

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: $\pm 1mV$ Typ.

Applications

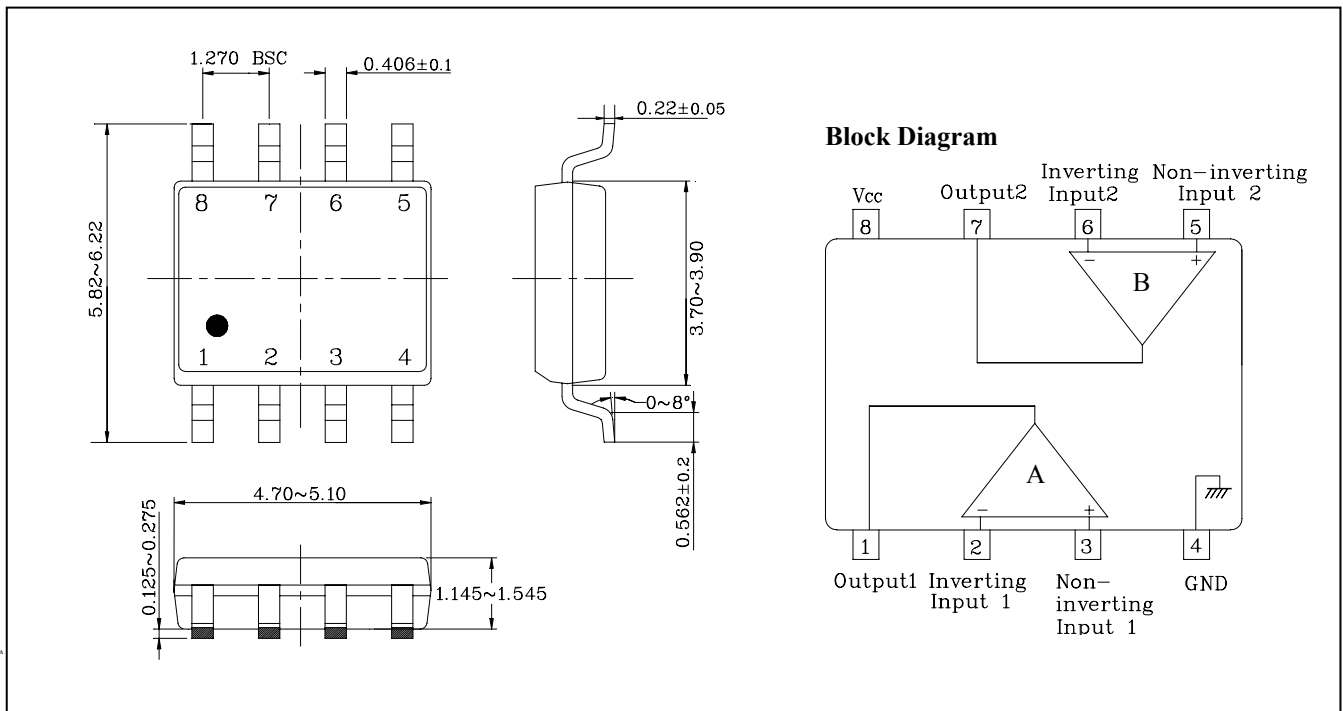
- Transducer amplifier
- DC gain blocks
- Conventional operational amplifiers

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 $-40\text{ °C} \leq T_a \leq +85\text{ °C}$)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Offset Voltage	V_{IOS}	$V_O = 1.4V$ $R_S = 0\Omega$	-	± 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}	$V_{CC} = 30V, R_L = \infty, \text{ All Channel}$	-	-	2.5	mA
Large Signal Voltage Gain	A_V	$V_{CC} = 15V$ $R_L = 15\text{ K}\Omega$	50	200	-	V/mV
Output Voltage ('L' Level)	V_{SAT}	$V_{IN+} = 0V, V_{IN-} = 1V$ $I_{SINK} \leq 4mA$	-	150	400	mV
Response Time	t_{RES}	$R_L = 5.1\text{ K}\Omega, C_L = 15pF$	-	1.3	-	μS
Output Sink Current	I_{SINK}	$V_O \leq 1.5V$ $V_{IN+} = 0V, V_{IN-} = 1V$	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 $V_{CC}-I_{CC}$

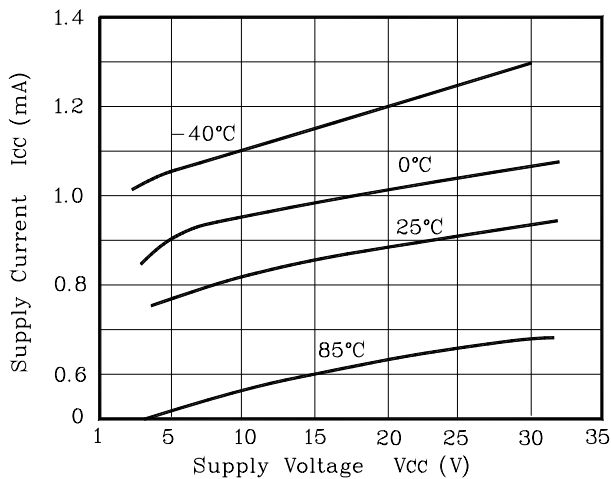


Fig. 2 $V_{CC}-I_{IB}$

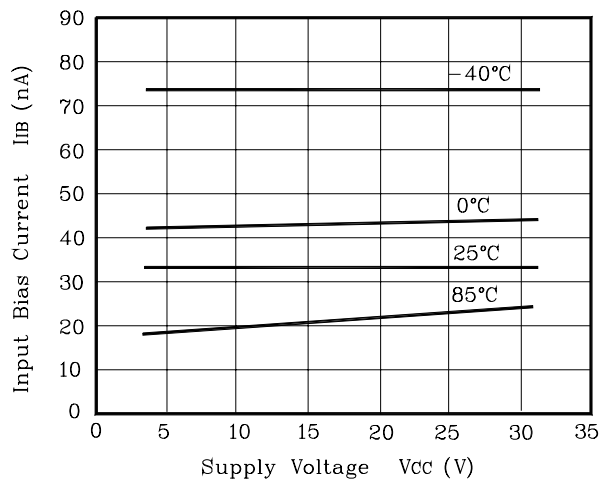


Fig. 3 $V_{OL}-I_{SINK}$

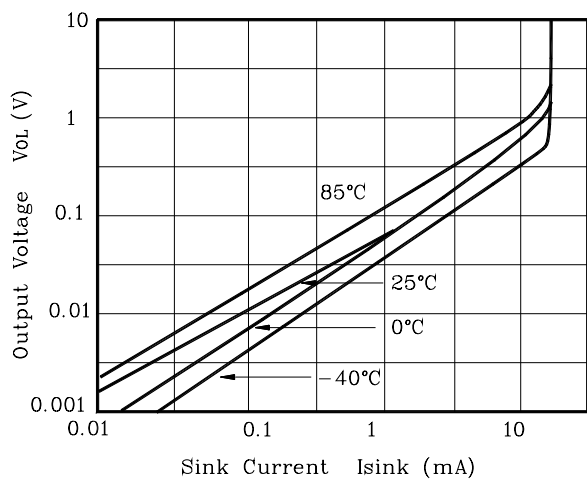


Fig. 4 P_D-T_a

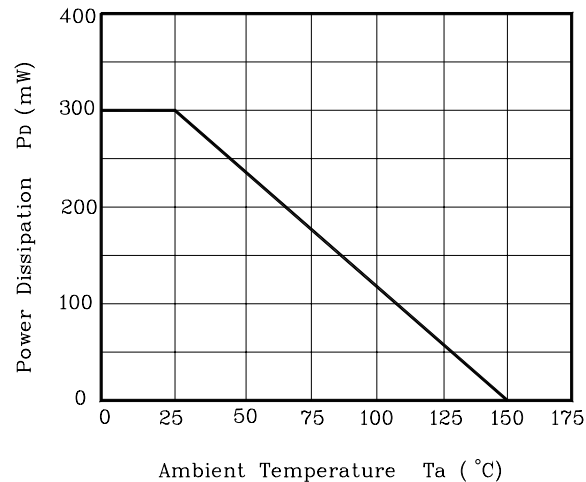


Fig. 5 $V_{IN}, V_{OUT}-t_{rsp}$

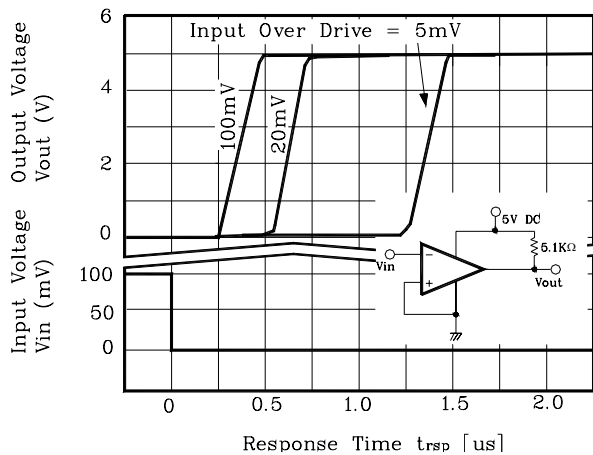
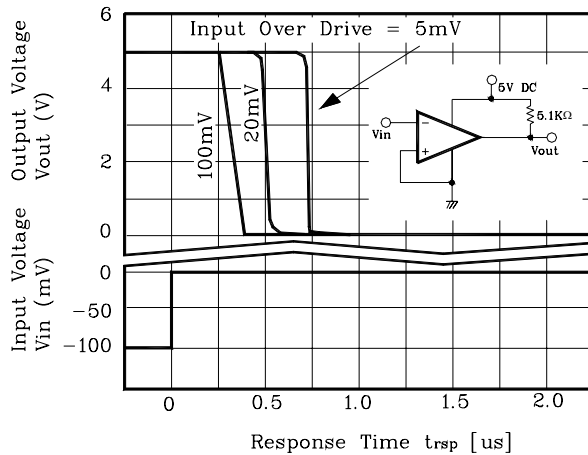


Fig. 6 $V_{IN}, V_{OUT}-t_{rsp}$



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