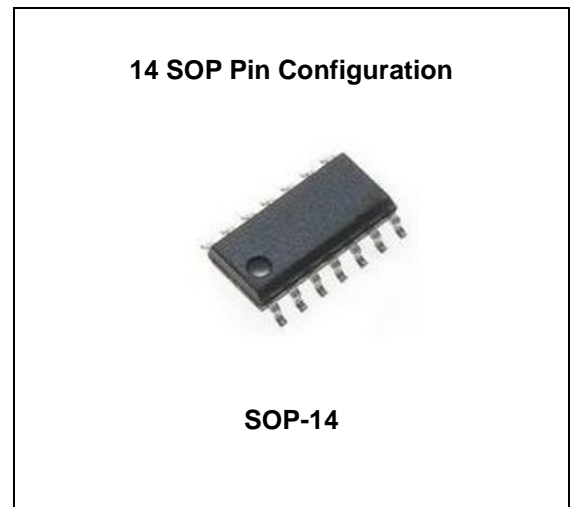


## FEATURES

- Wide range of supply voltages
- 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



## ORDERING INFORMATION

Device	Package
TJ339GD	SOP-14

## DESCRIPTION

The TJ339 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.

## ABSOLUTE MAXIMUM RATING

CHARACTERISTIC	SYMBOL	Value	UNIT
Supply Voltage	$V_{CC}$	+36 or $\pm 18$	V
Input Differential Voltage	$V_{IDR}$	36	V
Input Voltage Range	$V_{ICR}$	-0.3 to 36	V
Operating Ambient Temperature Range	$T_{OPR}$	-40 to 125	°C
Storage Temperature Range	$T_{STG}$	-65 to 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 $30V$ , $V_{IC}=V_{ICR}$ min, $V_O=1.4V$	25 °C	2	5	mV
		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	
$V_{ICR}$ (Note1) Common-mode input voltage range		25 °C	0 to $V_{CC}-1.5$		V
		Full range	0 to $V_{CC}-2$		
$V_{OL}$ Low-level output voltage	$I_{OL}=4mA$ , $V_{ID}=-1V$	25 °C	150	400	mV
		Full range		700	
$A_{VD}$ Large-signal differential voltage amplification	$V_{CC}=15V$ $V_O=1.4V$ to $11.4V$ $R_L \geq 15k\Omega$ 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	uA
$I_{OL}$ Low-level output current	$V_{OL}=1.5V$ , $V_{ID}=-1V$	25 °C	6		mA
$I_{CC}$ Supply current	$R_L=\infty$ , $V_{CC}=5V$	25 °C	0.8	2	mA
	$R_L=\infty$ , $V_{CC}=30V$	Full range		2.5	

Note 1. The voltage at either input or common-mode should not be allowed to go negative by more than 0.3V. The upper end of the common-mode voltage range is  $V_{CC}-1.5V$ .

2. All characteristics are measured with zero common-mode input voltage unless otherwise specified. Temperature full range is -40 °C to +125 °C.

## SWITCHING CHARACTERISTICS, $V_{CC}=5V$ , $T_A=25^\circ C$

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Response time	$R_L$ connected to 5V through 5.1k, $C_L=15pF^*$ (Note1)	100mV input step with 5-mA overdrive	1.3		us
		Full range	0.3		

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

## REVISION NOTICE

The description in this datasheet can be revised without any notice to describe its electrical characteristics properly.