



# LA6339

## High-Performance Quad Comparator

### Overview

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 36.0V, 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.

### Specifications

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

Parameter	Symbol	Conditions	Ratings	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  $T_a = 25^\circ\text{C}$ ,  $V_{CC}=5\text{V}$

Parameter	Symbol	Conditions	Test Circuit	Ratings			Unit
				min	typ	max	
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 drain	$I_{CC}$	$R_L=\infty$	4		0.8	2	mA
Voltage gain	$V_G$	$R_L=15\text{k}\Omega$	5		200		V/mV
Response time		$V_{RL}=5\text{V}$ , $R_L=5.1\text{k}\Omega$	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 leakage current	$I_{LEAK}$	$V_{IN^-}=0\text{V}$ , $V_{IN^+}=1\text{V}$ , $V_O=5\text{V}$	9		0.1		nA

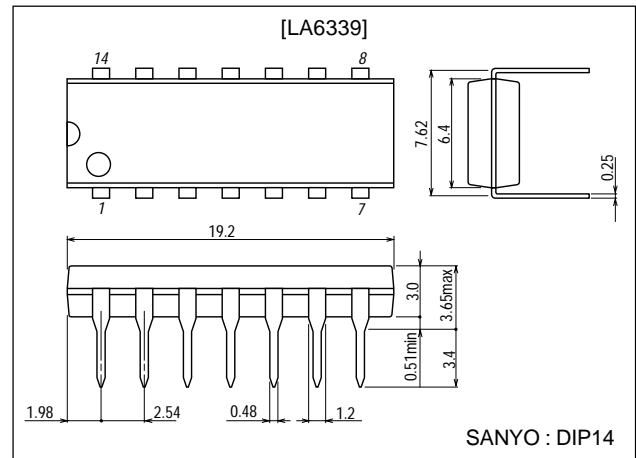
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### Package Dimensions

unit:mm

3003A-DIP14

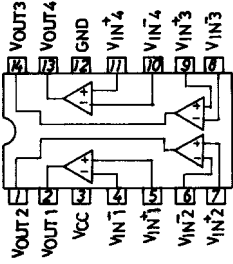


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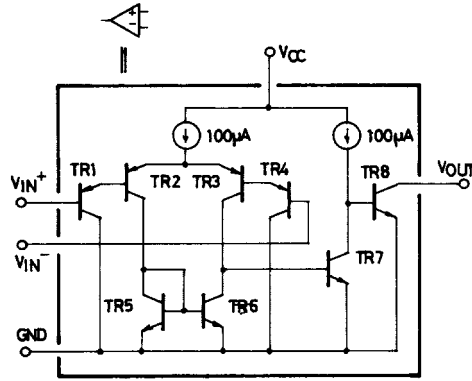
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

40500TN (KT)/7087KI/4265MW/2173KI, TS No.994-1/4

Pin Assignment

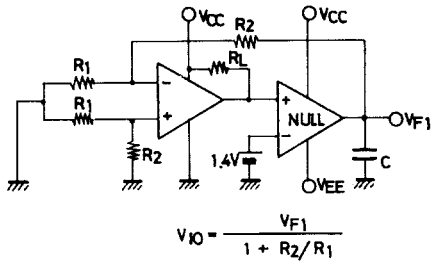


Equivalent Circuit (1 unit)

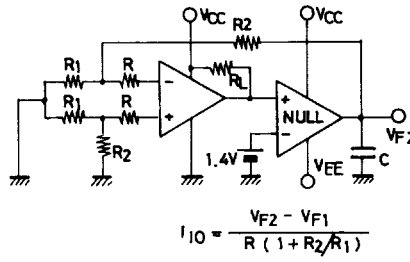


Test Circuits

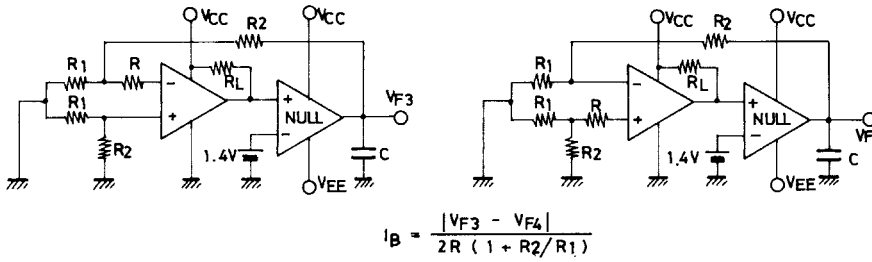
1. Input Offset Voltage



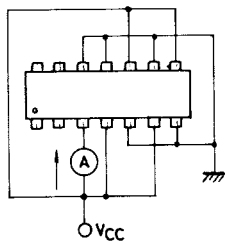
2. Input Offset Current



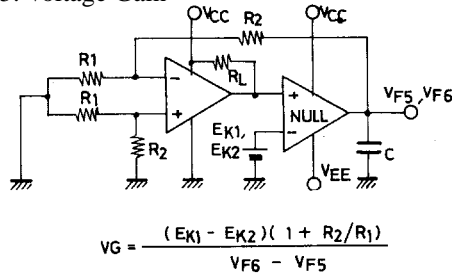
3. Input Bias Current



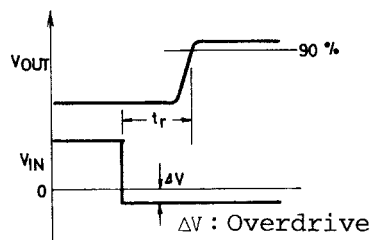
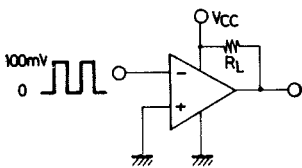
4. Current Drain



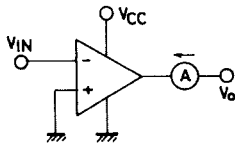
5. Voltage Gain



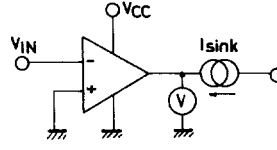
6. Response Time



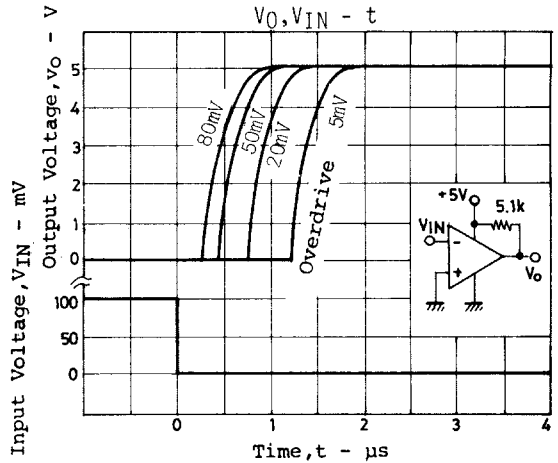
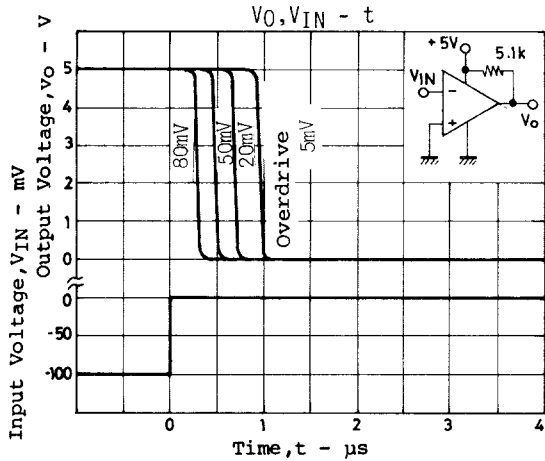
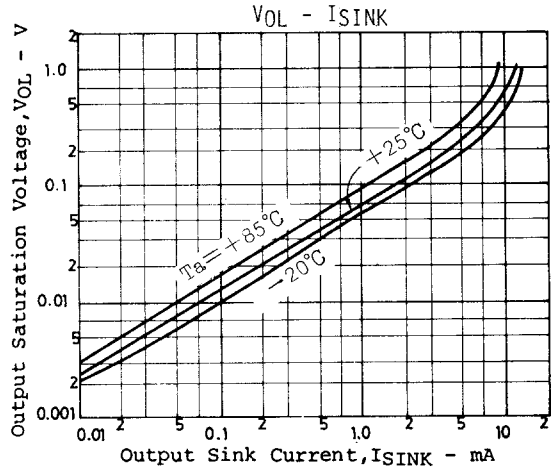
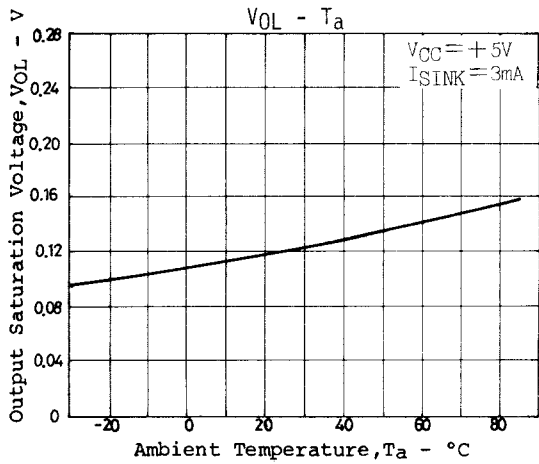
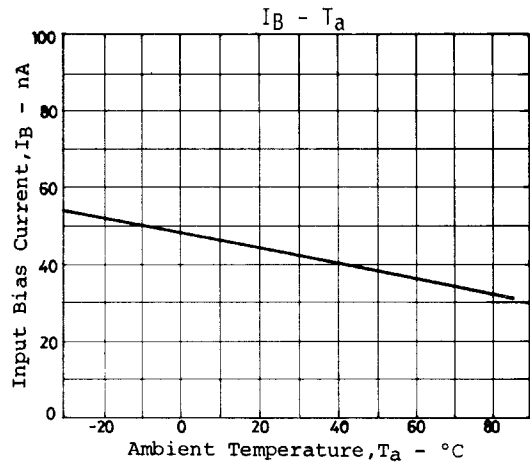
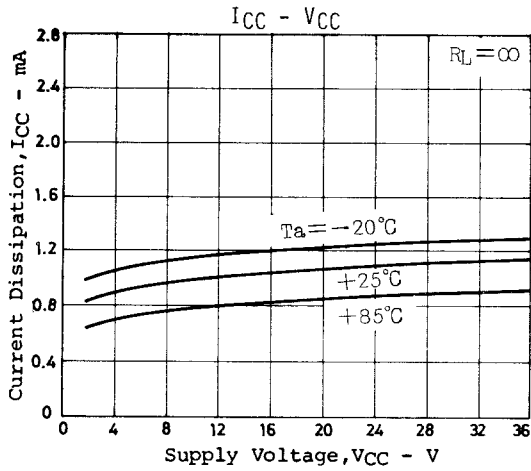
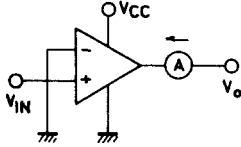
7. Output Sink Current



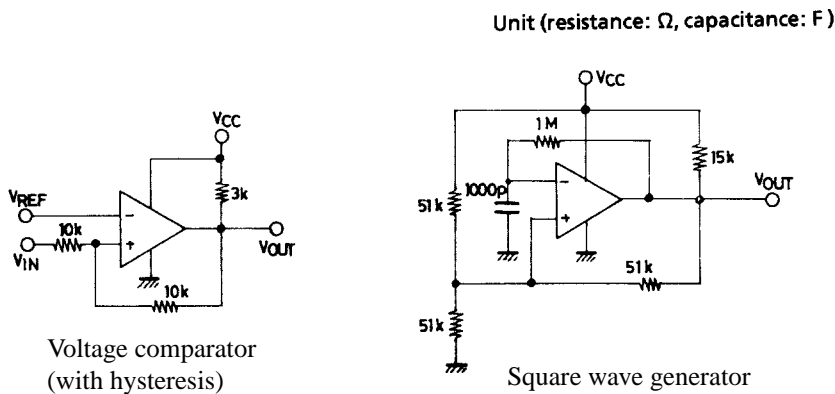
8. Output Saturation Voltage



9. Output Leakage Current



## Sample Application Circuits



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