

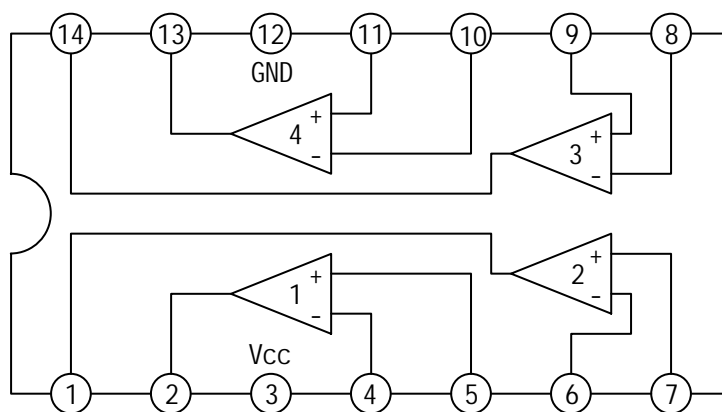
## QUAD DIFFERENTIAL COMPARATOR—YD339

### DESCRIPTION AND FEATURES

The YD339 consists of four independent voltage comparators designed specifically to operate from a single power supply over a wide voltage range ;

- \*Single or dual supply operation ;
- \*Wide operating supply range ( $V_{CC}=2V\sim 36V$  or  $\pm 1 \sim \pm 18V$ ) ;
- \*Input common-mode voltage includes ground ;
- \*Low supply current drain:  $I_{CC}=0.8mA$  (Typical) ;
- \*Open collector output 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.

### BLOCK DIAGRAM



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**ABSOLUTE MAXIMUM RATINGS** (Tamb=25 )

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V <sub>CC</sub>	±18 or 36	V
Differential Input Voltage	V <sub>ID</sub>	±36	V
Input Voltage	V <sub>I</sub>	-0.3 ~ 36V	V
Power Dissipation	P <sub>d</sub>	625	mW
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	
Storage Temperature	T <sub>stg</sub>	-55 ~ +125	

**ELECTRICAL CHARACTERISTICS**

(V<sub>CC</sub>=5.0V, Tamb=25 , All voltage referenced to GND unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Offset Voltage	V <sub>IO</sub>	V <sub>CM</sub> =0 to V <sub>CC</sub> -1.5 V <sub>O(P)</sub> =1.4V, R <sub>S</sub> =0		±1.5	±5.0	mV
Input Offset Current	I <sub>IO</sub>			±2.3	±50	nA
Input Bias Current	I <sub>b</sub>			57	250	nA
Input Common-mode Voltage	V <sub>I(R)</sub>		0		V <sub>CC</sub> -1.5	V
Supply Current	I <sub>CC</sub>	R <sub>L</sub> =		1.1	2.0	mA
Large Signal Voltage Gain	G <sub>v</sub>	V <sub>CC</sub> =15V, R <sub>L</sub> > 15k		200		V/mV
Large Signal Response Time	t <sub>res</sub>	V <sub>i</sub> =TTL logic wing V <sub>ref</sub> =1.4V, V <sub>RL</sub> =5V, R <sub>L</sub> =5.1k		350		ns
Response Time	t <sub>res</sub>	V <sub>RL</sub> =5V, R <sub>L</sub> =5.1k		1400		ns
Output Sink Current	I <sub>sink</sub>	V <sub>i(-)</sub> > 1V, V <sub>i(+)</sub> =0V, V <sub>o(p)</sub> < 1.5V	6	18		mA

OUTLINE DRAWING

**DIP-14**

unit:mm

