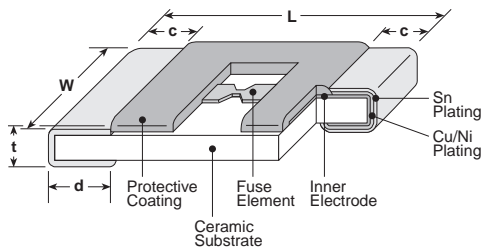




features

- Small, lightweight design
- Special manufacturing method stabilizing fusing characteristics and occupying less area
- Low power consumption and less voltage drop due to low internal resistance
- Suitable for overcurrent protection of circuit block in electronic devices
- Suitable for flow and reflow soldering
- Products with lead-free terminations meet EU RoHS and China RoHS requirements

dimensions and construction



| Type (Inch Size Code) | Dimensions inches (mm) | | | | |
|--------------------------|------------------------|-------------------------|------------------------|------------------------|------------------------------------------------------------------------------------|
| | L | W | c | d | t |
| TF10BN (0402) | .04±.004 (1.0±0.1) | .02±.002 (0.5±0.05) | .008±.004 (0.2±0.1) | .01±.004 (0.25±0.1) | .015±.002 (0.4±0.05) |
| TF16AT (0603) | .063±.004 (1.6±0.1) | .031±.003 (0.8±0.08) | .012±.004 (0.3±0.1) | .012±.004 (0.3±0.1) | .018±.002 (0.45±0.05) |
| TF16SN (0603) | .063±.008 (1.6±0.2) | .031±.004 (0.8±0.1) | .012±.004 (0.3±0.1) | .012±.004 (0.3±0.1) | .015+ ^{+0.04} _{-.002} (0.4+ ^{+0.1} _{-.05}) |

ordering information

| | | | | | |
|-----------|----------------------------------------------------|--------------------------------------------|------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------|
| TF | 16S | N | 1.25 | T | TE |
| Type | Size | Fusing Characteristic | Rated Current | Termination Material | Packaging |
| | 10B: 1.0x0.5mm 16A: 1.6x0.8mm 16S: 1.6x0.8mm | N: Normal blow T: Anti pulse (16A only) | Reference rating chart | T: Sn | TB: 2mm pitch punched paper (TF10BN only, 10,000 pieces/reel) TD: 4mm pitch punched paper (TF16 only, 5,000 pieces/reel) |

applications and ratings

| Part Designation | Marking | Rated Current | Fusing Time | Internal R. Maximum (mΩ) | Rated Voltage | Rated Ambient Temperature | Operating Temperature Range | | | | |
|------------------|---------|---------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------|---------------------------|-----------------------------|-----|-----|-------|-----------------|
| TF10BN0.20 | A | 0.20A | Open within 5 sec. at 200% rated current (Refer to Fusing Characteristics graph) | 1990 | 32V | +70°C | -55°C to +125°C | | | | |
| TF10BN0.25 | C | 0.25A | | 1270 | | | | | | | |
| TF10BN0.315 | D | 0.315A | | 850 | | | | | | | |
| TF10BN0.50 | F | 0.50A | | 320 | | | | | | | |
| TF10BN0.63 | I | 0.63A | | 200 | | | | | | | |
| TF10BN0.80 | K | 0.80A | | 135 | | | | | | | |
| TF10BN1.00 | L | 1.00A | | 115 | | | | | | | |
| TF10BN1.25 | M | 1.25A | | 90 | | | | | | | |
| TF10BN1.60 | N | 1.60A | | 58 | | | | | | | |
| TF10BN2.00 | S | 2.00A | | 42 | | | | | | | |
| TF10BN2.50 | T | 2.50A | | 35 | | | | | | | |
| TF10BN3.00 | V | 3.00A | | 30 | | | | | | | |
| TF16AT0.25 | C | 0.25A | | Open within 5 sec. at 200% rated current (Refer to Fusing Characteristics graph) | | | | 498 | 32V | +70°C | -55°C to +125°C |
| TF16AT0.315 | D | 0.315A | | | | | | 384 | | | |
| TF16AT0.50 | F | 0.50A | | | | | | 198 | | | |
| TF16AT0.63 | I | 0.63A | 143 | | | | | | | | |
| TF16AT0.80 | K | 0.80A | 120 | | | | | | | | |
| TF16AT1.00 | L | 1.00A | 94 | | | | | | | | |
| TF16AT1.25 | M | 1.25A | 73 | | | | | | | | |
| TF16AT1.60 | N | 1.60A | 59 | | | | | | | | |
| TF16AT2.00 | S | 2.00A | 42 | | | | | | | | |
| TF16AT2.50 | T | 2.50A | 32 | | | | | | | | |

For further information on packaging, please refer to Appendix A.

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

12/01/17

circuit protection



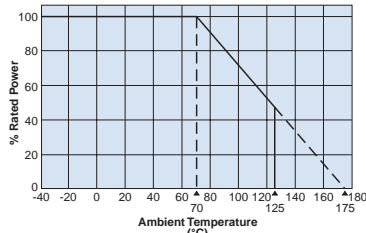
thin film chip fuse

applications and ratings (continued)

| Part Designation | Marking | Rated Current | Fusing Time | Internal R. Maximum (mΩ) | Rated Voltage | Rated Ambient Temperature | Operating Temperature Range |
|------------------|---------|---------------|----------------------------------------------------------------------------------|--------------------------|---------------|---------------------------|-----------------------------|
| TF16AT3.15 | U | 3.15A | Open within 5 sec. at 200% rated current (Refer to Fusing Characteristics graph) | 24 | 32V | +70°C | -55°C to +125°C |
| TF16AT4.00 | X | 4.00A | | 17 | | | |
| TF16AT5.00 | Y | 5.00A | | 14 | | | |
| TF16SN0.20 | A | 0.20A | Open within 1 sec. at 200% rated current (Refer to Fusing Characteristics graph) | 1500 | 32V | +70°C | -40°C to +125°C |
| TF16SN0.25 | C | 0.25A | | 960 | | | |
| TF16SN0.315 | D | 0.315A | | 600 | | | |
| TF16SN0.40 | H | 0.40A | | 440 | | | |
| TF16SN0.50 | F | 0.50A | | 300 | | | |
| TF16SN0.63 | I | 0.63A | | 190 | | | |
| TF16SN0.70 | J | 0.70A | | 170 | | | |
| TF16SN0.80 | K | 0.80A | | 135 | | | |
| TF16SN1.00 | L | 1.00A | | 103 | | | |
| TF16SN1.25 | M | 1.25A | | 78 | | | |
| TF16SN1.60 | N | 1.60A | | 58 | | | |
| TF16SN2.00 | S | 2.00A | | 47 | | | |
| TF16SN2.50 | T | 2.50A | | 38 | | | |
| TF16SN3.15 | U | 3.15A | | 28 | | | |

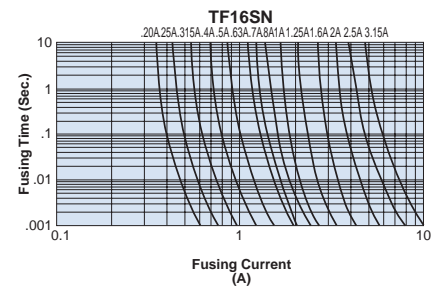
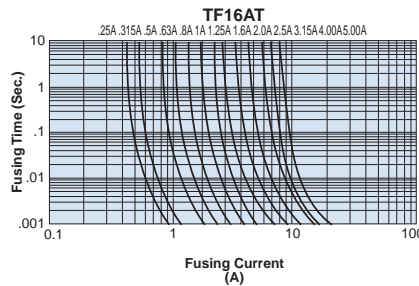
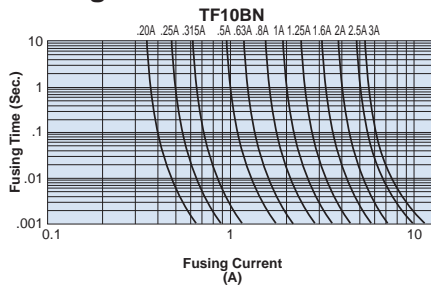
environmental applications

Derating Curve



Stationary Current: Regard the peak of stationary current waveform as stationary current value when the stationary current is repeated pulse.
 Temperature Derating: Rated current needs to be derated if used at an ambient temperature 70°C or above. Refer to the derating coefficient on the left figure.

Fusing Characteristics



Performance Characteristics

| Parameter | Requirement | | Test Method |
|-----------------------------|----------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| | Limit | Typical | |
| Fusing Characteristics | Within 1 second (16SN) Within 5 seconds (10BN, 16AT) | — | 200% of rated voltage shall be carried (@25°C) |
| Bending Test | No mechanical damages | — | Distance between holding points: 90mm, Bending: 3mm, 1 time (BN, AT), 2mm, 1 time (SN) |
| Resistance to Solder Heat | ±10% | ±4.5% (16SN) ±5% (10BN, 16AT) | 260°C ± 5°C, 10 seconds ± 0.5 st second |
| Solderability | 95% coverage minimum | — | 245°C ± 3°C, 3 seconds ± 0.5 second |
| Load Life | ±10% | ±4.5%(16SN) ±5% (10BN, 16AT) | 70°C ± 2°C, 1000 hours, rated current x 100%, 1.5 hr ON, 0.5 hr OFF cycle |
| Load Life Moisture | ±10% | ±3% (10BN) ±4.5% (16SN), 5% (16AT) | 40°C ± 2°C, 90 - 95% RH, 1000 hours, rated current x 100% (10BN, 16SN), x 75% (16AT), 1.5 hr ON, 0.5 hr OFF cycle |
| Rapid Change of Temperature | ±10% | ±4% (16SN) ±5% (10BN, 16AT) | 16SN: -40°C ± 2°C (30 minutes), 10BN, 16AT: -55°C ± 2°C, +125°C (30 minutes), 10 cycles |
| Resistance to Solvent | No evidence of damages to protective coating and marking | — | Conforming to MIL-STD-202F |
| Residual Resistance | 10kΩ and more | — | Measure DC resistance after fusing |

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

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