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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:

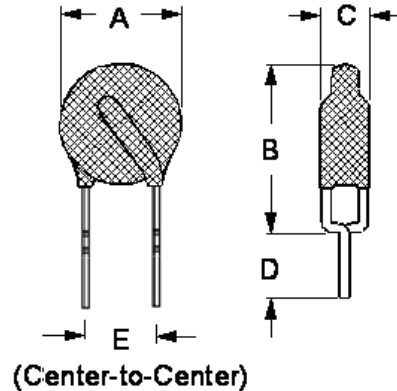
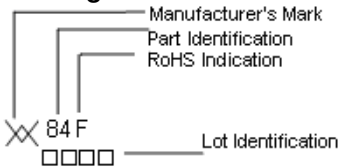


TABLE I. DIMENSIONS:

| mm: | A | | B | | C | | D | | E NOM |
|------|-----|--------|-----|--------|-----|--------|--------|-----|----------|
| | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | |
| | -- | 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: UL (File # E74889), CSA (File #1026908), and TUV (License #R72041425).
Reference Documents: PS300, ITU-T K.20, K.21
Precedence: This specification takes precedence over documents referenced herein.
Effectivity: Reference documents shall be the issue in effect on the date of invitation for bid.
CAUTION: 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

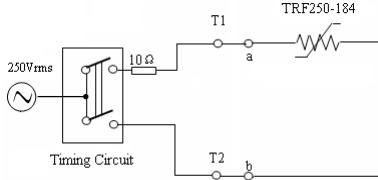
Directive 2000/53/EC
Compliant



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.

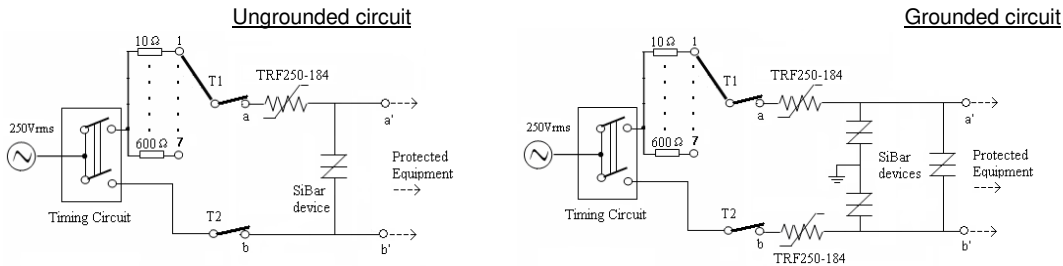
Test Schematic 1: 250 V_{RMS}, 10Ω load in series with TRF250-184:



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:



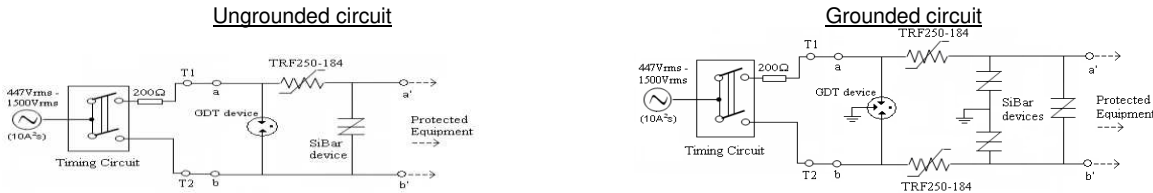
Note:

- 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

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