
NJM14558D
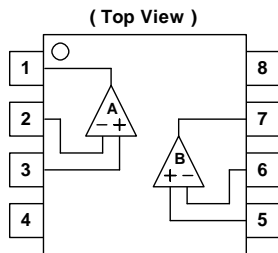(DIP8)

NJM14558M
(DMP8)

NJM14558E
(SOP8)

NJM14558V
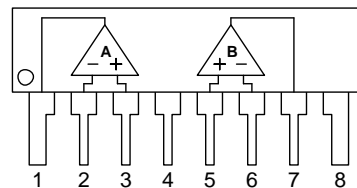(SSOP8)

NJM14558R
(MSOP8(VSP8))

NJM14558L
(SIP8)

■ PIN CONFIGURATION

(Top View)

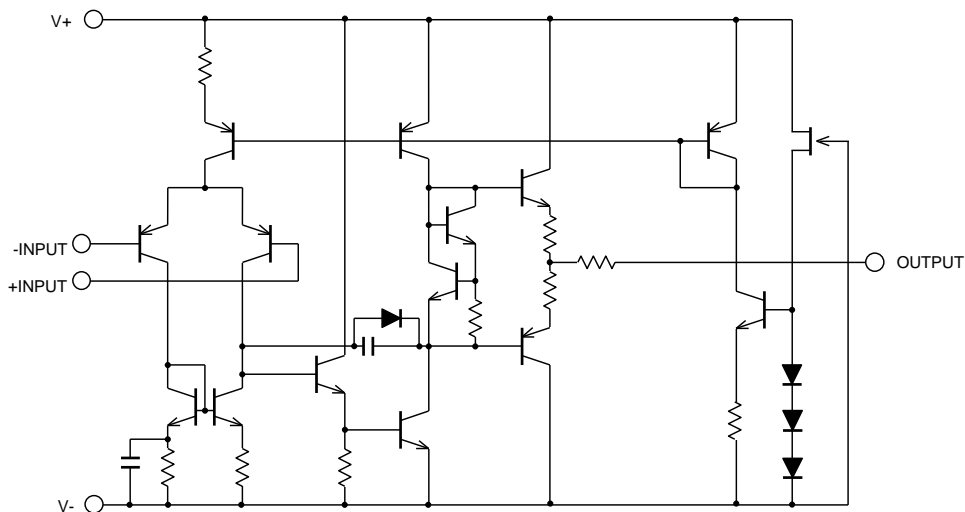NJM14558D/14558M/14558E
NJM14558V/14558R

NJM14558L

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   (1/2 Shown)

NJM14558

■ABSOLUTE MAXIMUM RATINGS (Ta=25˚C)

| PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+/V^-	± 7.5	V
Differential Input Voltage	V_{ID}	± 14	V
Input Voltage	V_{IC}	± 7 (note)	V
Power Dissipation	P_D	(DIP8) 500 (DMP8) 300 (SOP8) 300 (SSOP8) 250 (MSOP8(VSP8)) 320 (SIP8) 800	mW
Operating Temperature Range	T_{opr}	-40~+85	˚C
Storage Temperature Range	T_{stg}	-40~+125	˚C

(note) For supply voltage less than ±7V,the absolute maximum input voltage is equal to the supply voltage.
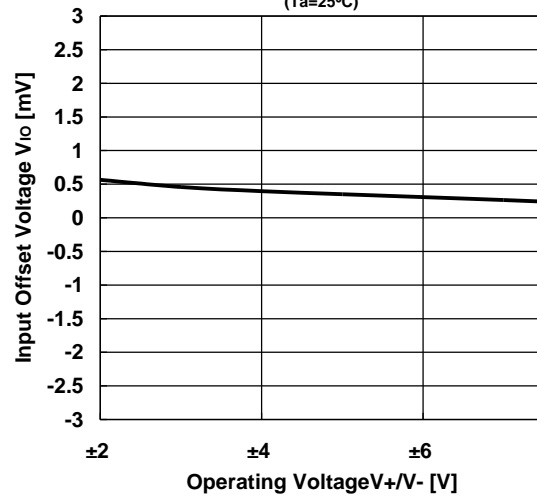
■ ELECTRICAL CHARACTERISTICS(V^+/V^-=±5V,Ta=25˚C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V_{opr}		± 2	-	± 7	V
Input Offset Voltage	V_{IO}	$R_S{\leq}10k{\Omega}$	-	0.5	3	mV
Input Offset Current	I_{IO}		-	5	50	nA
Input Bias Current	I_B		-	70	250	nA
Input Resistance	R_{IN}		0.3	5	-	MΩ
Large Signal Voltage Gain	A_V	$R_L{\geq}2k{\Omega},V_O$=±2.5V	86	100	-	dB
Maximum Output Voltage Swing (+)	V_{OM}^+	$R_L{\geq}2k{\Omega}$	3.5	4.0	-	V
Maximum Output Voltage Swing (-)	V_{OM}^-	$R_L{\geq}2k{\Omega}$	-	-3.5	-3.0	V
Input Common Mode Voltage Range	V_{ICM}		± 3.0	± 4.0	-	V
Common Mode Rejection Ratio	CMR	$R_S{\leq}10k{\Omega}$	70	90	-	dB
Supply Voltage Rejection Ratio	SVR	$R_S{\leq}10k{\Omega}$	76.5	90	-	dB
Operating Current	I_{CC}		-	2.7	4.5	mA
Slew Rate	SR		-	2.5	-	V/µs
Equivalent Input Noise Voltage	V_{NI}	RIAA,R_S=2.2kΩ,30kHz:LPF	-	1.4	-	µVrms
Gain Bandwidth Product	GB		-	5	-	MHz

New Japan Radio Co.,Ltd.

NJM14558

■ **TYPICAL CHARACTERISTICS**

Operating Current vs. Operating Voltage
(Ta=25ºC)

Operating Current I_{CC} [mA] vs. Operating Voltage V+/V- [V]
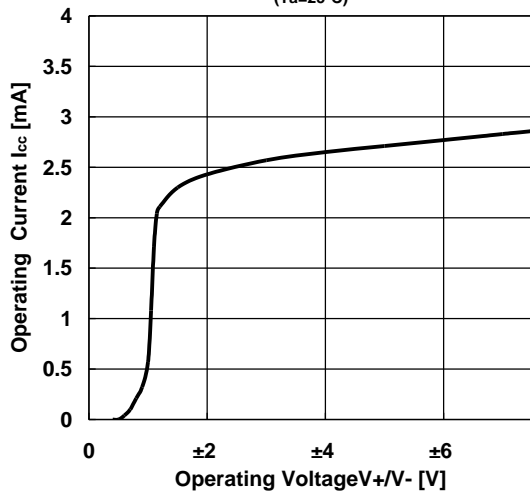
Input Offset Voltage vs. Operating Voltage
(Ta=25ºC)

Input Offset Voltage V_{IO} [mV] vs. Operating Voltage V+/V- [V]

Input Bias Current vs. Operating Voltage
(Ta=25ºC)

Input Bias Current I_B [nA] vs. Operating Voltage V+/V- [V]
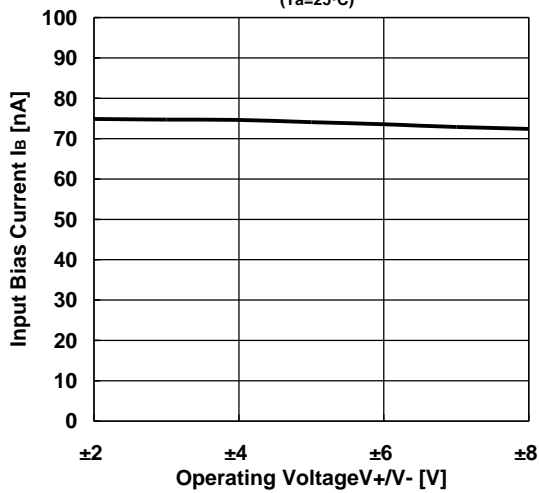
Maximum Output Voltage Swing vs. Operating Voltage
(Ta=25ºC)

Maximum Output Voltage Swing V_{OM} [V] vs. Operating Voltage V+/V- [V]
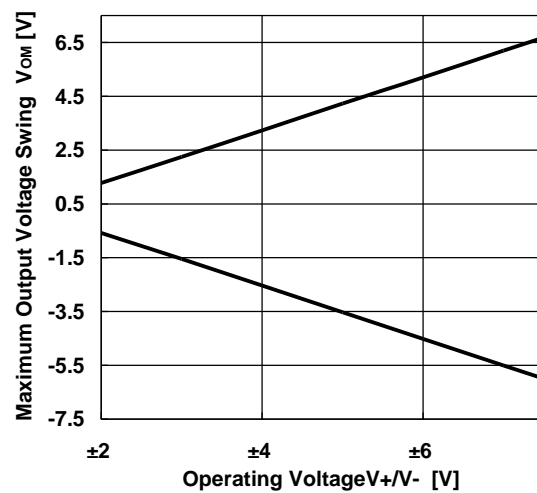
Input Common Mode Voltage Range
(V^{+}/V^{-}=±5V, Ta=25ºC)
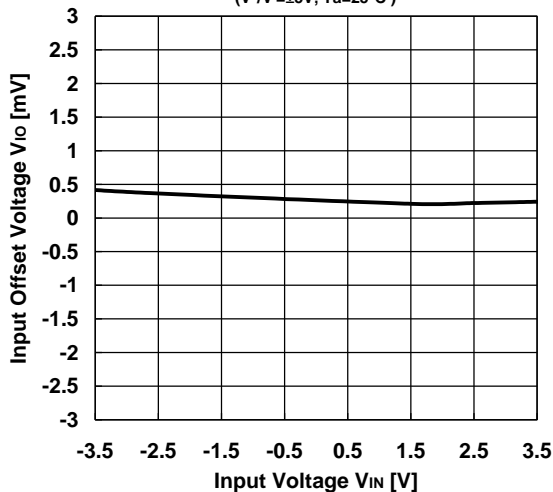
Input Offset Voltage V_{IO} [mV] vs. Input Voltage V_{IN} [V]

NJM14558

■ TYPICAL CHARACTERISTICS

**Maximum Output Voltage Swing
vs. Load Resistance**
(V⁺/V⁻=±5V, Ta=25ºC)

Maximum Output Voltage Swing V$_{OM}$ [V] vs Load Resistance R$_L$[Ω]

**Maximum Output Voltage Swing
vs.Frequency**
(V⁺/V⁻=±5V, Ta=25ºC)

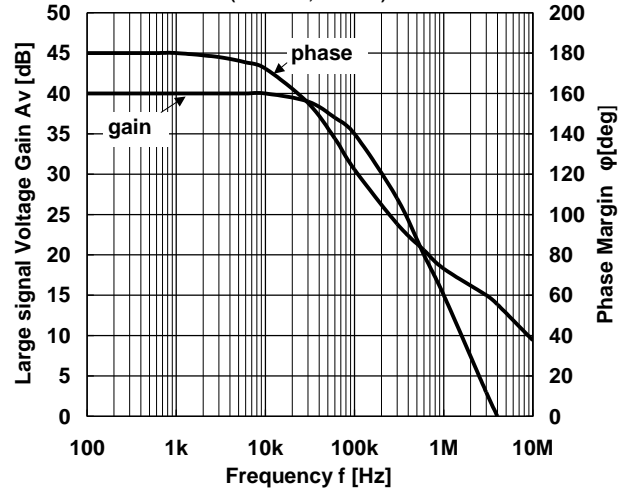Maximum Output Voltage Swing V$_{OPP}$[V] vs Frequency f [Hz]

NJM14558
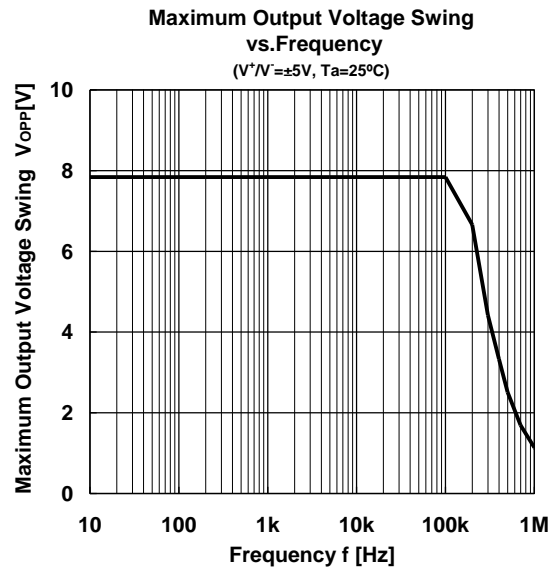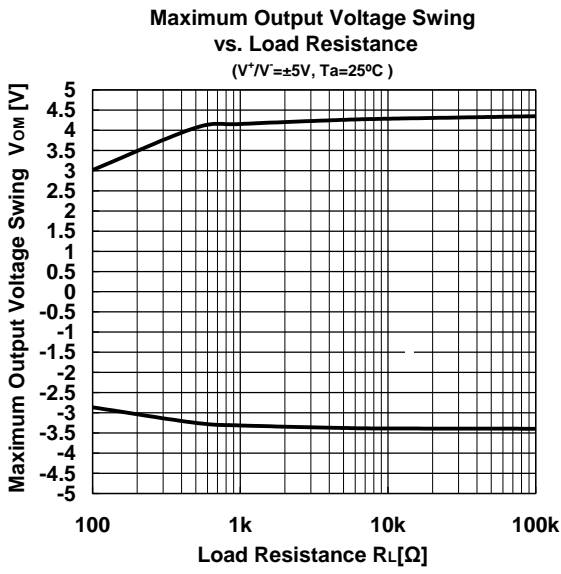
■ TYPICAL CHARACTERISTICS

Large signal Voltage Gain vs. Operating Voltage
(Ta=25ºC)
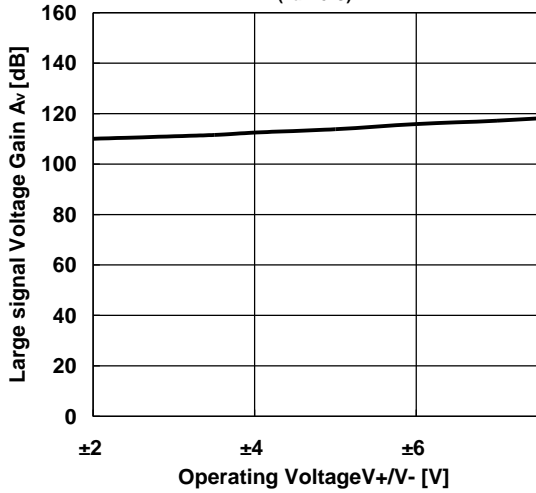
Large signal Voltage Gain vs. Frequency
(V⁺/V⁻=±5V, Ta=25ºC)

Slew Rate(Fall)

V⁺/V⁻=±5V
V:1V/div
t:400nS/div
Ta=25ºC

Slew Rate(Rise)
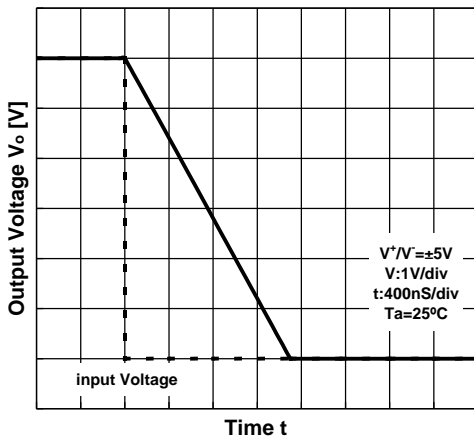
V⁺/V⁻=±5V
V:1V/div
t:400nS/div
Ta=25ºC
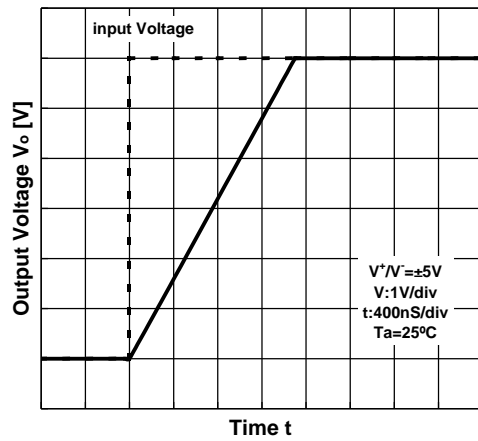
THD vs. Output Voltage
(V⁺=±5V, Ta=25ºC)
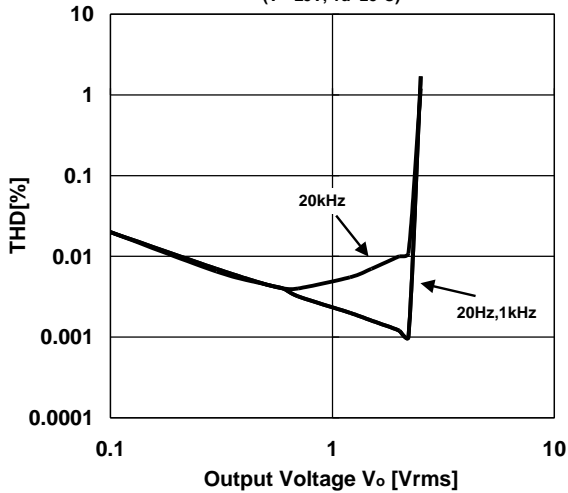
Equivalent Input Noise Voltage vs. Frequency
(V⁺/V⁻=±5V, Ta=25ºC)

NJM14558

■ **TYPICAL CHARACTERISTICS**

Operating Current vs. Temperature

Input Offset Voltage vs. Temperature

Input Bias Current vs. Temperature

Maximum Output Voltage Swing vs. Temperature

■ **TYPICAL CHARACTERISTICS**

Large signal Voltage Gain vs. Temperature

Common Mode Rejection Ratio vs. Temperature

Supply Voltage Rejection Ratio vs. Temperature
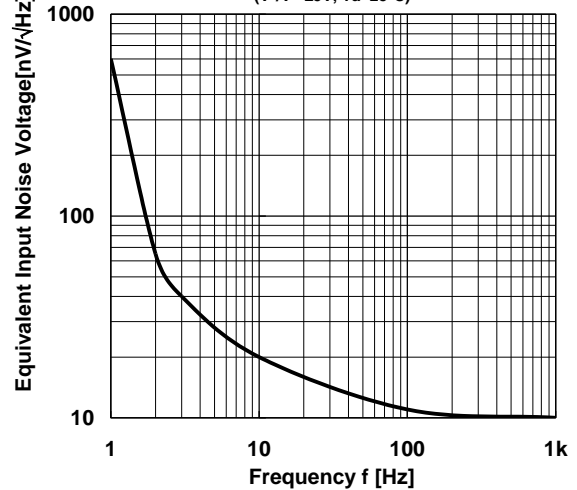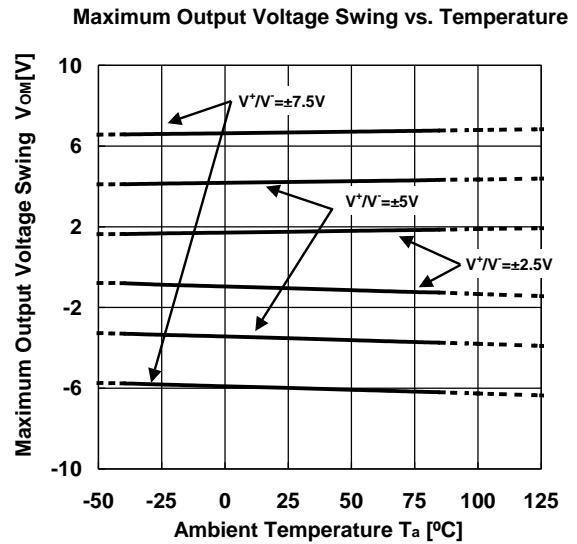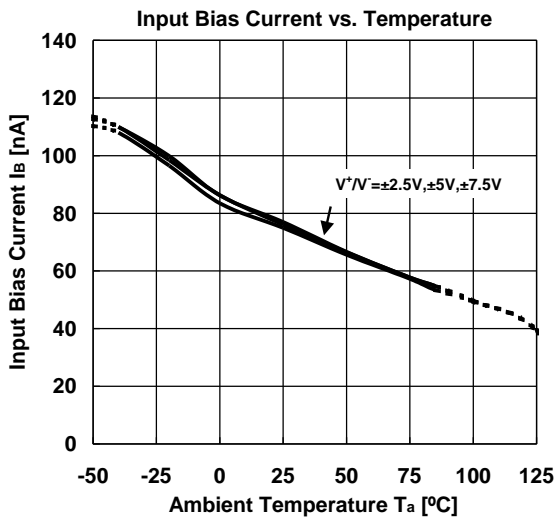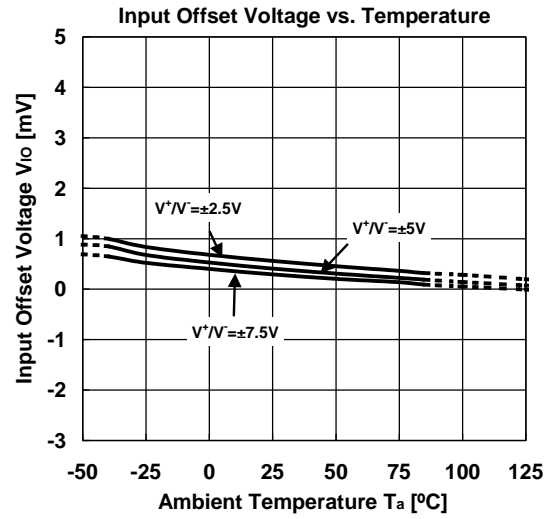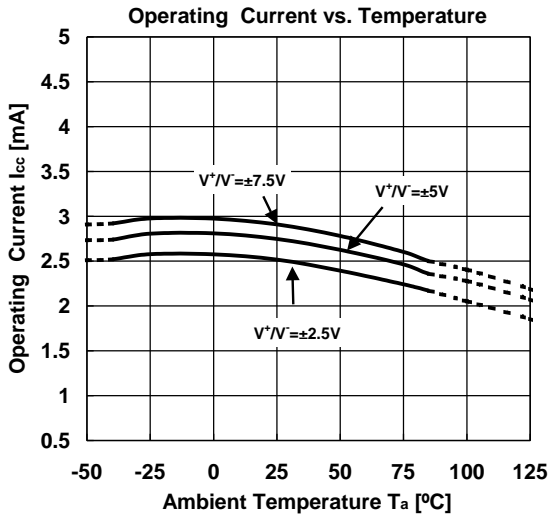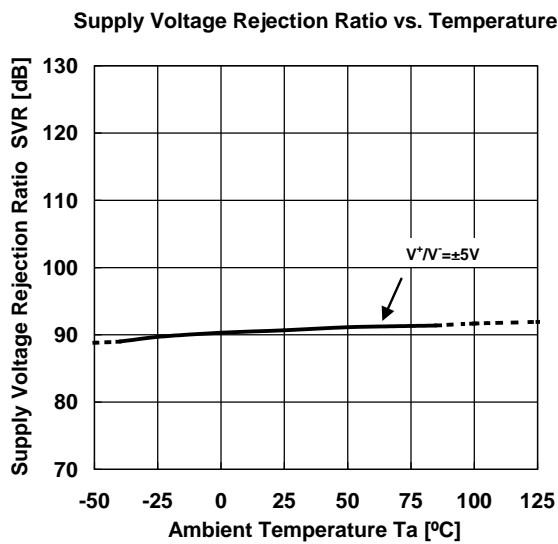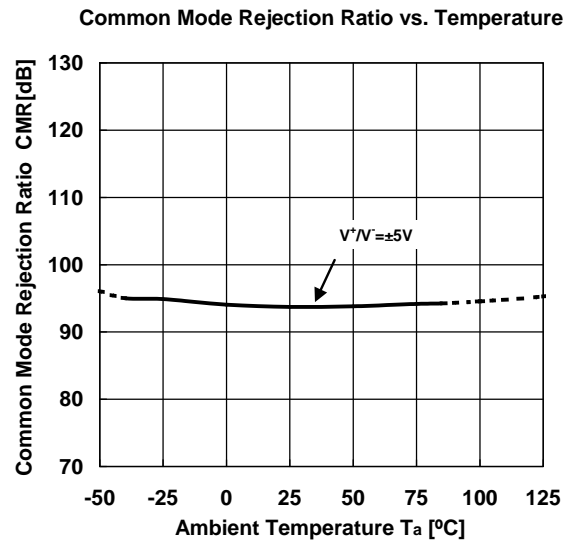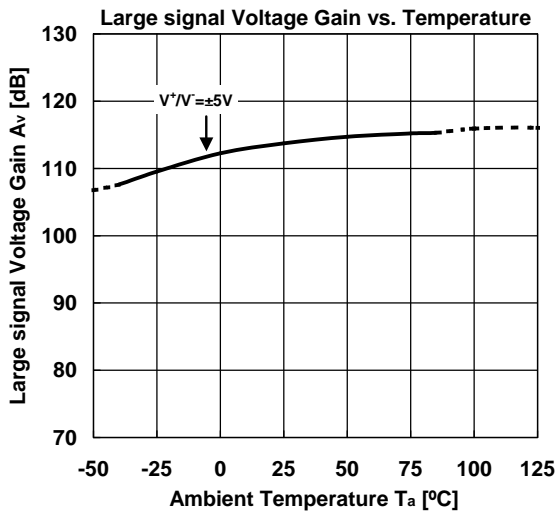
[CAUTION]
  The specifications on this databook are only given for information , without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Operational Amplifiers - Op Amps *category:*

Click to view products by Nisshinbo *manufacturer:*

Other Similar products are found below :

NCV33072ADR2G LM358SNG 430227FB UPC824G2-A LT1678IS8 042225DB 058184EB UPC822G2-A UPC259G2-A UPC258G2-A NCV33202DMR2G NTE925 AZV358MTR-G1 AP4310AUMTR-AG1 HA1630D02MMEL-E HA1630S01LPEL-E SCY33178DR2G NJU77806F3-TE1 NCV5652MUTWG NCV20034DR2G LM324EDR2G LM2902EDR2G NTE7155 NTE778S NTE871 NTE924 NTE937 MCP6V17T-E/MNY MCP6V19-E/ST MXD8011HF MCP6V17T-E/MS SCY6358ADR2G ADA4523-1BCPZ LTC2065HUD#PBF ADA4523-1BCPZ-RL7 NJM2904CRB1-TE1 2SD965T-R RS6332PXK BDM8551 BDM321 MD1324 COS8052SR COS8552SR COS8554SR COS2177SR COS2353SR COS724TR ASOPD4580S-R RS321BKXF ADA4097-1HUJZ-RL7