

SANYO

No. 999C

LA6393D, 6393S

High-Performance Dual Comparator

The LA6393D,6393S are high-performance dual comparators that are capable of operating from a single power supply voltage over a wide range 2 to 36V.

Because of their excellent input characteristics and low power, they can be very conveniently applied to multisignal parallel comparator circuits that require high-density assembly.

Features

- LA6393D : DIP-8 pin package, LA6393S : SEP-9 pin package
- Wide operating power-supply voltage range
(Single power supply : 2.0 to 36.0V, dual power supplies : ± 1.0 to ± 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 (0.6mA) and low power.

Maximum Ratings at Ta=25°C

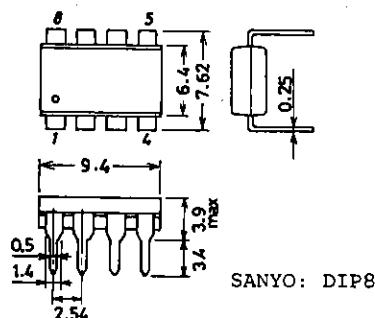
Maximum Ratings at Ta = 25°C			unit
Maximum Supply Voltage	V _{CC} max	36	V
Differential Input Voltage	V _{ID}	36	V
Common-Mode Input Voltage Range	V _{ICM}	−0.3 to +36	V
Allowable Power Dissipation	P _d max	570	mW
Operating Temperature	T _{opr}	−30 to +85	°C
Storage Temperature	T _{stg}	−55 to +125	°C

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

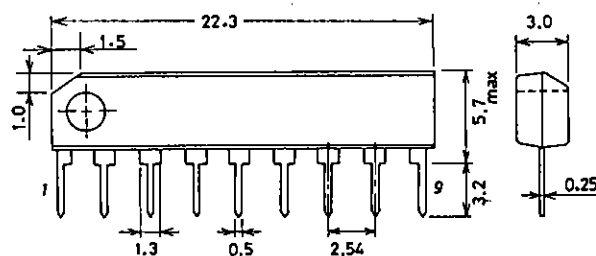
Operating Characteristics at Ta = 25°C, VCC = 5V			Test Circuit	min	typ	max	unit
Input Offset Voltage	V _{IO}		1		±1	±5	mV
Input Offset Current	I _{IO}		2		±5	±50	nA
Input Bias Current	I _B		3		25	250	nA
Common-Mode Input Voltage Range	V _{ICM}			0	V _{CC} - 1.5		V
Supply Current	I _{CC}	R _L = ∞	4		0.6	1	mA
Voltage Gain	V _G	R _L = 15kΩ	5		200		V/mV
Response Time		V _{RL} = 5V, R _L = 5.1kΩ	6		1.3		μs

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Package Dimensions 30018
(unit: mm) [LA6393D]



Package Dimensions 3017B
(unit: mm) [LA6393S]



SANYO: SEP9

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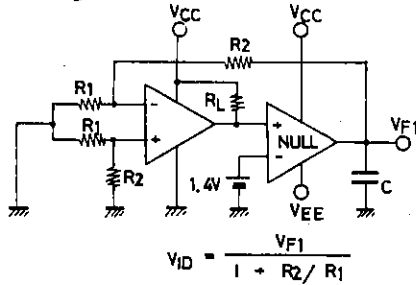
LA6393D, 6393S

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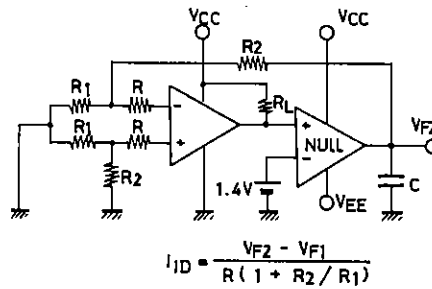
			Test Circuit	min	typ	max	unit
Output Sink Current	I_{SINK}	$V_{IN-} = 1V, V_{IN+} = 0V,$ $V_O \leq 1.5V$	7	6	16		mA
Output Saturation Voltage	V_{OL}	$V_{IN-} = 1V, V_{IN+} = 0V,$ $I_{SINK} \leq 3mA$	8		0.2	0.4	V
Output Leakage Current	I_{LEAK}	$V_{IN-} = 0V, V_{IN+} = 1V,$ $V_O = 5V$	9		0.1		nA

Test Circuits

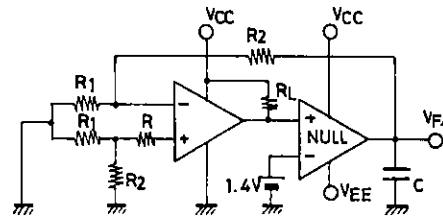
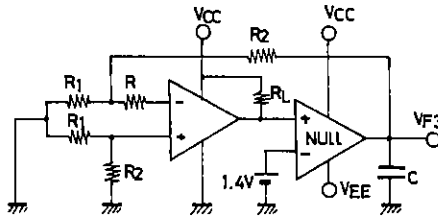
1. Input Offset Voltage



2. Input Offset Current

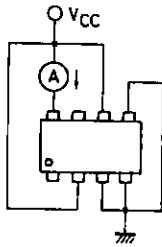


3. Input Bias Current

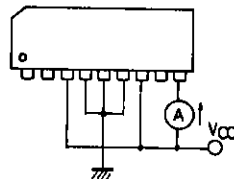


$$I_B = \frac{|V_{F3} - V_{F4}|}{2R(1 + R_2/R_1)}$$

4. Supply Current

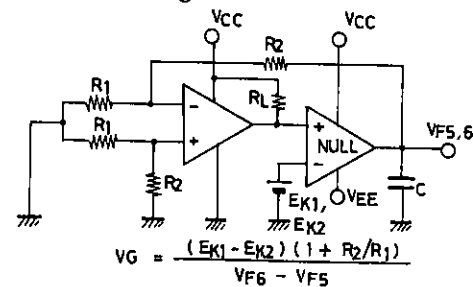


LA6393D

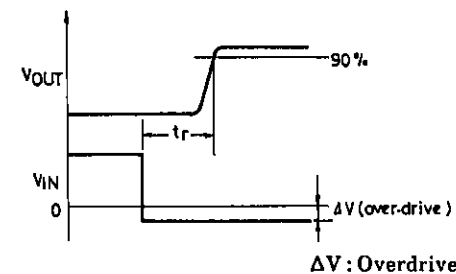
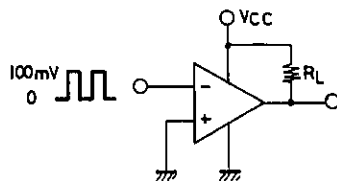


LA6393S

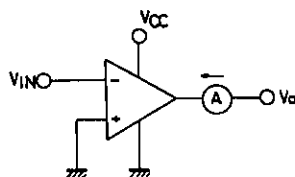
5. Voltage Gain



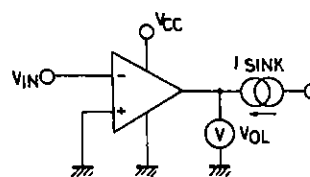
6. Response Time



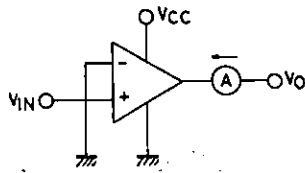
7. Output Sink Current



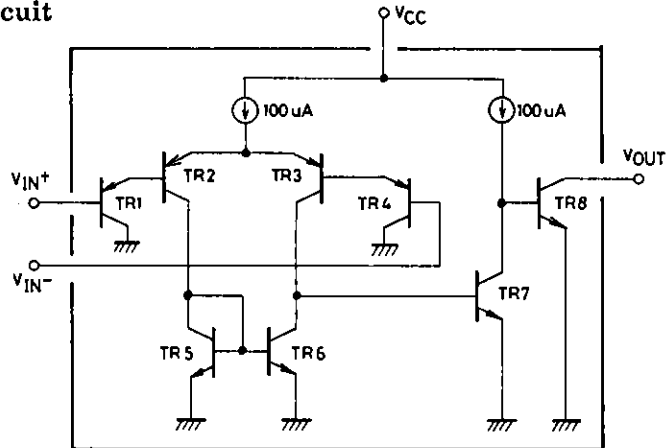
8. Output Saturation Voltage



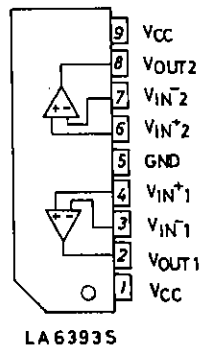
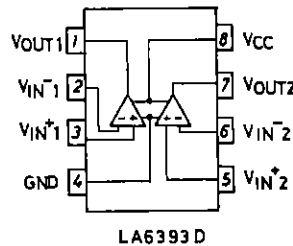
9. Output Leakage Current



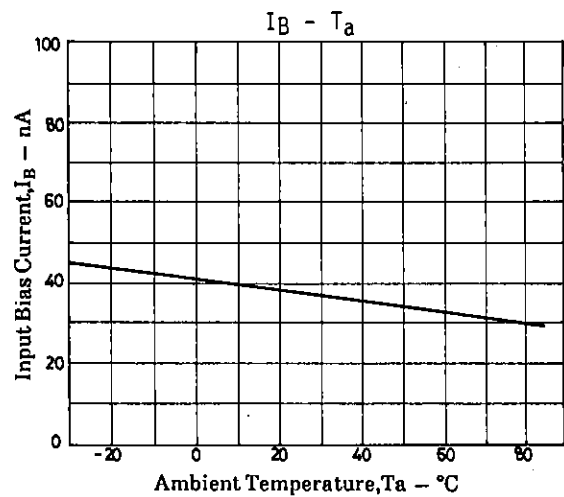
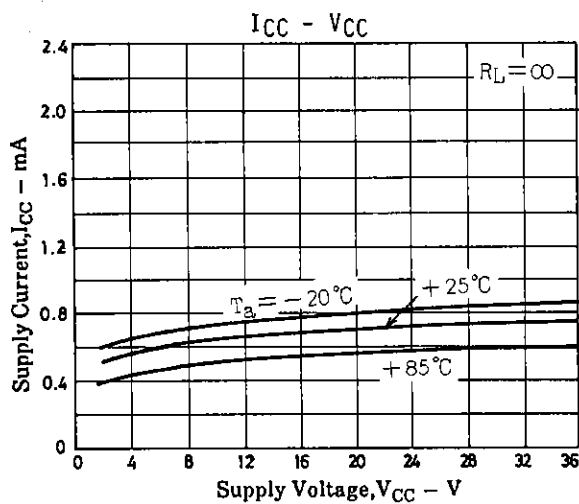
Equivalent Circuit

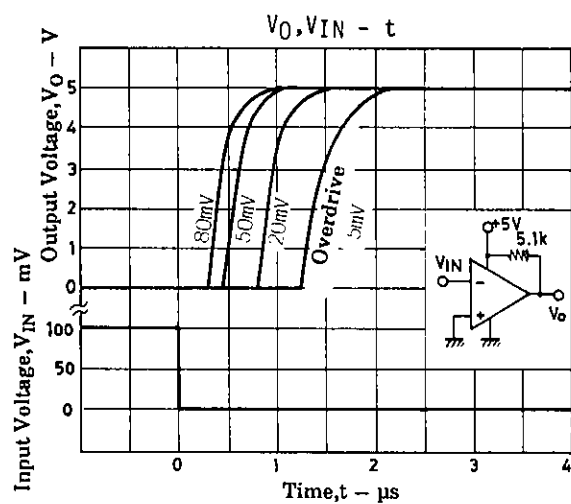
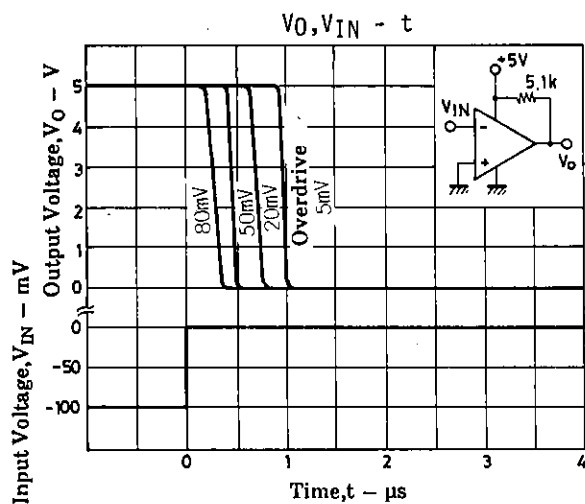
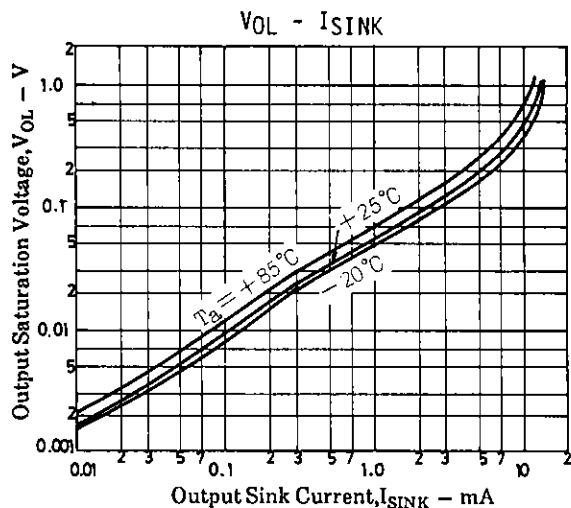
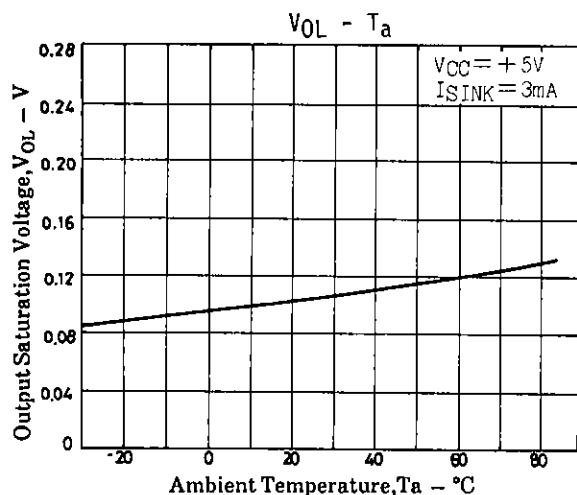


Pin Assignment

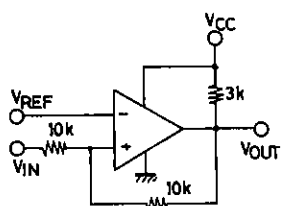


Main Characteristics

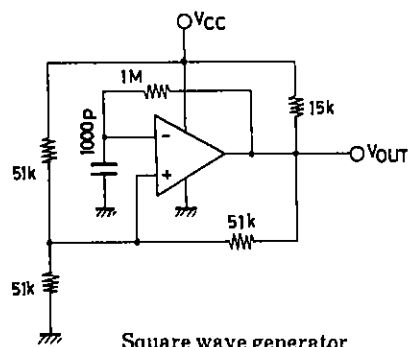




Sample Application Circuits



Voltage comparator
(with hysteresis)



Square wave generator

Unit (resistance: Ω , capacitance: F)

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