

GSCLM393

DUAL DIFFERENTIAL COMPARATOR

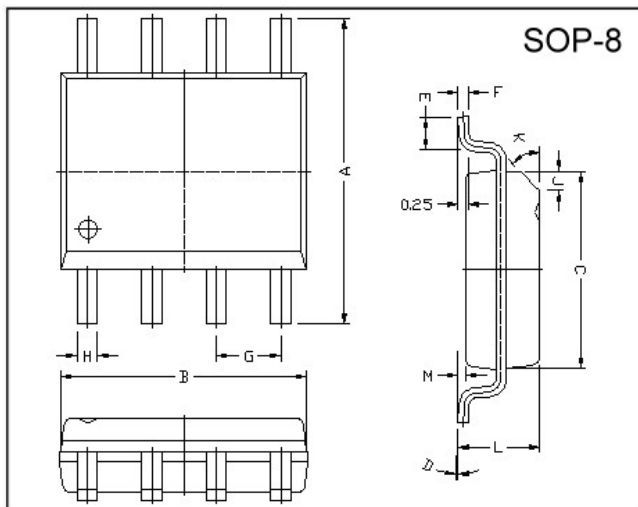
Description

The GSCLM393 consists of two independent voltage comparators, designed specifically to operate from a single power over a wide voltage range.

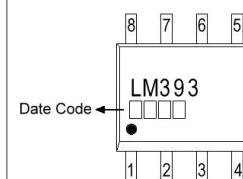
Features

- *Single or dual supply operation.
- *Wide operating supply range ($V_{CC}=2V\sim 36V$ or ± 1 to $\pm 18V$).
- *Input common-mode voltage includes ground.
- *Low supply current drain $I_{CC} = 0.8mA$ (Typical).
- *Low input bias current $I_{bias} = 25nA$ (Typical)
- *Output compatible with TTL, DTL, and CMOS logic system.

Package Dimensions

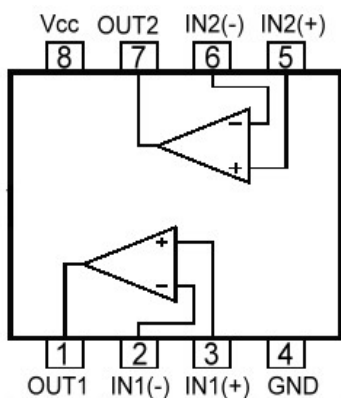


Marking :

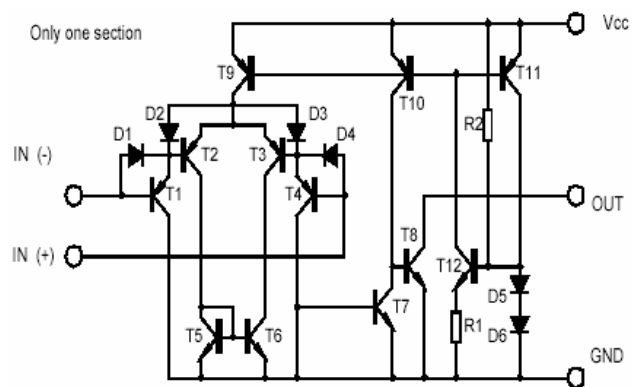


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	M	0.10	0.25
B	4.80	5.00	H	0.35	0.49
C	3.80	4.00	L	1.35	1.75
D	0°	8°	J	0.375 REF.	
E	0.40	0.90	K	45°	
F	0.19	0.25	G	1.27 TYP.	

Pin Configurations



Block Diagram



Absolute Maximum Ratings at $T_a = 25^\circ C$

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	± 18 or 36	V
Differential Input Voltage	V_{IDiff}	36	V
Input voltage	V_I	-0.3~36	V
Power Dissipation	PD	570	mW
Operating Temperature	T_{opr}	0~+70	$^\circ C$
Storage Temperature	T_{stg}	-65 to 150	$^\circ C$

Electrical Characteristics ($V_{CC}=5V$, $T_a=25^\circ C$, $R_T=10k$, All voltage referenced to GND unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Offset Voltage	V_{IO}	$V_{CM}=0$ TO $V_{CC}-1.5$ $V_{O(p)} = 1.4V$, $R_s=0$		± 1.0	± 5.0	mV
Input Offset Current	I_{IO}			± 5	± 50	nA
Input Bias Current	I_b			65	250	nA
Input Common-Mode Voltage Range	$V_{I(R)}$		0		$V_{CC}-1.5$	V
Supply Current	I_{CC}	$R_L=\infty$		0.6	1.0	mA
		$R_L=\infty, V_{CC}=30V$		0.8	2.5	mA
Large Signal Voltage Gain	G_v	$V_{CC}=15V$, $R_L>15K\Omega$	50	200		V/mV
Large Signal Response Time	t_{res}	$V_i=TTL$ logic wing $V_{ref}=1.4V$, $V_{RL}=5V$, $R_L=5.1 K\Omega$		350		ns
Response Time	t_{res}	$V_{RL}=5V$, $R_L=5.1K\Omega$		1400		ns
Output Sink Current	I_{sink}	$V_i(-)>1V$, $V_i(+)=0V$, $V_{O(p)}<1.5V$	6	18		mA
Output Saturation Voltage	V_{sat}	$V_i(-)>1V$, $V_i(+)=0V$, $I_{sink}=4mA$		160	400	mV
Output Leakage Current	$I_{leakage}$	$V_i(+)=1V$, $V_i(-)=0$				
		$V_{O(p)}=5V$		0.1		nA
		$V_{O(p)}=30V$			1.0	μA

Typical Performance Characteristics

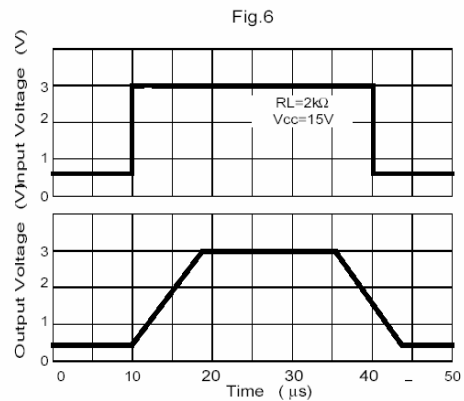
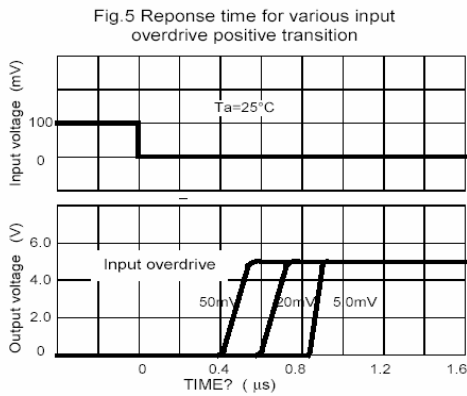
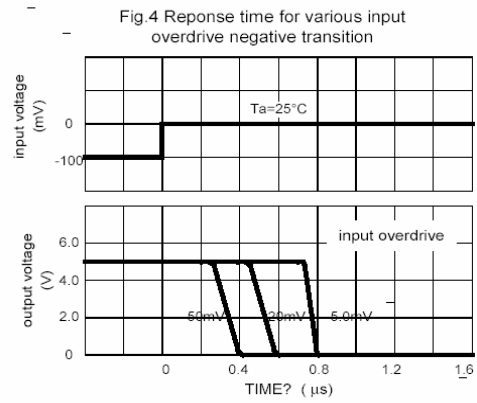
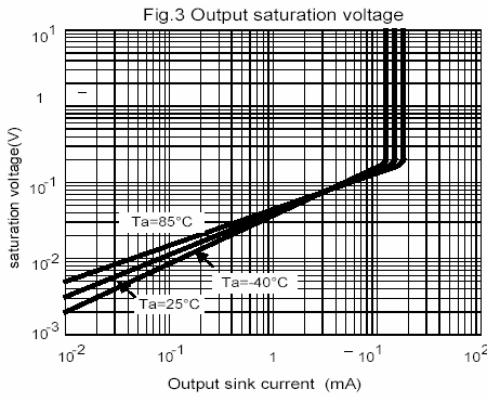
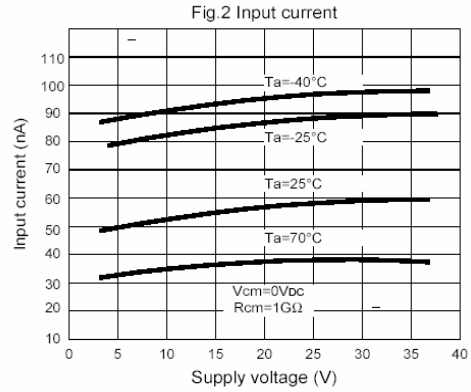
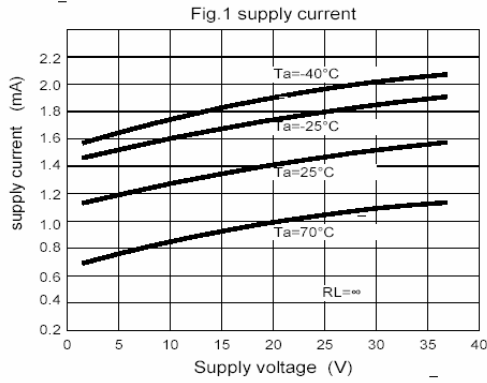


Fig.7 voltage Follower pulse response (small signal)

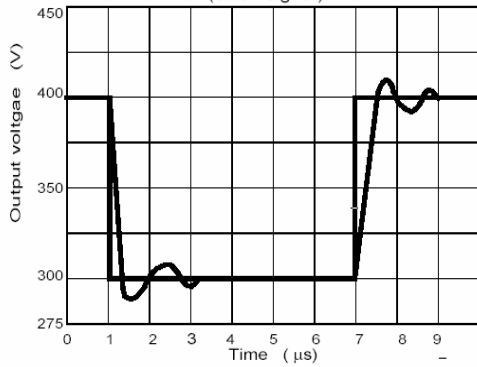


Fig.8 Large signal Frequency Response

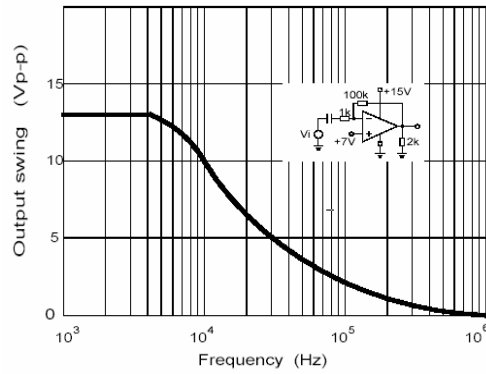


Fig.9 Output Characteristics current sourcing

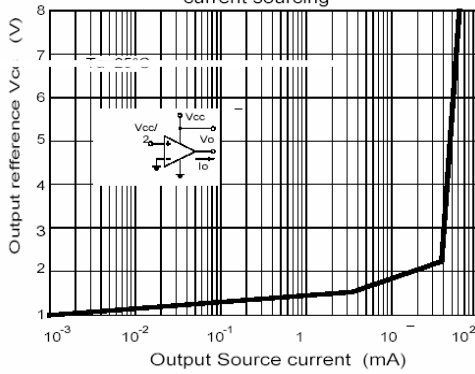


Fig.10 Output Characteristics Current sinking

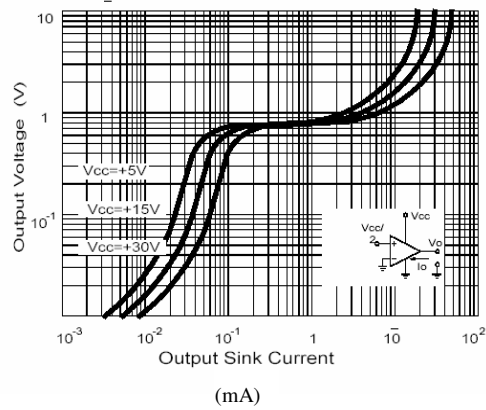
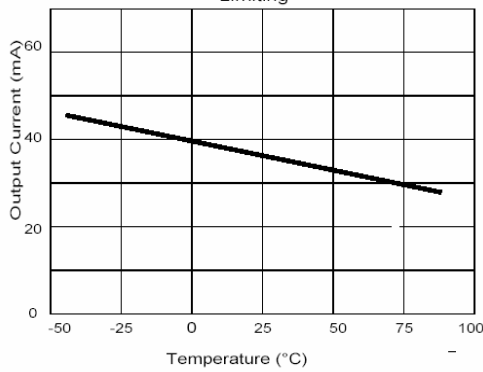


Fig.11 Current Limiting



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