

GSCLM393

DUAL DIFFERENTIAL COMPARATOR

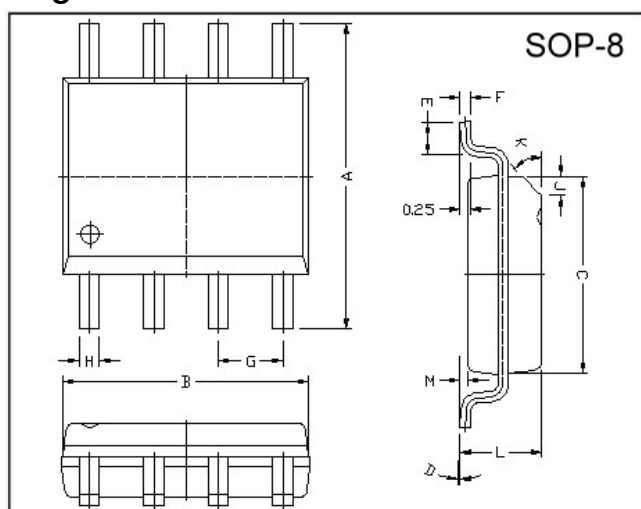
Description

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

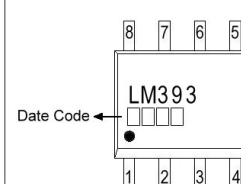
Features

- *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

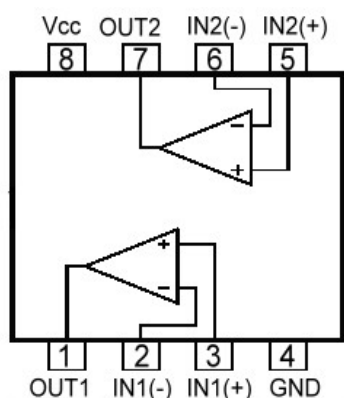


Marking :

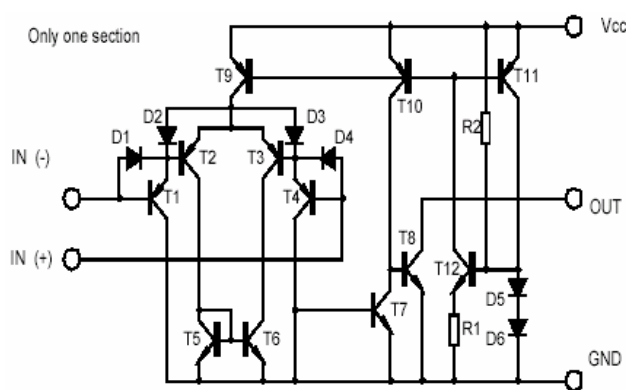


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	M	0.10	0.25
B	4.80	5.00	H	0.35	0.49
C	3.80	4.00	L	1.35	1.75
D	0°	8°	J	0.375 REF.	
E	0.40	0.90	K	45°	
F	0.19	0.25	G	1.27 TYP.	

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°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 =∞		0.6	1.0	mA
		R _L =∞, V _{CC} =30V		0.8	2.5	mA
Large Signal Voltage Gain	G _v	V _{CC} =15V, R _L >15KΩ	50	200		V/mV
Large Signal Response Time	t _{res}	V _i =TTL logic wing V _{ref} =1.4V, V _R L=5V, R _L =5.1 KΩ		350		ns
Response Time	t _{res}	V _R L=5V, R _L =5.1KΩ		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	uA

Typical Performance Characteristics

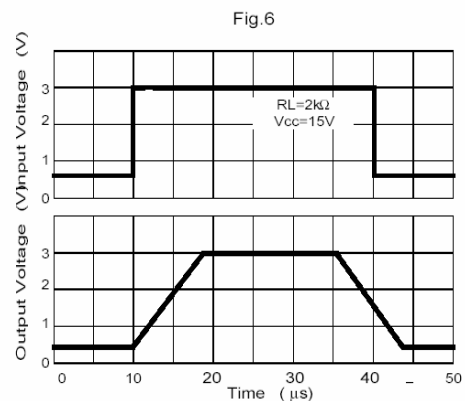
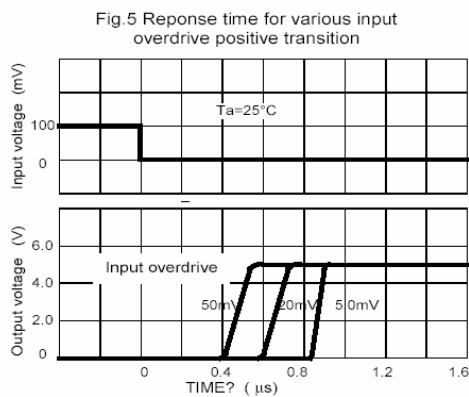
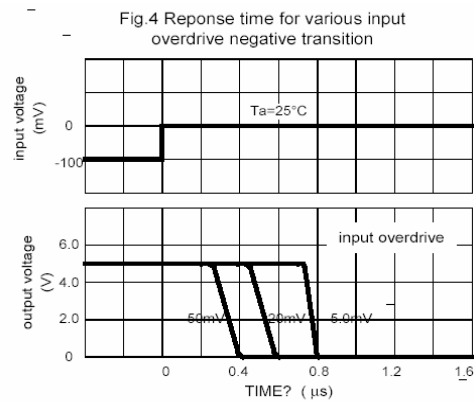
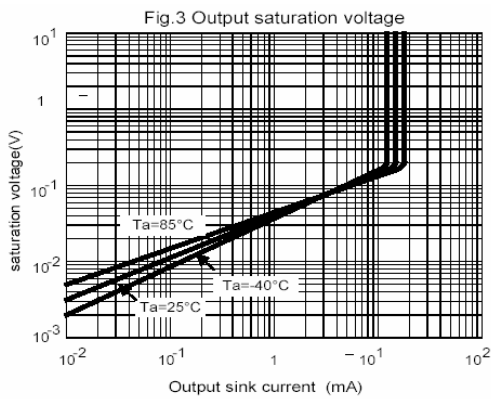
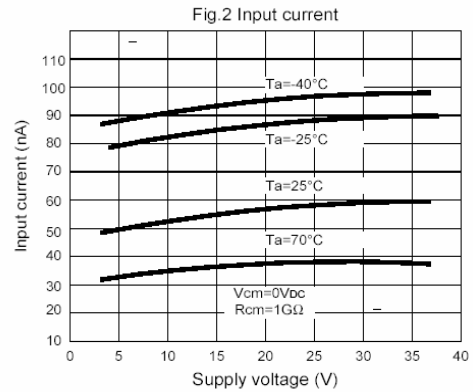
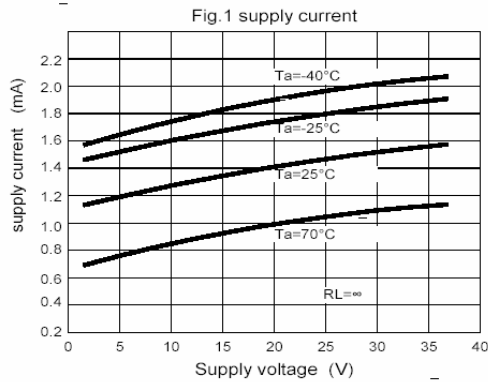


Fig.7 voltage Follower pulse response (small signal)

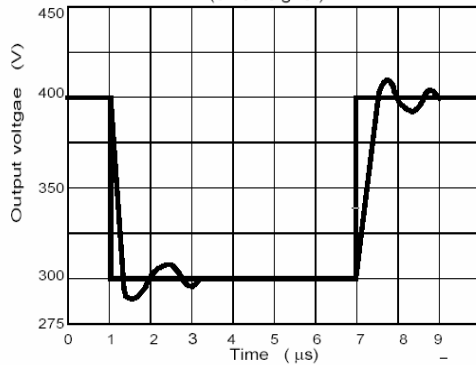


Fig.8 Large signal Frequency Response

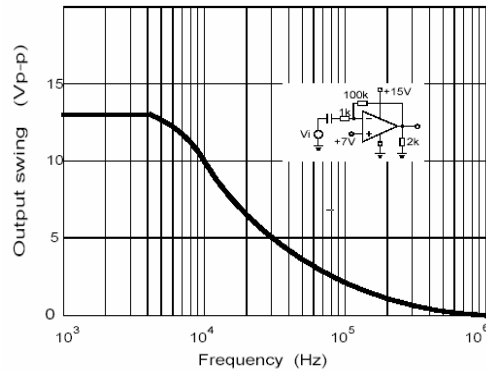


Fig.9 Output Characteristics current sourcing

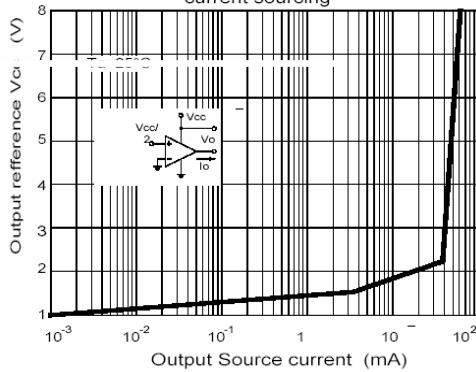


Fig.10 Output Characteristics Current sinking

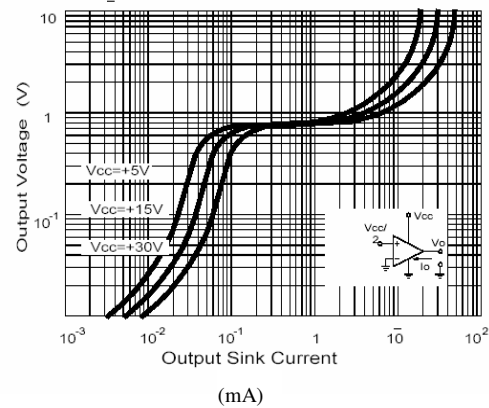
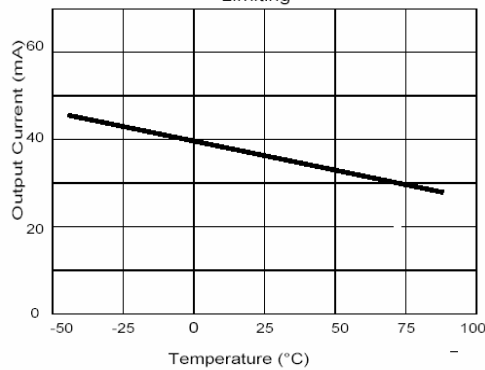


Fig.11 Current Limiting



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