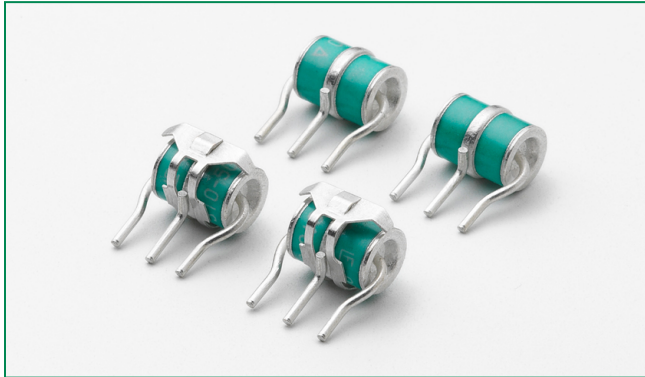


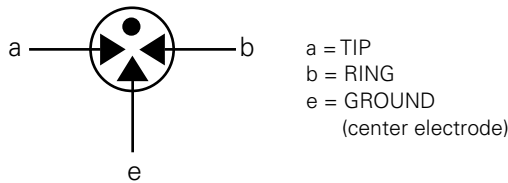
PMT3(310) Series



Agency Approvals

| AGENCY | AGENCY FILE NUMBER |
|---|--------------------|
|  | E128662 |

3 Electrode GDT Graphical Symbol



Description

Littelfuse three electrode PMT3(310) series GDTs are designed primarily to protect telecommunications equipment requiring simultaneous crowbar action of two signal lines. GDTs function as switches; dissipating a minimum amount of energy and can handle much higher currents than other types of transient voltage protection.

Features

- Rugged ceramic-metal construction
- Low capacitance (<1.5 pF)
- Available with or without leads
- Available with various lead spacings
- Available with or without fail-safe clip
- Tested to REA PE-80

Applications

- Telephone interface
- Telephone line cards
- Repeater
- Modems
- Line test equipment

Electrical Characteristics

| Part Number | Device Specifications | | | | | | Life Ratings | | | | | | |
|--------------|----------------------------|-----|-----|------------------------|----------------------|------------------------------|---------------------|---|--|---|---|---|--|
| | DC Breakdown (I-g) @500V/s | | | DC Voltage 100 V/μSec. | DC Voltage 1kV/μSec. | Insulation Resistance | Capacitance (@1Mhz) | AC Current 11 cycles @ 50-60Hz ¹ | AC Current 50Hz 1Sec. x10 ¹ | Surge Current 8/20μSec x10 ¹ | Max Single Surge 8/20 μSec ¹ | Max Single Surge 10/350 μSec ¹ | Surge Life 10/1000 μSec x 400 ¹ |
| | Min | Typ | Max | Min | Min | | | | | | | | |
| PMT3(310)075 | 60 | 75 | 90 | 500 | 650 | 10 ¹⁰ Ω (at 50V) | 1.5 pf | 130Amps | 20Amps | 20kA | 25kA | 5kA | 1kA |
| PMT3(310)090 | 72 | 90 | 108 | 500 | 650 | | | | | | | | |
| PMT3(310)150 | 120 | 150 | 180 | 500 | 600 | 10 ¹⁰ Ω (at 100V) | | | | | | | |
| PMT3(310)230 | 184 | 230 | 276 | 600 | 700 | | | | | | | | |
| PMT3(310)250 | 200 | 250 | 300 | 600 | 700 | | | | | | | | |
| PMT3(310)350 | 280 | 350 | 420 | 900 | 1000 | | | | | | | | |
| PMT3(310)400 | 320 | 400 | 480 | 900 | 1000 | | | | | | | | |
| PMT3(310)500 | 400 | 500 | 600 | 1100 | 1200 | | | | | | | | |

NOTES:

- Total current through center electrode, tested in accordance with ITU-T Rec K.12 and REA PE 80
- End of life DC: 50% of minimum initial DC breakdown voltage to 150% of maximum initial DC breakdown voltage limit.
- Impulse: less than 150% of initial impulse breakdown down limit.

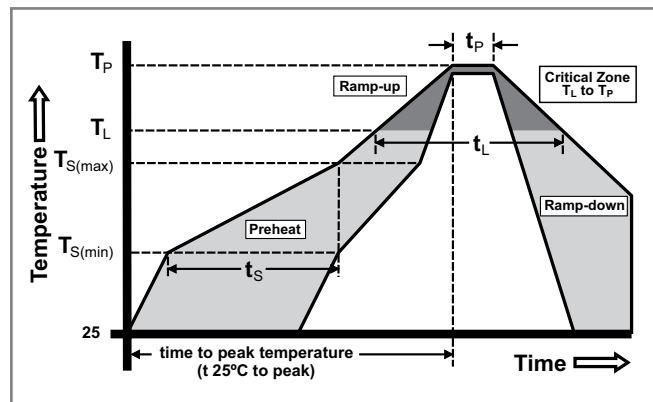
Product Characteristics

| | |
|---------------------------------------|--|
| Materials | Dull Tin Plate 175 ± 12.5 Microns with Ceramic Insulator |
| Product Marking | Littelfuse 'LF' marking, Voltage and date code. |
| Glow to arc transition current | ~ 1Amp |
| Glow Voltage | ~ 60-200 Volts |

| | |
|---|------------------|
| Storage and Operational Temperature | -40 to +90°C |
| Transverse Voltage (Delay Time) Tested to ITU-T Rec. K.12 | < 0.2µSec |
| Arc Voltage | ~ 10 to 35 Volts |
| Holdover Voltage Tested to ITU-T Rec. K.12 & REA PE 80 | < 150mS |

Soldering Parameters - Reflow Soldering (Surface Mount Devices)

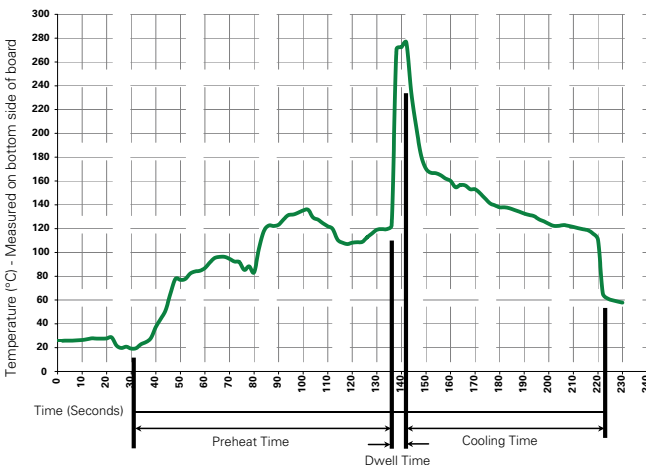
| | | |
|--|------------------------------------|-------------------------|
| Reflow Condition | | Pb – Free assembly |
| Pre Heat | - Temperature Min ($T_{s(min)}$) | 150°C |
| | - Temperature Max ($T_{s(max)}$) | 200°C |
| | - Time (Min to Max) (t_s) | 60 – 180 secs |
| Average ramp up rate (Liquidus Temp (T_L) to peak) | | 3°C/second max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 5°C/second max |
| Reflow | - Temperature (T_L) (Liquidus) | 217°C |
| | - Temperature (t_L) | 60 – 150 seconds |
| Peak Temperature (T_p) | | 260 ^{+0/-5} °C |
| Time within 5°C of actual peak Temperature (t_p) | | 10 – 30 seconds |
| Ramp-down Rate | | 6°C/second max |
| Time 25°C to peak Temperature (T_p) | | 8 minutes Max. |
| Do not exceed | | 260°C |



Soldering Parameters - Hand Soldering

Solder Iron Temperature: 350° C +/- 5°C
Heating Time: 5 seconds max.

Soldering Parameters - Wave Soldering (Thru-Hole Devices)



Recommended Process Parameters:

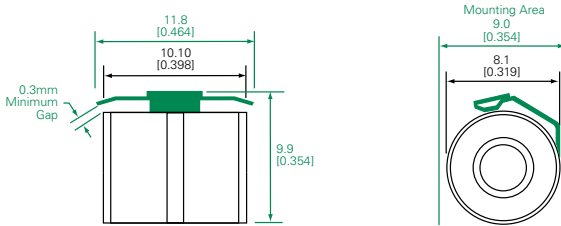
| Wave Parameter | Lead-Free Recommendation |
|---|-----------------------------------|
| Preheat: (Depends on Flux Activation Temperature) | (Typical Industry Recommendation) |
| Temperature Minimum: | 100° C |
| Temperature Maximum: | 150° C |
| Preheat Time: | 60-180 seconds |
| Solder Pot Temperature: | 280° C Maximum |
| Solder Dwell Time: | 2-5 seconds |

Note: Surge Arrestors with a Failsafe mechanism should be individually examined after soldering

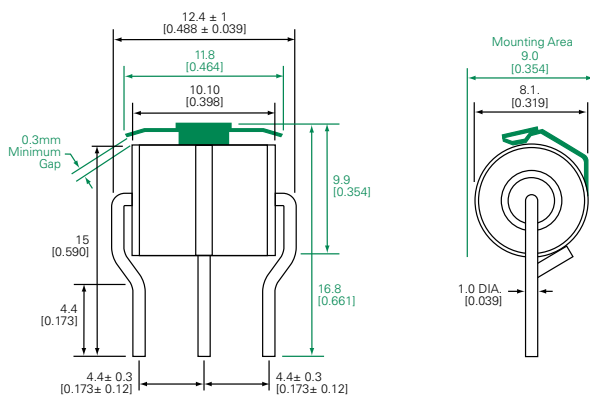
Device Dimensions

NOTE: Failsafe option dimensions shown in green.

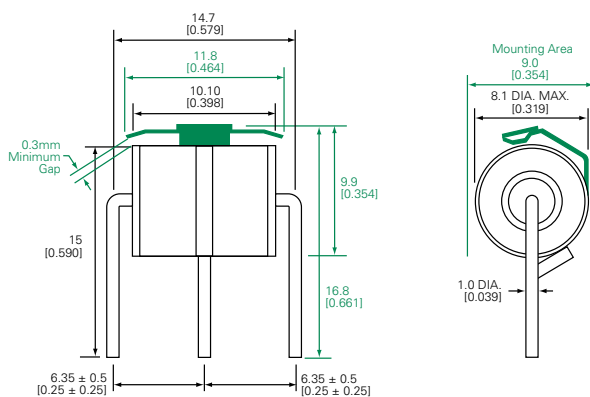
Type 01 - Surface Mount Core



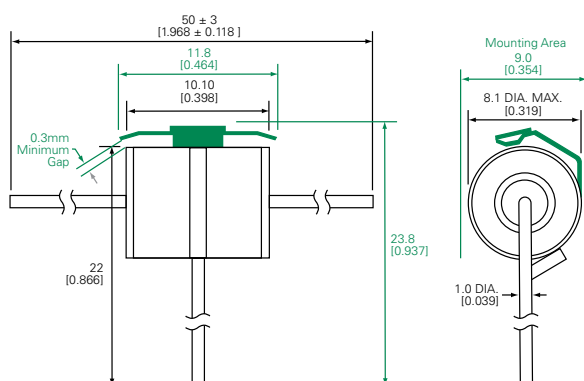
Type 04 - Shaped Radial Leads



Type 06 - Straight Radial Leads



Type 14 - Straight "T" Leads



Packaging

| Device Type | Description | Quantity |
|-------------|----------------------------------|----------|
| Type 01 | 100pcs/tray x 5 trays per carton | 500 |
| Type 04 | 100pcs/tray x 5 trays per carton | 500 |
| Type 06 | 100pcs/tray x 5 trays per carton | 500 |
| Type 14 | 50pcs/tray x 5 trays per carton | 250 |

| Part Number | Available Package Option | | | |
|--------------|--------------------------|---------|---------|---------|
| | Type 01 | Type 04 | Type 06 | Type 14 |
| PMT3(310)075 | | X | | |
| PMT3(310)090 | | X | | |
| PMT3(310)150 | X | X | X | X |
| PMT3(310)230 | | X | X | |
| PMT3(310)250 | X | X | X | X |
| PMT3(310)350 | | X | X | |
| PMT3(310)400 | | X | X | |
| PMT3(310)500 | | X | X | |

Part Numbering System

PMT3(310) XXX XX X

