**Features**

- ◆ Radial Leaded Devices
- ◆ Cured, flame retardant epoxy polymer insulating material meets UL 94V-0 requirements
- ◆ Bulk Package in tape/ reel is available for most models

Applications

For a low voltage power supply which is up to 250V and a load for circuit protection,

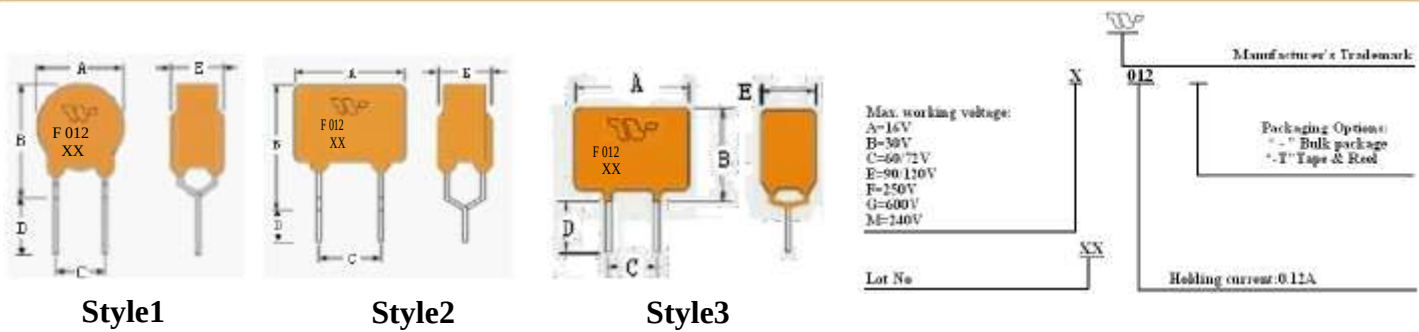
- ◆ Security and fire alarm systems
- ◆ Analog and digital line cards
- ◆ Modems and DSL

Electrical Characteristics

P/N	I _H (A)	I _T (A)	V _{max} (V)	I _{max} (A)	V _{max} (V)	Time To Trip		Pd _{typ} (W)	R _{min} (Ω)	R _{max} (Ω)	R1 _{max} (Ω)
						(A)	(Sec.)				
TRF002	0.020	0.045	60	3.0	250	0.10	3.0	1.0	65	145	240
TRF004	0.040	0.080	60	3.0	250	0.20	3.0	1.0	24	65.0	97.5
TRF006	0.060	0.120	60	3.0	250	0.30	3.0	1.0	22.0	36.0	56.0
TRF008	0.080	0.160	60	3.0	250	0.35	4.0	1.0	14.0	22.0	33.0
TRF009	0.090	0.220	60	3.0	250	1.00	1.0	1.0	9.7	20.6	33.0
TRF011	0.110	0.220	60	3.0	250	1.00	1.0	1.0	6.0	12.0	18.0
TRF012	0.120	0.240	60	3.0	250	1.00	3.0	1.0	6.0	10.0	16.0
TRF012U	0.120	0.240	60	3.0	250	1.00	1.5	1.0	6.0	10.0	16.0
TRF014	0.145	0.29	60	3.0	250	1.00	2.5	1.0	3.0	6.0	14.0
TRF014U	0.145	0.29	60	3.0	250	1.0	2.5	1.0	3.5	6.5	12.0
TRF018	0.180	0.54	60	3.0	250	3.0	1.5	1.8	1.0	2.2	4.0
TRF018U	0.180	0.54	60	3.0	250	3.0	1.5	1.8	1.0	2.2	4.0
TRF020	0.200	0.6	60	3.0	250	3.0	5.0	1.8	1.7	3.5	6.30
TRF030	0.300	0.60	60	3.0	250	3.0	6.0	1.8	1.0	2.2	3.50
TRF040	0.400	0.800	60	5.5	250	3.0	8	1.8	0.80	1.60	3.20
TRF050	0.500	1.00	60	6.0	250	3.0	10	3.0	0.56	1.40	2.52
TRF060	0.600	1.20	60	7.0	250	3.0	12	3.2	0.40	1.10	2.16
TRF080	0.800	1.60	60	8.0	250	4.0	18	3.6	0.32	0.80	1.44
TRF100	1.000	2.00	60	10.0	250	5.0	21	2.9	0.22	0.50	1.45
TRF150	1.500	3.00	60	15.0	250	7.50	25.0	3.5	0.12	0.28	0.68
TRF200	2.000	4.00	60	10.0	250	10.0	28	4.5	0.09	0.192	0.42

“U” suffix indicates product without insulation coating.

Product Dimensions & Marking (Unit: mm)

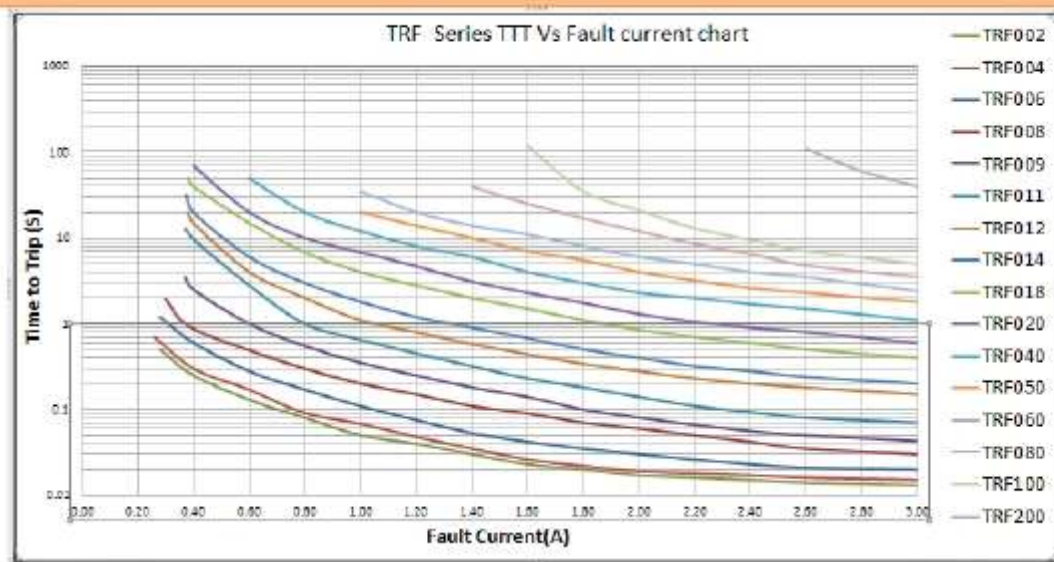


P/N	A	B	C	D	E	Physical Characteristics		
	Max.	Max.	Typ.	Min.	Max.	Style	Lead Φ mm	Material
TRF002	7.4	12.7	5.1	7.6	4.5	1	0.5	CP
TRF004	5.8	9.9	5.1	7.6	4.5	1	0.5	CP
TRF006	5.8	9.9	5.1	7.6	4.5	1	0.6	CP
TRF008	7.4	12.7	5.1	7.6	4.5	1	0.6	CP
TRF009	7.4	12.7	5.1	7.6	4.5	1	0.6	CP
TRF011	6.5	11.0	5.1	5.0	4.5	2	0.6	CP
TRF012	6.8	12.0	5.1	7.6	4.5	2	0.6	CP
TRF012U	6.8	12.0	5.1	7.6	4.5	2	0.6	CP
TRF014	6.5	11.0	5.1	5.0	4.5	2	0.6	CP
TRF014U	6.0	10.0	5.1	4.7	4.5	2	0.6	CP
TRF018	10.2	14.5	5.1	7.6	4.5	1	0.6	CP
TRF018U	10.2	14.5	5.1	7.6	4.5	1	0.6	CP
TRF020	10.5	17.0	5.1	7.6	4.5	1	0.6	CP
TRF030	11.0	16.8	5.1	7.6	4.5	1	0.6	CP
TRF040	11.7	17.0	5.1	7.6	3.8	1	0.6	CP
TRF050	13.0	18.0	5.1	7.6	3.8	2	0.6	CP
TRF060	14.0	19.5	5.1	7.6	3.8	2	0.6	CP
TRF080	16.3	21.3	5.1	7.6	3.8	3	0.8	Sn/Cu
TRF100	17.8	22.9	5.1	7.6	3.8	3	0.8	Sn/Cu
TRF150	20.8	29.8	10.2	7.6	3.8	3	0.8	Sn/Cu
TRF200	28.4	33.5	10.2	7.6	3.8	3	0.8	Sn/Cu

Thermal Derating Chart – I_{hold} (Amps)

P/N	Ambient Operating Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
TRF002	0.031	0.028	0.023	0.020	0.017	0.015	0.013	0.011	0.008
TRF004	0.062	0.055	0.048	0.040	0.033	0.029	0.026	0.022	0.017
TRF006	0.093	0.075	0.071	0.060	0.050	0.044	0.038	0.033	0.025
TRF008	0.124	0.110	0.095	0.080	0.066	0.059	0.051	0.044	0.033
TRF009	0.140	0.124	0.110	0.090	0.075	0.068	0.058	0.050	0.038
TRF011	0.171	0.151	0.131	0.110	0.091	0.081	0.071	0.061	0.046
TRF012(U)	0.186	0.165	0.143	0.120	0.099	0.088	0.077	0.066	0.050
TRF014(U)	0.225	0.199	0.172	0.145	0.119	0.106	0.093	0.080	0.060
TRF018(U)	0.269	0.240	0.211	0.180	0.153	0.138	0.123	0.109	0.087
TRF020	0.310	0.275	0.237	0.200	0.165	0.147	0.128	0.110	0.082
TRF030	0.465	0.413	0.356	0.300	0.248	0.221	0.192	0.165	0.123
TRF040	0.620	0.550	0.475	0.400	0.330	0.295	0.255	0.220	0.165
TRF050	0.775	0.688	0.594	0.500	0.412	0.366	0.319	0.275	0.206
TRF060	0.930	0.825	0.710	0.600	0.495	0.443	0.393	0.330	0.246
TRF080	1.240	1.100	0.950	0.800	0.660	0.590	0.510	0.440	0.330
TRF100	1.550	1.38	1.19	1.00	0.83	0.74	0.64	0.55	0.41
TRF150	2.400	2.00	1.80	1.50	1.20	1.10	0.90	0.80	0.60
TRF200	3.100	2.75	2.38	2.00	1.65	1.48	1.28	1.10	0.83

Typical time to trip at 25°C



The Time to Trip curves represent typical performance of a device in a simulated application environment. Actual performance in specific customer applications may differ from these values due to the influence of other variables.

Agency Approvals

- Agency Approvals: TUV
- Regulation/Standard: RoHS, Reach, HF

Standard Packaging Information

Model	Q'ty/bag
TRF002-TRF040	1000 pcs
TRF050-TRF100	500 pcs
TRF200	200 pcs

- Tape and Reel Specifications
- Devices taped using EIA468-B/IEC286-2 standards.