GSCLM393 DUAL DIFFERENTIAL COMPARATOR

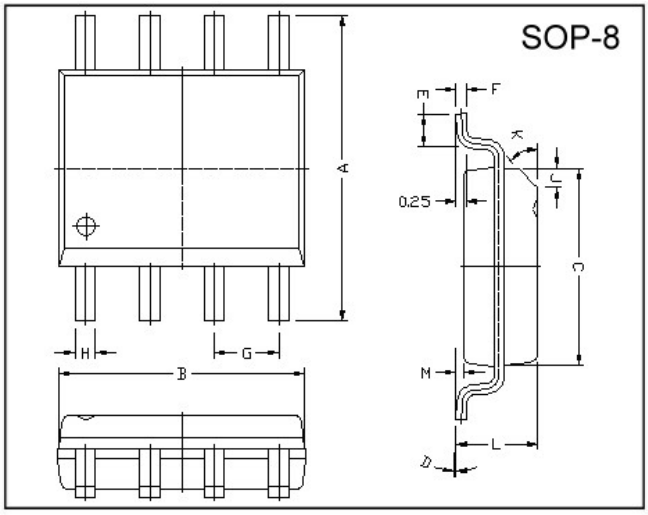
Description

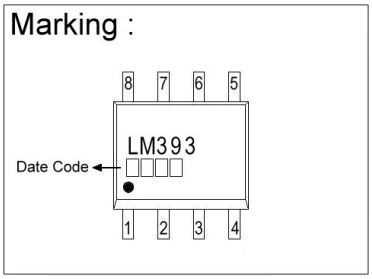
The GSCLM393 consists of two independent voltage comparators, designed specifically to operate from a single power over a wide voltage range.

Features

*Single or dual supply operation.
*Wide operating supply range (Vcc=2V~36V or ±1 to ±18V).
*Input common-mode voltage includes ground.
*Low supply current drain ICC =0.8mA (Typical).
*Low input bias current Ibias=25nA (Typical)
*Output compatible with TTL, DTL, and CMOS logic system.

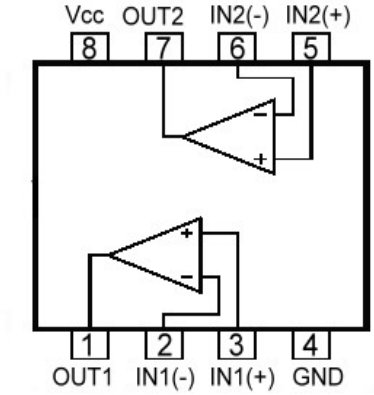
Package Dimensions



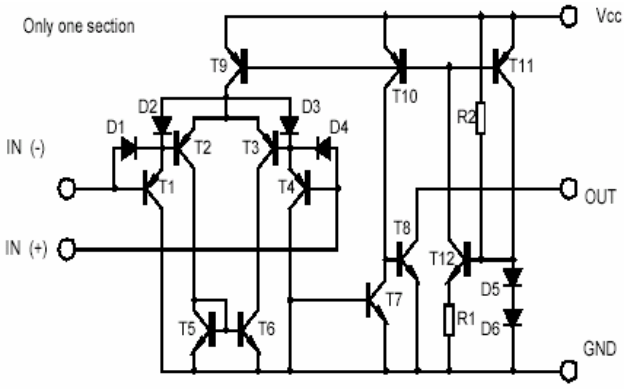


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	M	0.10	0.25
B	4.80	5.00	H	0.35	0.49
C	3.80	4.00	L	1.35	1.75
D	0°	8°	J	0.375 REF.	
E	0.40	0.90	K	45°	
F	0.19	0.25	G	1.27 TYP.	

Pin Configurations



Block Diagram



Absolute Maximum Ratings at Ta = 25℃

Parameter	Symbol	Value	Unit
Supply Voltage	Vcc	±18 or 36	V
Differential Input Voltage	VIDiff	36	V
Input voltage	VI	-0.3~36	V
Power Dissipation	PD	570	mW
Operating Temperature	Topr	0~+70	℃
Storage Temperature	Tstg	-65 to 150	℃

Electrical Characteristics (Vcc=5V, Ta=25℃, RT=10k, All voltage referenced to GND unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Offset Voltage	VIO	VCM=0 TO Vcc –1.5 Vo(p) = 1.4V ,Rs=0		±1.0	±5.0	mV
Input Offset Current	IIO			±5	±50	nA
Input Bias Current	Ib			65	250	nA
Input Common-Mode Voltage Range	VI(R)		0		Vcc-1.5	V
Supply Current	Icc	RL=∞		0.6	1.0	mA
		RL=∞,Vcc=30V		0.8	2.5	mA
Large Signal Voltage Gain	Gv	Vcc=15V, RL>15KΩ	50	200		V/mV
Large Signal Response Time	tres	Vi=TTL logic wing Vref=1.4V,VRL=5V,RL=5.1 KΩ		350		ns
Response Time	tres	VRL=5V,RL=5.1KΩ		1400		ns
Output Sink Current	Isink	Vi(-)>1V,Vi(+)=0V,Vo(p)<1.5V	6	18		mA
Output Saturation Voltage	Vsat	Vi(-)>1V,Vi(+)=0V,Isink=4mA		160	400	mV
Output Leakage Current	Ileakage	VI(+)=1V,VI(-)=0				
		Vo(p)=5V		0.1		nA
		Vo(p)=30V			1.0	uA

Typical Performance Characteristics

Fig.1 supply current

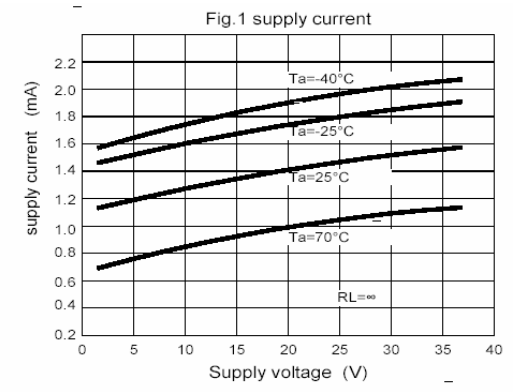


Fig.2 Input current

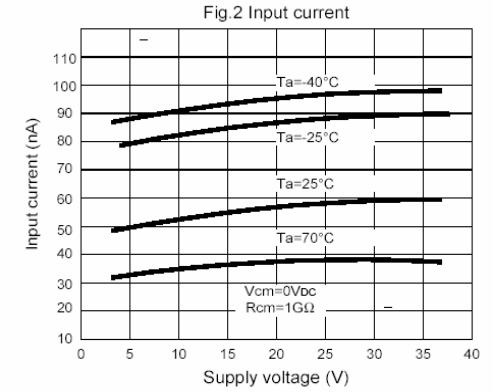


Fig.3 Output saturation voltage

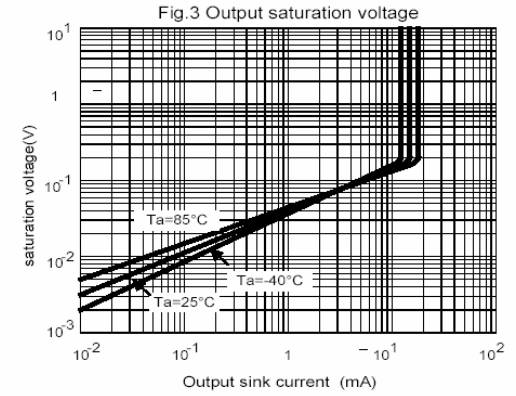


Fig.4 Reponse time for various input overdrive negative transition

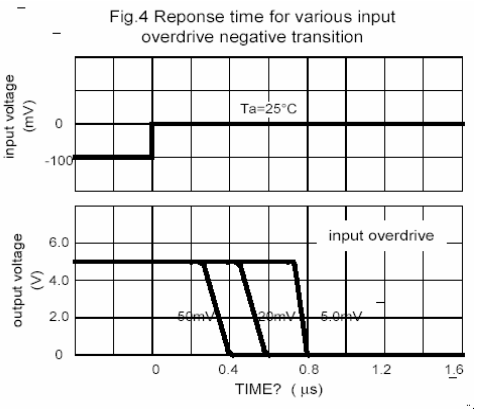


Fig.5 Reponse time for various input overdrive positive transition

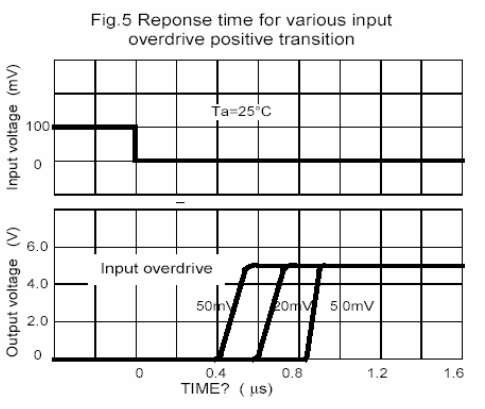


Fig.6

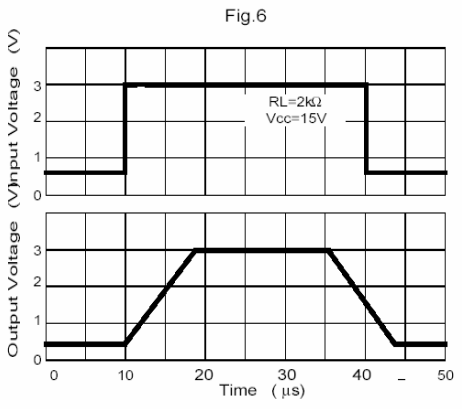


Fig.7 voltage Follower pulse response (small signal)

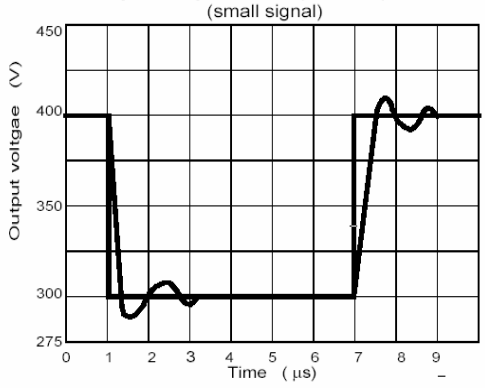


Fig.8 Large signal Frequency Response

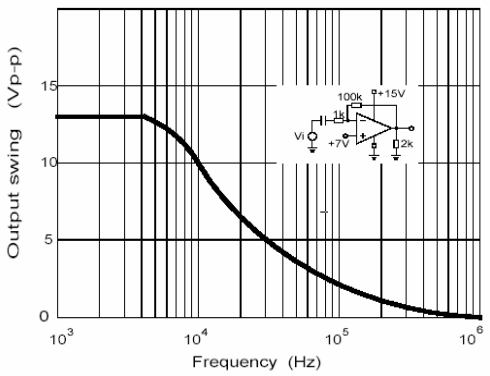


Fig.9 Output Characteristics current sourcing

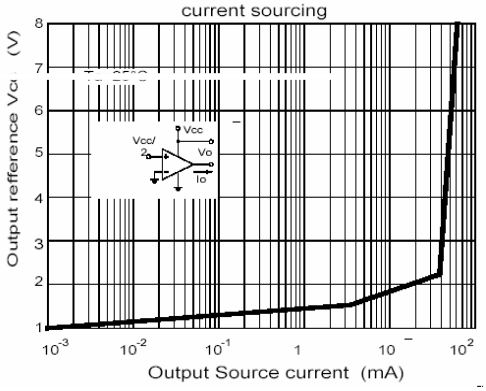


Fig.10 Output Characteristics Current sinking

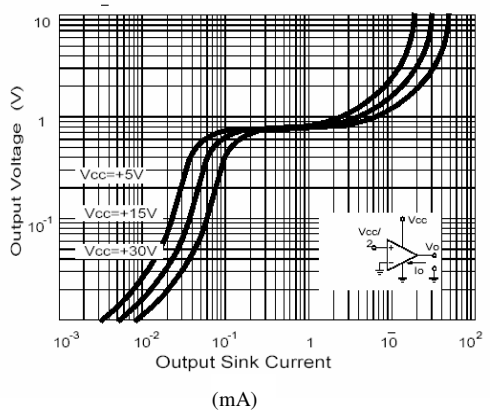
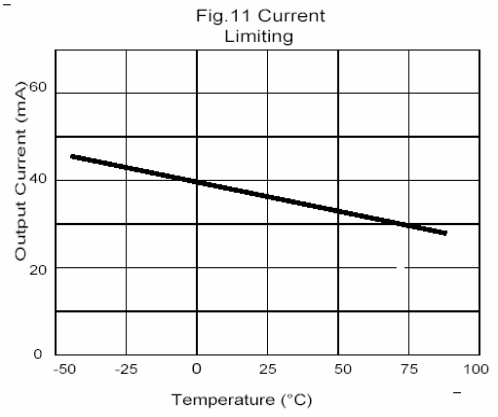


Fig.11 Current Limiting



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Head Office And Factory:
- **Taiwan**: No. 17-1 Tatung Rd. Fu Kou Hsin-Chu Industrial Park, Hsin-Chu, Taiwan, R. O. C.
  TEL : 886-3-597-7061 FAX : 886-3-597-9220, 597-0785
- **China**: (201203) No.255, Jang-Jiang Tsai-Lueng RD. , Pu-Dung-Hsin District, Shang-Hai City, China
  TEL : 86-21-5895-7671 ~ 4 FAX : 86-21-38950165