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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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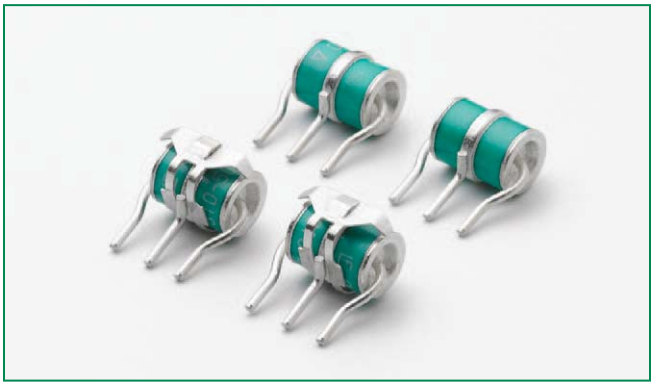
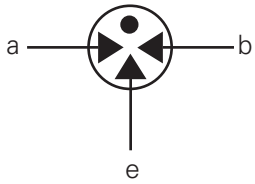
# PMT3(310) Series



## Agency Approvals

| AGENCY | AGENCY FILE NUMBER |
|---|---|
| ®RU | E128662 |

## 3 Electrode GDT Graphical Symbol




a = TIP
b = RING
e = GROUND
(center electrode)

## 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 fail-safe clip
- Available with or without leads
- Available with various lead spacings
- Tested to REA PE-80

## Applications

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

## Electrical Characteristics

| Part Number | Device Specifications | | | | | | Life Ratings | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DC Breakdown (I-g) @500V/µs | | | 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 | | | | | | | |
| PMT3(310)090 | 72 | 90 | 108 | 500 | 650 | $10^{10}$ Ω (at 50V) | 1.5 pf | 130Amps | 20Amps | 20kA | 25kA | 5kA | 1kA |
| 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:
1. 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.

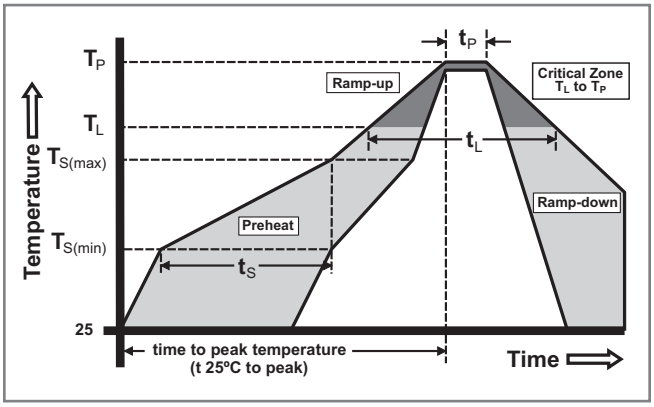
## Product Characteristics

| | |
|---|---|
| **Materials** | Dull Tin Plate 17.5 ± 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)

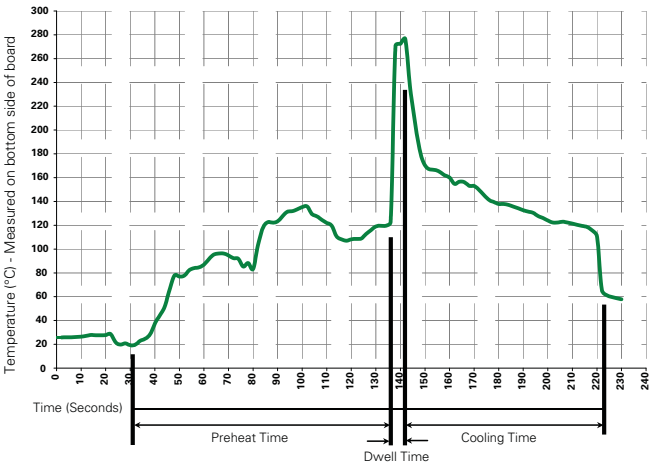
| | | |
|---|---|---|
| Reflow Condition | | Pb – Free assembly |
| Pre Heat | -Temperature Min ($T_{s(min)}$) | 150°C |
| | -Temperature Max ($T_{s(max)}$) | 200°C |
| | -Time (Min to Max) ($t_s$) | 60 – 180 secs |
| Average ramp up rate (Liquidus Temp ($T_L$) to peak | | 3°C/second max |
| $T_{S(max)}$ 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:

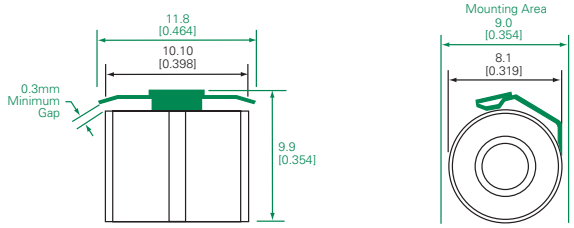
| Wave Parameter | Lead-Free Recommendation |
|---|---|
| Preheat: (Depends on Flux Activation Temperature) | (Typical Industry Recommendation) |
| Temperature Minimum: | 100° C |
| Temperature Maximum: | 150° C |
| Preheat Time: | 60-180 seconds |
| Solder Pot Temperature: | 280° C Maximum |
| Solder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

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

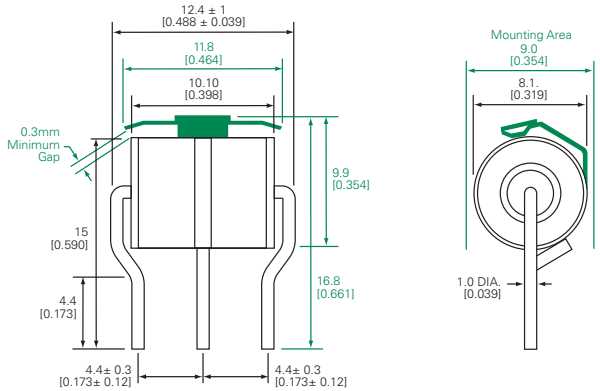
## Device Dimensions

NOTE: Failsafe option dimensions shown in green.

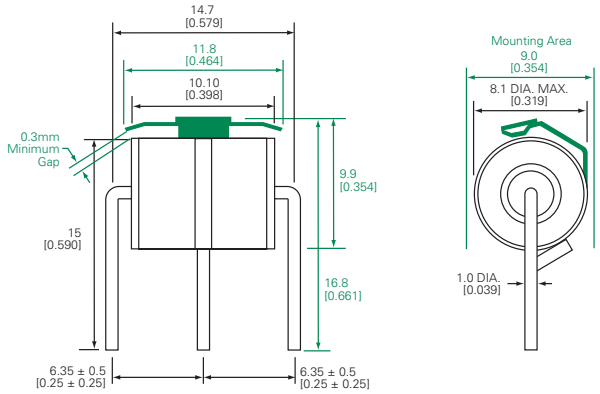
### Type 01 - Surface Mount Core



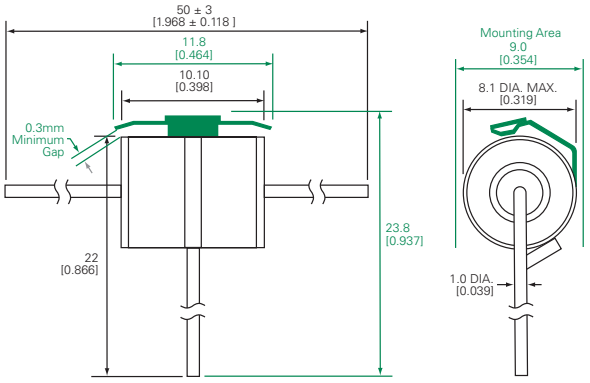

### Type 04 - Shaped Radial Leads




### 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 Numbering System

**PMT3(310) XXX XX X**

**Series**
PMT3(310)

**Breakdown Voltage**
090 = 90V
150 = 150V
230 = 230V
250 = 250V
350 = 350V
400 = 400V
500 = 500V

**Device Type**
See Dimensions section:
01 = Type 01
04 = Type 04
06 = Type 06
14 = Type 14

**Packaging Option Code**
Blank = No Failsafe
F = With Failsafe