


MOTOROLA

Quad Single Supply Comparators

These comparators are designed for use in level detection, low-level sensing and memory applications in consumer automotive and industrial electronic applications.

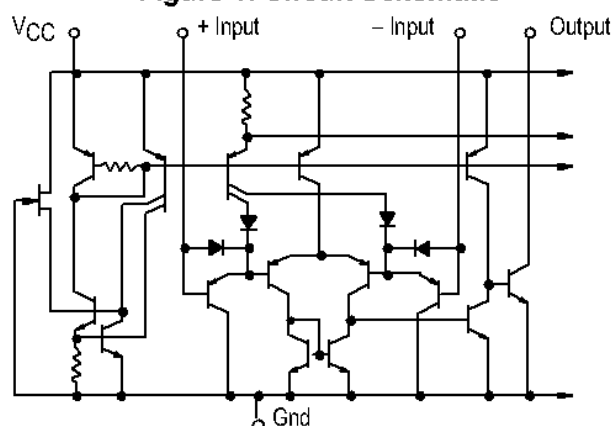
- Single or Split Supply Operation
- Low Input Bias Current: 25 nA (Typ)
- Low Input Offset Current: ± 5.0 nA (Typ)
- Low Input Offset Voltage: ± 1.0 mV (Typ) LM139A Series
- Input Common Mode Voltage Range to Gnd
- Low Output Saturation Voltage: 130 mV (Typ) @ 4.0 mA
- TTL and CMOS Compatible
- ESD Clamps on the Inputs Increase Reliability without Affecting Device Operation

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Power Supply Voltage LM239, A/LM339A/LM2901, V MC3302	V_{CC}	+36 or ± 18 +30 or ± 15	Vdc
Input Differential Voltage Range LM239, A/LM339A/LM2901, V MC3302	V_{IDR}	36 30	Vdc
Input Common Mode Voltage Range	V_{ICMR}	-0.3 to V_{CC}	Vdc
Output Short Circuit to Ground (Note 1)	I_{SC}	Continuous	
Power Dissipation @ $T_A = 25^\circ\text{C}$ Plastic Package Derate above 25°C	P_D	1.0 8.0	W mW/ $^\circ\text{C}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Operating Ambient Temperature Range LM239, A MC3302 LM2901 LM2901V LM339, A	T_A	-25 to $+85$ -40 to $+85$ -40 to $+105$ -40 to $+125$ 0 to $+70$	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to $+150$	$^\circ\text{C}$

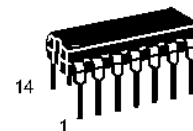
NOTE: 1. The maximum output current may be as high as 20 mA, independent of the magnitude of V_{CC} . Output short circuits to V_{CC} can cause excessive heating and eventual destruction.

Figure 1. Circuit Schematic

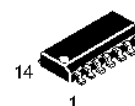


NOTE: Diagram shown is for 1 comparator.

LM339, LM339A, LM239, LM239A, LM2901, M2901V, MC3302

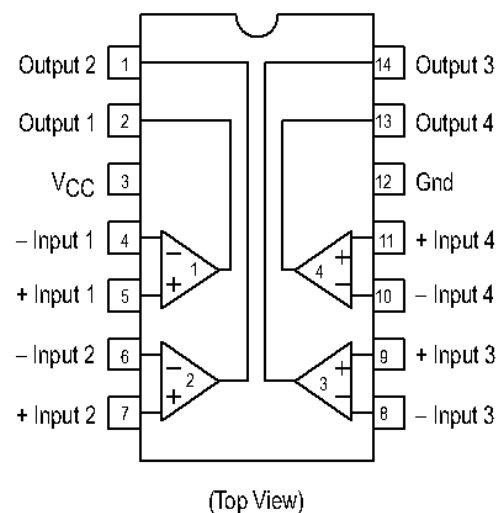


N, P SUFFIX
PLASTIC PACKAGE
CASE 646



D SUFFIX
PLASTIC PACKAGE
CASE 751A
(SO-14)

PIN CONNECTIONS



ORDERING INFORMATION

Device	Operating Temperature Range	Package
LM239D, AD LM239N, AN	$T_A = 25^\circ$ to $+85^\circ\text{C}$	SO-14 Plastic DIP
LM339D, AD LM339N, AN	$T_A = 0^\circ$ to $+70^\circ\text{C}$	SO-14 Plastic DIP
LM2901D LM2901N	$T_A = -40^\circ$ to $+105^\circ\text{C}$	SO-14 Plastic DIP
LM2901VD LM2901VN	$T_A = -40^\circ$ to $+125^\circ\text{C}$	SO-14 Plastic DIP
MC3302P	$T_A = -40^\circ$ to $+85^\circ\text{C}$	Plastic DIP