File E339631
Project 4789177450

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REPORT

On

COMPONENT – LOW-VOLTAGE SOLID-STATE OVERCURRENT PROTECTORS

Texas Instruments Inc
Dallas, Texas

DESCRIPTION

PRODUCT COVERED:

USR, Component – Low voltage Solid-State Overcurrent Protectors, Cat. Nos. TPS2663, followed by 0, 1, 2, 3, 5, or 6; and Cat. Nos. TPS1663, followed by 0 or 2. May be followed by additional characters that do not affect the safety features of the device.

GENERAL:

These devices are solid-state overcurrent protectors. They are solid-state switches that limit output current when the output load exceeds the current-limit threshold or when a load-side short-circuit is present. Solid-state overcurrent protectors are intended to be used on the load-side of an isolating transformer, power supply or battery to provide a means of supplementary protection.

ELECTRICAL RATINGS:

Cat. Nos.	Input Voltage Range, V dc	Number of Outputs	Operational Current Rating per Output, A	Overcurrent Protection Current Rating per Output, A
TPS26630 TPS26631 TPS16630	4.5 – 60	1	0.54 – 5.5	0.66 – 6.42
TPS26632 TPS26633 TPS26636	4.5 – 32	1	0.54 – 5.5	0.66 – 6.42
TPS26635 TPS16632	4.5 – 35.7	1	0.54 – 5.5	0.66 – 6.42

ENVIRONMENTAL RATINGS:

Cat. Nos.	Maximum Operating Temperature	Shipping and Storage Temp per UL 2367
TPS26630 TPS26631 TPS16630 TPS26632 TPS26633 TPS26636 TPS26635 TPS16632	65°C	-30 to 70°C

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

USR indicates investigation to the UL standard for Safety for Solid State Overcurrent Protectors, UL 2367, First Edition.

Use – For use only in (or with) complete equipment where the acceptability of the combination is determined by UL LLC.

Conditions of Acceptability –

1. These devices are integrated circuits and electrical spacings within the device are not specified.

2. These devices are entirely electronic in nature and have no means for manual operation or reset.

3. The terminals of these devices are for factory wiring only and intended to be mounted on a printed wiring board.

4. These devices have only been evaluated for supplementary overcurrent protection of secondary circuits supplied by the load side of a transformer or battery, and have not been evaluated for branch-circuit protection.

5. Use on secondary supply circuits with a higher power capability requires additional evaluation for reliability, such as are contained in the Standard for Safety-Related Controls Employing Solid-State Controls, UL 991.

6. These devices have not been subjected Tests for Telecom applications and their suitability for connection to telecommunication networks with outside plant connections should be determined in the end-use.

7. These devices were evaluated with respect to continuous current operation at the current levels shown in the electrical ratings section of this report.

Conditions of Acceptability (cont'd) –

8. These devices have been subjected to environmental conditionings with respect to the following conditions (per UL 2367):

   Shipping and Storage: -30 to +70°C
   Thermal Cycling
   Endurance
   Abnormal
   Maximum Operating Temperature: 65°C

9. These devices have been evaluated for indoor and outdoor use.

10. These devices limit currents to values less than the overcurrent protection rating noted.

11. These devices were tested in the circuit shown in Illustration 4.

12. Cat. Nos. TPS26630, TPS26631, TPS26632, TPS26633, TPS26636, and TPS26635 make use of an external MOSFETs. These devices have been evaluated with the following MOSFETs: Cat. No. CSD19537Q3, N-CH, 100V, 50A manufactured by Texas Instruments and Cat. No. BSS138, N-CH 50V 0.22A manufactured by Fairchild Semiconductor. Any additional evaluation as to be determined in the end-product.

CONSTRUCTION DETAILS:

MARKING:

The Recognized Company, trade name or trademark, catalog number and voltage and current ratings. Markings may be provided on the smallest package or reel.

Electrical ratings, including voltage range, maximum continuous current, protective current and operating temperatures shall be provided on the manufacturer's device specific datasheet. The datasheet may be web-based provided it is publicly accessible on the internet.

Spacings - No spacing requirements are specified.

Tolerance - Unless otherwise specified, all dimensions are nominal.

Corrosion Protection - All parts are of corrosion resistant material or are suitably plated to resist corrosion.

Current Carrying Parts - Stainless steel, silver, gold, nickel, aluminum, copper or copper alloy. May be plated with tin, lead, silver or gold.

Insulated Housing – Molded in a high pressure, high temperature molding process, from R/C (QMFZ2) epoxy molding resin, "Sumikon" Type EME-G770HCD, manufactured by Sumitomo Bakelite Co Ltd (E41429), rated V-0, 130°C.

Alternate Insulating Housing – Same as above, except any R/C (QMFZ2), epoxy molding compound, rated min. 130°C, min. V-2 flame rating.

MODEL DIFFERENCES AND SIMILARITIES:

Models TPS26630 and TPS26631 have adjustable overvoltage cut-offs. Models TPS26632, TPS26633, TPS26636 have fixed 35Vdc overvoltage clamps. Model TPS26635 has a fixed 39Vdc overvoltage clamp.

Models TPS26630 and TPS26632 have an active current limiting overload fault response. Models TPS26631, TPS26633, TPS26635, TPS266365, and TPS26636 have an active current limiting with pulse current support overload fault response.

Models TPS26630 and TPS26631 do not have adjustable output power limiting. Models TPS26632, TPS26633, TPS26635, and TPS26636 have adjustable output power limiting.

Model TPS16630 is identical to model TPS16632 except Model TPS16630 has an adjustable overvoltage cut-off without an adjustable output power limiting function. TPS16632 has a fixed 39Vdc overvoltage clamp with an adjustable output power limiting function.

ADDITIONAL CONSTRUCTION DETAILS:

Refer to the following Ills. For overall view and dimensional information:

Cat. Nos.	Ill. No.	Comments
TPS16630 TPS16632	1A	Pin Configuration
	1B	Pin Functions
	2	Top View Marking
	3	Package Outline
	4	Test Schematic
TPS26630 TPS26631 TPS26632 TPS26633 TPS26635 TPS26636	5A	Pin Configuration
	5B	Pin Functions
	2	Top View Marking
	6	Package Outline
	7	Test Schematic