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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

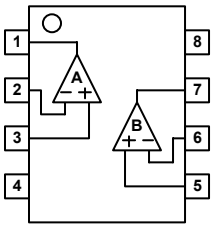
NJM2407R
(MSOP8(VSOP8))

NJM2407RB1
(MSOP8(TVSP8))

■ FEATURES

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

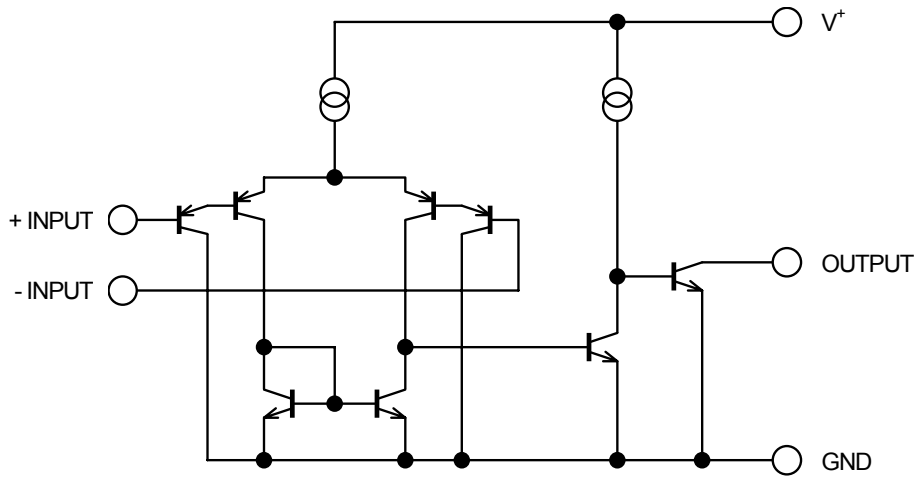
■ PIN CONFIGURATION



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/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.

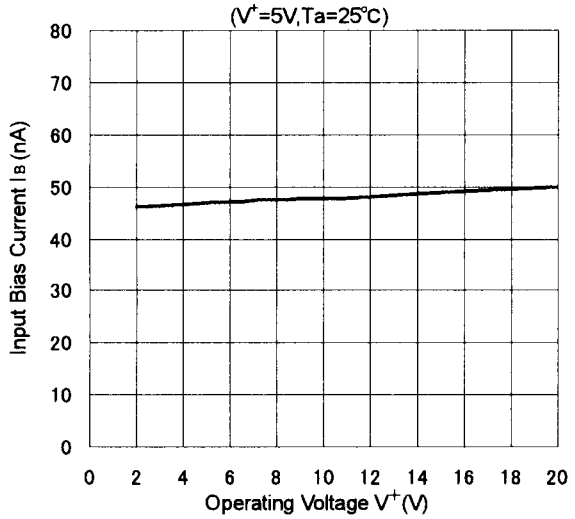
■ ELECTRICAL CHARACTERISTICS

(V^+=5V,Ta=25°C)

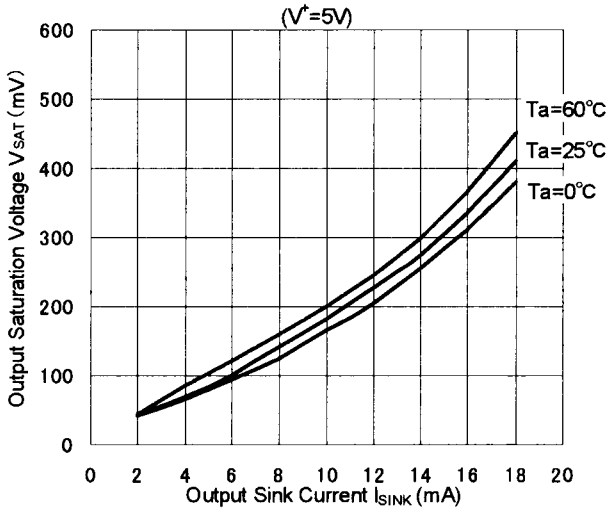
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	R_S=0Ω,V_O=1.4V	-	2	7	mV
Input Offset Current	I_{IO}		-	5	50	nA
Input Bias Current	I_B		-	25	250	nA
Large Signal Voltage Gain	A_V	R_L=15kΩ	-	106	-	dB
Input Common Mode Voltage Range	V_{ICM}		0~3.5	-	-	V
Response Time	t_R	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

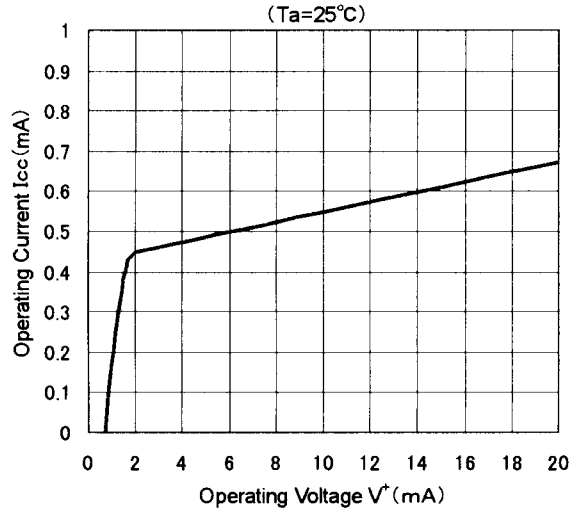
Input Bias Current vs. Operating Voltage
(V^+=5V,Ta=25°C)



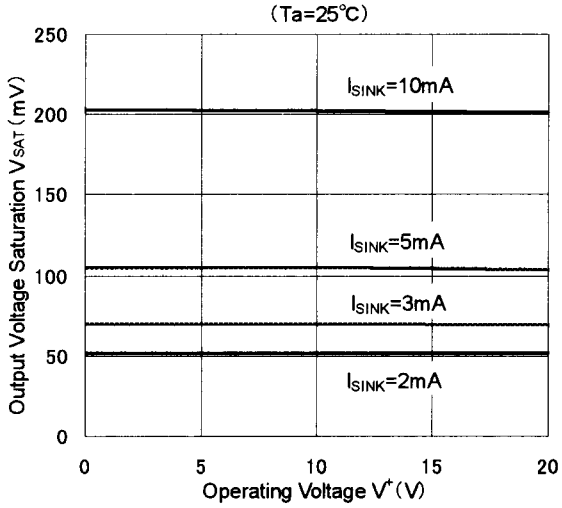
Output Saturation Voltage vs. Output Sink Current
(V^+=5V)



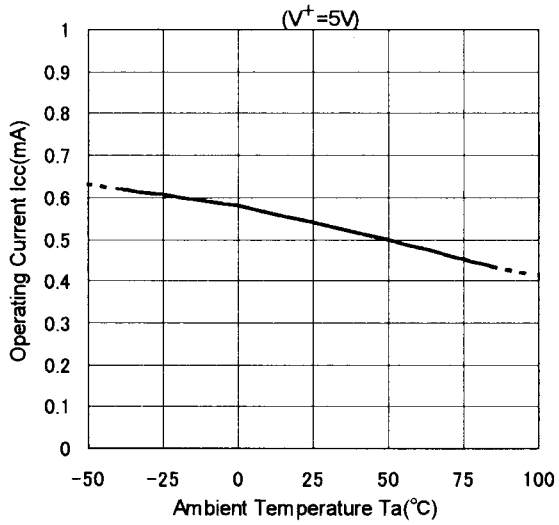
Operating Current vs. Operating Voltage
(Ta=25°C)



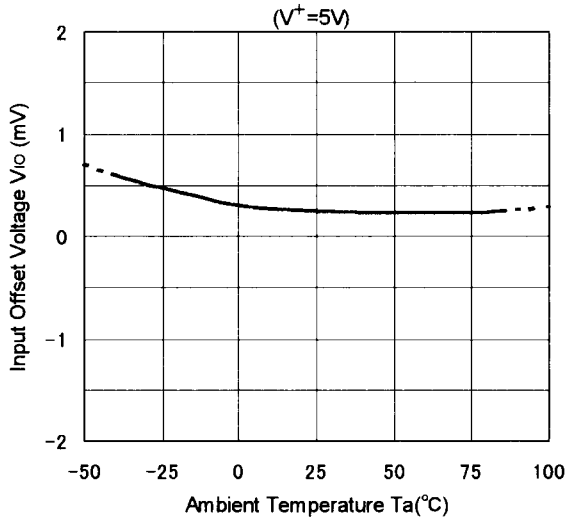
Output Voltage Saturation vs. Operating Current
(Ta=25°C)



Operating Current vs. Temperature
(V^+=5V)



Input Offset Voltage vs. Temperature
(V^+=5V)



■ TYPICAL CHARACTERISTICS