

SINGLE-SUPPLY DUAL COMPARATOR

■ GENERAL DESCRIPTION

The NJM2407 is a single-supply dual comparator in small surface mount packages of MSOP8 (VSP8) and MSOP8(TVSP). The darlington PNP type input stage provides a signal detection of ground level. Further two-stage common-emitter output circuit provides a large gain, low output saturation voltage of 400mV (max.) and output sink current of 6mA (min.).

■ PACKAGE OUTLINE



NJM2407R
(MSOP8(VSP8))

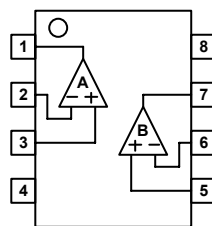


NJM2407RB1
(MSOP8(TVSP8))

■ FEATURES

- Operating Voltage $V^+ = +2V$ to $+20V$
- Output Sink Current 6mA min.
- Response Time 0.8 μ s typ.
- Bipolar Technology
- Package Outline MSOP8 (VSP8) MEET JEDEC MO-187-DA
MSOP8 (TVSP8) MEET JEDEC MO-187-DA / THIN TYPE

■ PIN CONFIGURATION

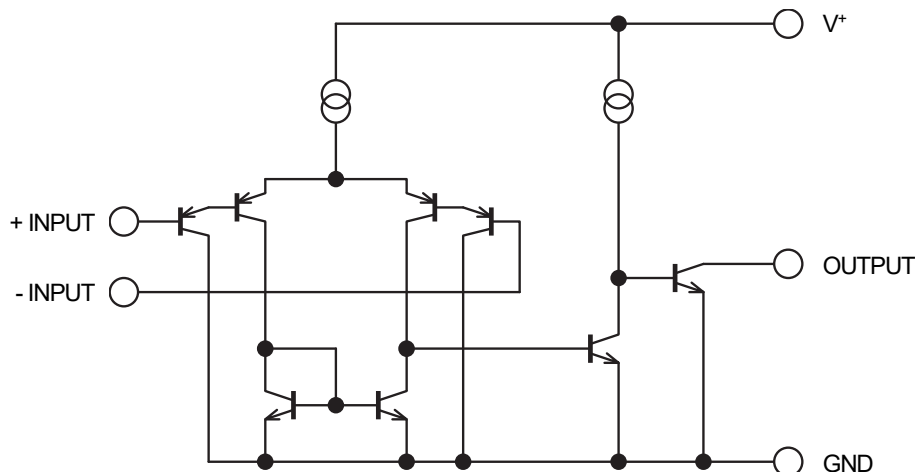


NJM2407R
NJM2407RB1

PIN FUNCTION

- 1.A OUTPUT
- 2.A -INPUT
- 3.A +INPUT
- 4.GND
- 5.B +INPUT
- 6.B -INPUT
- 7.B OUTPUT
- 8.V⁺

■ EQUIVALENT CIRCUIT (1/2 Shown)



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺ (V ⁺ /V ⁻)	20 (±10)	V
Differential Input Voltage	V _{ID}	± 20	V
Input Voltage	V _{IN}	-0.3~+20 (note)	V
Power Dissipation	P _D	MSOP8(VSP/TVSP8) 320	mW
Operating Temperature Range	T _{opr}	-40~+85	°C
Storage Temperature Range	T _{stg}	-50~+125	°C

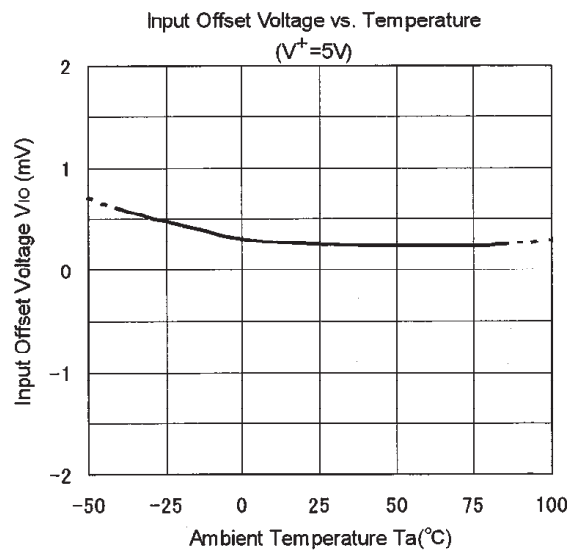
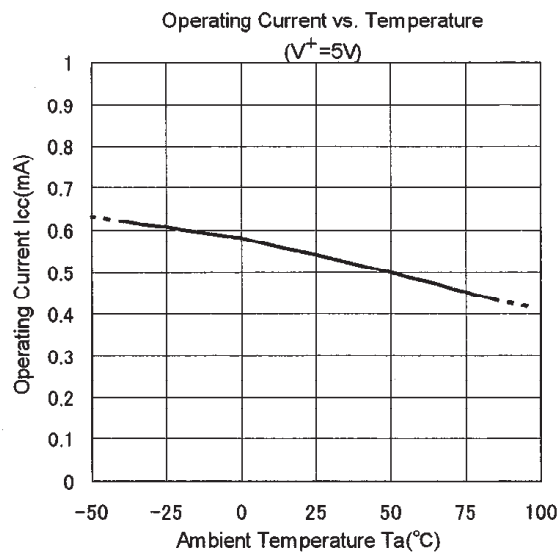
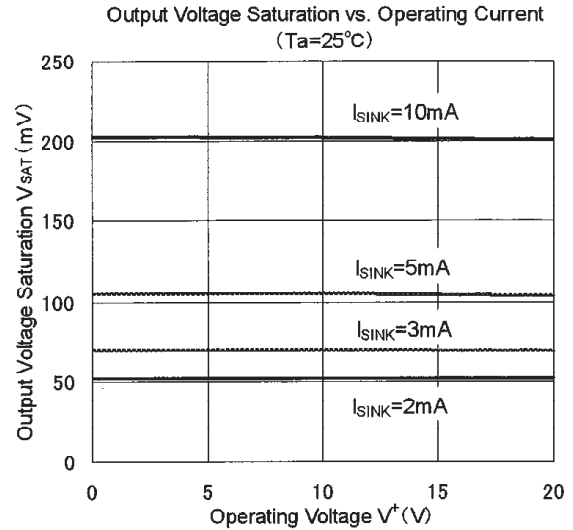
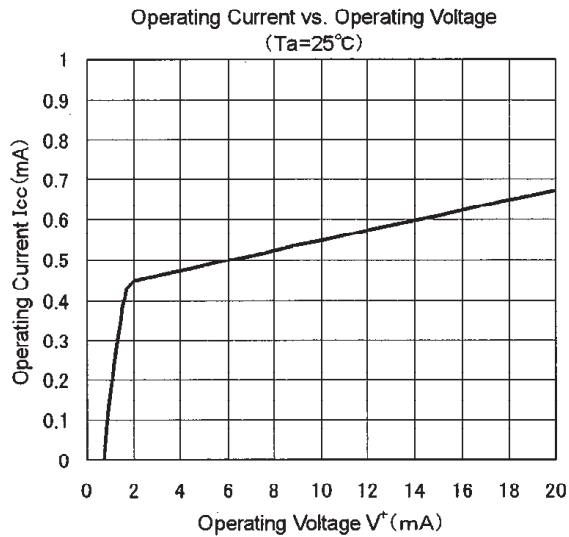
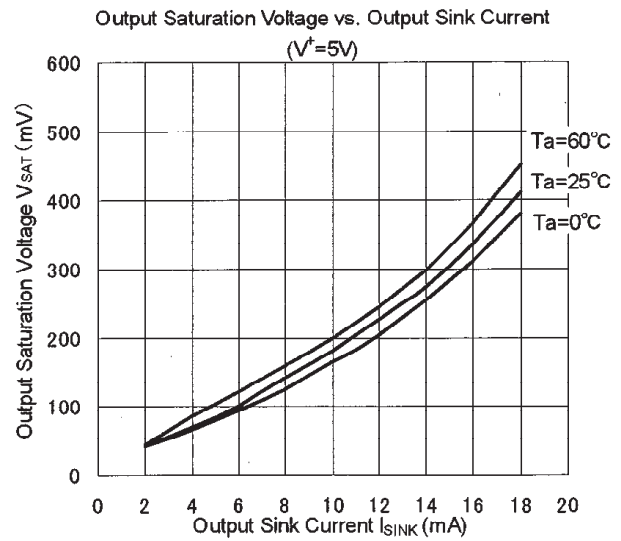
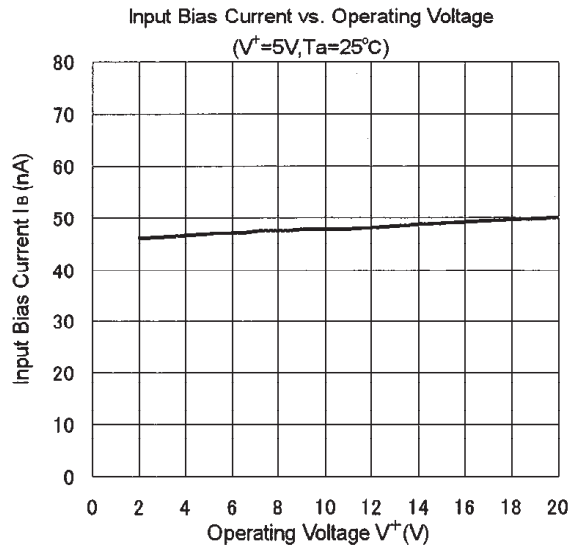
(note) When the supply voltage is less than +20V, the absolute maximum input is equal to the supply voltage.

■ ELECTRICAL CHARACTERISTICS

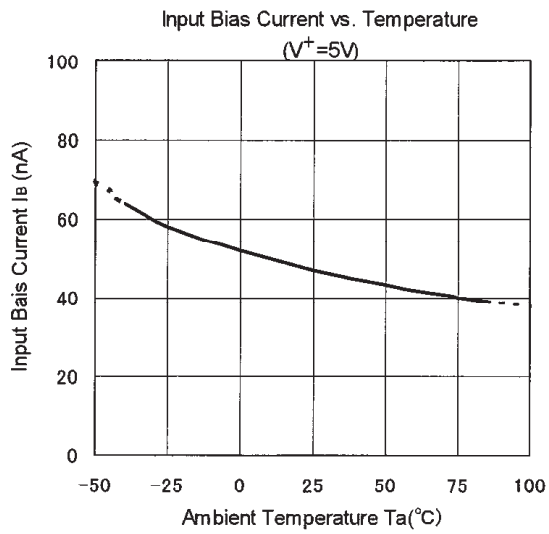
(V⁺=5V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V _{IO}	R _S =0Ω, V _O =1.4V	-	2	7	mV
Input Offset Current	I _{IO}		-	5	50	nA
Input Bias Current	I _B		-	25	250	nA
Large Signal Voltage Gain	A _V	R _L =15kΩ	-	106	-	dB
Input Common Mode Voltage Range	V _{ICM}		0~3.5	-	-	V
Response Time	t _r	R _L =5.1kΩ	-	0.8	-	μs
Output Sink Current	I _{SINK}	V _{IN} =1V, V _{IN} ⁺ =0V, V _O =1.5V	6	16	-	mA
Output Saturation Voltage	V _{SAT}	V _{IN} =1V, V _{IN} ⁺ =0V, I _{SINK} =3mA	-	200	400	mV
Output Leakage Current	I _{LEAK}	V _{IN} =0V, V _{IN} ⁺ =1V, V _O =5V	-	-	1.0	μA
Operating Current	I _{CC}	R _L =∞	-	0.4	1	mA

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS



[CAUTION]

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