

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:

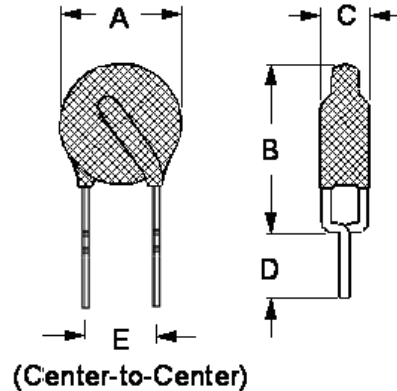
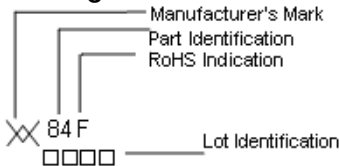


TABLE I. DIMENSIONS:

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

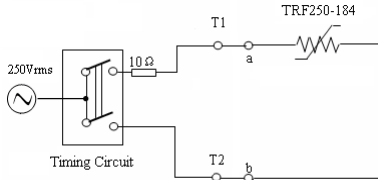


Additional Application Fault Ratings at 20°C

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.

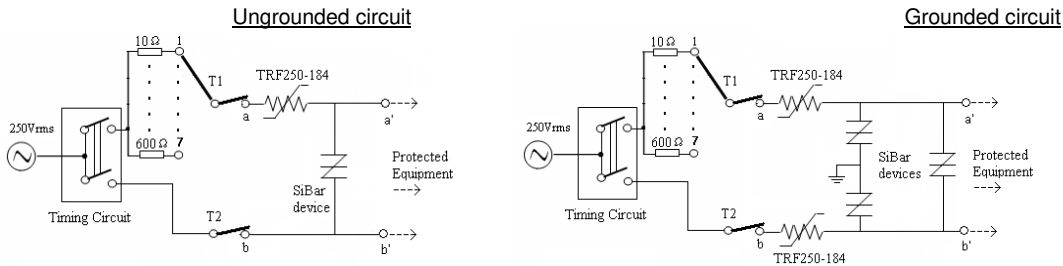
Test Schematic 1: 250 V_{RMS}, 10Ω load in series with TRF250-184:



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:



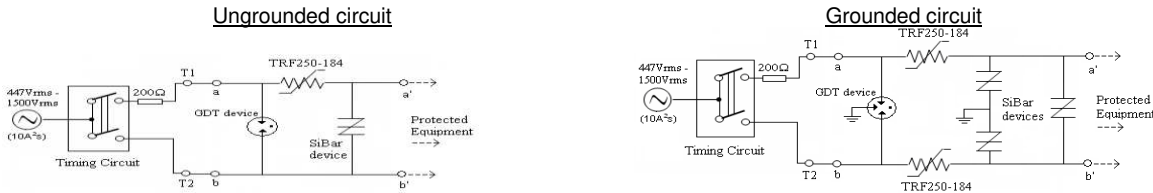
Note:

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

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, $V_{BO} = 350V$ maximum, $I_{PP} = 100A$ ($V_{OC} 10/700\mu s$)
- 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

Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and shall not be used for, any purpose (including, without limitation, military, aerospace, medical, lifesaving, life-sustaining or nuclear facility applications, devices intended for surgical implant into the body, or any other application in which the failure or lack of desired operation of the product may result in personal injury, death, or property damage) other than those expressly set forth in applicable Littelfuse product documentation. Warranties granted by Littelfuse shall be deemed void for products used for any purpose not expressly set forth in applicable Littelfuse documentation. Littelfuse shall not be liable for any claims or damages arising out of products used in applications not expressly intended by Littelfuse as set forth in applicable Littelfuse documentation. The sale and use of Littelfuse products is subject to Littelfuse Terms and Conditions of Sale, unless otherwise agreed by Littelfuse.