

**SANYO**

No.994D

**LA6339****High-Performance Quad Comparator**

The LA6339 is a high-performance quad comparator that is capable of operating from a single power supply over a wide range of 2V to 36V. Because of its excellent input characteristics and low power, it can be very conveniently applied to multisignal parallel comparator circuits that require high-density assembly.

**Features**

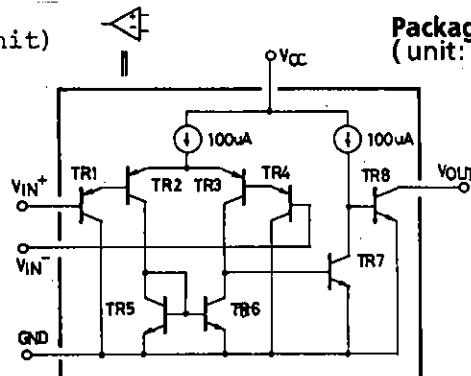
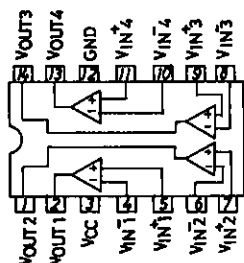
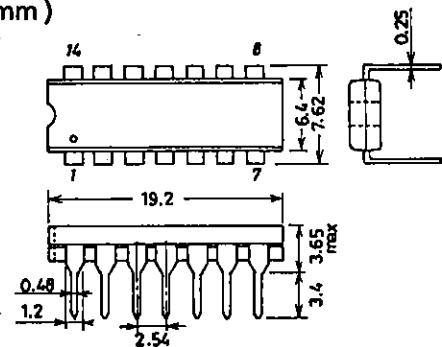
- Wide supply voltage range (Single supply: 2.0 to 36.0 V, dual supplies:  $\pm 1.0$  to  $\pm 18.0$  V).
- Wide common-mode input voltage range (0 to  $V_{CC}-1.5$  V).
- Open collector output enabling wired OR.
- Small current dissipation ( $0.8\text{mA}/V_{CC}=5\text{V}, R_L=\infty$ ) and low power.

**Maximum Ratings at  $T_a=25^\circ\text{C}$** 

			unit
Maximum Supply Voltage	$V_{CC\text{max}}$	36	V
Differential Input Voltage	$V_{ID}$	36	V
Common-mode Input Voltage	$V_{ICM}$	-0.3 to +36	V
Allowable Power Dissipation	$P_{D\text{max}}$	700	mW
Operating Temperature	$T_{opr}$	-30 to +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +125	$^\circ\text{C}$

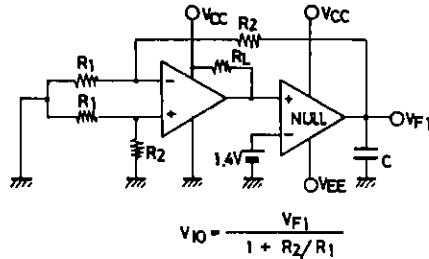
**Operating Characteristics at  $T_a=25^\circ\text{C}, V_{CC}=5\text{V}$** 

		Test circuit	min	typ	min	unit
Input Offset Voltage	$V_{IO}$	1		$\pm 2$	$\pm 5$	mV
Input Offset Current	$I_{IO}$	2		$\pm 5$	$\pm 50$	nA
Input Bias Current	$I_B$	3		25	250	nA
Common-mode Input Voltage	$V_{ICM}$		0		$V_{CC}-1.5$	V
Current Dissipation	$I_{CC}$	$R_L=\infty$	4	0.8	2	mA
Voltage Gain	$V_G$	$R_L=15\text{kohms}$	5	200		V/mV
Response Time		$V_{RL}=5\text{V}, R_L=5.1\text{kohms}$	6	1.3		$\mu\text{s}$
Output Sink Current	$I_{SINK}$	$V_{IN}=1\text{V}, V_{IN+}=0\text{V}, V_O \leq 1.5\text{V}$	7	6	16	mA
Output Saturation Voltage	$V_{OL}$	$V_{IN}=1\text{V}, V_{IN+}=0\text{V}, I_{SINK} \leq 3\text{mA}$	8	0.2	0.4	V
Output Leak Current	$I_{LEAK}$	$V_{IN}=0\text{V}, V_{IN+}=1\text{V}, V_O=5\text{V}$	9	0.1		nA

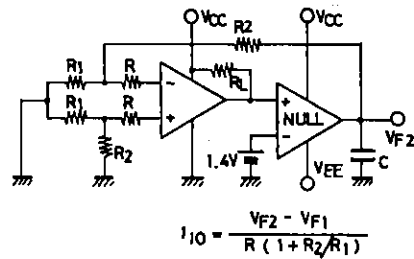
**Pin Assignment and Equivalent Circuit (1 unit)****Package Dimensions 3003A-D14IC (unit: mm)**

## Test Circuits

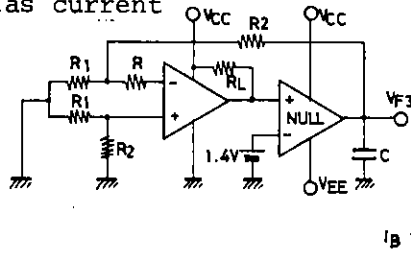
## 1. Input offset voltage



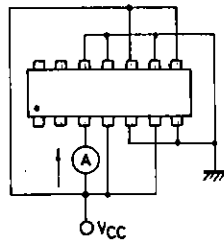
## 2. Input offset current



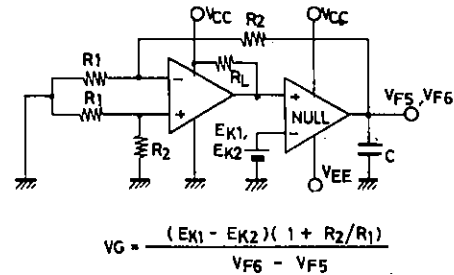
## 3. Input bias current



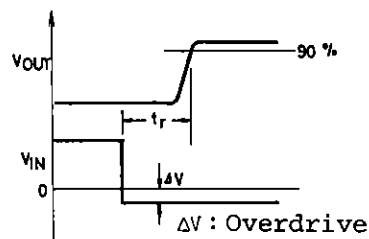
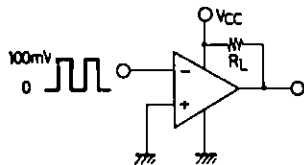
## 4. Current dissipation



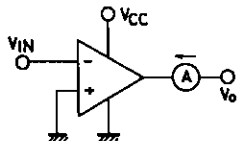
## 5. Voltage gain



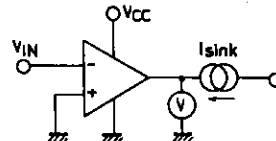
## 6. Response time



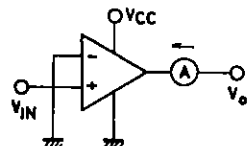
## 7. Output sink current

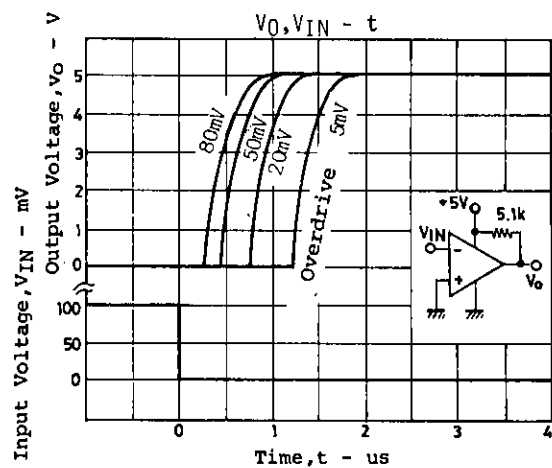
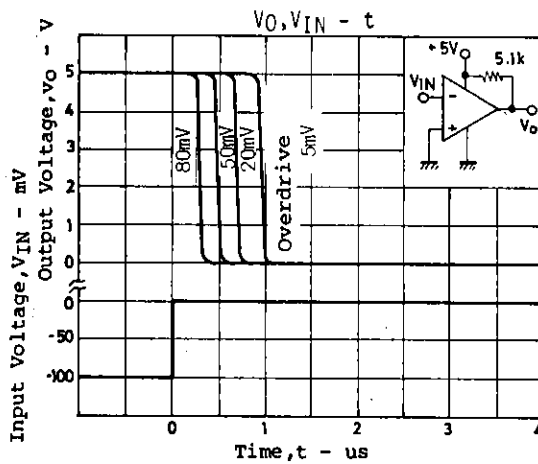
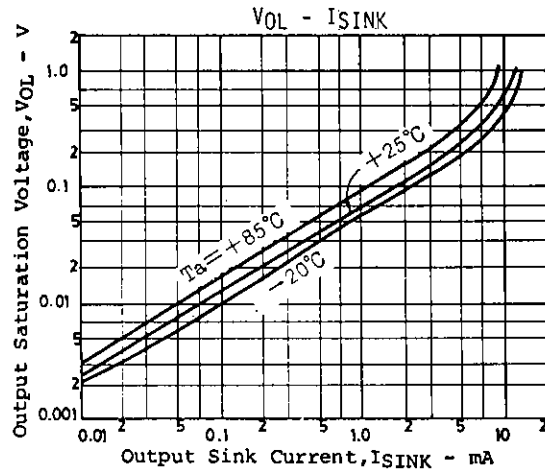
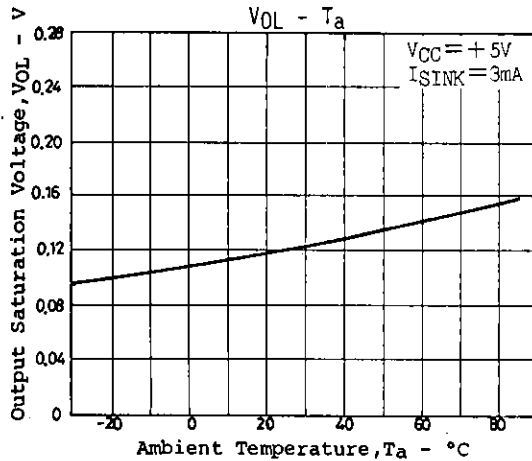
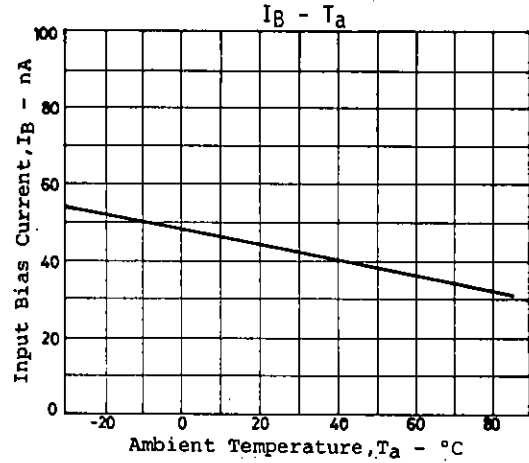
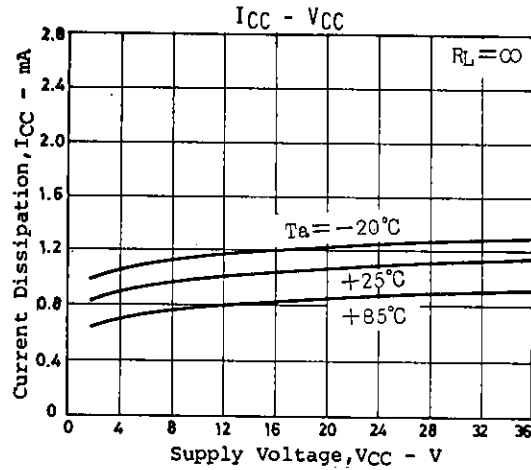


## 8. Output saturation voltage



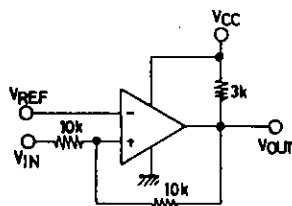
## 9. Output leak current



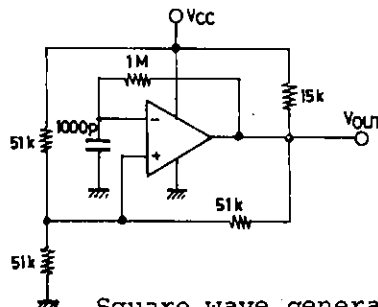


## Sample Application Circuits

Unit (resistance:  $\Omega$ , capacitance: F)



Voltage comparator  
(with hysteresis)



Square wave generator

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