Dual Differential Comparators TJ393

FEATURES

- Wide range of supply voltages
- Low supply current drain independent of the 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

SOP-8 Pin Configuration

SOP-8

ORDERING INFORMATION

Device	Package
TJ393GD	SOP-8

DESCRIPTION

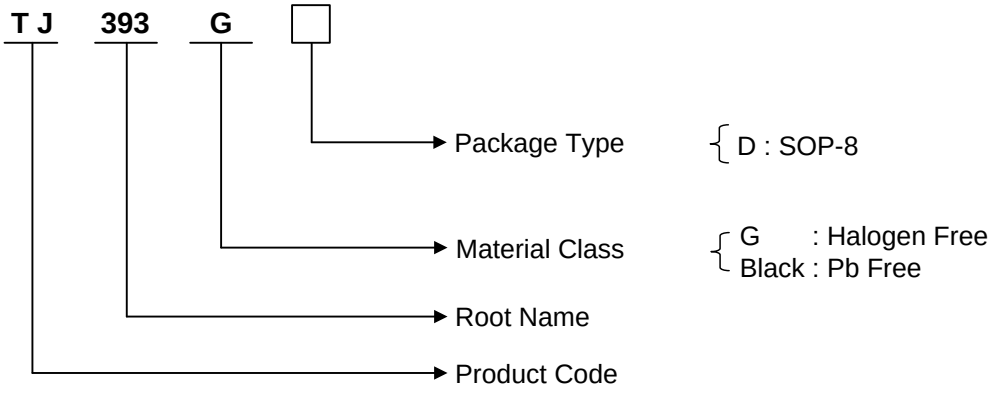
The TJ393 consists of two independent voltage comparators. These were designed specifically to operate from a single power supply over a wide range of voltages. Operation from split power supplies is also possible and the low power supply current drain is independent of the magnitude of the power supply voltage. The outputs can be connected to other open-collector outputs to achieve wired-AND relationships.

ABSOLUTE MAXIMUM RATING

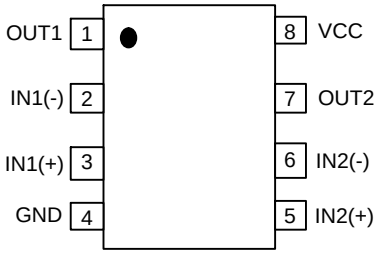
CHARACTERISTIC	SYMBOL	Value	UNIT
Supply Voltage	V_{CC}	+36 or ±18	V
Input Differential Voltage	V_{IDR}	36	V
Input Voltage Range	V_{ICR}	-0.3 to 36	V
Operating Ambient Temperature Range	T_{OPR}	-40 to 125	℃
Storage Temperature Range	T_{STG}	-65 to 150	℃

Ordering Information

Package	Order No.	Description	Supply As	Status
SOP-8	TJ393GD	Dual Differential Comparators, Halogen-Free	Reel	Active



PIN CONFIGURATION



SOP-8

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℃		2	5	mV
		Full range			9	
I_{IO} Input offset current	V_O=1.4V	25℃		5	50	nA
		Full range			150	
I_{IB} Input bias current	V_O=1.4V	25℃		-25	-250	nA
		Full range			-400	
V_{ICR} (Note1) Common-mode input voltage range		25℃	0		Vcc-1.5	V
		Full range	0		Vcc-2.0	
V_{OL} Low-level output voltage	I_{OL}=4mA, V_{ID}=-1V	25℃		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≥15kΩ to Vcc	25℃	50	200		V/mV
I_{OH} High-level output current	V_{OH}=5V, V_{ID}=1V	25℃		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℃	6			mA
I_{CC} Supply current	RL=∞, V_{CC}=5V	25℃		0.8	1	mA
	RL=∞, 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 VCC-1.5V.

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

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

PARAMETE	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Response time	RL connected to 5V through 5.1k, CL=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.