Ordering number: EN 1103B

Monolithic Linear IC

SANYO No.1103B

LA6393M

High-Performance Dual Comparator

The LA6393M is a high-performance dual 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: ±1.0 to 18.0V)
- Wide common-mode input voltage range (0 to $V_{CC}-1.5V$)
- Open collector output enabling wired OR
- Small current dissipation (0.6mA) and low power
- Mini flat package enabling compactness of sets

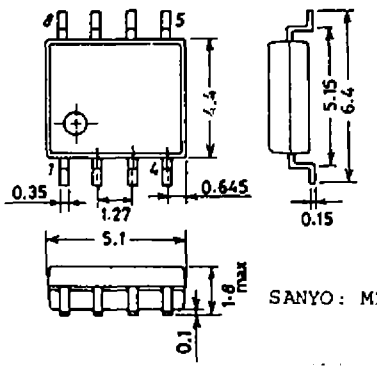
Maximum Ratings/T_a=25°C

			unit
Maximum power supply voltage	V_{CC} max	36	V
Differential input voltage	V_{ID}	36	V
Common-mode input voltage range	V_{ICM}	−0.3~+36	V
Allowable power dissipation	P_d max	300	mW
Operating temperature	Topr	−30~+85	°C
Storage temperature	T_{stg}	−55~+125	°C

Operating Characteristics/T_a=25°C, V_{CC}=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
Current dissipation	I_{CC}	$R_L=\infty$	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 \leqq$1.5V	7	6	16		mA
Output saturation voltage	V_{OL}	$V_{IN}-$=1V, $V_{IN}+$=0V, $I_{SINK} \leqq$3mA	8		0.2	0.4	V
Output leak current	I_{LEAK}	$V_{IN}-$=0V, $V_{IN}+$=1V, V_O=5V	9		0.1		nA

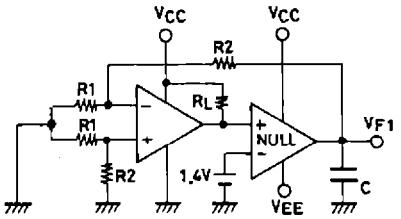
Package Dimensions 3032B-M8IC
(unit: mm)



SANYO: MFP8

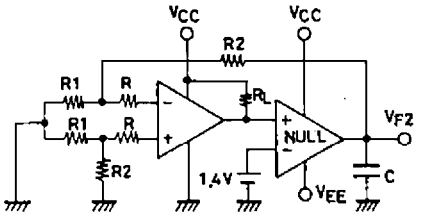
Test Circuits

1. Input offset voltage



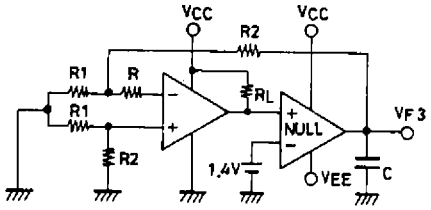
$$V_{IO} = \frac{V_{F1}}{1 + R2/R1}$$

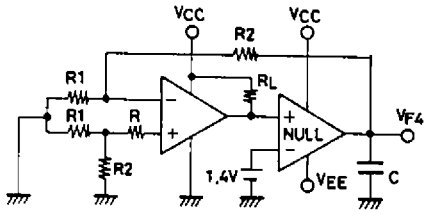
2. Input offset current



$$I_{IO} = \frac{V_{F2} - V_{F1}}{R\,(1 + R2/R1)}$$

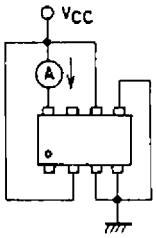
3. Input bias current



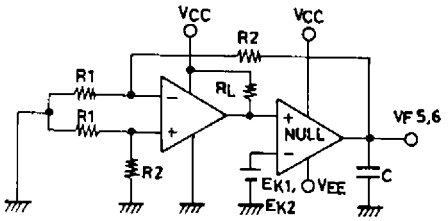


$$I_B = \frac{|V_{F3} - V_{F4}|}{2R\ (1 + R2/R1)}$$

4. Current dissipation

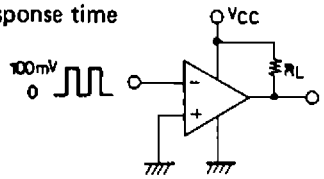


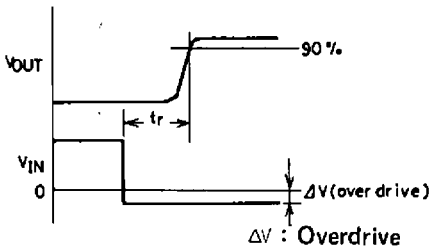
5. Voltage gain



$$V_G = \frac{(E_{K1} - E_{K2})\,(1 + R2/R1)}{V_{F6} - V_{F5}}$$

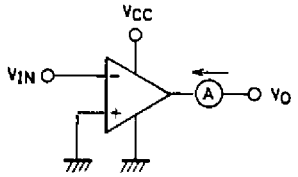
6. Response time



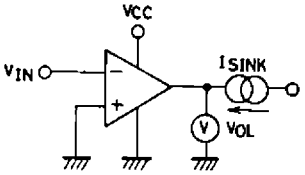


ΔV : Overdrive

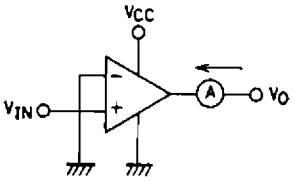
7. Output sink current



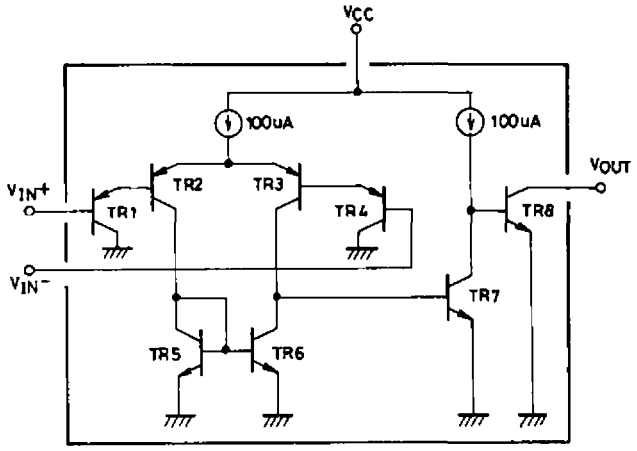
8. Output saturation voltage



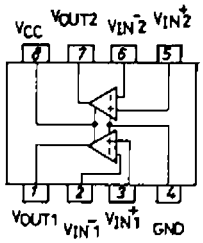
9. Output leak current

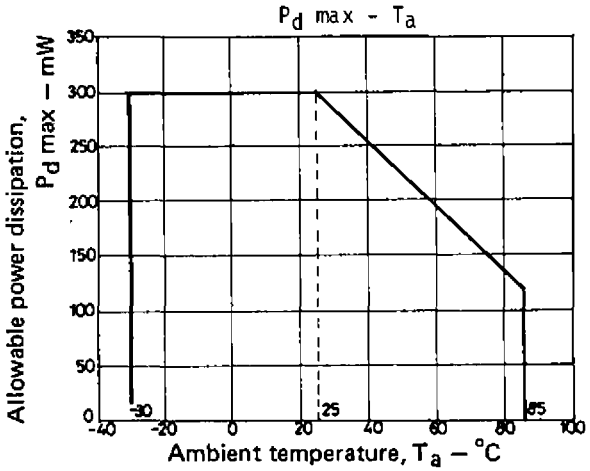


Equivalent Circuit

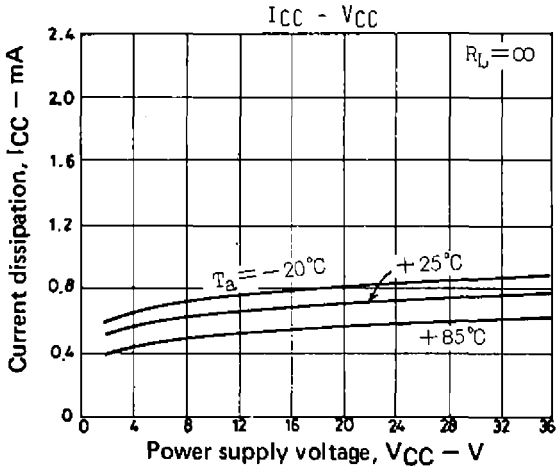


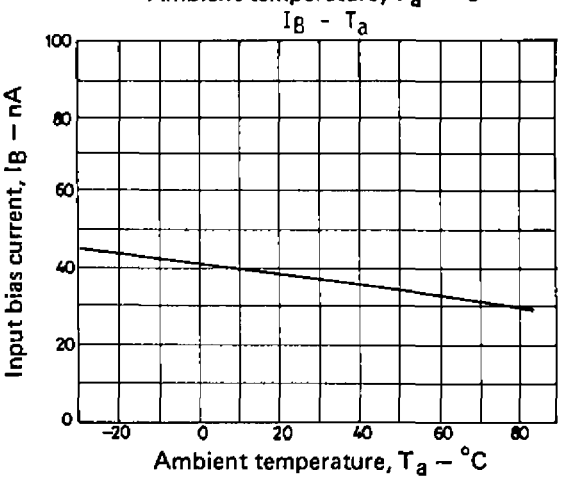
Pin Assignment

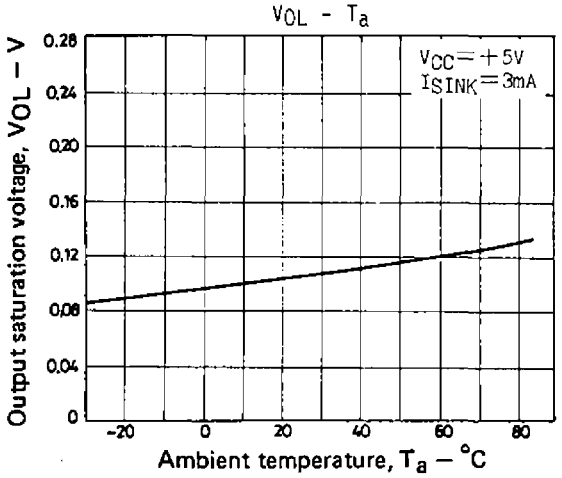


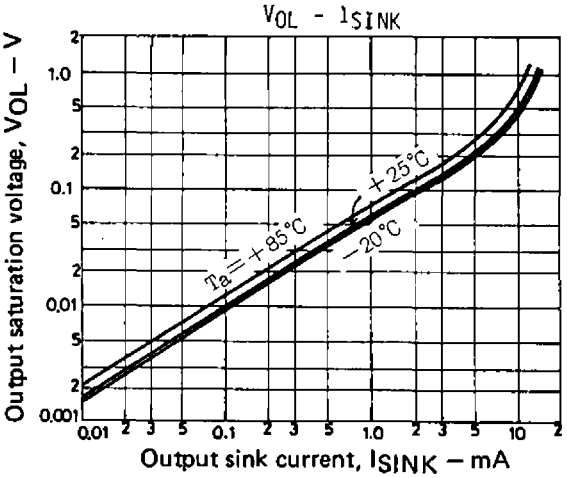


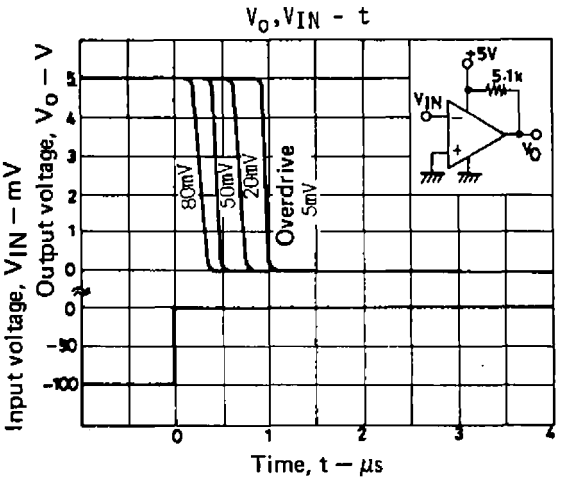
Main Characteristics

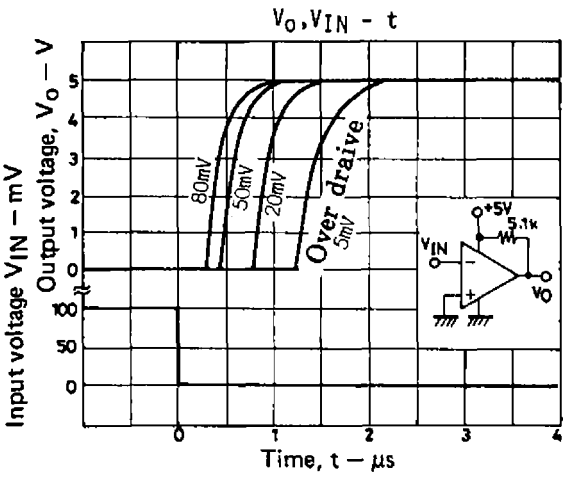




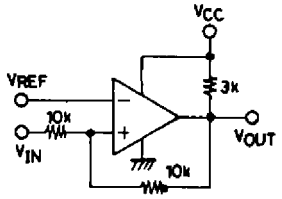




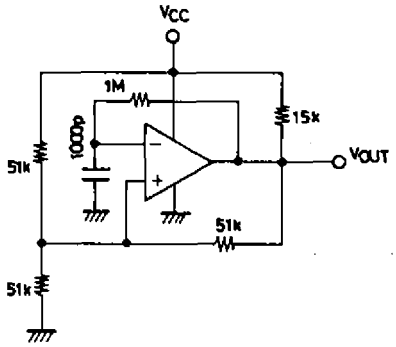




■ Sample Application Circuits



Voltage comparator
(with hysteresis)



Square wave generator

Unit (resistance: Ω, capacitance: F)

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