

Introduction:

- ✧ MRTF Series is a Metal case resettable thermal fuse, it will detect the over temperature condition automatically and cut off the circuit when the temperature is too high. When the temperature decrease, its resettable characteristic will make it come back to normal condition and be used repetitively.

Features:

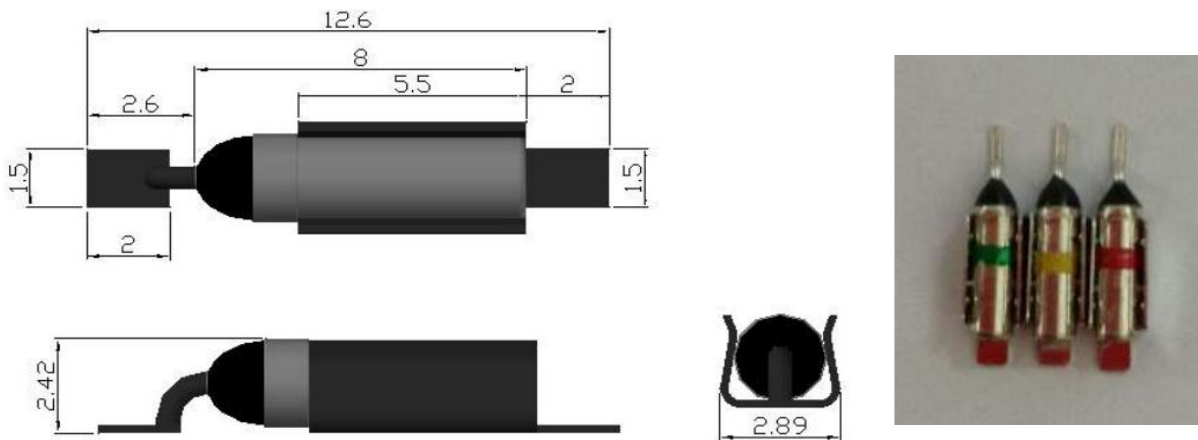
- ✧ Complex protector device for over temperature protection
- ✧ Very Small size features can save large PCB space
- ✧ Alternative package between SMD Type and Leaded Type
- ✧ Stable and accurate cut-off due to the mechanical action.
- ✧ 6000times Max Recycling action

Applications:

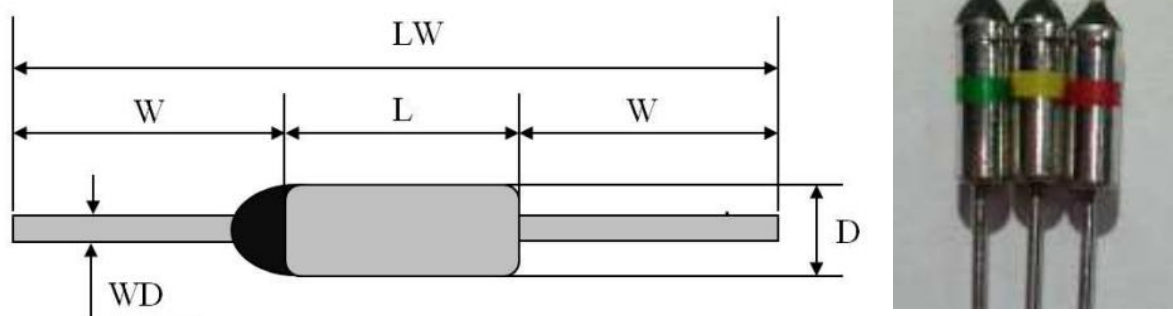
- ✧ Motor, Heating Source of Electric Products, LED Lighting, Li-Battery Pack

Structure:(Unit:mm)

MRTF-***S Series (SMD Type)



MRTF-***L Series (Leaded Type)



| Leaded Type | Dimensions(mm) | | | | |
|------------------|----------------|----------|----------|-------|-------|
| | L | D(Ø) | WD(Ø) | W | LW |
| MRTF-***L Series | 6.6±0.5 | 2.15±0.1 | 0.6±0.05 | 26~28 | 59~63 |

Electrical Specifications:

| Part No. | Item | Voltage Rating | Ampere Rating | Cut-off Temp. | Reset Temp. | Initial Resistance | Recycle Number |
|-----------|-------|----------------|---------------|---------------|-------------|--------------------|----------------|
| | | Vr | Ir | Tc | Tr | Rin | - |
| | Unit | V (AC) | A (AC) | ℃ | ℃ | mΩ | - |
| | Range | Max. | Max. | ±5 | ±10 | under | Max. |
| MRTF-075* | ±5 | 250 | 0.5 | 75 | 55 | 1A<80mΩ 2A<40mΩ | 6000 |
| MRTF-095* | ±5 | 250 | 0.5 | 95 | 75 | | 6000 |
| MRTF-115* | ±5 | 250 | 0.5 | 115 | 95 | | 6000 |

Operating Characteristics:

75℃

| %of Ampere Rating(A) | Operating Time | | Operating Type |
|----------------------|----------------|---------|----------------|
| | Min | Max | |
| 150% | 100 hrs. | - | Resettable |
| 300% | 15 sec. | 1 min. | Resettable |
| 400% | 5 sec. | 15 sec. | Resettable |
| 500% | 1 sec. | 5 sec. | Resettable |
| 1000% | 0.5 sec. | 2 sec. | Permanent Open |

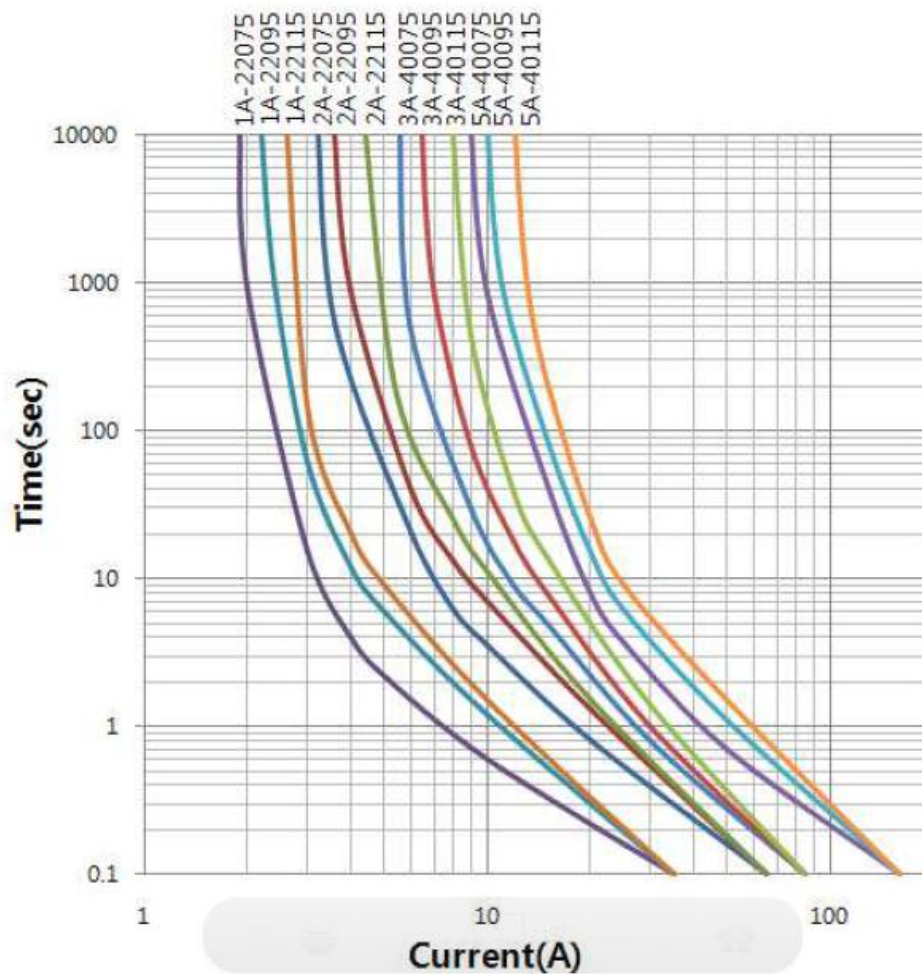
95℃

| %of Ampere Rating(A) | Operating Time | | Operating Type |
|----------------------|----------------|---------|----------------|
| | Min | Max | |
| 150% | 100 hrs. | - | Resettable |
| 300% | 30 sec. | 2 min. | Resettable |
| 400% | 10 sec. | 30 sec. | Resettable |
| 500% | 3 sec. | 10 sec. | Resettable |
| 1000% | 0.5 sec. | 3 sec. | Permanent Open |

115°C

| %of Ampere Rating(A) | Operating Time | | Operating Type |
|----------------------|----------------|---------|----------------|
| | Min | Max | |
| 150% | 100 hrs. | - | Resettable |
| 300% | 30 sec. | 10 min. | Resettable |
| 400% | 15 sec. | 1 min. | Resettable |
| 500% | 3 sec. | 10 sec. | Resettable |
| 1000% | 0.5 sec. | 3 sec. | Permanent Open |

Time-Current Curves:

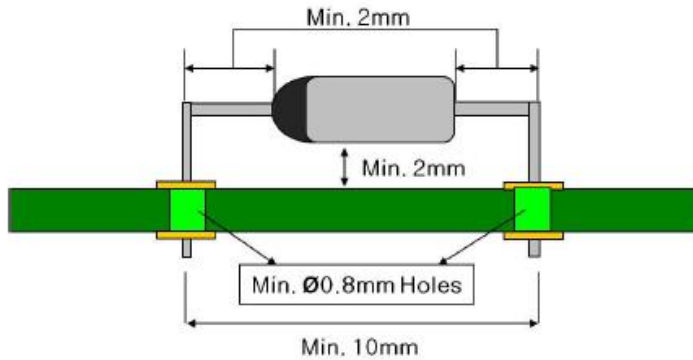


Reliability Test:

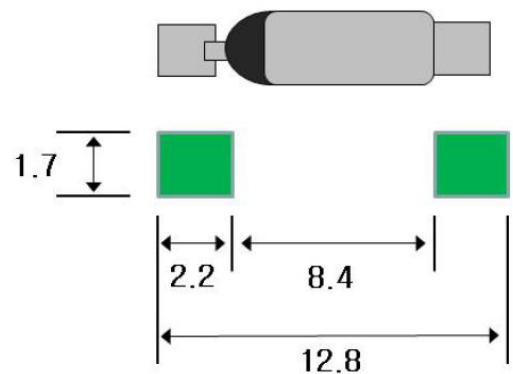
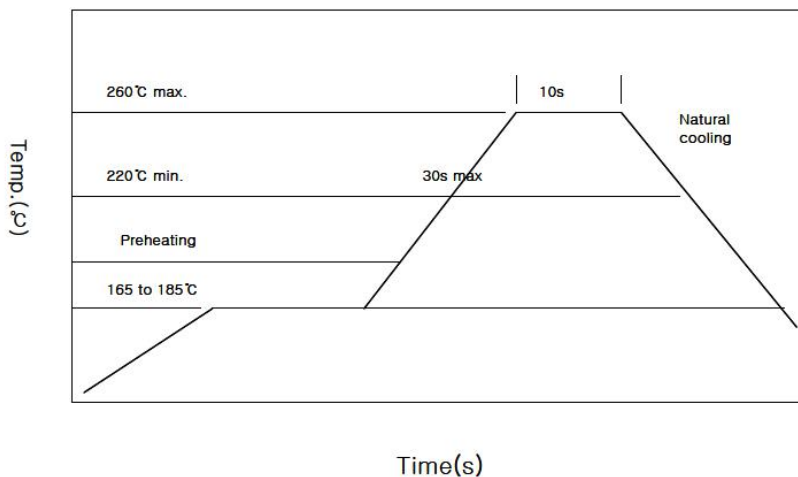
| No. | Item | Test Condition | Requirement |
|-----|--|---|--|
| 1 | Aging Test | Surface temperature test Temperature : Cut-off Temp. $\pm 5^{\circ}\text{C}$ Time : 1,000hr | No repeatable defect. Resistance variation: Max. 100m Ω |
| 2 | Thermal shock | ① $90^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 5min ② $-40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 5min Number of cycle : 30times Test interval : 5min | No repeatable defect. Resistance variation: Max. 100m Ω |
| 3 | Thermal/Humidity Resistance | Temperature : $65^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Humidity : 90~95% RH Time : 500hr | No repeatable defect. Resistance variation: Max. 100m Ω |
| 4 | Heat-Cold-Humidity Cychling Resistance | ① 24hr immersed in water at 25°C ② -35°C - 8hr ③ Cut-off Temp. $+5^{\circ}\text{C}$ - 24hr ④ 40°C / 90~95% RH 168hr Number of cycle : 3times Test interval : 5 min | No repeatable defect. Resistance variation: Max. 100m Ω |
| 5 | Endurance (Repeatable) | Cut-off Temperature 10,000 Cycle | No repeatable defect. |
| 6 | Soldering | Lead free soldering Temperature : $260 \sim 280^{\circ}\text{C}$ Soldering Time : 10sec. Max. | No repeatable defect. Resistance variation: Max. 100m Ω |

Soldering & PCB Layout Recommendation:

MRTF-***L Series (Leaded Type)



MRTF-***S Series (SMD Type)



CONTACT INFORMATION

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