

**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 :  $\pm 1.0$  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 (0.6mA) and low power.

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

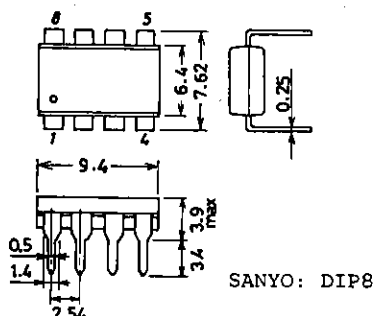
			unit
Maximum Supply Voltage	$V_{CC}$ max	36	V
Differential Input Voltage	$V_{ID}$	36	V
Common-Mode Input Voltage Range	$V_{ICM}$	-0.3 to +36	V
Allowable Power Dissipation	$P_d$ max	570	mW
Operating Temperature	$T_{opr}$	-30 to +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +125	$^\circ\text{C}$

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

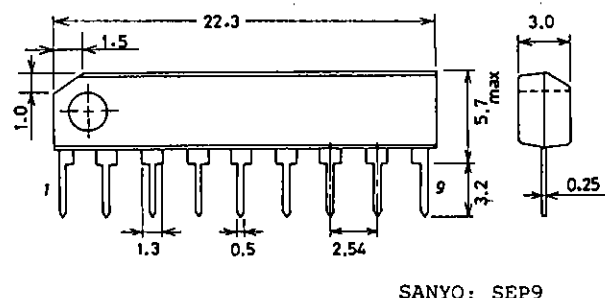
			Test Circuit	min	typ	max	unit
Input Offset Voltage	$V_{IO}$		1		$\pm 1$	$\pm 5$	mV
Input Offset Current	$I_{IO}$		2		$\pm 5$	$\pm 50$	nA
Input Bias Current	$I_B$		3		25	250	nA
Common-Mode Input Voltage Range	$V_{ICM}$			0	$V_{CC}-1.5$		V
Supply Current	$I_{CC}$	$R_L = \infty$	4		0.6	1	mA
Voltage Gain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

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**Package Dimensions 3001B**  
(unit: mm) [LA6393D]



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



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1300TA/7087KI/4235MW/6032KI, ID No.999-1/5

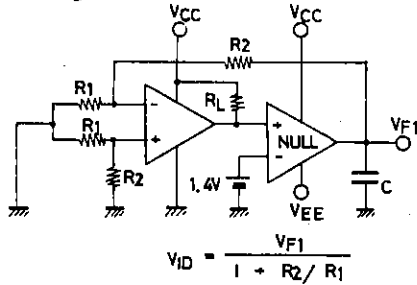
# LA6393D, 6393S

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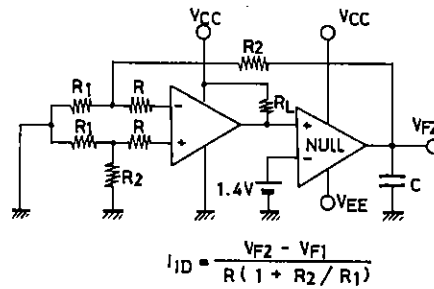
			Test Circuit	min	typ	max	unit
Output Sink Current	$I_{SINK}$	$V_{IN-} = 1V, V_{IN+} = 0V,$ $V_O \leq 1.5V$	7	6	16		mA
Output Saturation Voltage	$V_{OL}$	$V_{IN-} = 1V, V_{IN+} = 0V,$ $I_{SINK} \leq 3mA$	8		0.2	0.4	V
Output Leakage Current	$I_{LEAK}$	$V_{IN-} = 0V, V_{IN+} = 1V,$ $V_O = 5V$	9		0.1		nA

## Test Circuits

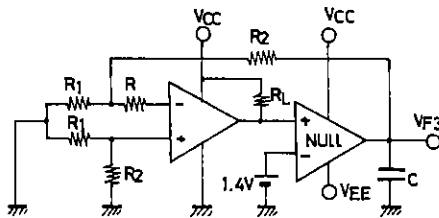
### 1. Input Offset Voltage



### 2. Input Offset Current

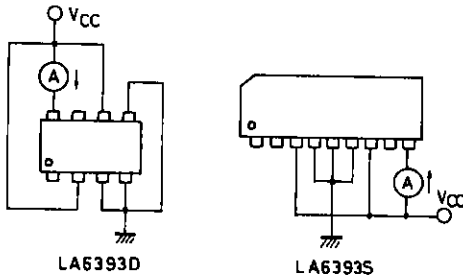


### 3. Input Bias Current

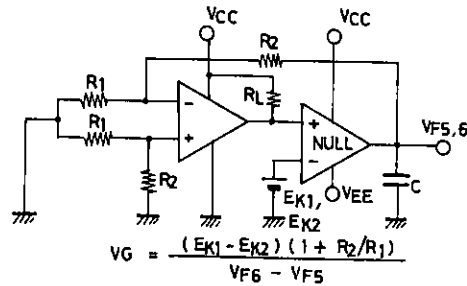


$$I_B = \frac{|VF3 - VF4|}{2R(1 + R2/R1)}$$

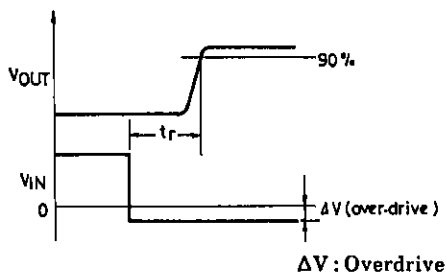
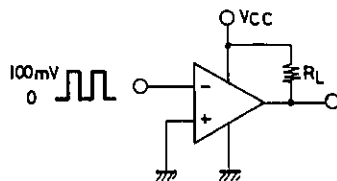
### 4. Supply Current



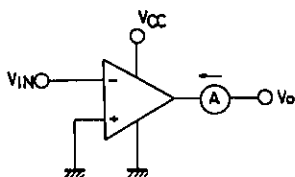
### 5. Voltage Gain



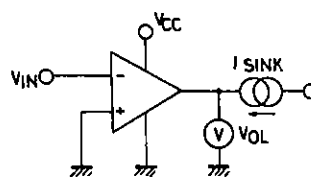
### 6. Response Time



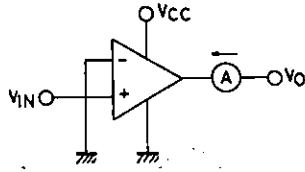
### 7. Output Sink Current



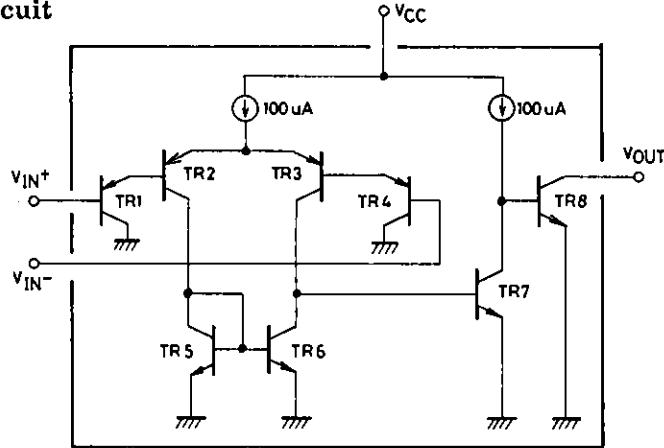
### 8. Output Saturation Voltage



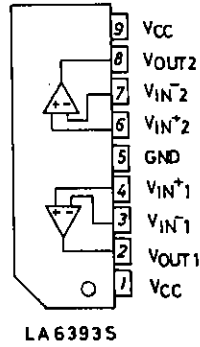
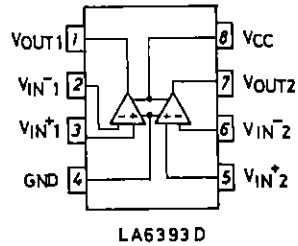
9. Output Leakage Current



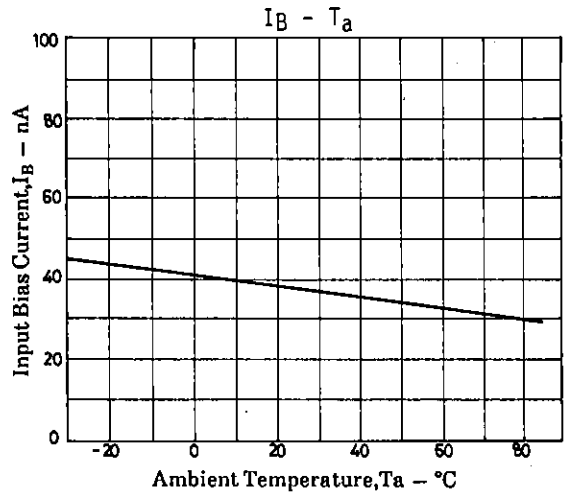
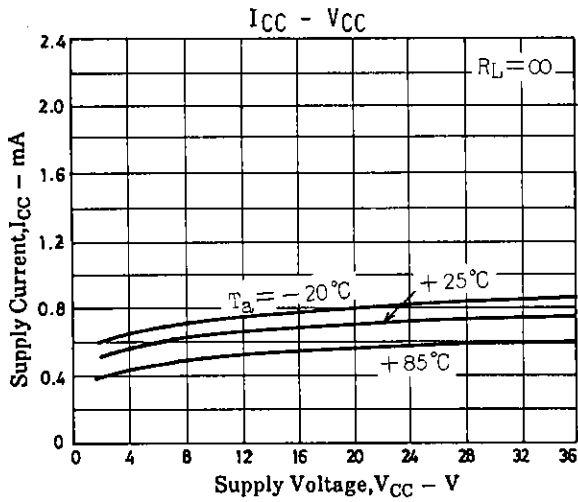
Equivalent Circuit

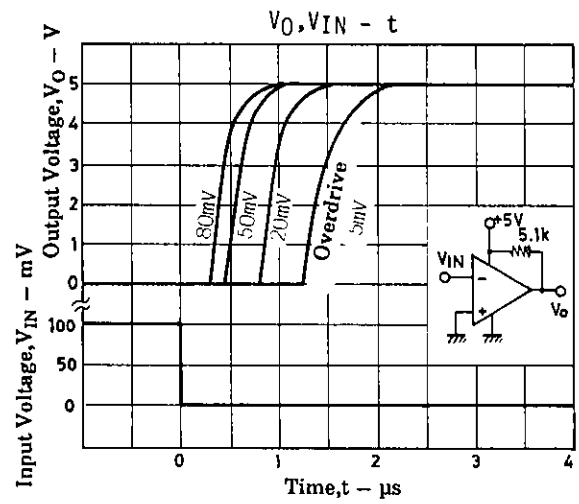
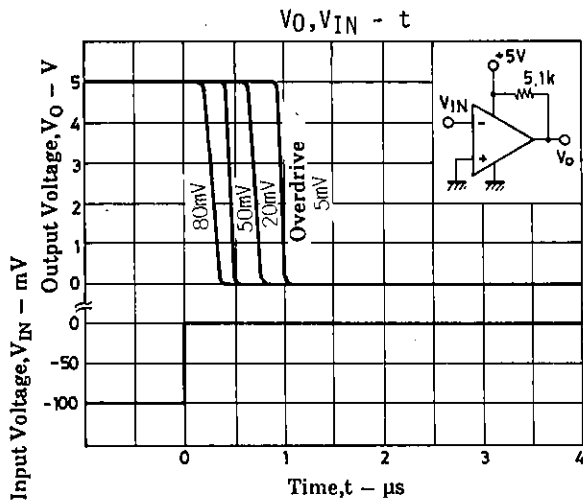
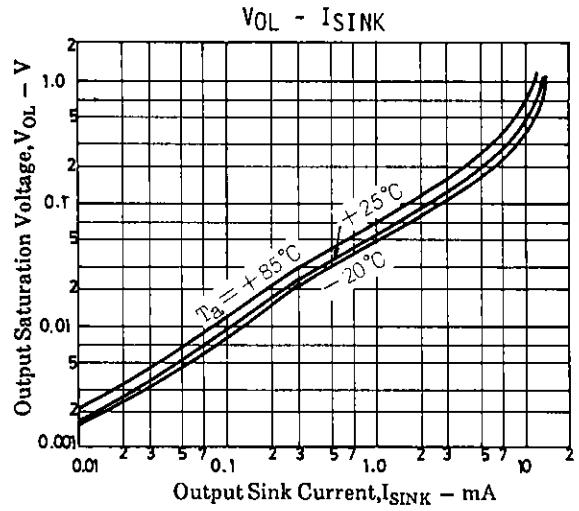
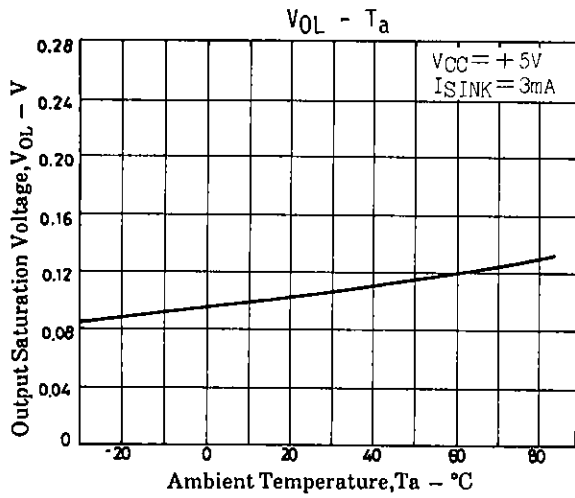


Pin Assignment

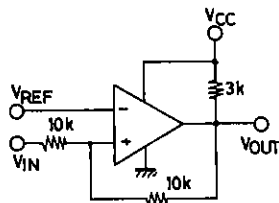


Main Characteristics

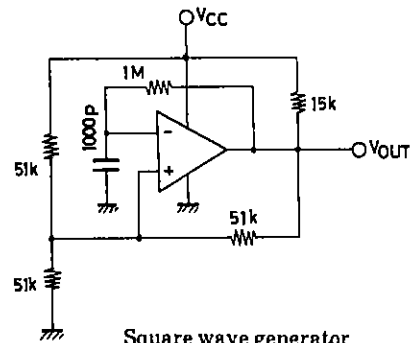




Sample Application Circuits



Voltage comparator  
(with hysteresis)



Square wave generator

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

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