

UTCLM393 LINEAR INTEGRATED CIRCUIT

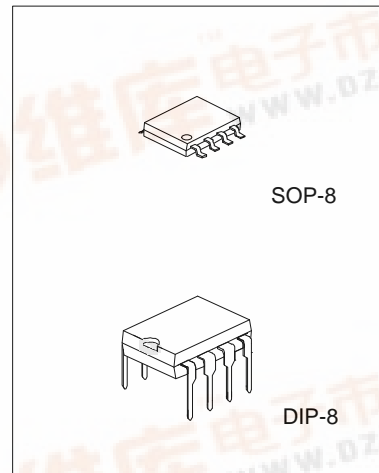
DUAL DIFFERENTIAL COMPARATOR

DESCRIPTION

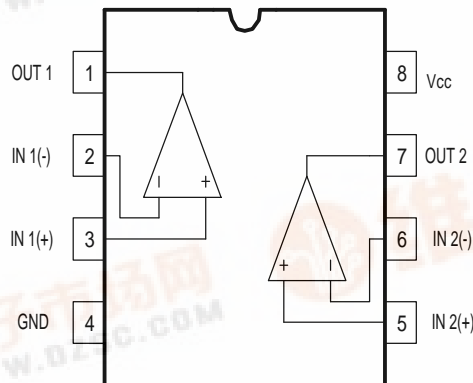
The UTC LM393 consists of two independent voltage comparators, designed specifically to operate from a single power supply over a wide voltage range.

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.

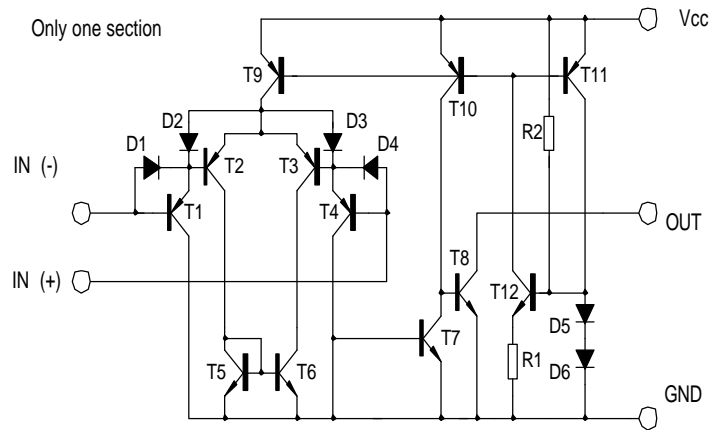


PIN CONFIGURATIONS



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BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

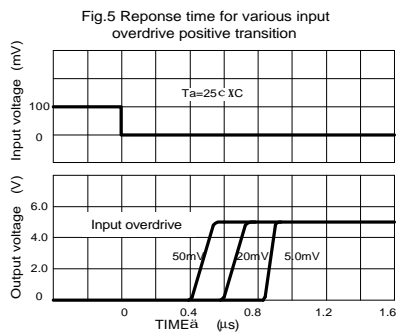
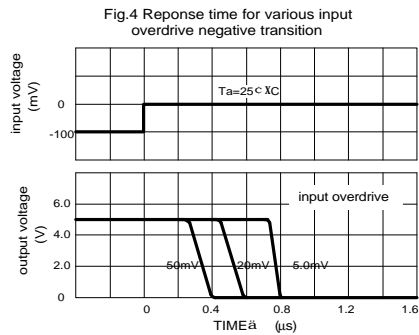
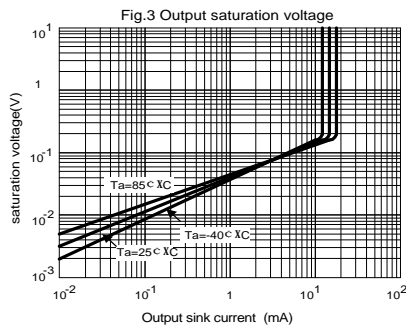
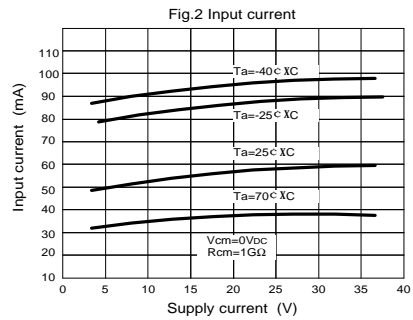
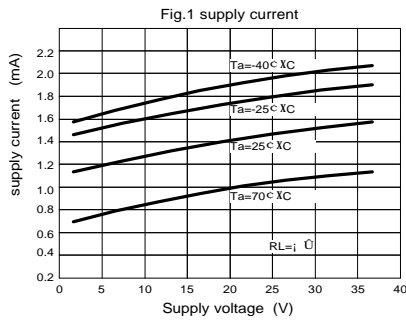
PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	Vcc	+ 18 OR 36	V
Differential Input Voltage	V _{IDiff}	36	V
Input Voltage	V _I	-0.3-36V	V
Power Dissipation	P _d	570	mW
Operating Temperature	T _{opr}	0 to +70	°C
Storage Temperature	T _{stg}	-65 to 150	°C

ELECTRICAL CHARACTERISTICS (Vcc=5.0V, Ta=25°C, 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 =5V, R _L =5.1kΩ		350		ns
Response Time	t _{res}	V _R =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 V _{o(p)} =30V		0.1	1.0	nA μA

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TYPICAL PERFORMANCE CHARACTERISTICS



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