

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 $T_a = 25^\circ\text{C}$

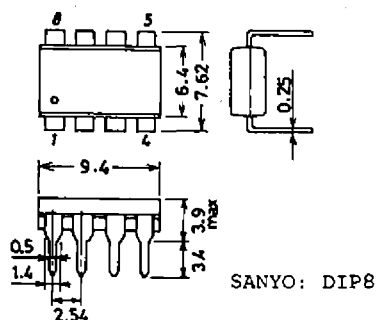
			unit
Maximum Supply Voltage	V_{CC} max	36	V
Differential Input Voltage	V_{ID}	36	V
Common-Mode Input Voltage Range	V_{ICM}	-0.3 to +36	V
Allowable Power Dissipation	P_d max	570	mW
Operating Temperature	T_{opr}	-30 to +85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +125	$^\circ\text{C}$

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

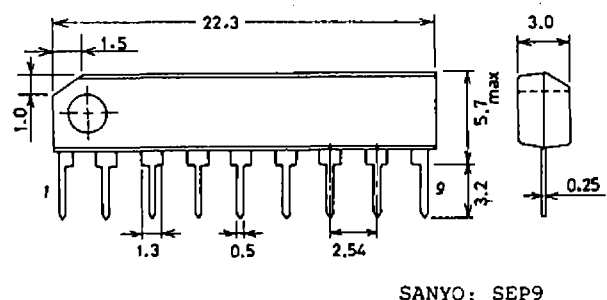
			Test Circuit	min	typ	max	unit
Input Offset Voltage	V_{IO}		1		± 1	± 5	mV
Input Offset Current	I_{IO}		2		± 5	± 50	nA
Input Bias Current	I_B		3		25	250	nA
Common-Mode Input Voltage Range	V_{ICM}			0	$V_{CC} - 1.5$		V
Supply Current	I_{CC}	$R_L = \infty$	4		0.6	1	mA
Voltage Gain	V_G	$R_L = 15\text{k}\Omega$	5		200		V/mV
Response Time		$V_{RL} = 5\text{V}, R_L = 5.1\text{k}\Omega$	6		1.3		μs

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Package Dimensions 30018
(unit: mm) [LA6393D]



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



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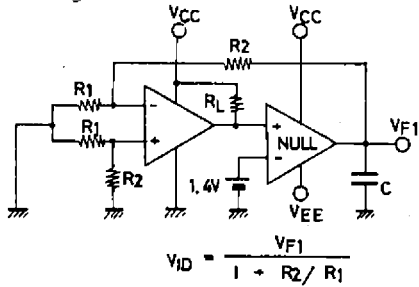
LA6393D, 6393S

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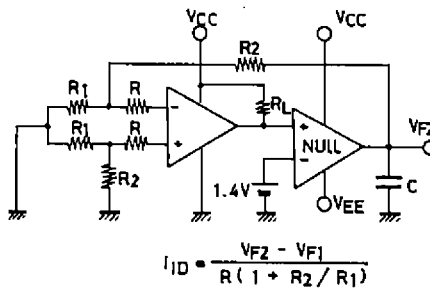
			Test Circuit	min	typ	max	unit
Output Sink Current	I_{SINK}	$V_{IN-} = 1V, V_{IN+} = 0V,$ $V_O \leq 1.5V$	7	6	16		mA
Output Saturation Voltage	V_{OL}	$V_{IN-} = 1V, V_{IN+} = 0V,$ $I_{SINK} \leq 3mA$	8		0.2	0.4	V
Output Leakage Current	I_{LEAK}	$V_{IN-} = 0V, V_{IN+} = 1V,$ $V_O = 5V$	9		0.1		nA

Test Circuits

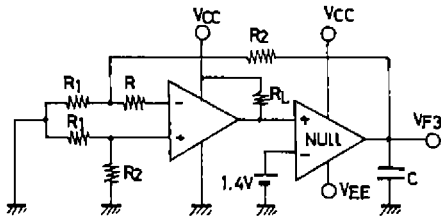
1. Input Offset Voltage



2. Input Offset Current

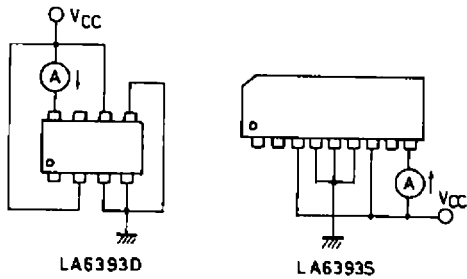


3. Input Bias Current

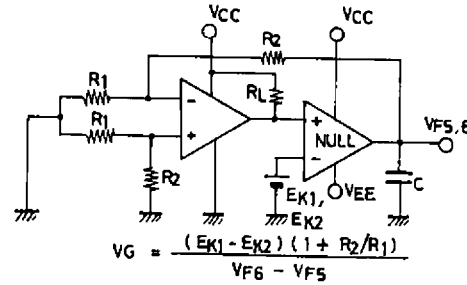


$$I_B = \frac{|VF3 - VF4|}{2R(1 + R2/R1)}$$

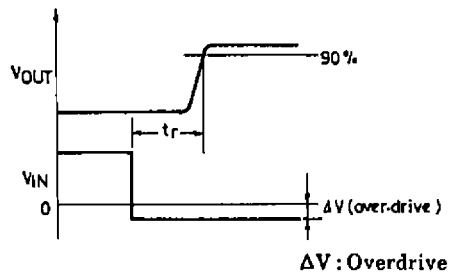
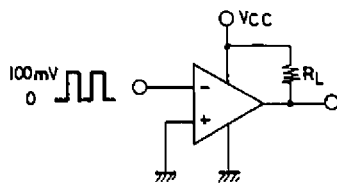
4. Supply Current



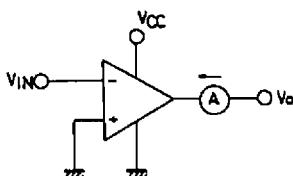
5. Voltage Gain



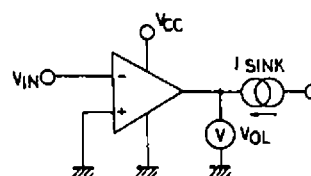
6. Response Time



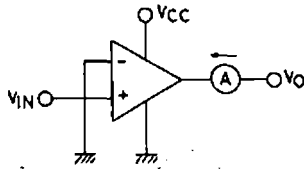
7. Output Sink Current



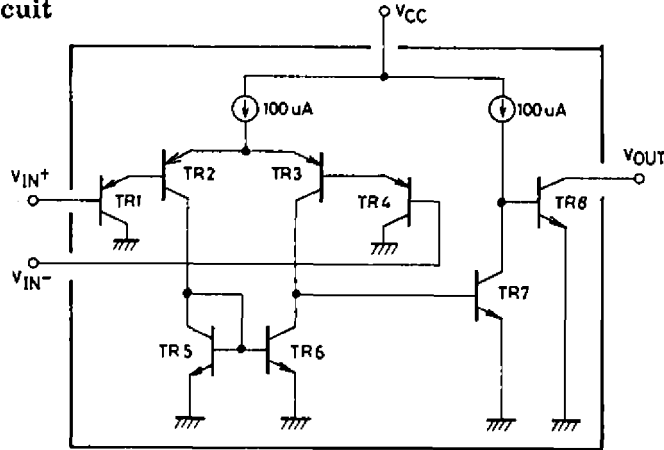
8. Output Saturation Voltage



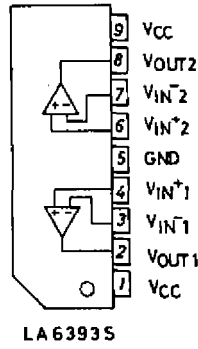
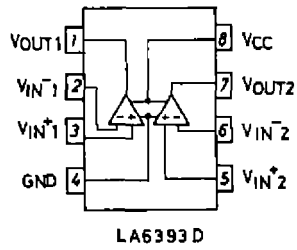
9. Output Leakage Current



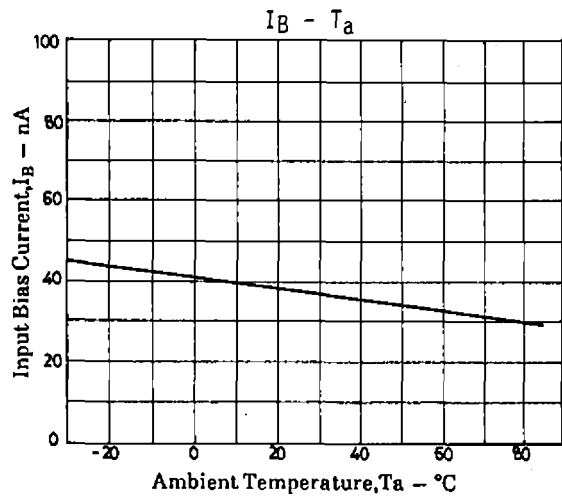
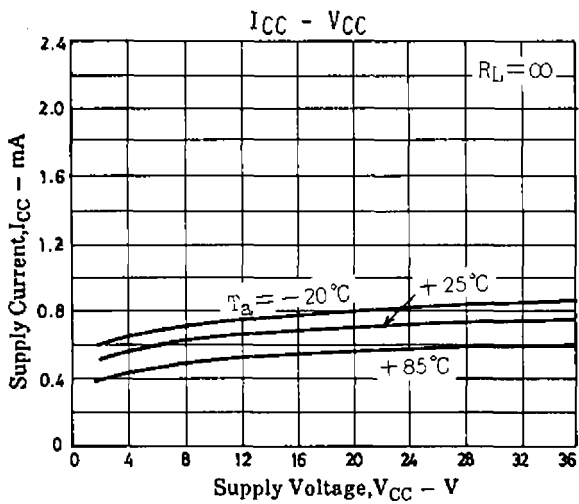
Equivalent Circuit

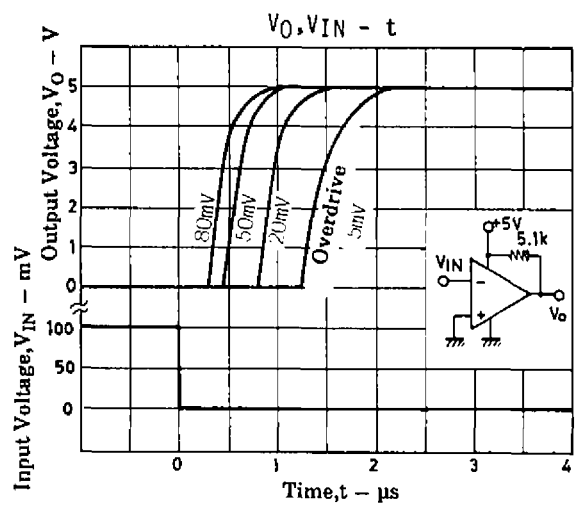
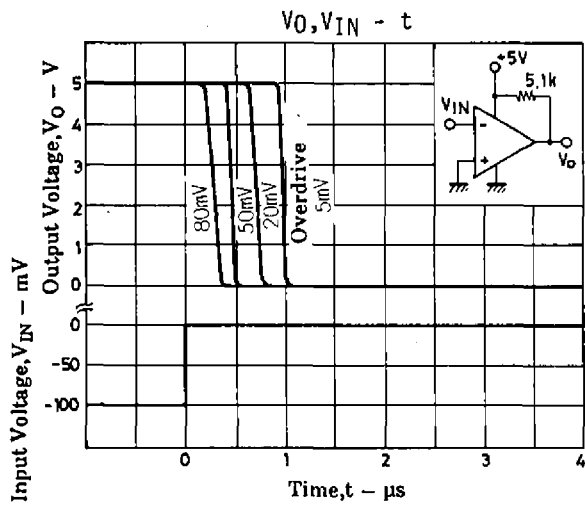
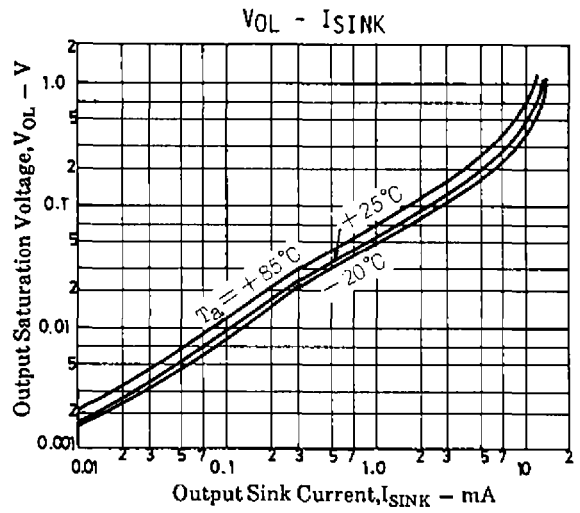
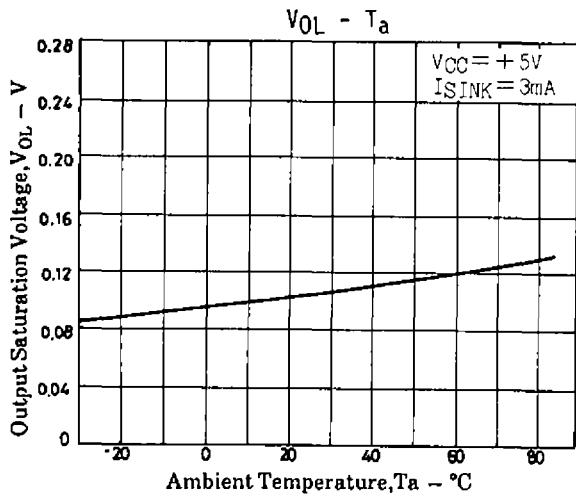


Pin Assignment

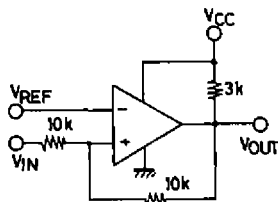


Main Characteristics

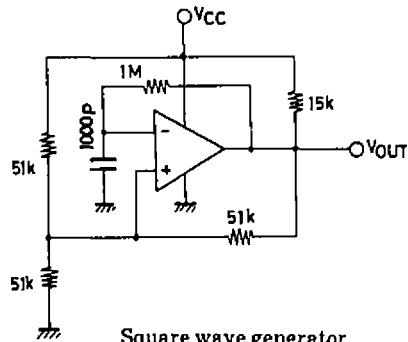




Sample Application Circuits



Voltage comparator
(with hysteresis)



Square wave generator

Unit (resistance: Ω , capacitance: F)

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