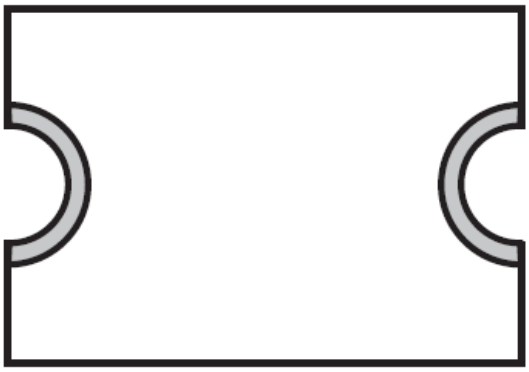
1. Scope

This specification applies for the Lead-Free SMD Resettable fuse series .

2. Construction



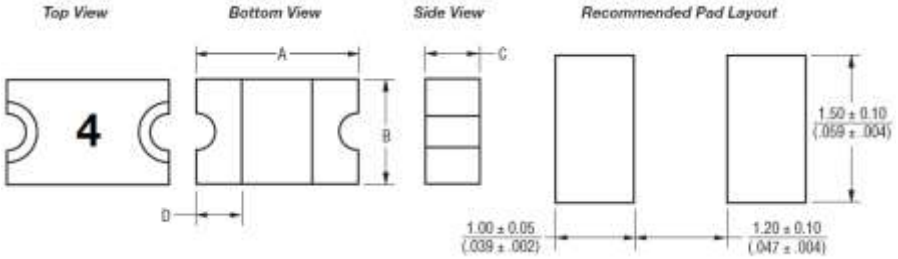
Terminal material:
Electroless Ni under immersion Au

Termination pad solderability:
Standard Au finish:
Meets ANSI/J-STD-002 Category 2.

3. Type Designation

TRF	10	—	035	V06	—	E	F
SMD Resettable fuse	Size: 10:0805(2012)		I-hold: 035:0.35A	Vmax(Vdc): V06: 6V, V08: 8V, V12: 12V, V13: 13.2V, V15: 15V, V16: 16V, V30: 30V, V60: 60V		Packaging: E:Embossed Tape, T:Paper Tape	Lead Free

4. Dimensions



Dimensions

Unit: mm

Part Designation	A		B		C		D
	Min.	Max.	Min.	Max.	Min.	Max.	Min.
TRF10-010V15-EF	2.00	2.30	1.20	1.50	0.48	0.85	0.20
TRF10-020V09-EF	2.00	2.30	1.20	1.50	0.48	0.85	0.20
TRF10-035V06-EF	2.00	2.30	1.20	1.50	0.48	0.85	0.20
TRF10-050V06-EF	2.00	2.30	1.20	1.50	0.48	0.85	0.20
TRF10-075V06-EF	2.00	2.30	1.20	1.50	0.75	1.25	0.20
TRF10-110V06-EF	2.00	2.30	1.20	1.50	0.75	1.25	0.20

Packaging: 3000 pcs. per reel.

5. Applications and ratings

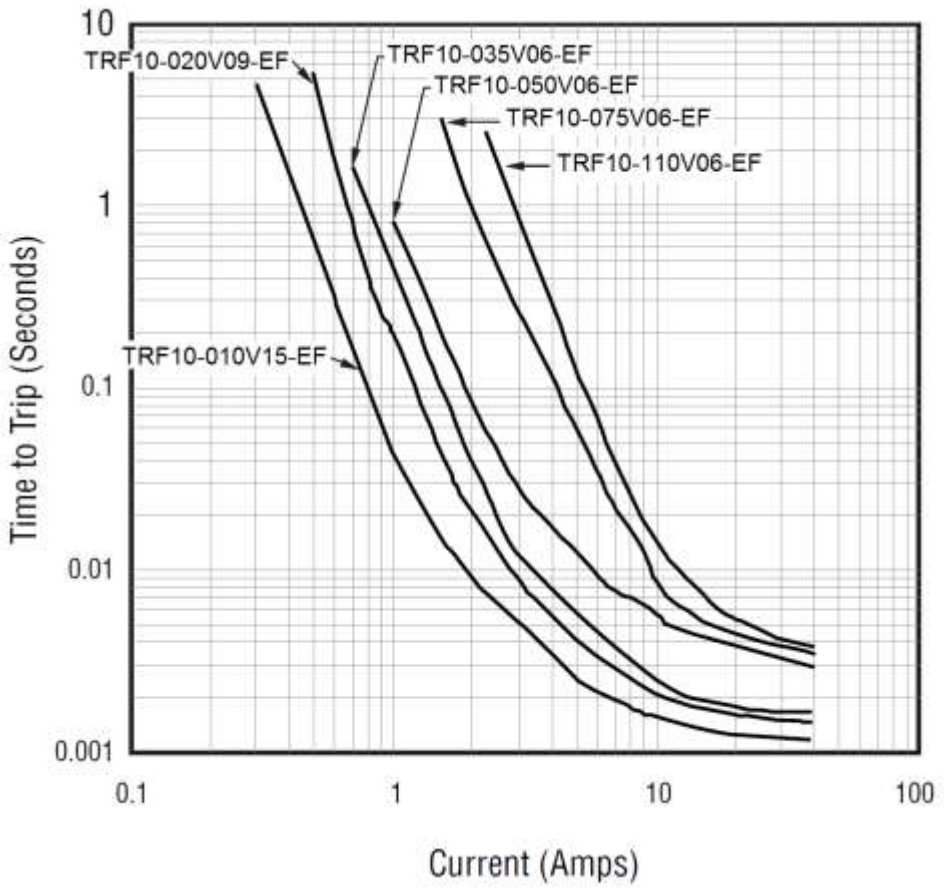
Part Designation	V_{max} (Vdc)	I_{max} (A)	I_{hold} at 23℃ (A)	I_{trip} at 23℃ (A)	P_d Typ. (W)	Maximum time to trip at 23℃		Resistance at 23℃	
						Curren (A)	Time (Sec)	Ri_{min} (Ω)	$R1_{max}$ (Ω)
TRF10-010V15-EF	15	40	0.10	0.3	0.5	0.5	1.5	1	7.5
TRF10-020V09-EF	9	40	0.20	0.5	0.5	8	0.02	0.65	3.5
TRF10-035V06-EF	6	40	0.35	0.75	0.5	8	0.1	0.25	1.2
TRF10-050V06-EF	6	40	0.50	1	0.5	8	0.1	0.15	0.9
TRF10-075V06-EF	6	40	0.75	1.5	0.6	8	0.2	0.09	0.35
TRF10-110V06-EF	6	40	1.10	2.2	0.6	8	0.3	0.06	0.21

I_{hold} = Hold Current. Maximum current device will sustain for 30min without tripping in 23°C still air.
I_{trip} = Trip Current. Minimum current at which the device will trip in 23°C still air.
V_{max} = Maximum voltage device can withstand without damage at rated current.
I_{max} = Maximum fault current device can withstand without damage at rated voltage.
P_d = Power dissipated from device when in the tripped state at 23°C still air.
Ri_{min} = Typical resistance of device in initial (un-soldered) state.
$R1_{max}$ = Maximum resistance of device at 23°C measured one hour post reflow.

6. Thermal Derating Chart

Part	Maximum ambient operating temperature(T_{mao}) vs. hold current (I_{hold}) (Amps)								
Designation	-40℃	-20℃	0℃	23℃	40℃	50℃	60℃	70℃	85℃
TRF10-010V15-EF	0.15	0.13	0.12	0.10	0.09	0.08	0.07	0.06	0.05
TRF10-020V09-EF	0.28	0.25	0.23	0.20	0.17	0.14	0.12	0.10	0.07
TRF10-035V06-EF	0.47	0.44	0.39	0.35	0.30	0.27	0.24	0.20	0.14
TRF10-050V06-EF	0.68	0.62	0.55	0.50	0.40	0.37	0.33	0.29	0.23
TRF10-075V06-EF	1.00	0.90	0.79	0.75	0.63	0.57	0.53	0.42	0.35
TRF10-110V06-EF	1.45	1.35	1.20	1.10	0.92	0.84	0.75	0.65	0.52

7. Typical Time to Trip at 23 °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.

8. Environment

8.1 Operating Conditions

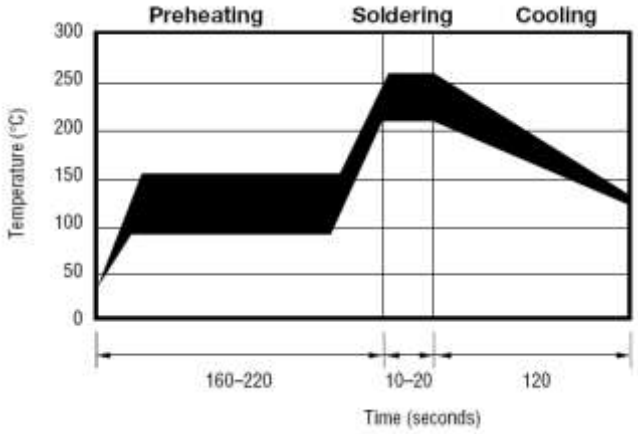
Operating Temperature: -40℃ to 85℃

Device Surface Temperature in Tripped State: 125℃ max

8.2 Environmental Specifications

TEST ITEM	Condition	Resistance Change
Passive aging	85℃,1000hr	±5% typical
Humidity aging	85℃,85%R.H,1000hr	±5% typical
Thermal shock	85℃ to -40℃,20times	±10% typical
Resistance to solvent	MIL-STD-202,Method215	No change
Vibration	MIL-STD-883C,Method2007.1 Condition A	No change

8.3 Solder Reflow Recommendations

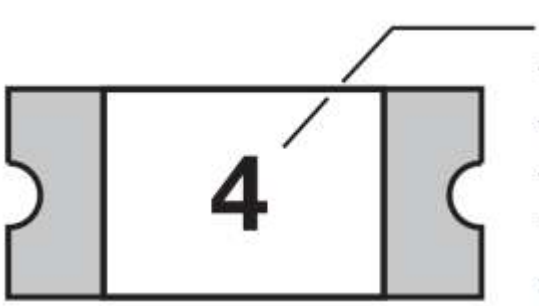


- Recommend reflow methods : IR, vapor phase oven, hot air oven.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25 mm(0.010 inch).
- Devices can be cleaned using standard method and solvents.

Note : If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

9. Typical Part Marking

Represents total content. Layout may vary.



PART IDENTIFICATION:
TRF10-010V15-EF = 1
TRF10-020V09-EF = 2
TRF10-035V06-EF = /
TRF10-050V06-EF = 4
TRF10-075V06-EF = 5
TRF10-110V06-EF = 6

BIWEEKLY DATE CODE WILL APPEAR ON THE PACKAGING LABEL:
WEEK 1 AND 2 = A
WEEK 51 AND 52 = Z

10. Storage Conditions:

Temperature : 40℃max, Humidity : 40%~70%

11. Shelf Life:

2 years from manufacturing date

12. Taping & Reel

Tape Dimensions	TRF10-010V15-EF TRF10-020V09-EF TRF10-035V06-EF TRF10-050V06-EF per EIA 481-1	TRF10-075V06-EF TRF10-110V06-EF per EIA 481-1
W	8.0 – 0.30 (0.315 – 0.012)	8.0 – 0.30 (0.315 – 0.012)
P_0	4.0 – 0.10 (0.157 – 0.004)	4.0 – 0.10 (0.157 – 0.004)
P_1	4.0 – 0.10 (0.157 – 0.004)	4.0 – 0.10 (0.157 – 0.004)
P_2	2.0 – 0.05 (0.079 – 0.002)	2.0 – 0.05 (0.079 – 0.002)
A_0	1.65 – 0.10 (0.065 – 0.004)	1.65 – 0.10 (0.065 – 0.004)
B_0	2.4 – 0.10 (0.094 – 0.004)	2.4 – 0.10 (0.094 – 0.004)
B_1 max.	4.35 (0.171)	4.35 (0.171)
D_0	1.50 + 0.10/-0.0 (0.059 + 0.004/-0)	1.50 + 0.10/-0.0 (0.059 + 0.004/-0)
F	3.5 – 0.05 (0.138 + 0.002)	3.5 – 0.05 (0.138 + 0.002)
E_1	1.75 – 0.10 (0.069 – 0.004)	1.75 – 0.10 (0.069 – 0.004)
E_2 min.	6.25 (0.246)	6.25 (0.246)
T max.	0.6 (0.024)	0.6 (0.024)
T_1 max.	0.10 (0.004)	0.10 (0.004)
K_0	0.95 – 0.10 (0.037 – 0.004)	1.25 – 0.10 (0.049 – 0.004)
Leader min.	390 (15.35)	390 (15.35)
Trailer min.	160 (6.30)	160 (6.30)
Reel Dimensions		
A max.	185 (7.28)	185 (7.28)
N min.	50 (1.97)	50 (1.97)
W_1	8.4 + 1.5/ -0.0 (0.331 + 0.059/-0)	8.4 + 1.5/ -0.0 (0.331 + 0.059/-0)
W_2 max.	14.4 (0.567)	14.4 (0.567)

UNIT = MM (INCHES)