

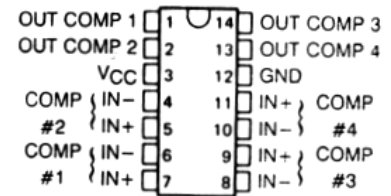
DESCRIPTION

The LM339 consists of four independent voltage comparators. These were designed specifically to operate from a single power supply over a wide range of voltages. Operation from split power supplies is also possible and the low power supply current drain is independent of the magnitude of the power supply voltage. The outputs can be connected to other open-collector outputs to achieve wired-AND relationships.

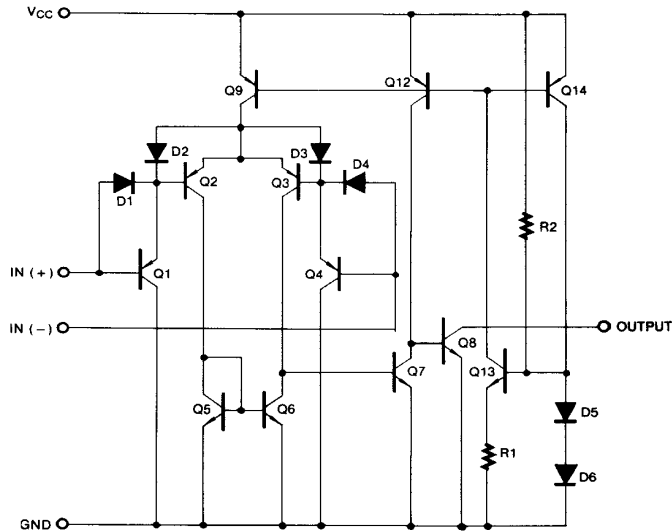
FEATURES

- Wide supply voltage range
- Low supply current drain independent of supply voltage.
- Low input biasing current
- Low input offset current
- Low input offset voltage
- Input common-mode voltage range includes GND
- Differential input voltage range equal to the power supply voltage
- Low output saturation voltage
- Output voltage compatible with TTL, MOS and CMOS logic

PACKAGE INFORMATION



SCHEMATIC DIAGRAM (One channel only)





ABSOLUTE MAXIMUM RATINGS

CHARACTERISTICS	SYMBOL	VALUE	UNIT
Supply Voltage	V _{CC}	±18 or 36	V
Differential Input Voltage	V _{I(DIFF)}	36	V
Input Voltage	V _I	- 0.3 to +36	V
Output Short Circuit to GND	V _{O(SC)}	Continuous	
Power Dissipation	PD	570	mW
Operating Temperature LM339/LM339A	T _{OPR}	0 ~ + 70	°C
Storage Temperature	T _{STG}	- 65 ~ + 150	°C

ELECTRICAL CHARACTERISTICS

at specified free-air temperature, V_{CC}=5V (unless otherwise noted)

PARAMETER	TEST CONDITIONS*	MIN	TYP	MAX	UNIT	
V _{IO} Input offset voltage	V _{CC} =5V to 30V	25 °C	2	5	mV	
	V _{IC} = V _{ICRmin} , V _O =1.4V	Full range		9		
I _{IO} Input offset current	V _O =1.4V	25 °C	5	50	nA	
		Full range		150		
I _{IB} Input bias current	V _O =1.4V	25 °C	-25	-250	nA	
		Full range		-400		
V _{ICR} Common-mode input voltage range**		25 °C	0 to V _{CC} -1.5		V	
		Full range	0 to V _{CC} -2			
A _{VD} Large-signal differential voltage amplification	V _{CC} =15V, V _O =1.4V to 11.4V, R _L ≥ 15kΩ to V _{CC}	25 °C	50	200	V/mV	
I _{OH} High-level output current	V _{OH} =5V, V _{ID} =1V	25 °C	0.1	50	nA	
	V _{OH} =30V, V _{ID} =1V	Full range		1	μA	
V _{OL} Low-level output voltage	I _{OL} =4mA, V _{ID} = -1V	25 °C	150	400	mV	
		Full range		700		
I _{OL} Low-level output current	V _{OL} =1.5V, V _{ID} = -1V	25 °C	6		mA	
I _{CC} Supply current	R _L = ∞	V _{CC} =5V	25 °C	0.8	2	mA
		V _{CC} =30V	Full range		2.5	

* Full range (MIN to MAX), for the LM339 is 0 °C to 70 °C. All characteristics are measured with zero common-mode input voltage unless otherwise specified.

** The voltage at either input or common-mode should not be allowed to go negative by more than 0.3 V. The upper end of the common-mode voltage range is V_{CC} - 1.5 V, but either or both inputs can go to 30 V without damage.

SWITCHING CHARACTERISTICS, V_{CC}=5V, T_A=25 °C

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Response time	R _L connected to 5V through 5.1kΩ, C _L =15pF* (See Note 1)	100-mV input step with 5-mV overdrive		1.3	μs
		TTL-level input step		0.3	

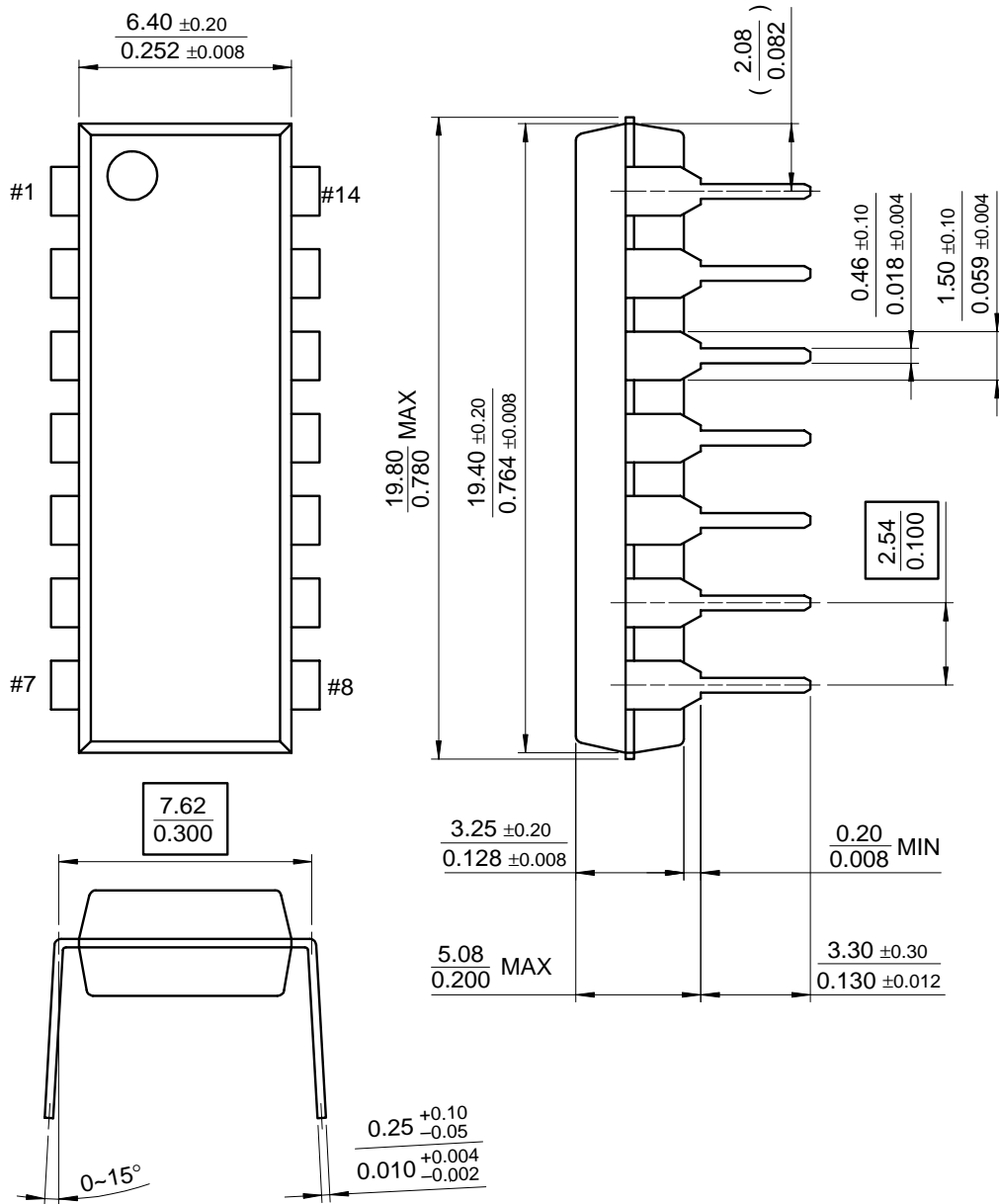
* C_L includes probe and jig capacitance.

NOTE 1: The response time specified is the interval between the input step function and the instant when the output crosses 1.4V.

Mechanical Dimensions

Dimensions in millimeters

14-DIP



Mechanical Dimensions (Continued)

Dimensions in millimeters

