

# LM339

# LINEAR INTEGRATED CIRCUIT

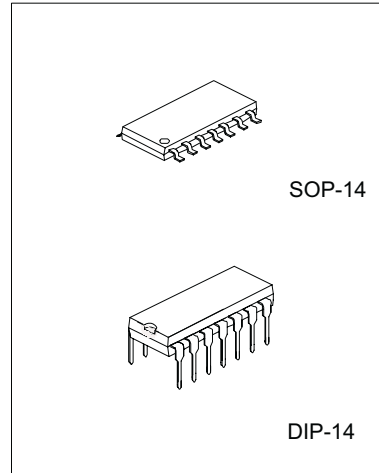
## QUAD DIFFERENTIAL COMPARATOR

### DESCRIPTION

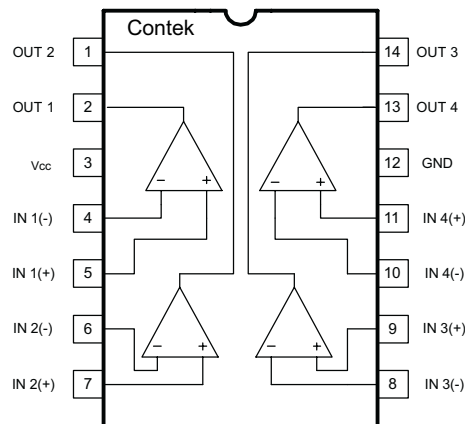
The Contek LM339 consists of four independent voltage comparators, designed specifically to operate from a single power supply over a wide voltage range.

### FEATURES

- \*Signal or dual supply operation.
- \*Wide operating supply range( $V_{cc}=2V\sim 36V$ ).
- \*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.



### PIN CONFIGURATIONS



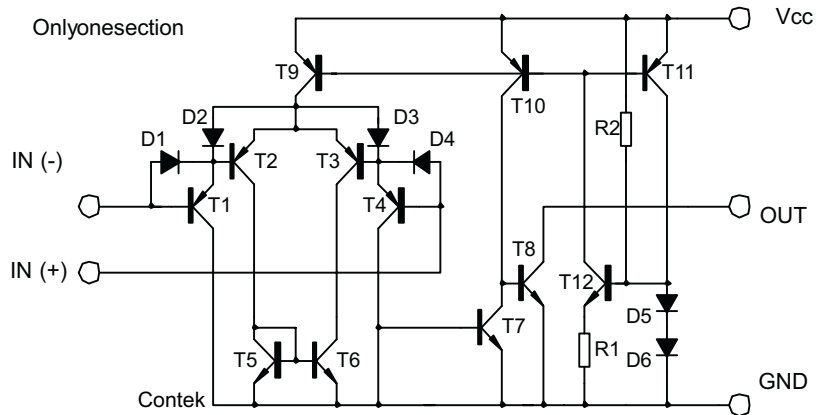
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## BLOCK DIAGRAM



## ABSOLUTE MAXIMUM RATINGS (Ta=25 °C)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	Vcc	+ - 18 OR 36	V
Differential input Voltage	VIDiff)	36	V
Input Voltage	VI	-0.3~36V	V
Power Dissipation	Pd	570	mW
Operating Temperature	Topr	0 to +70	C
Storage Temperature	Tstg	-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	Vio	VCM=0 to Vcc-1.5 Vo(p)=1.4V, Rs=0		+1.5	+5.0	mV
Input Offset Current	Iio			+2.3	+50	nA
Input Bias Current	Ib			57	250	nA
Input Common-Mode Voltage Range	VI(R)		0		Vcc-1.5	V
Supply Current	Icc	RL=		1.1	2.0	mA
Large Signal Voltage Gain	Gv	Vcc=15V, RL>15kΩ	50	200		V/mV
Large Signal Response Time	tres	Vi=TTL logic wing Vref=1.4V, VRL=5V, RL=5.1kΩ		350		ns
Response Time	tres	VRL=5V, RL=5.1kΩ		1400		ns
Output Sink Current	Isink	Vi(-)>1V, Vi(+)=0V, Vo(p)<1.5V	6	18		mA
Output Saturation Voltage	Vsat	Vi(-)>1V, Vi(+)=0V, Isink=4mA	140	400		mV
Output Leakage Current	Ileakage	Vi(+)=1V, Vi(-)=0	20	40		mA
Differential Input Voltage	VI(diff)				36	V



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TYPICAL PERFORMANCE CHARACTERISTICS

