

RoHS Compliant Product  
A suffix of "-C" specifies halogen or lead -free

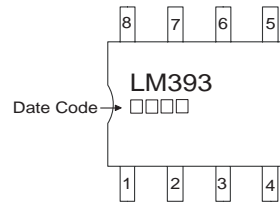
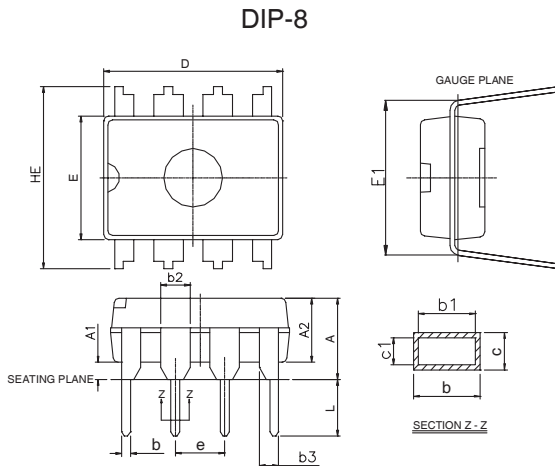
**DESCRIPTION**

The SPLM393 consists of two independent voltage comparators, designed specifically to operate from a single power over a wide voltage range.

**FEATURES**

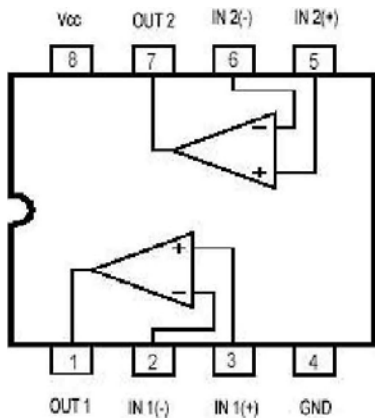
- Input Common-Mode Voltage Range Include Ground
- Single or dual supply operation
- Wide operating supply range ( $V_{CC} = 2V \sim 36V$  or  $\pm 1$  to  $\pm 18V$ )
- Input common-mode voltage includes ground
- Low supply current drain  $I_{CC} = 0.8mA$  (Typical)
- Low input bias current  $I_{BIAS}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

**PACKAGE DIMENSIONS**

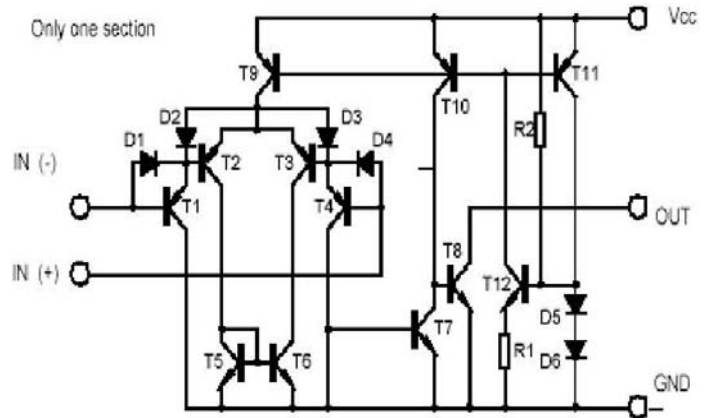


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	-	0.5334	c1	0.203	0.279
A1	0.381	-	D	9.017	10.16
A2	2.921	4.953	E	6.096	7.112
b	0.356	0.559	E1	7.620	8.255
b1	0.356	0.508	e	2.540 BSC	
b2	1.143	1.778	HE	-	10.92
b3	0.762	1.143	L	2.921	3.810
c	0.203	0.356			

**PIN CONFIGURATIONS**



**BLOCK DIAGRAMS**



## MAXIMUM RATINGS

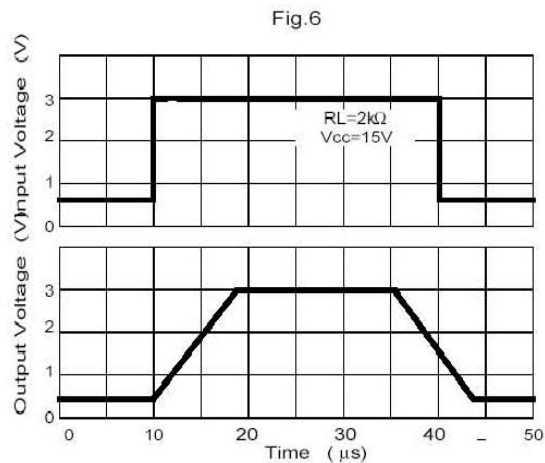
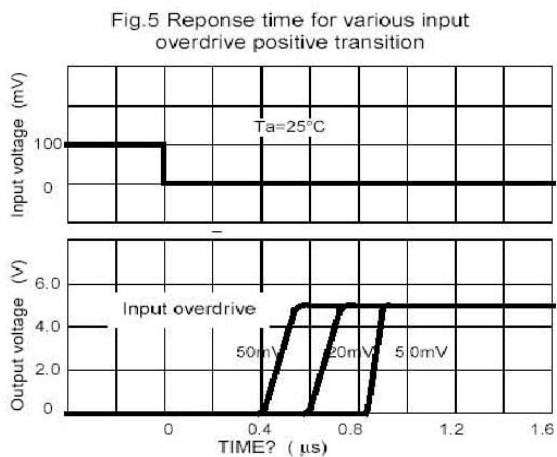
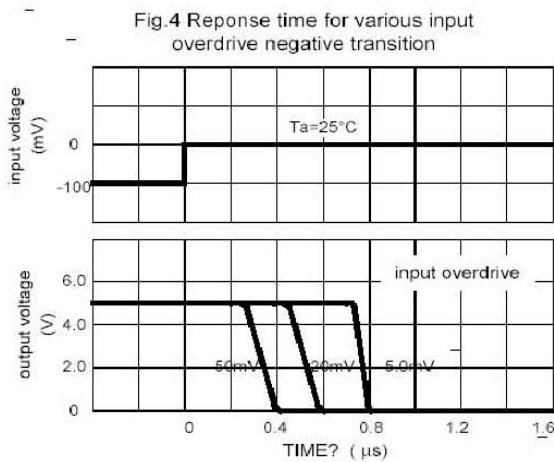
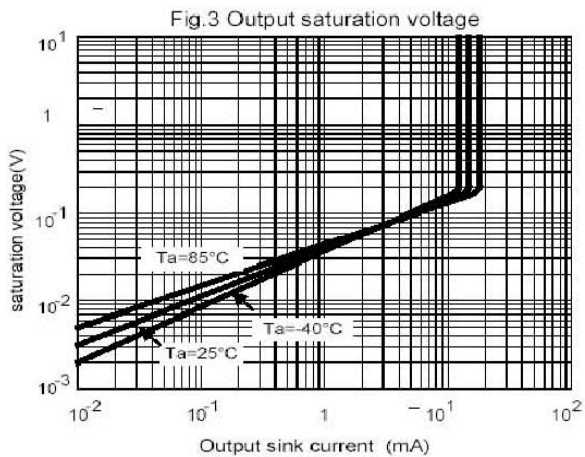
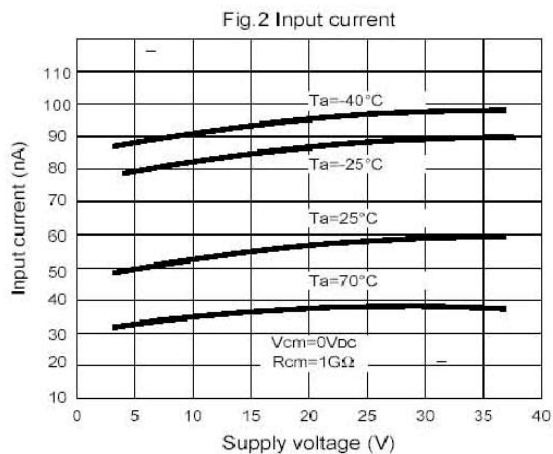
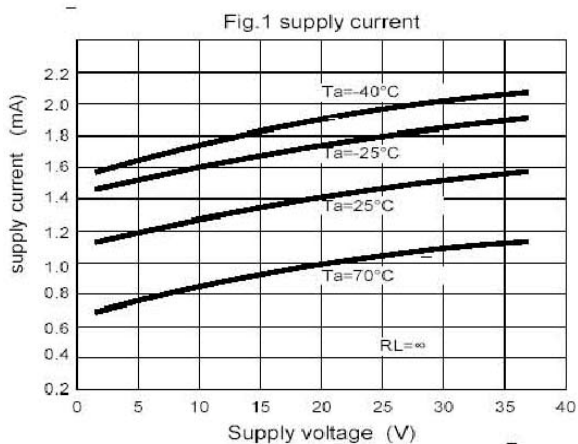
Parameter	Value	Units
Supply Voltage ( $V_{CC}$ )	$\pm 18$ or 36	V
Differential Input Voltage ( $V_{I(DIFF)}$ )	$\pm 36$	V
Input Voltage ( $V_I$ )	-0.3 ~ +36	V
Power Dissipation ( $P_D$ )	570	mW
Operating & Junction Temperature ( $T_{OPR}$ , $T_{STG}$ )	0 ~ +70, -65 ~ +150	°C

## RECOMMENDED OPERATING CONDITIONS

( $V_{CC}=5V$ ,  $T_a=25$ ,  $R_T=10k$ , all voltage referenced to GND unless otherwise specified)

Characteristics	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Input Offset Voltage	$V_{IO}$	-	$\pm 1.0$	$\pm 5.0$	mV	$V_{CM}=0V$ to $V_{CC}-1.5V$ , $V_{O(P)}=1.4V$ , $R_S=0 \Omega$
Input Offset Current	$I_{IO}$	-	$\pm 5$	$\pm 50$	nA	
Input Bias Current	$I_{BIAS}$	-	65	250	nA	
Input Common Mode Voltage Range	$V_{I(R)}$	0	-	$V_{CC}-1.5$	V	
Supply Current	$I_{CC}$	-	0.6	1.0	mA	$R_L=\infty$
		-	0.8	2.5	mA	$R_L=\infty$ , $V_{CC}=30V$
Large Signal Voltage Gain	$G_V$	50	200	-	V/mV	$V_{CC}=15V$ , $R_L \geq 15K\Omega$
Large Signal Response Time	$t_{res}$	-	350	-	ns	$V_I=TTL$ logic wing, $V_{REF}=1.4V$ , $V_{RL}=5V$ , $R_L=5.1 K\Omega$
Response Time	$t_{res}$	-	1400	-	ns	$V_{RL}=5V$ , $R_L=5.1K\Omega$
Output Sink Current	$I_{SINK}$	6	18	-	mA	$V_{I(-)} > 1V$ , $V_{I(+)} = 0V$ , $V_{O(P)} < 1.5V$
Output Saturation Voltage	$V_{sat}$	-	160	400	mV	$V_{I(-)} > 1V$ , $V_{I(+)} = 0V$ , $I_{SINK} = 4mA$
Output Leakage Current	$I_{leakage}$	-	-	-	-	$V_{I(+)} = 1V$ , $V_{I(-)} = 0$
		-	0.1	-	nA	$V_{O(P)} = 5V$
		-	-	1.0	uA	$V_{O(P)} = 30V$

**CHARACTERISTIC CURVE**



**CHARACTERISTIC CURVE (cont'd)**

Fig.7 voltage Follower pulse response (small signal)

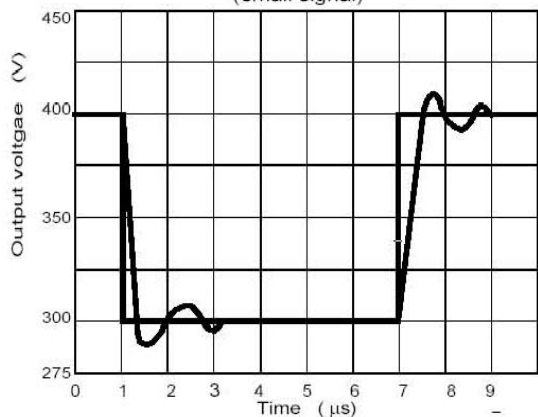


Fig.8 Large signal Frequency Response

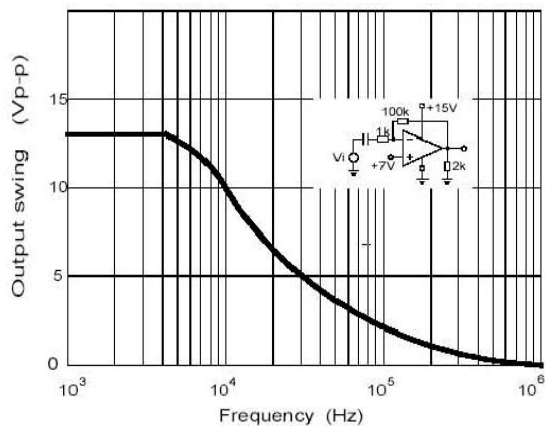


Fig.9 Output Characteristics current sourcing

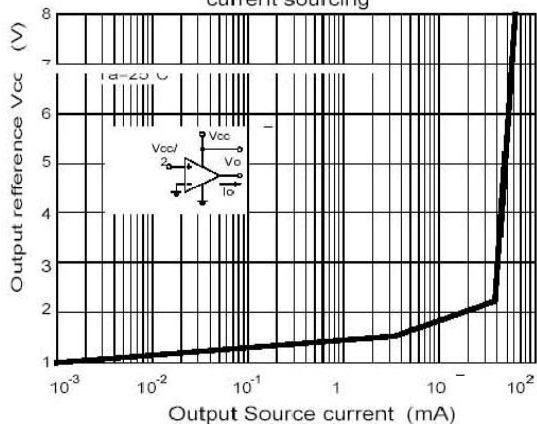


Fig.10 Output Characteristics Current sinking

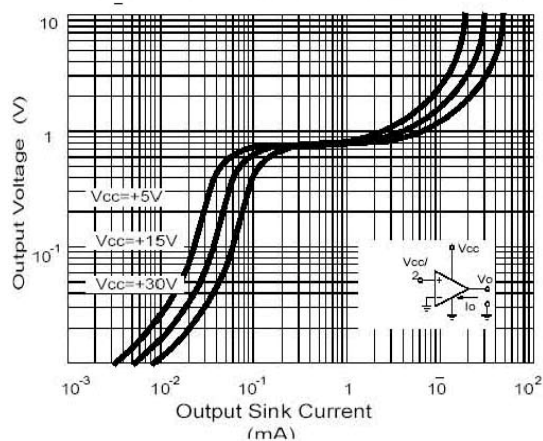


Fig.11 Current Limiting

