

Specification Status: Released

Operating Conditions at 20°C:

Maximum Continuous Operating Voltage (V_{MCO}): 100V_{DC}
Maximum Interrupt Current (I_{INT}): 10A_{RMS}

Fault Ratings at 20°C:

250 V_{RMS}, 3A, 10 applications
(See page 2 of this SCD for further application fault ratings)

Additional Info at 20°C:

- Resistance matched: n/a
- Lightning withstand: 4.0 kV with primary protection per ITU-T K.20, K.21
- Helps equipment meet ITU-T K.20, K.21 Recommendations
- Helps equipment meet Telcordia GR1089 intrabuilding requirements

Lead Material:

22 AWG Sn-Plated Copper (0.64 mm [0.025"] nominal diameter)

External Coating Material:

Cured, flame retardant epoxy polymer, meeting UL94 V-0 requirements

Marking:

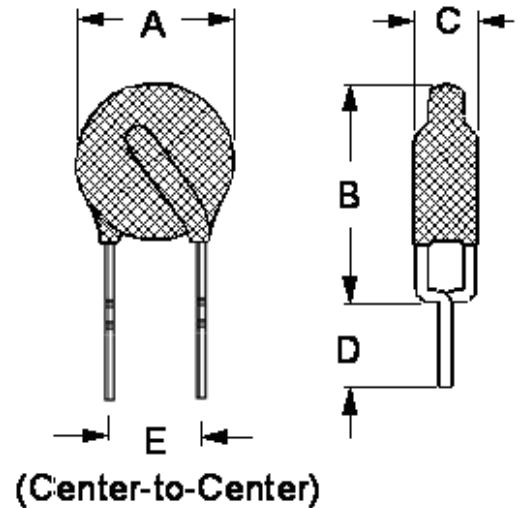
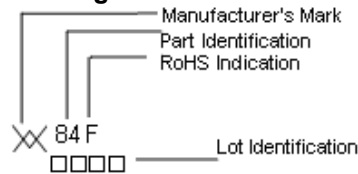


TABLE I. DIMENSIONS:

| | A | | B | | C | | D | | E |
|------|-----|--------|-----|--------|-----|--------|--------|-----|--------|
| | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | NOM |
| mm: | -- | 7.7 | -- | 10.5 | -- | 4.6 | 4.7 | -- | 5.0 |
| in:* | -- | (0.30) | -- | (0.41) | -- | (0.18) | (0.19) | -- | (0.20) |

*Rounded off approximation

TABLE II. PERFORMANCE RATINGS @ 20°C: As measured in Mueller Kelvin Clips:

| HOLD CURRENT (A) | TRIP CURRENT (A) | RESISTANCE (Ω) | | | TIME TO TRIP(Sec) @ 3A | | OPERATING TEMPERATURE (°C) | | TRIPPED POWER DISSIPATION (W) @ 100V _{DC} | |
|------------------|------------------|----------------|-------|----------------------|------------------------|-----|----------------------------|-----|--|-----|
| | | R MIN | R MAX | R _{1 MAX} * | TYP | MAX | MIN | MAX | TYP | MAX |
| 0.184 | 1.0 | 1.2 | 2.4 | 3.1 | 0.5 | 1.3 | 0 | 85 | 0.9 | 1.1 |

*Post Trip Resistance measured after one hour.

TABLE III. APPLICABLE PART DESCRIPTIONS:

| PART DESCRIPTION | PACKAGING TYPE | NOTES |
|------------------|----------------|-------|
| TRF250-184 | Bulk | N/A |

Agency Recognitions:
Reference Documents:
Precedence:
Effectivity:
CAUTION:

UL (File # E74889), CSA (File #1026908), and TUV (License #R72041425).
PS300, ITU-T K.20, K.21
This specification takes precedence over documents referenced herein.
Reference documents shall be the issue in effect on the date of invitation for bid.
Operation beyond the rated voltage or current may result in rupture, electrical arcing or flame.

Materials Information

ROHS Compliant

ELV Compliant

Pb-Free

Directive 2002/95/EC
Compliant

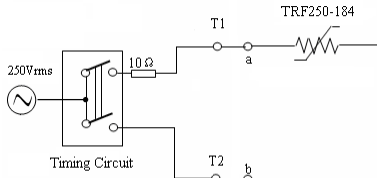
Directive 2000/53/EC
Compliant



Additional Application Fault Ratings at 20°C

- I) Power contact: 250 V_{RMS}, 10Ω load in series with TRF250-184, 1 application, t = 15 min (see Test Schematic 1 below).
– Meets Acceptance Criterion A or B of ITU-T K.20, K.21.

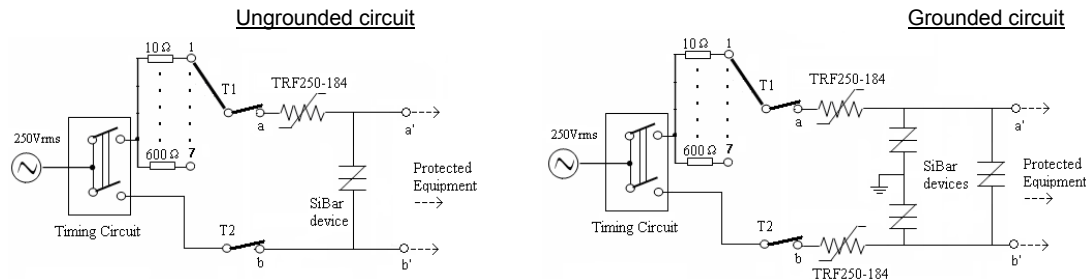
Test Schematic 1: 250 V_{RMS}, 10Ω load in series with TRF250-184:



- II) Power contact: 250 V_{RMS}, sequentially testing at 10Ω, 20Ω, 40Ω, 80Ω, 160Ω, 300Ω, 600Ω, in series with TRF250-184 & SiBar™ devices, total 7 applications, t = 2 min at each load, 5 min wait between applications (see Test Schematic 2 below).

- Tested (a) to (b) with ungrounded circuit.
- Tested either transversely [a- terminal and ground together to b- terminal, b-terminal and ground together to a- terminal], or port-to-earth [(a and b) together to ground with grounded circuit.
- Meets Acceptance Criterion A or B of ITU-T K.20, K.21.

Test Schematic 2: 250 V_{RMS}, 10Ω to 600Ω load in series with TRF250-184 & SiBar devices:



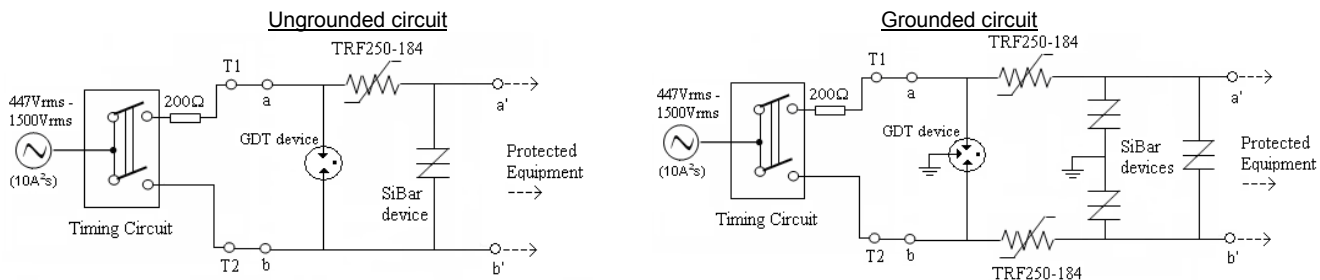
Note:

- 1) SiBar device (TVB275NSB-L): V_{DM} = 275V maximum, V_{BO} = of 350V maximum, I_{PP} = 100A (V_{OC} 10/700μs).

- III) Power induction (10A²s): 447_{RMS} (t = 2.0s) to 1500 V_{RMS} (t=0.18s), 200Ω load in series with TRF250-184 & SiBar devices with primary protection, 5 applications, 1 min wait between applications (see Test Schematic 3 below).

- Tested (a) to (b) with ungrounded circuit.
- Tested either transversely [a- terminal and ground together to b- terminal, b-terminal and ground together to a- terminal], or port-to-earth [(a and b) together to ground with grounded circuit.
- Meets Acceptance Criterion A or B of ITU-T K.20, K.21.

Test Schematic 3: 447_{RMS} (t = 2.0s) to 1500 V_{RMS} (t=0.18s), 200Ω load in series with TRF250-184, SiBar, GDT devices:



Note:

- 1) SiBar device (TVB275NSB-L): V_{DM} = 275V maximum, V_{BO} = of 350V maximum, I_{PP} = 100A (V_{OC} 10/700μs)
- 2) GDT device (GTCA28-421M-R10 for ungrounded circuit and GTCR(A)38-421M-R10 for grounded circuit): Nominal DC sparkover voltage = 420V @100V/s

This SCD is intended to present product, technical, and application data to assist the user in selecting TE Circuit Protection devices, including PolySwitch resettable devices, SiBar thyristor surge protectors, and Gas Discharge Tube devices. However, users should independently evaluate the suitability of, and test each product for their application. TE makes no warranties as to the accuracy or completeness of the information in this SCD and disclaims any liability resulting from its use. TE only obligations are those in the TE Standard Terms and Conditions of Sale and in no case will TE be liable for any incidental, indirect, or consequential damages arising from sale, resale, use, or misuse of its products. TE reserves the right to change or update, without notice, any information contained in this SCD; to change, without notice, the design, construction, materials, processing, or specification of any products; and to discontinue or limit production or distribution of any products. PolySwitch resettable devices are intended for protection against occasional overcurrent fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated, beyond the ratings listed in this SCD. Contamination of the polymeric material in the PolySwitch resettable device with certain silicon based oils or some aggressive solvents can adversely impact the performance of the devices. Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components. Operation in circuits with a large inductance can generate a circuit voltage (L di/dt) above the rated voltage of the PolySwitch resettable device.