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1. SCOPE

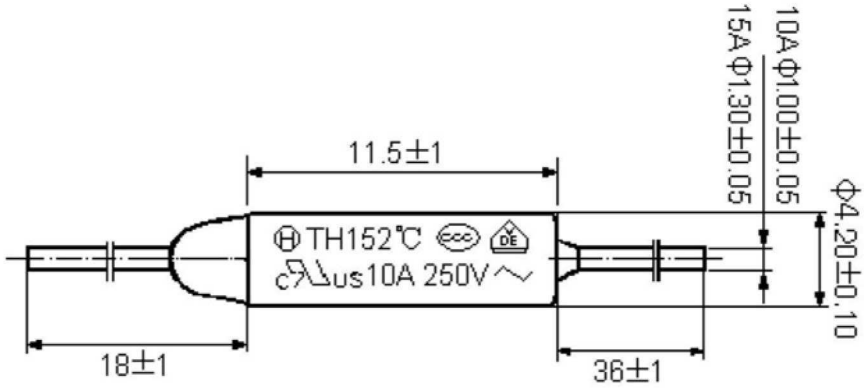
This specification defines the technical requirements of TZ-D series thermal-link with PROFFUSE®

2. MATERIAL

PART	MATERIAL	REMARK
Metal Case with Pig-tail	Brass (Metal Case) Copper (Pig-tail)	Silver Plated (Metal Case) Tin Plated (Pig-tail)
Thermal Pellet	Organic Compounds	
Shim	Copper	
Star Contact	Copper	Silver Plated
Spring	Steel Wire	
Ceramic Bead	Alumina	
Lead Wire	Copper	Silver Plated
Sealing Resin	Epoxy	Black

3. DIMENSION & STRUCTURE

3.1 DIMENSION



3.2 Metal Case

Metal case shall have no defects such as crack, injury and contamination.

3.3 Lead Wire

The solderability of the lead Wire shall be in accordance with the standard of SJ/T 10669.

3.4 Sealing Resin

Sealing resin shall have no defects such as crack, breaking off.

4. MECHANICAL PERFORMANCES

Thermal-links shall withstand the below experiments.

4.1 Tensile Test

The thermal-link shall be supported in any convenient manner in order not to damage it and 16N of tensile force shall be applied to each lead wire for 1 minute. After the test, the thermal-link shall not show any damage such as crack, breaking off.

4.2 Thrust test

The thermal-link shall be supported using any convenient means such that it is not damaged and 4N of thrust force shall be applied to each lead wire for 1 minute. After the test, the thermal-link shall not show any damage such as crack, breaking off.

4.3 Bending test

The thermal-link shall be rigidly supported such that it is not damaged. Each lead wire shall be bent through 90° at a location 10 mm from the body of the thermal-link and then twisted through 180°. After the test, the lead wire shall not show any damage such as crack, injury.

5. ELECTRICAL & TEMPERATURE PERFORMANCES

5.1 Rated Voltage Ur & Rated Current Ir: 250V 10A/15A.

5.2 Rated Functioning Temperature Tf: 66℃~240℃.

5.3 Functioning Characteristics and Safety Approvals

Type	Rated Functioning Temp. T_f(℃)	Fusing-off Temp. (℃)	Holding Temp. T_h (℃)	Maximum Temp. Limit T_m (℃)	Safety Approvals		
					CCC 10A	VDE 10A	$_{c}UR_{US}$ 10A
TZ-D-066	66	62±2	42	130	•		
TZ-D-072	72	***70±2***	45	150		•	•
TZ-D-077	77	***75±2***	55	120	•	•	•
TZ-D-084	84	80±2	60	***150***	•		
TZ-D-093	93	***90±2***	66	150			•
TZ-D-094	94	92±2	66	150		•	•
TZ-D-099	99	***97±2***	71	150	•	•	•
TZ-D-105	105	***103±2***	80	150	•		
TZ-D-110	110	108±2	88	***140***	•	•	•
TZ-D-113	113	108±2	88	150	•		
TZ-D-121	121	***119±2***	94	150	•		
TZ-D-128	128	***126±2***	106	155	•	•	•
TZ-D-133	133	***131±2***	104	159	•	•	•
TZ-D-139	139	137±2	117	170	•		
TZ-D-142	142	***140±2***	114	159	•	•	•
TZ-D-152	152	149±3	128	176	•	•	•
TZ-D-157	157	***154±2***	127	172	•	•	•
TZ-D-167	167	***165±2***	146	190	•	•	•
TZ-D-172	172	170±2	144	189	•		
TZ-D-184	184	182±2	160	214	•	•	
TZ-D-192	192	***189±3***	164	300	•	•	•
TZ-D-198	198	***196±2***	170	250	•		
TZ-D-216	216	***213±3***	189	350	•	•	
TZ-D-228	228	225±3	190	300	•	•	•
TZ-D-240	240	***234±3***	190	350	•	•	•

- Denotes for Approved

5.3.1 Temperature Requirements

In order to ensure the accuracy of required temperature settings, indicated test temperatures shall be measured with an tolerance of ±1℃. Care shall furthermore be taken that temperature

difference in that port of the test oven where the samples are tested, do not exceed 1 ℃ at any point. The signal current for operation of thermal-links is limited to less than 10mA.

5.3.2 Holding Temperature (Th)

In the closed test oven, where thermal-links are carrying rated current and the voltage shall not exceed rated voltage, the temperature of thermal-links shall maintain Th+0/-6℃ for 168 hours. At the end of this test, all samples shall not function.

5.3.3 Rated Functioning Temperature (Tf)

Thermal-links shall be exposed in the test oven with the temperature of Tf-20℃ for at least 20 minutes, Then increase the temperature steadily with a rate of rise between 0.5℃ per minute to 1℃ per minute until all samples have functioned. The individual functioning temperature shall not be less than Tf-10℃ and not greater than Tf.

5.3.4 Maximum Temperature Limit (Tm)

The specimens shall be subjected to Tm +0/-5℃ for 10 minutes, and then within the specimens maintained at Tm +0/-5℃, a test voltage of 2Ur shall be applied between the open terminals. No flashover, breakdown or re-function shall occur. At the end of this test, all specimens shall have functioned.

5.4 Dielectric Strength

Test voltage value shall comply with the ones indicated in the below table. The test voltage is the substantially sine-wave form with a frequency between 45Hz and 62Hz.

Position tested	Test voltage
Between Disconnection (contact parts)	2Ur

The specimens are deemed to comply with the requirements if no flashover or breakdown occurs during the dielectric strength test. Glow discharges that do not cause a drop for the test voltage are neglected.

5.5 Interrupting Current

The interrupting current of thermal-links shall be tested at a continual temperature rise of (2±1)℃. Per minute, with a test voltage of 1.1Ur and the 1.5 Ir. During and after these tests, no arc or flame shall occur, and no materials are expelled that might impair the surrounding area or otherwise arouse something hazardous.

5.6 Transient Overload Current

DC current pulses, with an amplitude of 15 Ir and a duration of 3ms with 10s intervals are applied for 100 successive cycles through the current path. After the test, there shall be no interruption of the current path nor other damage in thermal-links.

5.7 Insulation Resistance

Compliance is checked by measuring the insulation resistance after interrupting current test, also after having operated in the temperature test. The insulation resistance shall be measured with a D.C. voltage of 2Ur between the open terminals. The measured between the open terminals is not less than 0.2MΩ.

6. MARKING

6.1 The marking on fuse shall be legible and rub-resistant. Compliance is checked by trying to rub out the marking lightly for 15s with a piece of cloth soaked with water.

6.2 The markings for every fuse shall be prescribed as below:

1) Type
2) Trade Mark PROFUSE
3) Rated Functioning Temperature
4) Rated Current & Voltage
5) Safety Approval Logo:

6.3 The label in the smallest package in which the fuses are put shall contain the Type, Trade Mark, Rated Functioning Temperature, Rated Voltage, Rated Current, Safety Approval Logo, Lot. No., The products which meet the RoHS directive shall be marked with the RoHS symbol.

7. PACKING DETAILS

7.1 Packing Standard:

100EA/little plastic bag→5 little plastic bags /inner box→20 inner boxes/ external carton

Little plastic bag dimensions: length×width×thickness=10.5mm×9.0mm×0.04mm

Inner box dimensions: length×width×height =125mm×75mm×75mm

External carton dimensions: length×width×height =400mm×320mm×150mm

7.2 We may pack according to the clients' requirements.

7.3 Packing should meet the requirements of anti-moisture and anti-shaking so that the products will not absorb the moisture or be damaged during transportation or storage.

8. Installation Notes

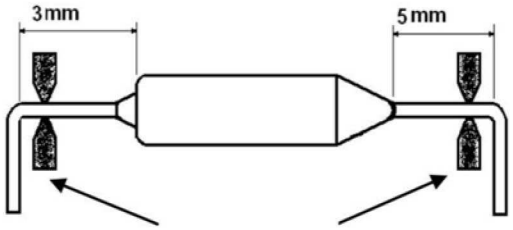
The function of thermal-link can be affected by installation methods, during installation you should take appropriate measures to avoid the thermal-link being damaged or cut off prematurely.

8.1 Thermal-link can use welding, compression joint, screw fixing and other methods to install, but making sure the connection be tightening. After installation, please do not forcefully pull or screw the lead wire.

8.2 The treatment of lead wire bending during installation process.

8.2.1 The bend of metal case riveting end is above 3mm away from the metal case, and the bend of sealing resin end is above 5mm away from the sealing resin.

8.2.2 When bending the lead wire should be firstly fixed by the stationary fixture and then be bended beyond the fixed point.



Stationary Fixture

8.3 If adopting welding or point welding to install, the heat produced by welding may cause the functioning of thermal-link, to avoid the mentioned function, please pay attention to the following points:

8.3.1 Had better not to use welding method to install when the specification is below 121℃. When installing the thermal-link of higher rated function temperature in welding method, it should consider the coordinating relationship among environment temperature, function temperature and the melting point of soldering tin.

8.3.2 Apply appropriate method to cooling the space between welding point and thermal-link body when welding the thermal-link, for example, to use metal fixture with good conductivity to touch the lead wire to conduct heat in this space.

8.3.3 Try to make the welding point far away from the thermal-link body, the welding point of metal case riveting end should be above 20mm away from the metal case, the welding point of sealing resin end should be above 10mm away from the sealing resin, promptly cool the thermal-link after welding.

8.3.4 Welding temperature within 300℃, welding time within 2 seconds. Try to employ low welding temperature and complete welding work in a short time.

8.4 Connectors and terminals should not be easily loosened because of the vibration, force, thermal circulation or other similar stress.

8.5 The parts to install thermal-link should have enough mechanical strength and rigidity. The plank, cramping apparatus or bolt must be able to endure probable thrust force, tensile force, twisting moment, vibration and the impact of cyclical temperature changes.

8.6 Installed thermal-link should have enough protection to prevent the harmful effect brought by probable liquid spill of the equipment.

8.7 Please do not use thermal-link under the environment of water, organic solvents, corrosive gas, high humidity or high pressure.