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### SINGLE COMPARATOR

#### **■ GENERAL DESCRIPTION**

#### **■ PACKAGE OUTLINE**

The NJM2406 is a single comparator of ultra miniature surface mount package.

The NJM2406 is suitable for small electronic equipments and hybrid circuits.





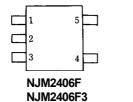
NJM2406F

NNJM2406F3

#### **■ FEATURES**

- Operating Voltage (2.5V to 7V)
- Single Supply Operation
- Mounted in Ultra Miniature Package 2.0x1.25mm (1/8 of DMP8 package)
- Ground Shield Plate between +Input and Output
- Ground Shield Plate between +Input and -Input
- Suitable Pin Arrangement for Application
- Package Outline SOT-23-5,SC88A
- Bipolar Technology

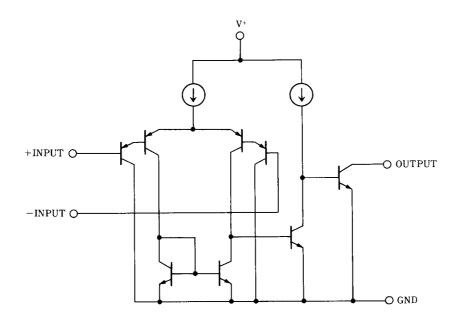
#### **■ PIN CONFIGURATION**



PIN FUNCTION

- 1. -INPUT
- 2. GND
- +INPUT
   OUTPUT
- 5 \

#### **■ EQUIVALENT CIRCUIT**



#### ■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup>	7	V
Differential Input Voltage	$V_{\text{ID}}$	7	V
Input Voltage	$V_{IN}$	-0.3~7	V
Power Dissipation	P <sub>D</sub>	(SOT-23-5 ) 200 ( SC88A ) 250 ( note1 )	mW
Output to Negative Supply Voltage	$V_{SUS}$	20	V
Operating Temperature Range	T <sub>opr</sub>	-40~+85	°C
Storage Temperature Range	T <sub>stg</sub>	-40~+125	°C

(note1) On glass epoxy board. (50x50x1.6mm)

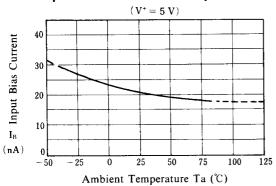
#### **■ ELECTRICAL CHARACTERISTICS**

( V<sup>+</sup>=5V,Ta=25°C )

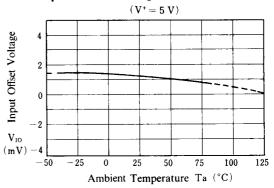
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	$V_{IO}$	$R_S=0\Omega,V_O=1.4V$	-	1	7	mV
Input Offset Current	I <sub>IO</sub>		-	1	50	nA
Input Bias Current	$I_{B}$		-	20	250	nA
Input Common Mode Voltage Range	$V_{ICM}$		0~3.5	-	-	V
Large Signal Voltage Gain	$A_V$	$R_L$ =15k $\Omega$	-	106	-	dB
Response Time	$t_R$	R <sub>L</sub> =5.1kΩ	-	1.5	-	μs
Output Sink Current	I <sub>SINK</sub>	$V_{IN}^{-}=1V, V_{IN}^{+}=0V, V_{O}=1.5V$	6	-	-	mA
Output Saturation Voltage	$V_{SAT}$	$V_{IN}^-=1V,V_{IN}^+=0V,I_{SINK}=5mA$	-	300	500	mV
Output Leakage Current	I <sub>LEAK</sub>	$V_{IN}^{-}=0V, V_{IN}^{+}=1V, V_{O}=20V$	-	-	1	μA
Operating Current	I <sub>CC</sub>		200	400	800	μA

#### **■ TYPICAL CHARACTERISTICS**

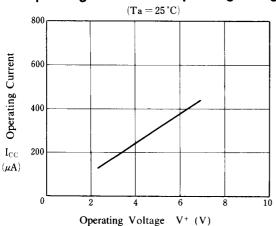
#### Input Bias Current vs. Temperature



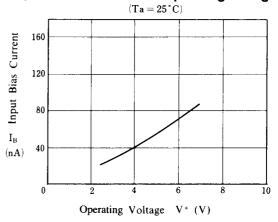
#### Input Offset Voltage vs. Temperature



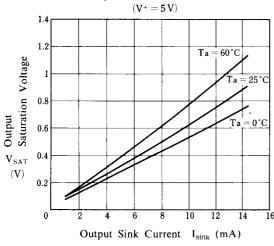
### Operating Current vs. Operating Voltage



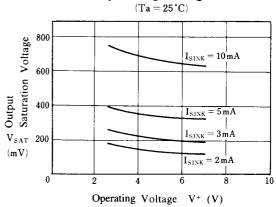
#### Input Bias Current vs. Operating Voltage



# Output Saturation Voltage vs. Output Sink Current

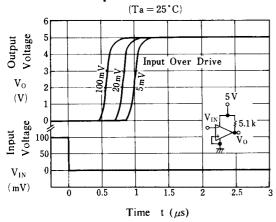


# Output Saturation Voltage vs. Operating Voltage

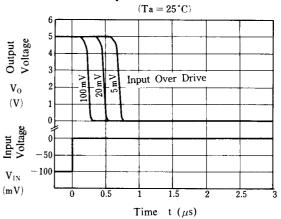


#### **■ TYPICAL CHARACTERISTICS**

#### Response Time for Various **Input Over Drives**



#### **Response Time for Various Input Over Drives**



#### [CAUTION]

[CAUTION]
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