

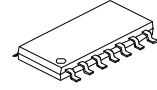
QUAD DIFFERENTIAL COMPARATOR

DESCRIPTION

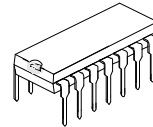
The LM339 consists of four independent voltage comparators, designed specifically to operate from a single power supply over a wide voltage range.

FEATURES

- *Signal or dual supply operation.
- *Wide operating supply range ($V_{CC}=2V\sim 30V$).
- *Input common-mode voltage includes ground.
- *Low supply current drain $I_{CC}=0.8mA$ (Typical).
- *Open collector outputs for wired and connection.
- *Low input bias current $I_{bias}=25nA$ (Typical).
- *Low output saturation voltage.
- *Output compatible with TTL, DTL, and CMOS logic system.

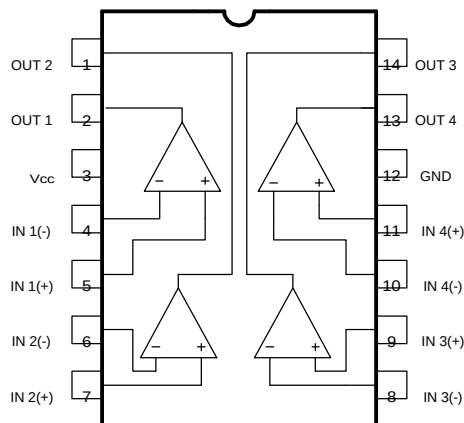


SOP-14

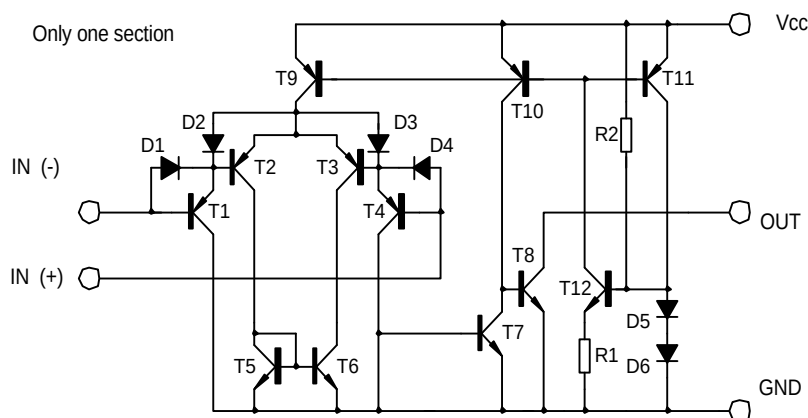


DIP-14

PIN CONFIGURATIONS



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS_(Ta=25°C)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V _{cc}	+ - 15OR 30	V
Differential input Voltage	V _{IDiff}	30	V
Input Voltage	V _I	-0.3~30V	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

(V_{cc}=5.0V, T_a=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		+ - 1.5	+ - 5.0	mV
Input Offset Current	I _{io}			+ - 2.3	+ - 50	nA
Input Bias Current	I _b			57	200	nA
Input Common-Mode Voltage Range	V _{l(R)}		0		V _{cc} -1.5	V
Supply Current	I _{cc}	R _L =∞		1.1	2.0	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 _{RL} =5V, R _L =5.1kΩ		350		ns
Response Time	t _{res}	V _{RL} =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		140	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
Differential Input Voltage	V _I (diff)				32	V

TYPICAL PERFORMANCE CHARACTERISTICS

Fig.1 supply current

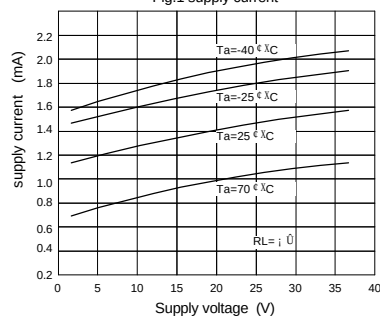


Fig.2 Input current

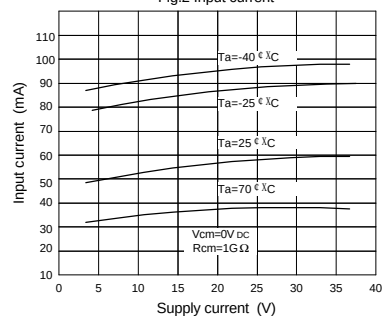


Fig.3 Output saturation voltage

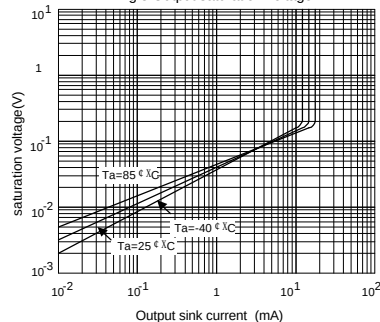


Fig.4 Reponse time for various input overdrive negative transition

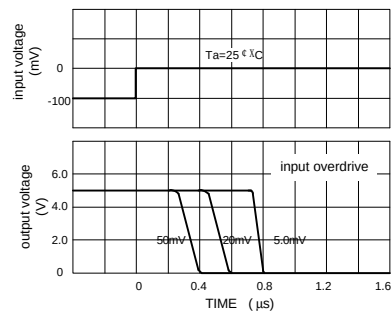


Fig.5 Reponse time for various input overdrive positive transition

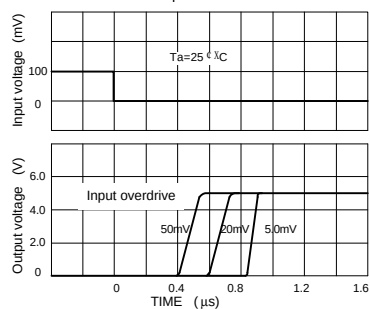


Fig.6

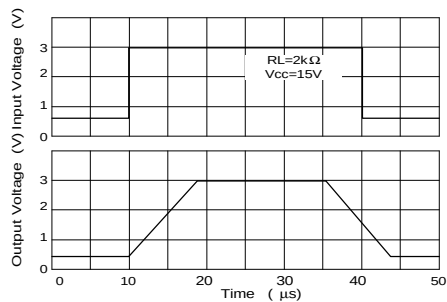


Fig.7 voltage Follower pulse response (small signal)

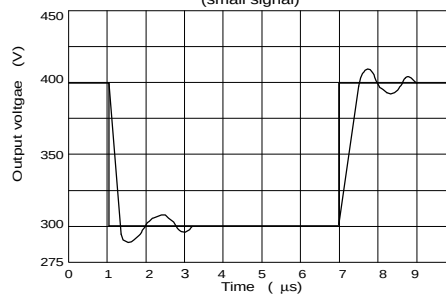


Fig.8 Large signal Frequency Response

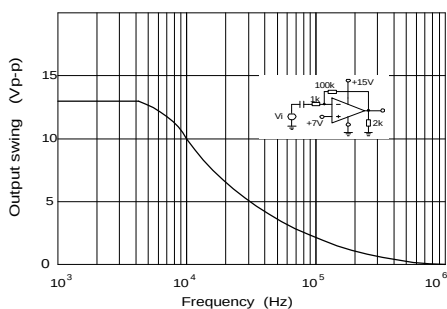


Fig.9 Output Characteristics current sourcing

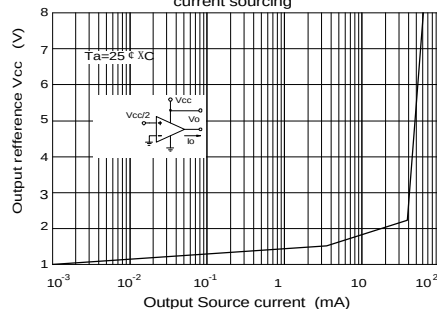


Fig.10 Output Characteristics Current sinking

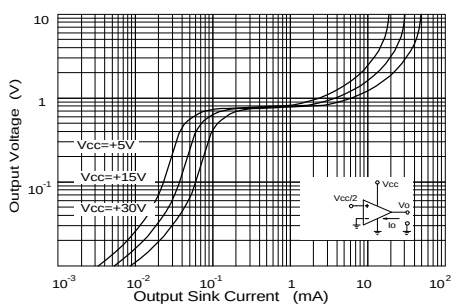


Fig.11 Current Limiting

