

File E187820  
Project 00NK38207

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REPORT

on

COMPONENT - TEMPERATURE INDICATING AND REGULATING EQUIPMENT

TouchSensor Technologies, LLC  
Wheaton, IL

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## DESCRIPTION

## PRODUCT COVERED:

Component - Models TS100 TouchCell, Part Nos U000212A, U000302E, U02PE-AA, U02PE-CB U02PD-CA, U02ND-CA, **U02PEAAZ**, **U02PECBZ**, **U02PDCAZ**, and **U02NDCAZ**.

## GENERAL CHARACTER:

The TS100 is intended to be used in the touch-cell circuits employed in electronic touch-sensitive keypad applications. The TouchCell circuit is designed to emulate the input functions of conventional membrane or mechanical switches.

A TouchCell is a sensory circuit consisting of the TS100, three to five resistors (RI, RO, RL, RIS, ROS) and a patterned foil trace sensor. Optionally, the touchcell may be provided with a capacitor for noise filtering.

Power is applied by a strobed or steady state signal. When the right amount of finger-touch or any material that the sensor can detect is applied to the TouchCell, directly or indirectly through a layer of substrates or through air, the TouchCell detects an actuation and presents a logic high at the output. This signal can be applied to a supervisory microprocessor or circuit.

TABLE 1

PART NO.	IC PACKAGE SIZE (+)	OUTPUT CONFIG.	NO. OF TERMINALS
U000212A	SOIC	Active High	8-pins
U000302E	SOIC	Active High	8-pins
U002PE-AA <b>U02PEAAZ</b>	SOIC	Active High	8-pins
U002PE-CB <b>U02PECBZ</b>	SOT	Active High	6-pins
U02PD-CA <b>U02PDCAZ</b>	SOT	Active High	6-pins
U02ND-CA <b>U02NDCAZ</b>	SOT	Active Low	6-pins

## RATINGS:

Electrical -

Supply Input - 5 V dc, 15 W maximum (Refer to C of A No. 7)

Maximum Ambient Temperature - 115°C

Use - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Conditions of Acceptability - When installed in the final use equipment, etc., the following are among the considerations to be made:

1. The device shall be installed in compliance with the enclosure, mounting, spacing, and segregation requirements of the ultimate application.
2. The ratings recorded herein shall be judged in the ultimate application.
3. The foil trace sensor and resistors control the sensitivity of a TouchCell. Each individual TouchCell is customized for the end-application by adjusting the foil trace pattern and the resistor values. Once configured for an application, the TouchCell has been demonstrated to be a reliable circuit suitable for safety and limiting applications. For a TouchCell used in a safety or limiting application, consideration shall be given to performing functional verification tests with the TouchCell installed in the end-product and describing the TouchCell's foil trace pattern, resistor values, and substrate in the end-product Report.
4. The TouchCell is considered a reliable solid state control component, consequently the inclusion of the TS100 in the Failure Mode Analysis for the end-product is not necessary.
5. The TouchCell with the following electronic components was subjected to the Demonstrated Test Method per the Standard for Safety-Related Solid State Controls for Household Electric Ranges, UL 858A.

Resistor (RI,RO,R1,R2, **RIS, ROS**) - AVX Corporation, CR21 series  
SEI Electronics Incorporated, RMC1/10 series  
Prosperity Dielectrics Co. Ltd., FCR05 series  
NIC Components Corporation, NRC10 series  
Vishay Dale, CRW0805 Series

Capacitor (Optional) - Compostar, CC0805 Series  
Vishay Dale, VJ0805 Series  
NIC components Corporation, NMC0805 Series  
\*Maritek Electronic Corporation, MA0805 Series

This program demonstrated that above resistors were unlikely to fail in a short-circuit or open-circuit mode and the above capacitors were unlikely to fail in a short-circuit mode.

The suitability of use with other components shall be determined in the ultimate application.

6. No electrical or physical environmental stress testing (per UL 991 or UL 858 A) has been conducted on this component. If required by the end-use application, this testing shall be conducted in conjunction with the electronic control circuitry which receives input from this component.
  
7. The TouchCell has been evaluated and determined suitable for use in non-isolated, line-connected circuits (i.e. reactive power supplies) delivering 15 watts maximum, a low-voltage limited energy circuit. When used in this type of circuit, consideration shall be given to subjecting the circuitry of the hose controller in which the touchcell resides to a Limited Power Point Determination Test per Sec. 25 of UL244A "Solid-State Controls for Appliances".