



LA6393D, 6393S

High-Performance Dual Comparator

Overview

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

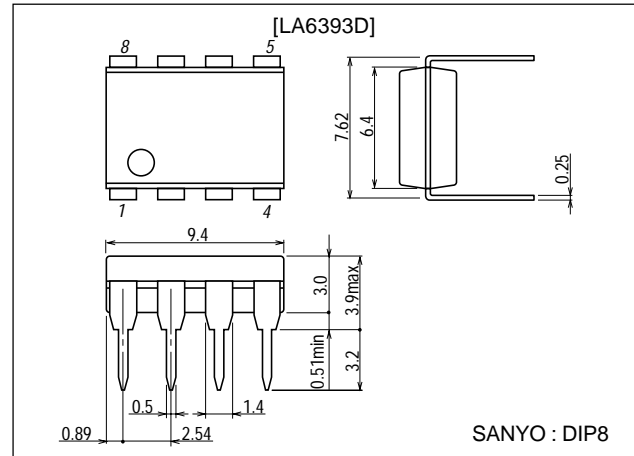
Features

- LA6393D : DIP-8 pin package, LA6393S : SIP-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 drain (0.6mA) and low power.

Package Dimensions

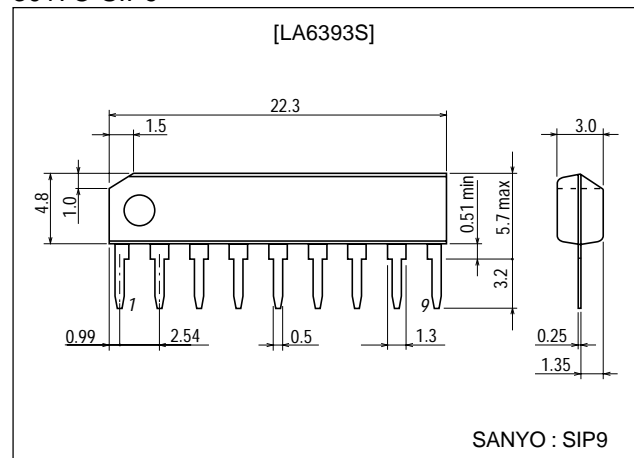
unit:mm

3001B-DIP8



unit:mm

3017C-SIP9



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Specifications

Absolute Maximum Ratings at Ta = 25°C

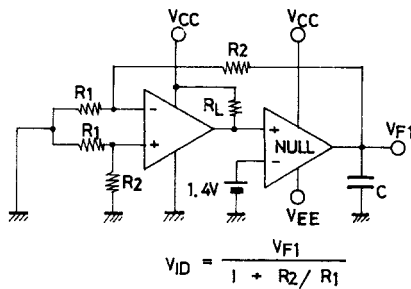
Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V _{CC} max		36	V
Differential input voltage	V _{ID}		36	V
Common-mode input voltage range	V _{ICM}		-0.3 to +36	V
Allowable power dissipation	Pd max		570	mW
Operating temperature	Topr		-30 to +85	°C
Storage temperature	Tstg		-55 to +125	°C

Operating Characteristics at Ta = 25°C, V_{CC}=5V

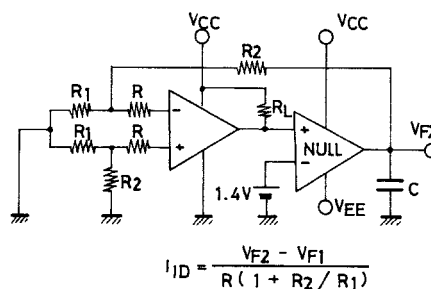
Parameter	Symbol	Conditions	Test Circuit	Ratings			Unit
				min	typ	max	
Input offset voltage	V _{IO}		1		±1	±5	mV
Input offset current	I _{IO}		2		±5	±50	nA
Input bias current	I _B		3		25	250	nA
Common-mode input voltage range	V _{ICM}			0		V _{CC} -1.5	V
Supply current	I _{CC}	R _L =∞	4		0.6	1	mA
Voltage gain	V _G	R _L =15kΩ	5		200		V/mV
Response time		V _{RL} =5V, R _L =5.1kΩ	6		1.3		μs
Output sink current	I _{SINK}	V _{IN} ⁻ =1V, V _{IN} ⁺ =0V, V _O ≤1.5V	7	6	16		mA
Output saturation voltage	V _{OL}	V _{IN} ⁻ =1V, V _{IN} ⁺ =0V, I _{SINK} ≤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

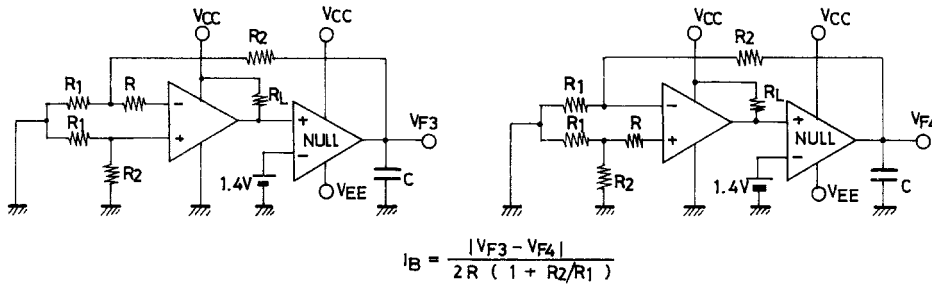
1. Input Offset Voltage



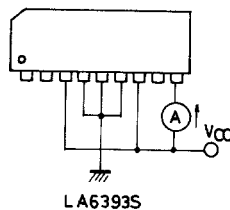
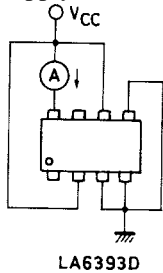
2. Input Offset Current



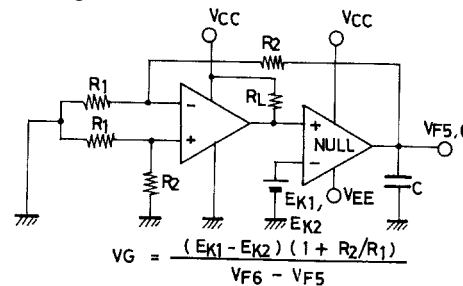
3. Input Bias Current



4. Supply Current

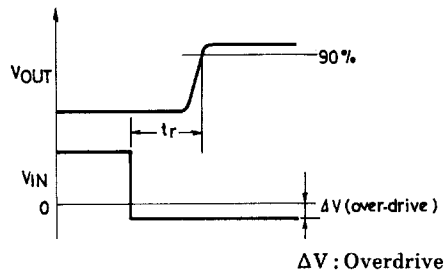
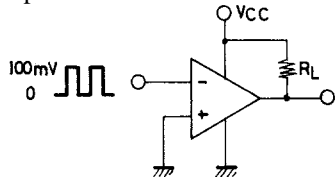


5. Voltage Gain

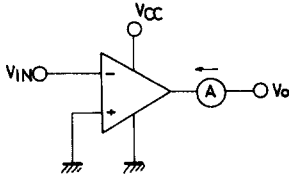


LA6393D, 6393S

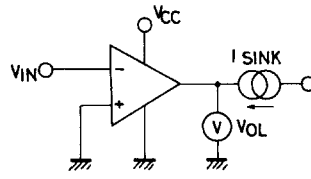
6. Response Time



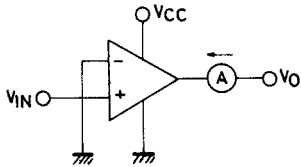
7. Output Sink Current



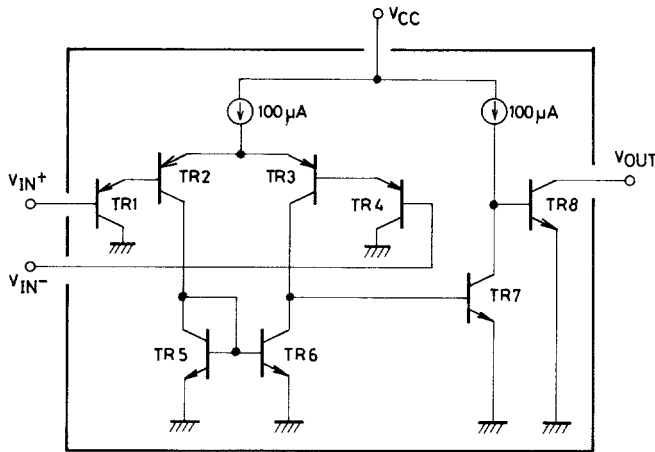
8. Output Saturation Voltage



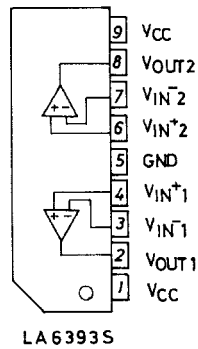
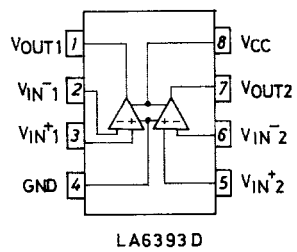
9. Output Leakage Current



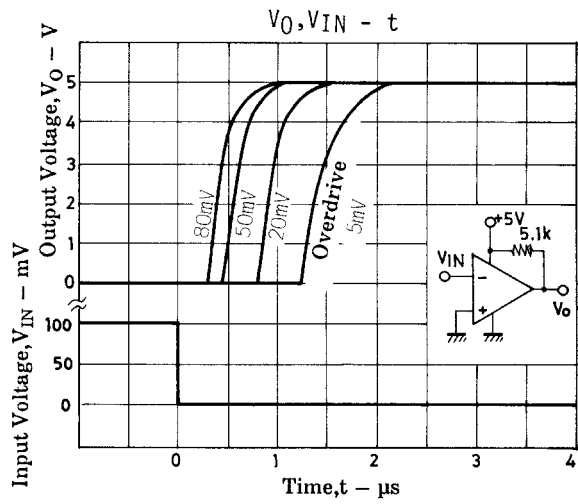
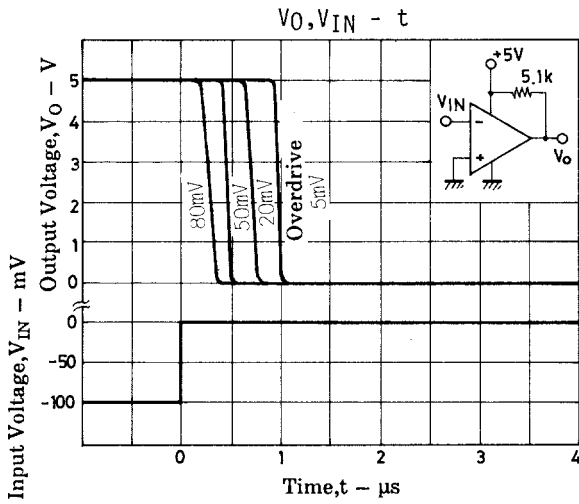
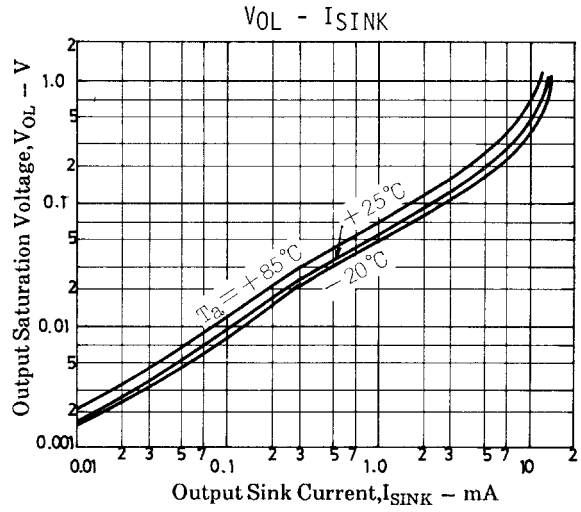
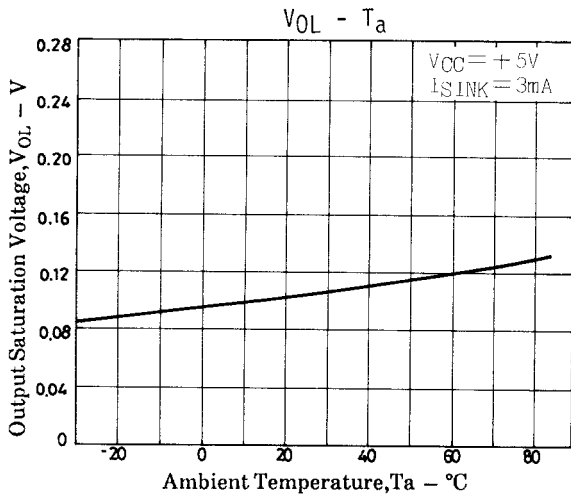
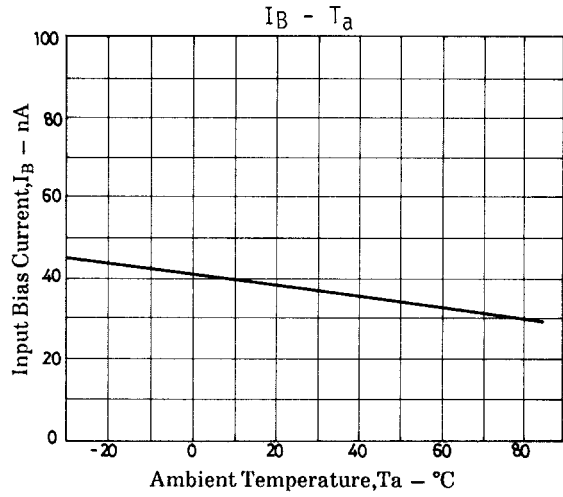
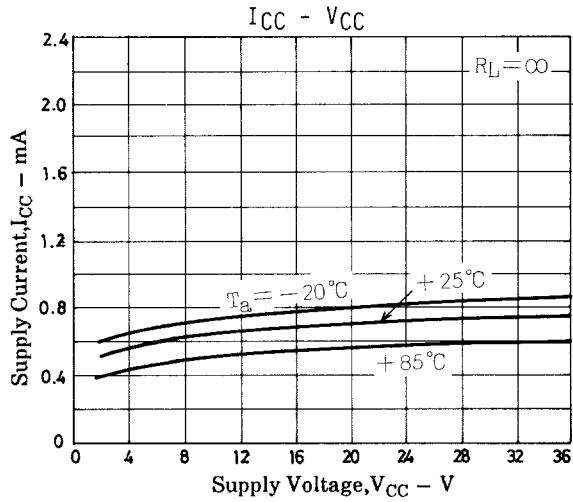
Equivalent Circuit



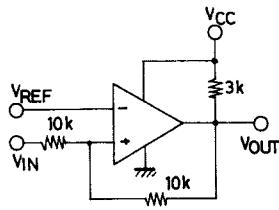
Pin Assignment



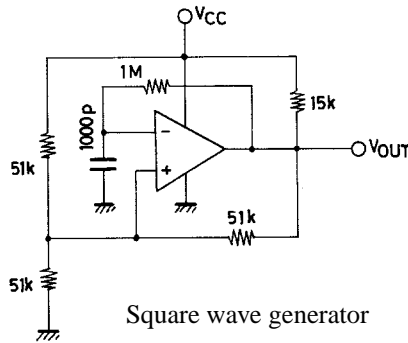
Main Characteristics



Sample Application Circuits



Voltage comparator
(with hysteresis)



Square wave generator

Unit (resistance: Ω, capacitance: F)

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