DUAL AUDIO OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJM8080 is dual operational amplifier designed for audio applications. NJM8080 finely refines to every detail from Si-wafer to circuit layout, stick in a thorough improvement in sound quality. The NJM8080 features high resolution and crispy-clear high frequency sound, which can fully perform the digital sound source with loss-less.

NJM8080 features low noise, wide gain-bandwidth, low distortion and high output current, and various reliabilities and conveniences are improved. NJM8080 can widely be used as the standard audio operational amplifier.

■ PACKAGE OUTLINE

NJM8080G
(SOP8)

NJM8080RB1
(MSOP8 (TVSP8))

NJM8080V
(SSOP8)

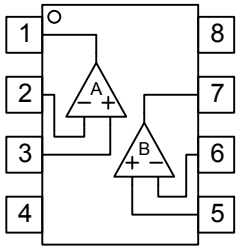
■ FEATURES

● Operating Voltage	±2V to ±18V
● Low Input Noise Voltage	5nV/√ Hz typ. at f=1kHz
●Wide Gain Bandwidth Product	15MHz typ.
● Low Distortion	0.0005% typ.
● Slew Rate	5V/μs typ.
● Bipolar Technology	
● Package Outline	SOP8, MSOP8 (TVSP8)* *MEET JEDEC MO-187-DA / THIN TYPE SSOP8

● Internal ESD protection
Human body model (HBM) ±2000V typ.
●Wide temperature range -40°C to +125°C

■ PIN CONFIGURATION

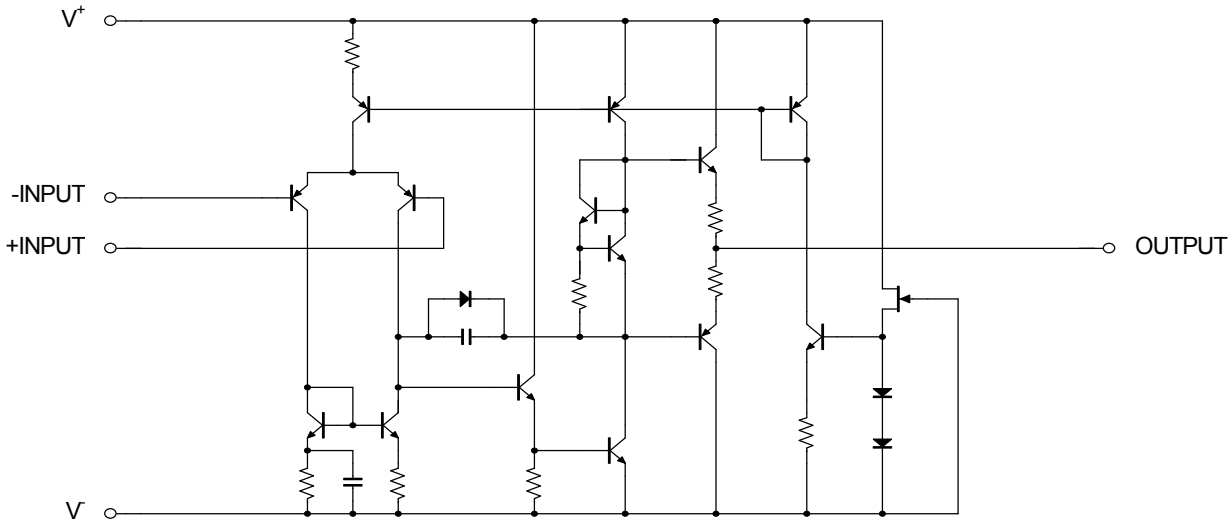
Top View



NJM8080G
NJM8080RB1
NJM8080V

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)



■ABSOLUTE MAXIMUM RATINGS (Ta=25ºC, unless otherwise noted.)

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V^+/V^-	±18V	V
Differential Input Voltage (Note1)	V_{ID}	±36	V
Input Voltage (Note2)	V_{IN}	V^--0.3 to V^-+36	V
Output Terminal Input Voltage	Vo	V^--0.3 to V^++0.3	V
Power Dissipation	P_D	SOP : 690 (Note3) 1000 (Note4) MSOP : 510 (Note3) 680 (Note4) SSOP : 430 (Note3) 540(Note4)	mW
Operating Temperature Range	Topr	-40~+125	ºC
Storage Temperature Range	Tstg	-65~+150	ºC

(Note1) Differential voltage is the voltage difference between +INPUT and -INPUT.

(Note2) Input voltage is the voltage should be allowed to apply to the input terminal independent of the magnitude of V+.
The normal operation will establish when any input is within the Common Mode Input Voltage Range of electrical characteristics.

(Note3) EIA/JEDEC STANDARD Test board (76.2 x 114.3 x 1.6mm, 2layers, FR-4) mounting

(Note4) EIA/JEDEC STANDARD Test board (76.2 x 114.3 x 1.6mm, 4layers, FR-4) mounting

■ RECOMMENDED OPERATING CONDITIONS (Ta=25ºC)

PARAMETER	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V^+/V^-		±2	-	±18	V

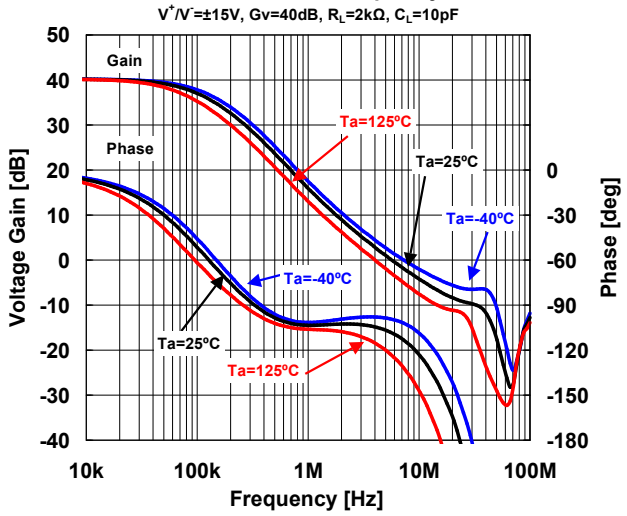
■ ELECTRICAL CHARACTERISTICS (V^+/V^-=±15V, Ta=25ºC, unless otherwise noted.)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	R_S≤10kΩ	-	0.3	3	mV
Input Offset Current	I_{IO}		-	5	200	nA
Input Bias Current	I_B		-	100	500	nA
Input Resistance	R_{IN}		-	0.5	-	MΩ
Large Signal Voltage Gain	A_V	R_L≥2kΩ, V_O=±10V	90	110	-	dB
Maximum Output Voltage	V_{OM}	R_L≥2kΩ	±12	±13.5	-	V
Common Mode Input Voltage Range	V_{ICM}		±12	±13.5	-	V
Common Mode Rejection Ratio	CMR	R_S≤10kΩ	80	110	-	dB
Supply Voltage Rejection Ratio	SVR	R_S≤10kΩ	80	110	-	dB
Supply Current	I_{CC}		-	6	9	mA
Slew Rate	SR	R_L≥2kΩ	-	5	-	V/μs
Gain Bandwidth Product	GBP	f=10kHz	-	15	-	MHz
Total Harmonic Distortion	THD	A_V=20dB,V_O=5V,R_L=2kΩ,f=1kHz	-	0.0005	-	%
Equivalent Input Noise Voltage1	e_n	f=1kHz	-	5	-	nV/√Hz

■ TYPICAL CHARACTERISTICS

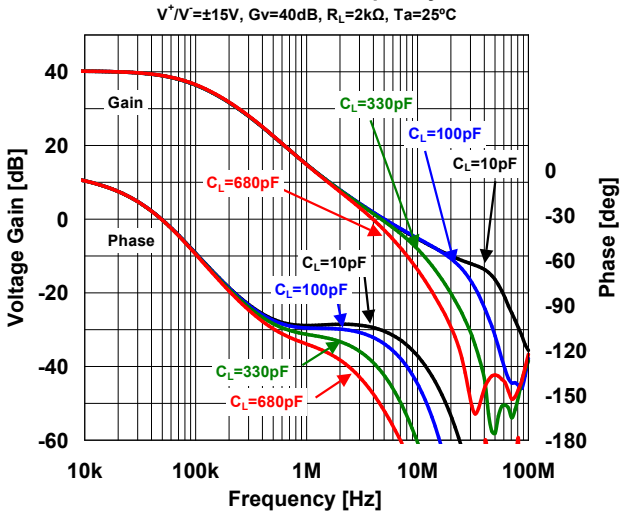
Gain/Phase vs. Frequency

V^+/V^-=±15V, Gv=40dB, R_L=2kΩ, C_L=10pF



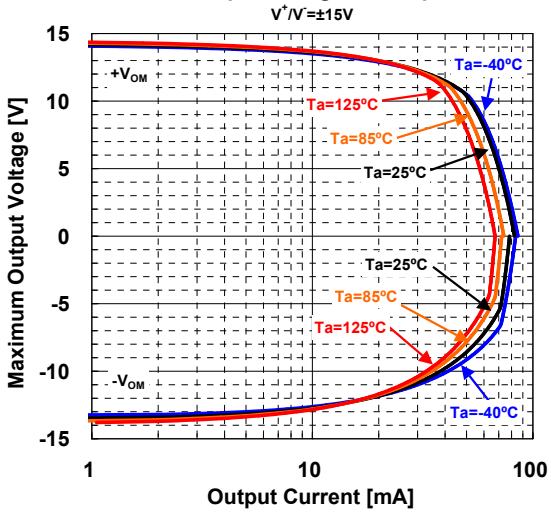
Gain/Phase vs. Frequency

V^+/V^-=±15V, Gv=40dB, R_L=2kΩ, Ta=25°C



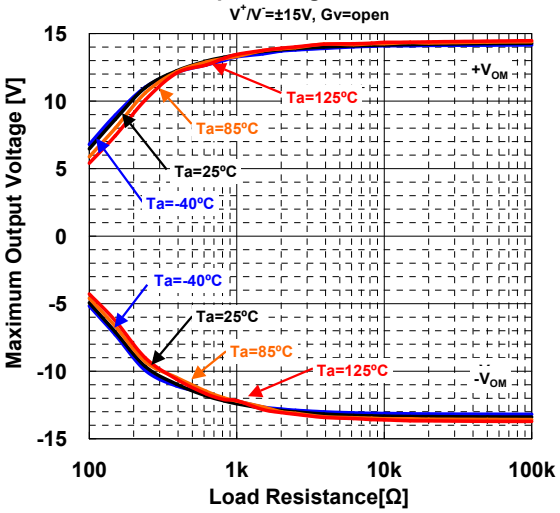
Maximum Output Voltage vs. Output Current

V^+/V^-=±15V



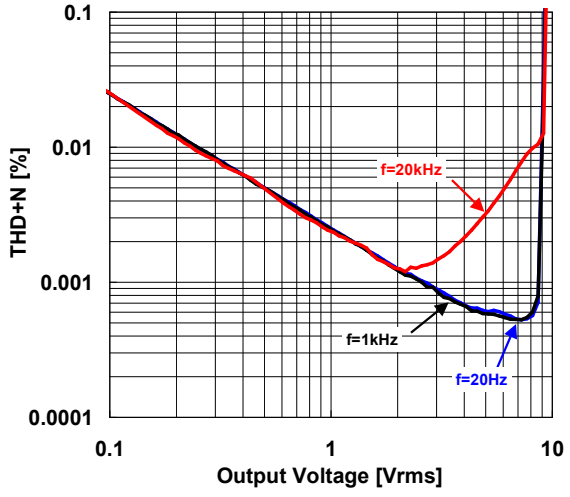
Maximum Output Voltage vs. Load Resistance

V^+/V^-=±15V, Gv=open



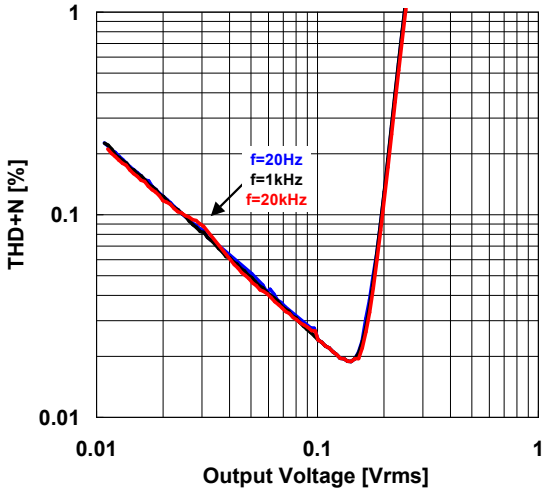
THD+N vs. Output Voltage

V^+/V^-=±15V, G_V=20dB, R_L=2kΩ, Ta=25°C



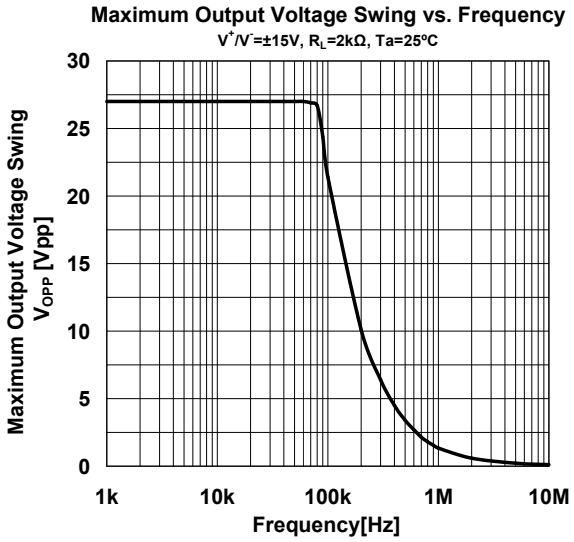
THD+N vs. Output Voltage

V^+/V^-=±2V, G_V=20dB, R_L=2kΩ, Ta=25°C

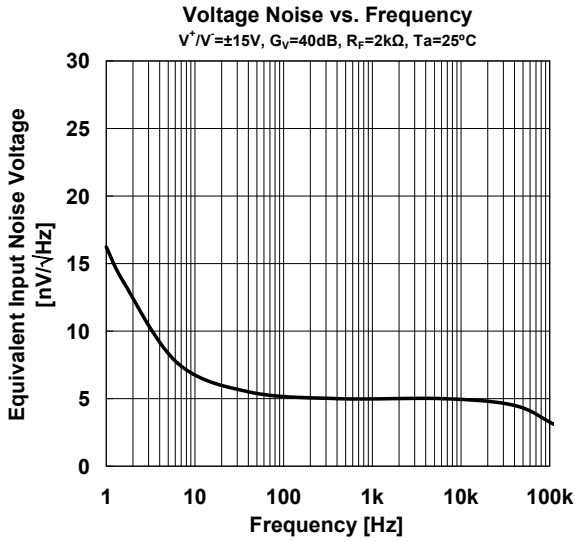


■ TYPICAL CHARACTERISTICS

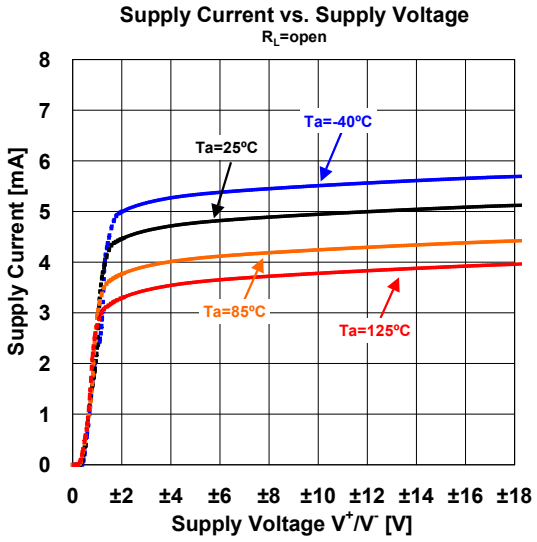
Maximum Output Voltage Swing vs. Frequency



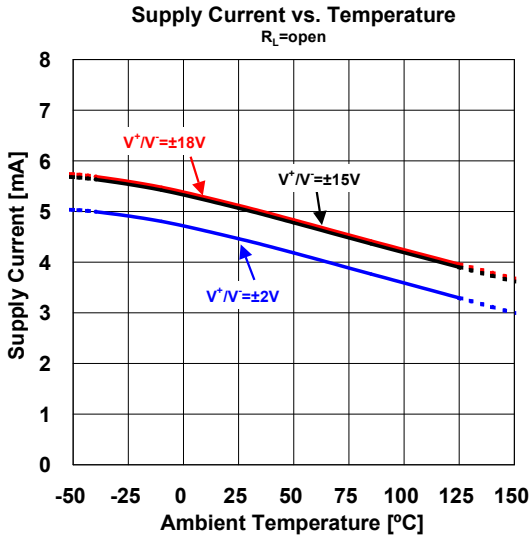
Voltage Noise vs. Frequency



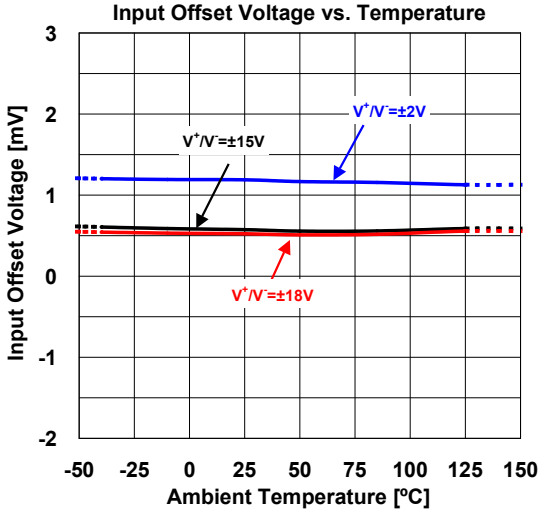
Supply Current vs. Supply Voltage



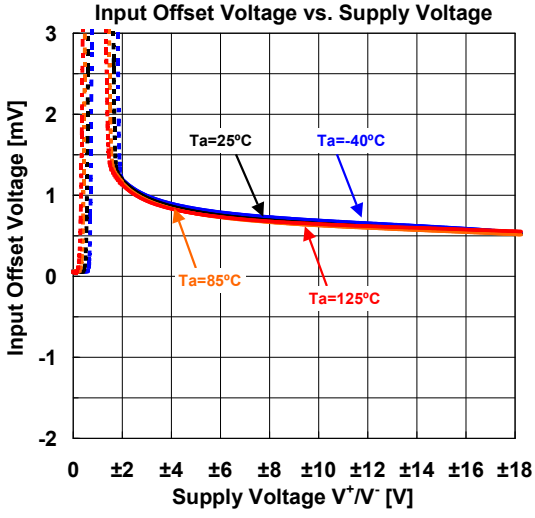
Supply Current vs. Temperature



Input Offset Voltage vs. Temperature

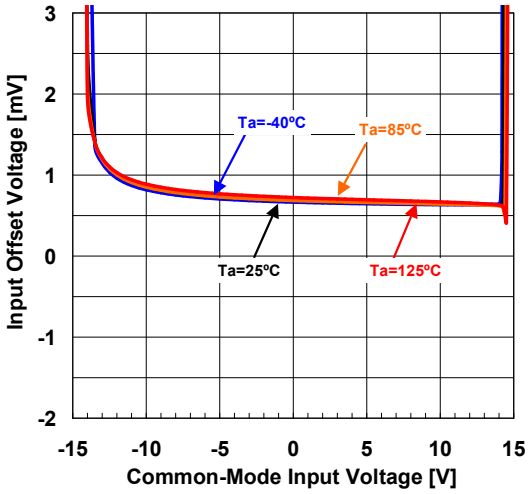


Input Offset Voltage vs. Supply Voltage

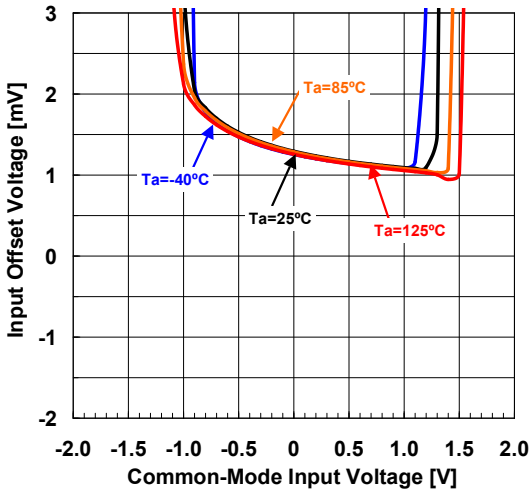


■ TYPICAL CHARACTERISTICS

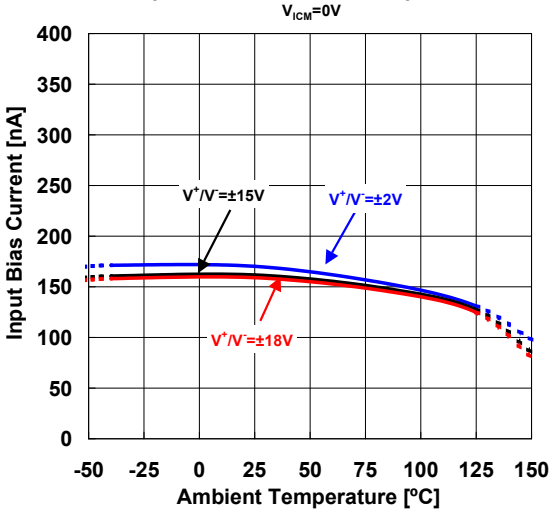
Input Offset Voltage
vs. Common-Mode Input Voltage
V^+/V^-=±15V



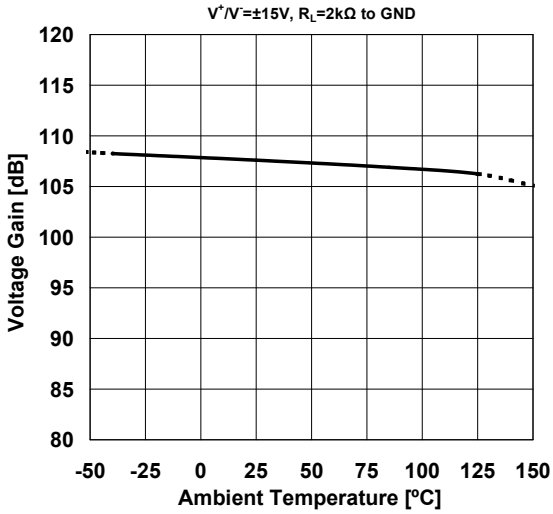
Input Offset Voltage
vs. Common-Mode Input Voltage
V^+/V^-=-±2V



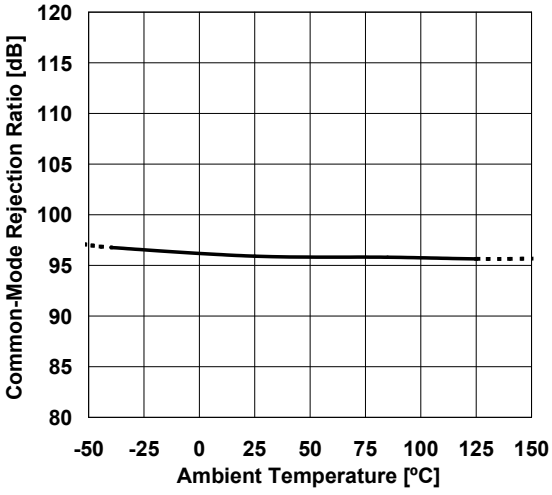
Input Bias Current vs. Temperature
V_{ICM}=0V



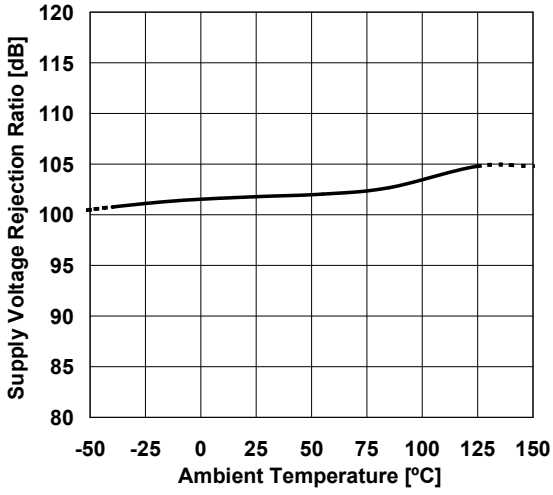
Voltage Gainvs. Temperature
V^+/V^-=±15V, R_L=2kΩ to GND



CMR vs. Temperature
V^+/V^-=±15V, V_{CM}=-12.2V~12.2V



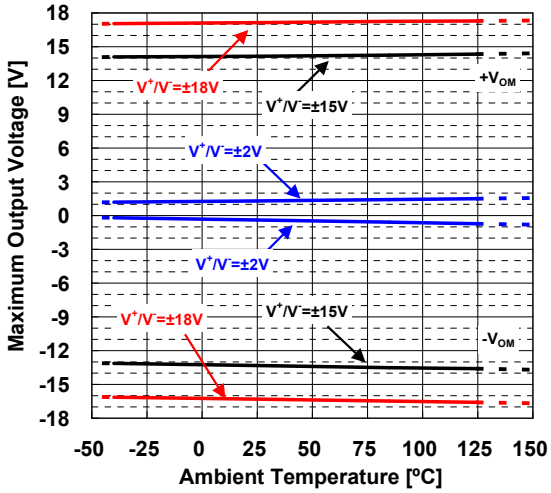
SVR vs. Temperature
V^+/V^-=±9V→±18V



■ TYPICAL CHARACTERISTICS

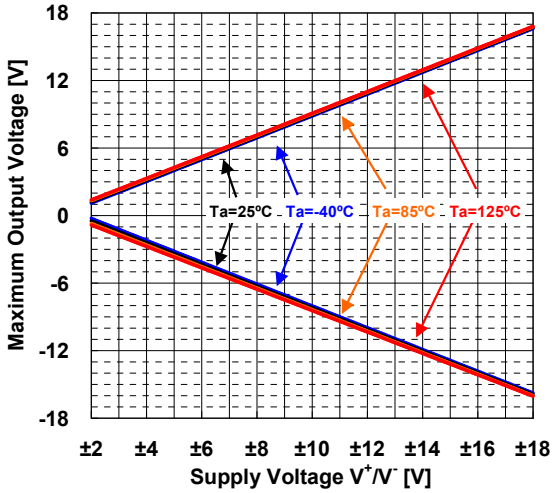
Maximum Output Voltage vs. Temperature

Gv=open, R_L=2kΩ, R_L to GND



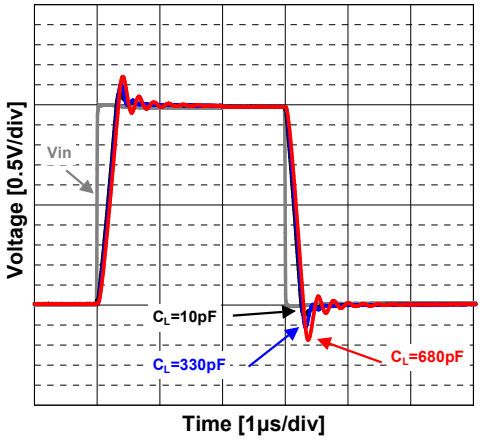
Maximum Output Voltage vs. Supply Voltage

R_L=2kΩ to GND



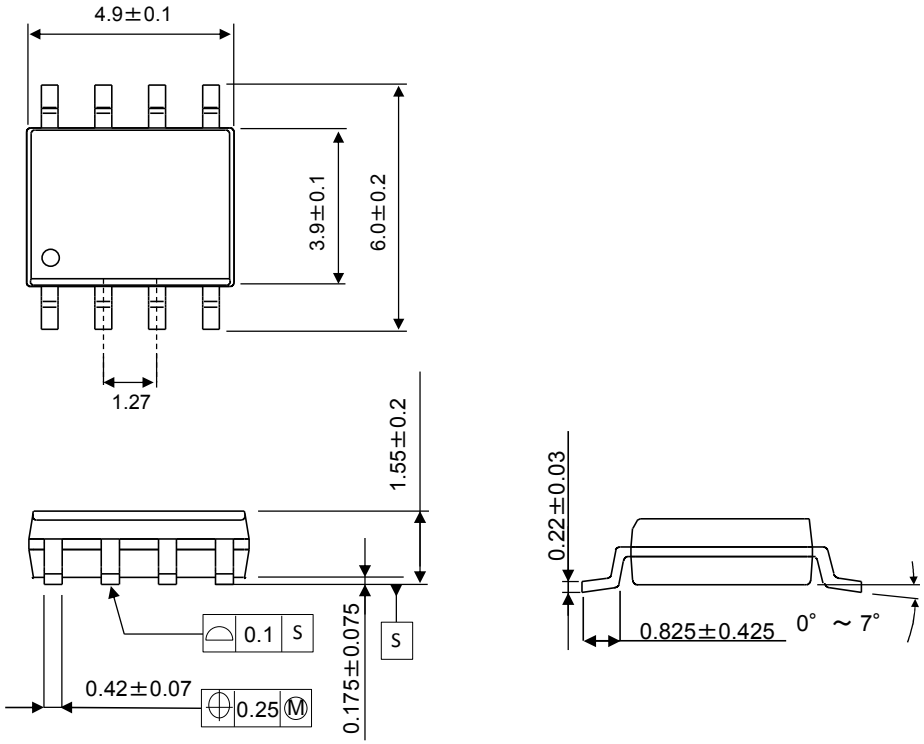
Pulse Response

V^+/V^-=±15V, R_L=2kΩ, Ta=25ºC



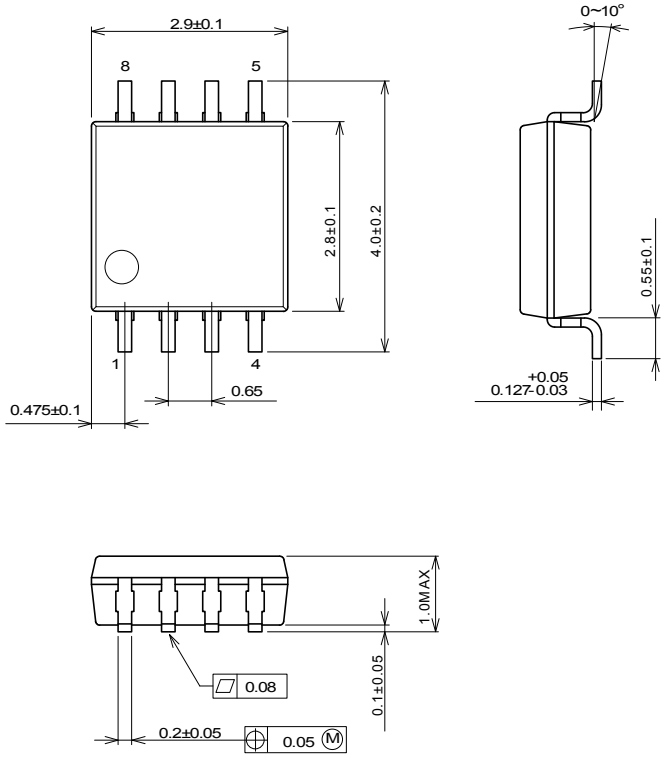
■**PACKAGE OUTLINE UNIT : mm**

SOP8

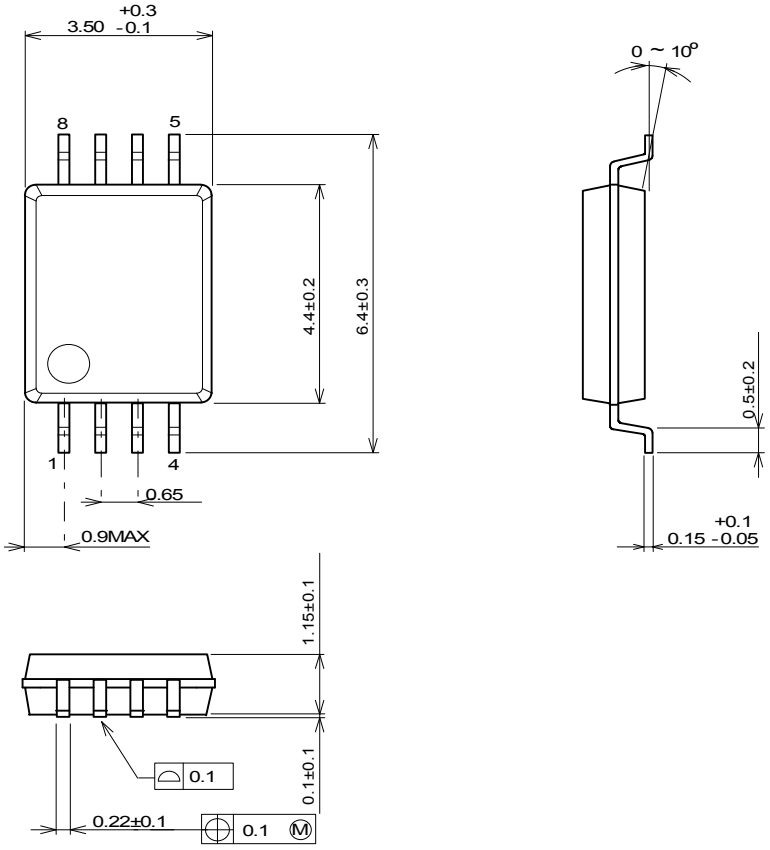


MSOP8 (TVSP8)*

*MEET JEDEC MO-187-DA / THIN TYPE



SSOP8



Mouser Electronics

Authorized Distributor

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NJR:

NJM8080G-TE2

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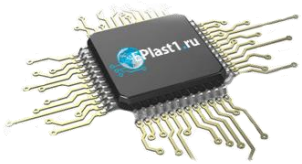
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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