

## SINGLE-SUPPLY DUAL COMPARATOR

### ■ GENERAL DESCRIPTION

The NJM2407 is a single-supply dual comparator packaged in VSP8. Its input stage of darlington PNP detects GND level.

The common-emitter output circuit performs low output saturation voltage less than 400mV at output sink current 3mA.

### ■ PACKAGE OUTLINE



NJM2407R

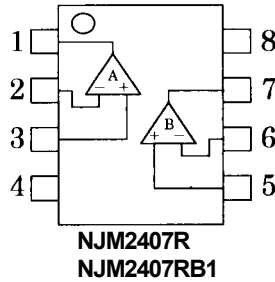


NJM2407RB1

### ■ FEATURES

- Operating Voltage (  $V^+ = +2V \sim +20V$  )
- Output Sink Current ( 6mA min. )
- Response Time ( 0.8 $\mu$ s typ. )
- Bipolar Technology
- Package Outline VSP8, TVSP8

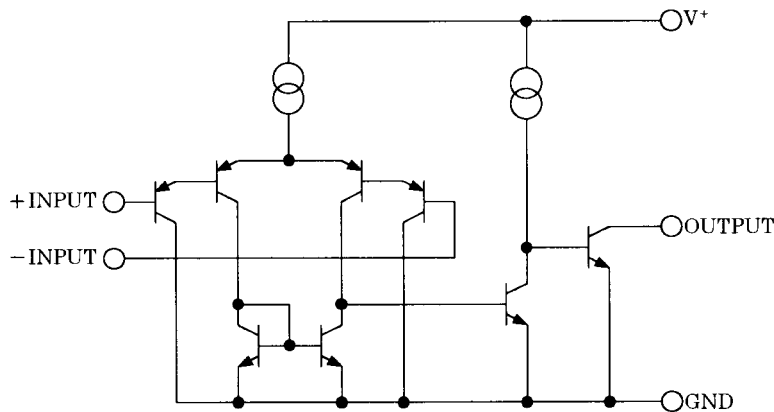
### ■ PIN CONFIGURATION



#### PIN FUNCTION

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

### ■ 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           | $P_D$              | 320               | mW   |
| Operating Temperature Range | $T_{opr}$          | -40~+85           | °C   |
| Storage Temperature Range   | $T_{stg}$          | -50~+125          | °C   |

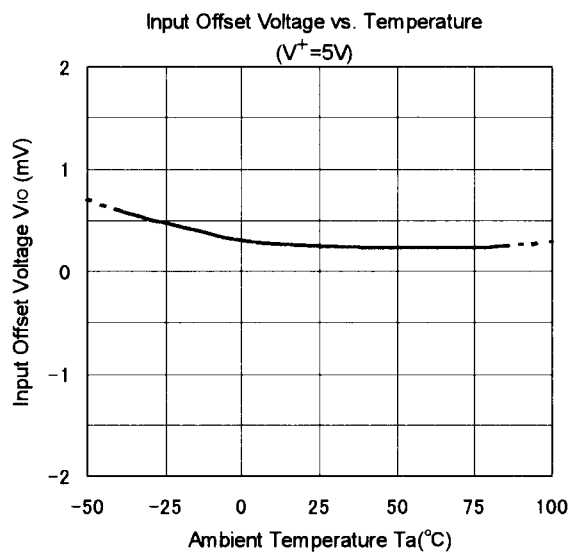
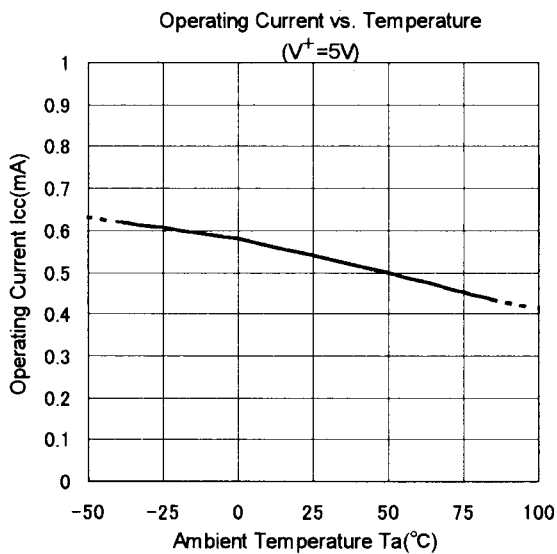
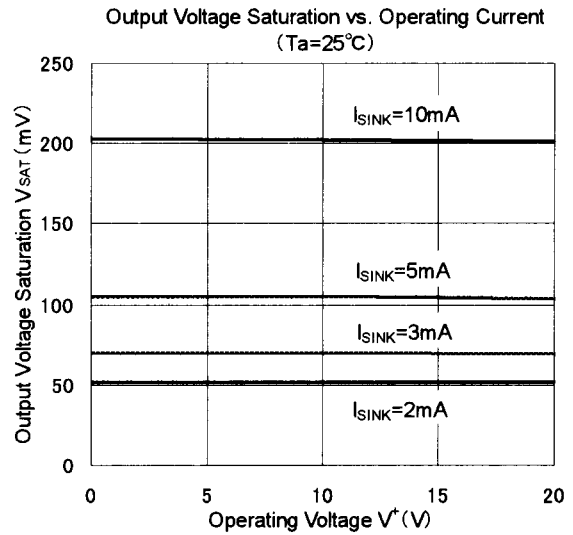
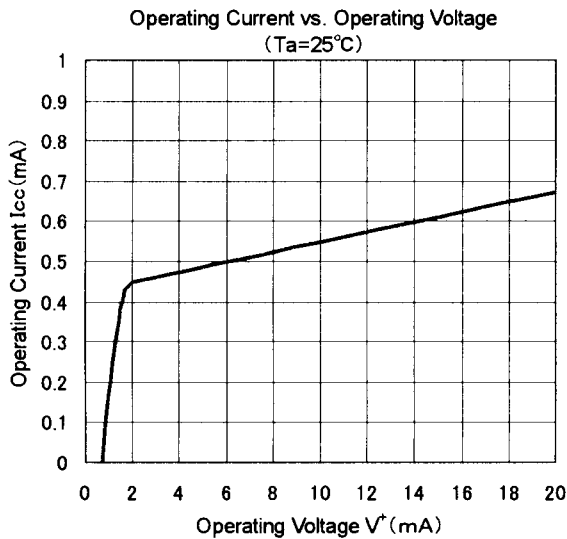
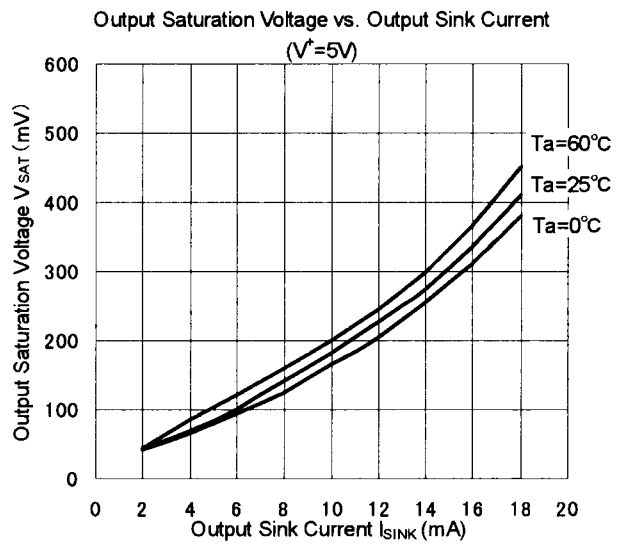
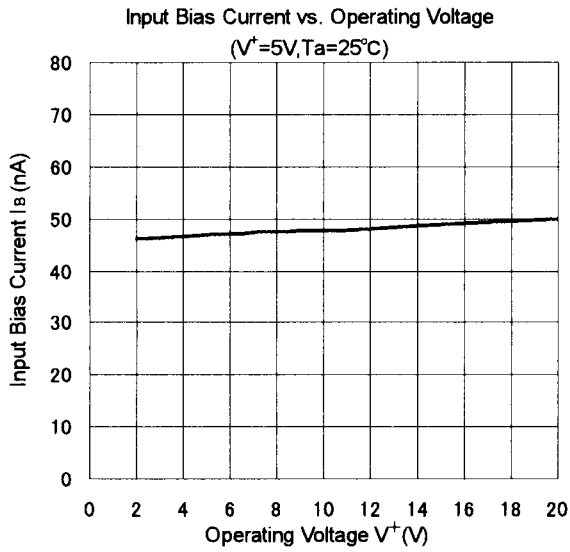
( note ) When the supply voltage is less than +20V, the absolute maximum input is equal to the supply voltage.

## ■ ELECTRICAL CHARACTERISTICS

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

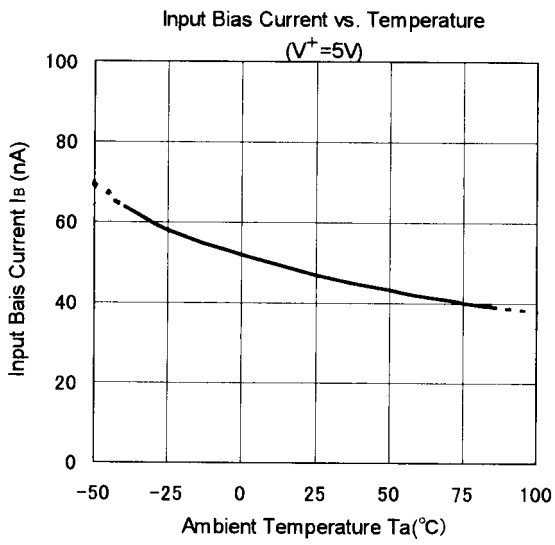
| PARAMETER                       | SYMBOL     | TEST CONDITION                                 | MIN.  | TYP. | MAX. | UNIT    |
|---------------------------------|------------|--|-------|------|------|---------|
| Input Offset Voltage            | $V_{IO}$   | $R_S=0\Omega, V_O=1.4V$                        | -     | 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



# NJM2407

## ■ TYPICAL CHARACTERISTICS



**[CAUTION]**

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