

## 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
- Output Sink Current
- Response Time
- Bipolar Technology
- Package Outline

$V^+ = +2V$  to  $+20V$

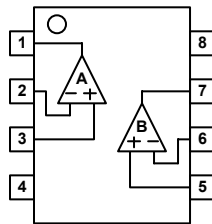
6mA min.

0.8 $\mu$ s typ.

MSOP8 (VSP8) MEET JEDEC MO-187-DA

MSOP8 (TVSP8) MEET JEDEC MO-187-DA / THIN TYPE

### ■ PIN CONFIGURATION

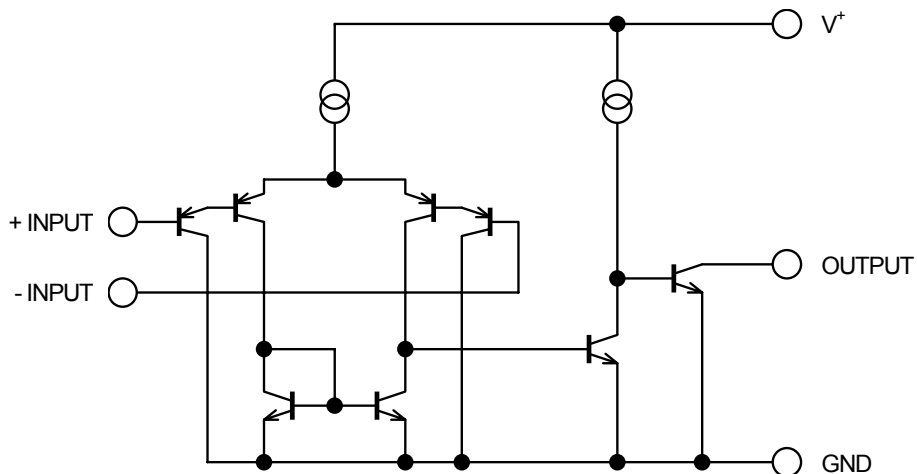


**NJM2407R**  
**NJM2407RB1**

#### 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 )



# NJM2407

## ■ ABSOLUTE MAXIMUM RATINGS

( Ta=25°C )

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V^+$ ( $V^+V^-$ )	20 ( $\pm 10$ )	V
Differential Input Voltage	$V_{ID}$	$\pm 20$	V
Input Voltage	$V_{IN}$	-0.3~+20 ( note )	V
Power Dissipation	$P_D$	MSOP8(VSP/TVSP) 320	mW
Operating Temperature Range	$T_{opr}$	-40~+85	°C
Storage Temperature Range	$T_{stg}$	-50~+125	°C

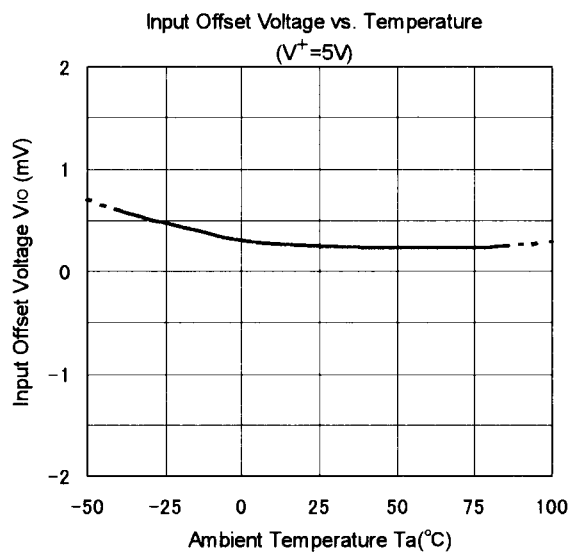
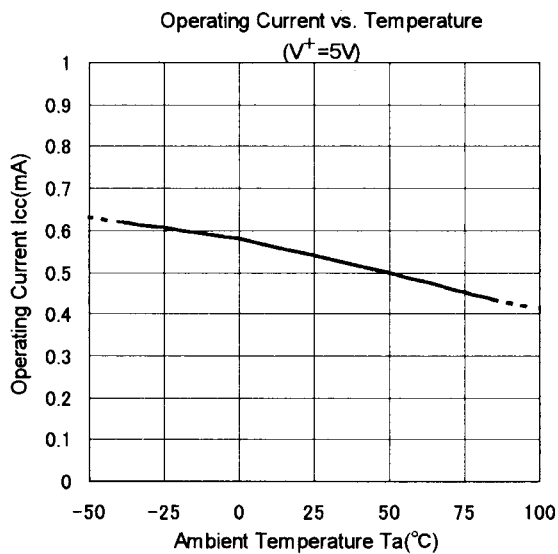
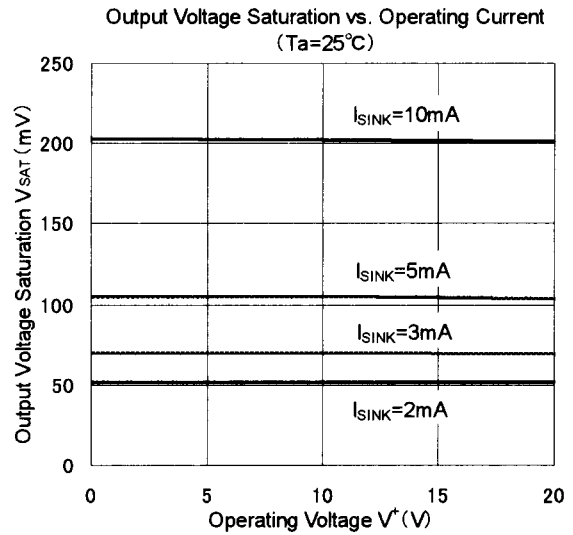
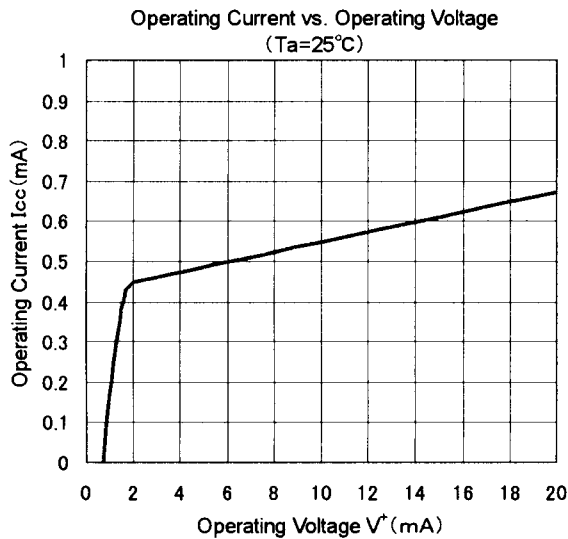
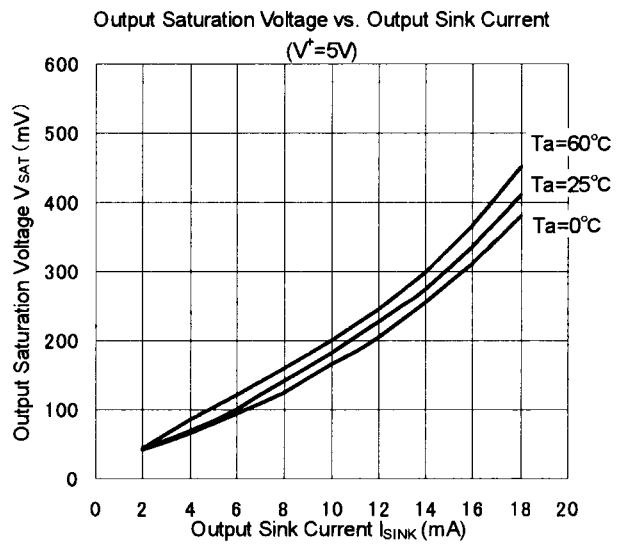
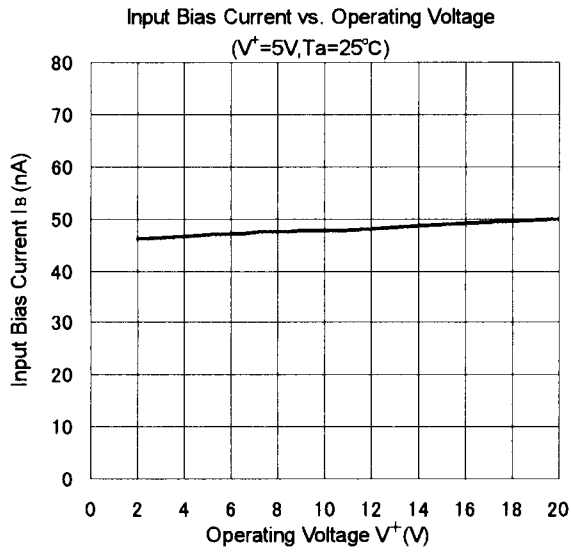
( note ) When the supply voltage is less than +20V,the absolute maximum input is equal to the supply voltage.

## ■ ELECTRICAL CHARACTERISTICS

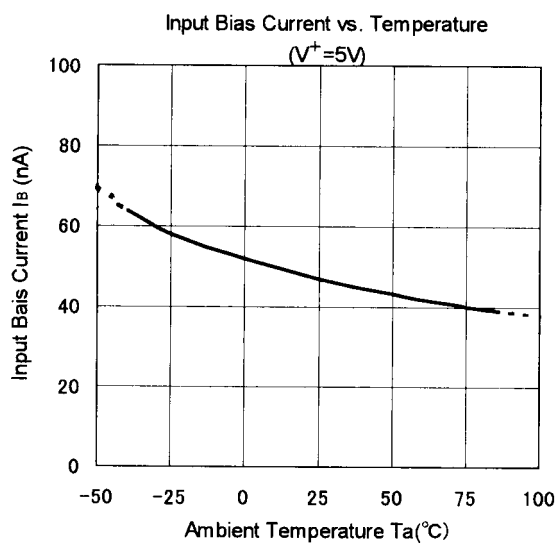
(  $V^+=5V, Ta=25^\circ C$  )

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	$V_{IO}$	$R_S=0\Omega, V_O=1.4V$	-	2	7	mV
Input Offset Current	$I_{IO}$		-	5	50	nA
Input Bias Current	$I_B$		-	25	250	nA
Large Signal Voltage Gain	$A_V$	$R_L=15k\Omega$	-	106	-	dB
Input Common Mode Voltage Range	$V_{ICM}$		0~3.5	-	-	V
Response Time	$t_R$	$R_L=5.1k\Omega$	-	0.8	-	$\mu s$
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	$\mu A$
Operating Current	$I_{CC}$	$R_L = \infty$	-	0.4	1	mA

## ■ TYPICAL CHARACTERISTICS



## ■ TYPICAL CHARACTERISTICS



[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.