

TWS01 1-CH Capacitance Comparator

TWS01

1-CH Capacitance Comparator

General Description

The TWS01 Capacitance Comparator is detecting capacitance difference between two inputs, inverting and non inverting input, with 0.03pF offset capacitance. It is better to apply for capacitive touch switch sealed from water or dust.

The device can detect resistor difference between two inputs, with very low current consumption and low supply voltage, 2.4V.

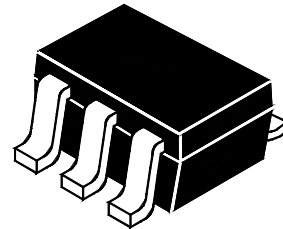
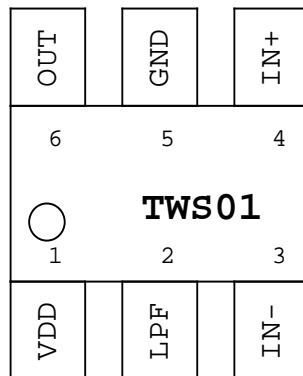
General Feature

- 1-Channel Capacitance Comparator
- Open-Drain Digital Output
- Adjustable output chattering

Application

- Fluid level sensing
- Switch replacement

Package SOT-26



Flat Package (SOT-26)

PIN No.	Name	Description	Protection
1	VDD	POWER	
2	C_LPF	LPF for Output Chattering	VDD
3	IN-	Inverter input	VDD
4	IN+	Non inverter input	VDD
5	GND	Ground	
6	OUT	Open collector	VDD

Absolute Maximum Rating

Battery supply voltage	12V
Maximum voltage on any pin	VDD+0.3
Maximum current on any PAD	100mA
Power Dissipation	100mW
Storage Temperature	-50 ~ 150 C
Operating Temperature	-20 ~ 75 C
Junction Temperature	150 C

TWS01 1-CH Capacitance Comparator

Characteristics	Symbol	Test Condition	Min	Typ	Max	Units
Supply Voltage	Vdd		2.4	-	12	V
Current consumption	Idmax	-20°C < Ta < +75°C, Vdd = 5V	-	240	350	µA
Power dissipation	Pd	-20 ~ 75°C, Vdd = 5V	-	-	100	mW

Electrical Characteristics

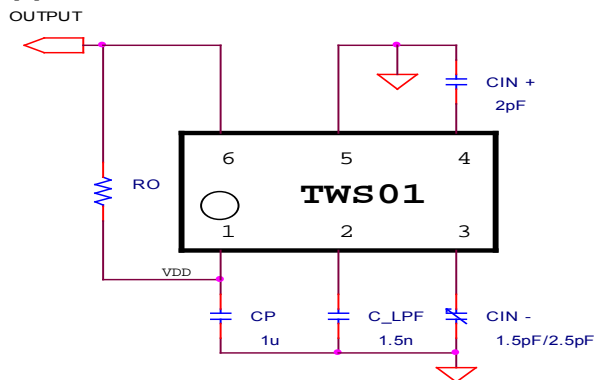
T_A = 25°C

Characteristics	Symbol	Test Condition	Min	Typ	Max	Units
Current consumption	I _{dd}	VDD=2.5V	-	80	140	µA
Output Impedance	Z _o	C _{in1} > C _{in2} C _{in1} < C _{in2} (note 1)	-	10 10M	-	Ohm
Input capacitance range	C _{in}		0.03	-	2000	pF
Offset Capacitance	C-Offset			0.03	-	pF

Note 1: C_{in(x)} means Capacitance in PIN IN1 or IN2.

Note 2: Output chattering can be adjusted with external capacitance in LPF PIN.

Application Schematics



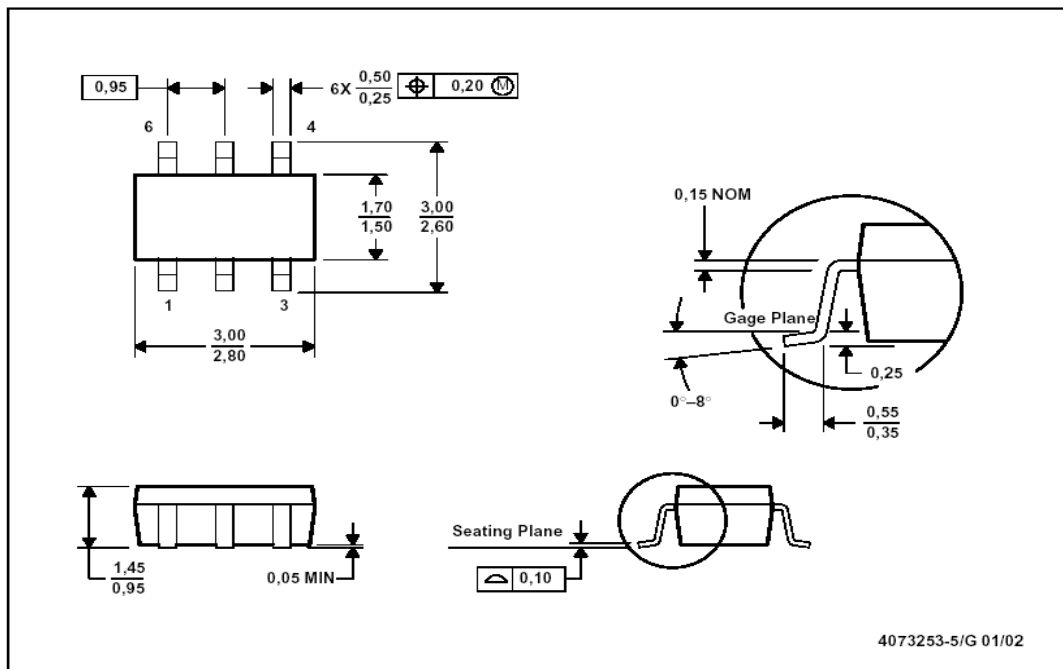
Ro: Pull up resistance

CLPF: Capacitor for Output chattering

Cp: Capacitor for supply

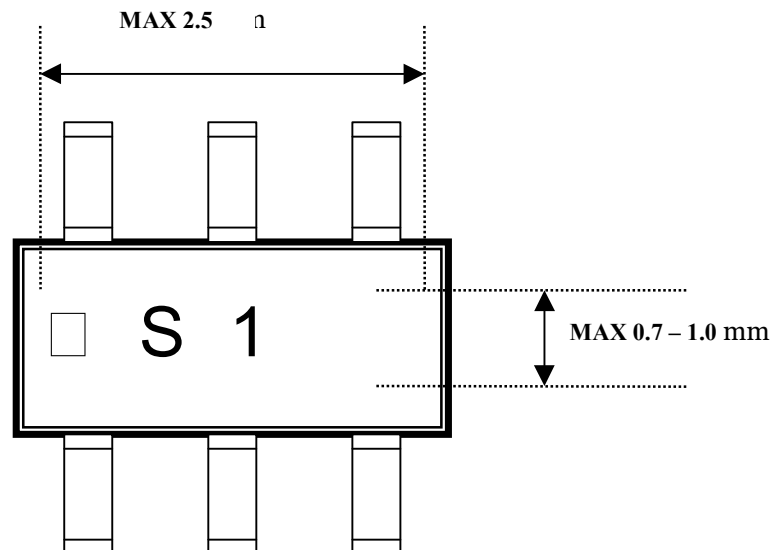
Package Physical Dimensions millimeters unless otherwise noted
- SOT-26 (2.9 x 1.6 x 1.1mm)

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- NOTES:
- All linear dimensions are in millimeters.
 - This drawing is subject to change without notice.
 - Body dimensions do not include mold flash or protrusion.
 - Leads 1, 2, 3 may be wider than leads 4, 5, 6 for package orientation.

MARKING INSTRUCTION - DIMENSION



- INSTRUCTION

CODE	MARKING INSTRUCTION
\square	DOT MARKING. PIN No. 1
S1	MARKING CODE
\square	ASSEMBLY DATE CODE

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