

Description

The S393 consists of two independent voltage comparators designed to operate from a single power supply over a wide voltage range.

Features

- Single Supply Operation: 2V to 36V.
- Dual Supply Operation: $\pm 1V$ to $\pm 18V$.
- Allow Comparison of Voltages Near Ground Potential.
- Low Current Drain 800uA Typ.
- Compatible with all Forms of Logic.
- Low Input Bias Current: 25nA Typ.
- Low Input Offset Current: \pm 5nA Typ.
- Low Offset Voltage: ± 1 mV Typ.

Applications

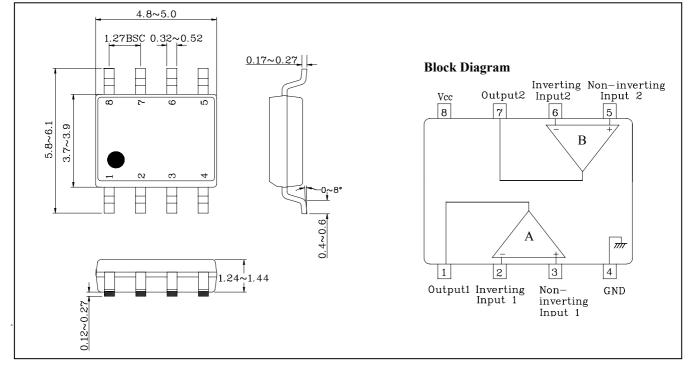
- Transducer amplifier
- DC gain blocks
- Conventional operational amplifiers

Ordering Information

Type NO.	Marking	Package Code
S393	S393	SOP-8

Outline Dimensions

unit : mm



Absolute maximum ratings

Characteristic	Symbol	Ratings	Unit
Supply voltage	V _{CC}	36 or ±18	V
Differential input voltage	V _{IND}	36	V
Input voltage	V _{IN}	-0.3 ~ +36	V
Power Dissipation	P _D	300	mW
Operating temperature	T _{opr}	-40 ~ +85	°C
Storage temperature	T _{stg}	-65 ~ 150	°C

Electrical Characteristics

(Unless otherwise specified. V_{CC} = 5V and $-40 \text{ }^\circ\text{C} \le Ta \le +85 \text{ }^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min.	Тур.	Max.	Unit
Input Offset Voltage	V_{IOS}	$V_0 = 1.4V$ Rs = 0Ω	-	±1	±5	mV
Input Offset Current	I_{IOS}	-	-	±5	±50	nA
Input Bias Current	I_{IB}	-	-	25	250	nA
Input Common Mode Voltage Range	V_{ICR}	-	0	-	V _{cc} -1.5	V
Supply Current	I _{CC}	V_{CC} = 30V, $R_L = \infty$, All Channel	-	-	2.5	mA
Large Signal Voltage Gain	A _V	$V_{CC} = 15V$ $R_L = 15 K\Omega$	50	200	-	V/mV
Output Voltage ('L' Level)	V_{SAT}	$\begin{array}{l} V_{\mathrm{IN+}} = \ 0V, \ V_{\mathrm{IN-}} = \ 1V \\ I_{\mathrm{SINK}} \leq \ 4mA \end{array}$	-	150	400	mV
Response Time	t _{RES}	$R_L = 5.1 \text{ K}\Omega, C_L = 15 \text{pF}$	-	1.3	-	uS
Output Sink Current	I _{SINK}	$\begin{array}{l} V_{O} \leq 1.5V \\ V_{IN+} = \; 0V \text{, } V_{IN-} = \; 1V \end{array}$	6	16	-	mA
Output Leakage Current	I_{Leak}	$V_{O} = 5V$ $V_{IN+} = 1V$, $V_{IN-} = 0V$	-	0.1	-	nA

Electrical Characteristic Curves

Fig. 1 V_{CC} -I_{CC}

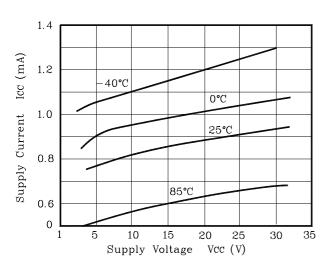
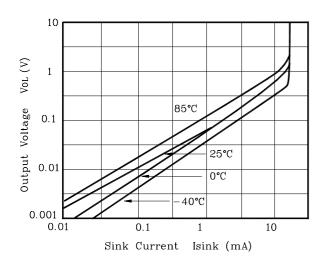
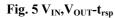


Fig. 3 V_{OL}-I_{SINK}





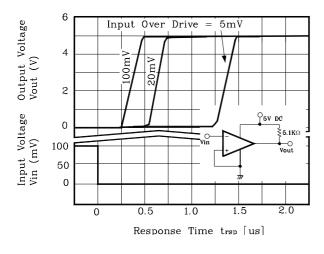


Fig. 2 V_{CC}-I_{IB}

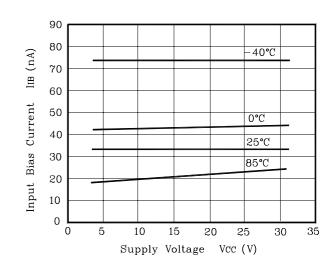


Fig. 4 P_D-Ta

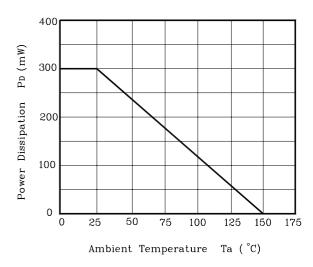
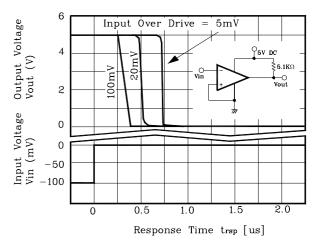


Fig. 6 V_{IN}, V_{OUT}-t_{rsp}



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