

**Specification Status: Released**

**Operating Conditions at 20°C:**

Maximum Continuous Operating Voltage ( $V_{MCO}$ ): 100V<sub>DC</sub>  
Maximum Interrupt Current ( $I_{INT}$ ): 10A<sub>RMS</sub>

**Fault Ratings at 20°C:**

250 V<sub>RMS</sub>, 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

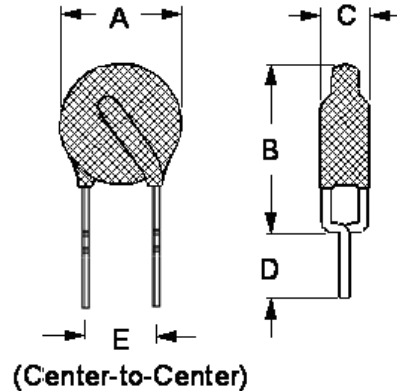
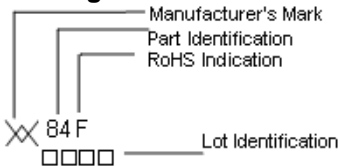
**Lead Material:**

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 <sub>DC</sub>	
		R MIN	R MAX	R <sub>1</sub> 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

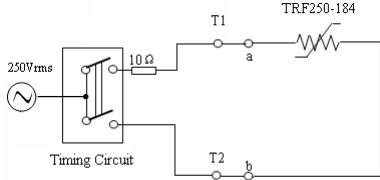
Directive 2000/53/EC  
Compliant



**Additional Application Fault Ratings at 20°C**

I) Power contact: 250 V<sub>RMS</sub>, 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.

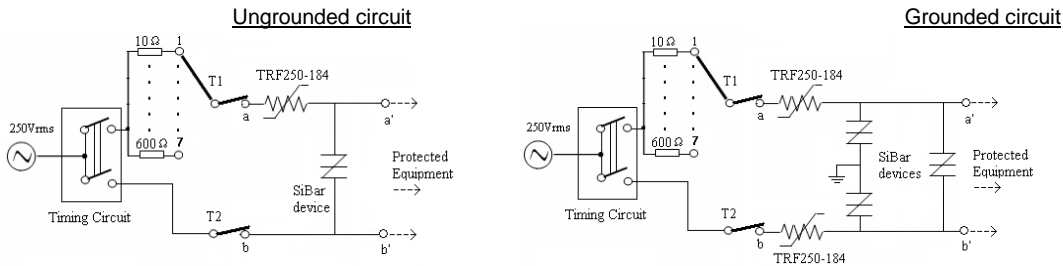
Test Schematic 1: 250 V<sub>RMS</sub>, 10Ω load in series with TRF250-184:



II) Power contact: 250 V<sub>RMS</sub>, 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<sub>RMS</sub>, 10Ω to 600Ω load in series with TRF250-184 & SiBar devices:



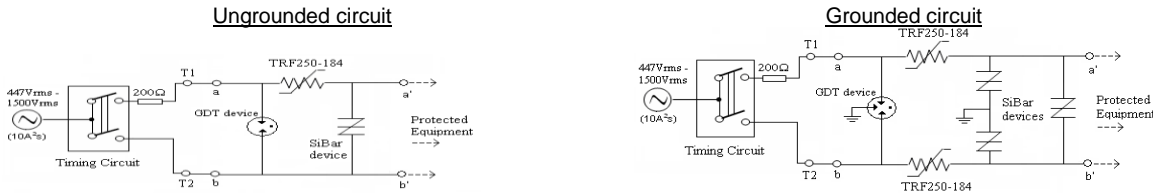
Note:

- 1) SiBar device (TVB275NSB-L): V<sub>DM</sub> = 275V maximum, V<sub>BO</sub> = of 350V maximum, I<sub>PP</sub> = 100A (V<sub>OC</sub> 10/700μs).

III) Power induction (10A<sup>2</sup>s): 447<sub>RMS</sub> (t = 2.0s) to 1500 V<sub>RMS</sub> (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<sub>RMS</sub> (t = 2.0s) to 1500 V<sub>RMS</sub> (t=0.18s), 200Ω load in series with TRF250-184, SiBar, GDT devices:



Note:

- 1) SiBar device (TVB275NSB-L): V<sub>DM</sub> = 275V maximum, V<sub>BO</sub> = of 350V maximum, I<sub>PP</sub> = 100A (V<sub>OC</sub> 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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