

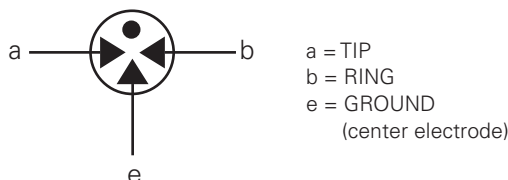
**RoHS** **Pb** **PMT3(310) Series**



### 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 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/s			DC Voltage 100 V/ μSec.	DC Voltage 1kV/ μSec.	Insulation Resistance	Capaci- tance (@1Mhz)	AC Current 11 cycles @ 50-60Hz <sup>1</sup>	AC Current 50Hz 1Sec. x10 <sup>1</sup>	Surge Current 8/20μSec x10 <sup>1</sup>	Max Single Surge 8/20 μSec <sup>1</sup>	Max Single Surge 10/350 μSec <sup>1</sup>	Surge Life 10/1000 μSec x 400 <sup>1</sup>
	Min	Typ	Max										
PMT3(310)075	60	75	90	500	650	10 <sup>10</sup> 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 <sup>10</sup> 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.

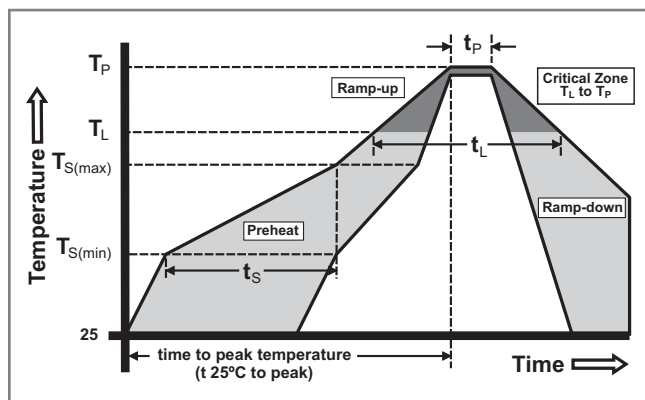
### Product Characteristics

<b>Materials</b>	Dull Tin Plate 17.5 ± 12.5 Microns with Ceramic Insulator
<b>Product Marking</b>	Littelfuse 'LF' marking, Voltage and date code.
<b>Glow to arc transition current</b>	~ 1Amp
<b>Glow Voltage</b>	~ 60-200 Volts

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

### Soldering Parameters - Reflow Soldering (Surface Mount Devices)

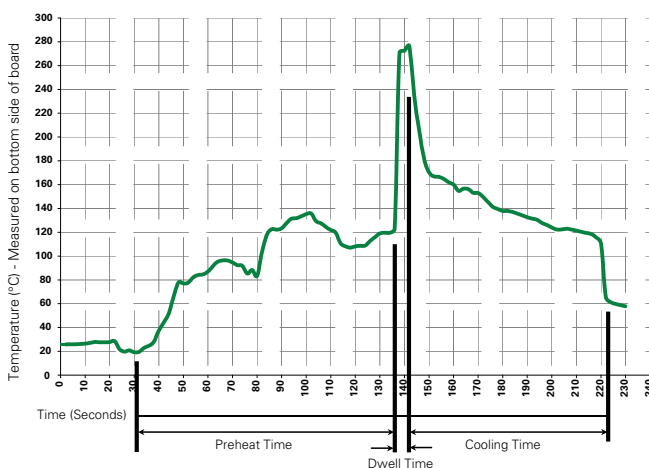
Reflow Condition		Pb – Free assembly
Pre Heat	- Temperature Min ( $T_{s(min)}$ )	150°C
	- Temperature Max ( $T_{s(max)}$ )	200°C
	- Time (Min to Max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/second max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		5°C/second max
Reflow	- Temperature ( $T_L$ ) (Liquidus)	217°C
	- Temperature ( $t_L$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260 <sup>+0/-5</sup> °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:

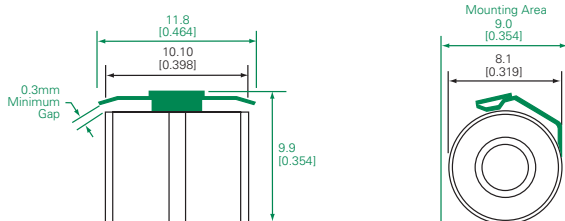
Wave Parameter	Lead-Free Recommendation
<b>Preheat:</b> (Depends on Flux Activation Temperature)	
Temperature Minimum:	100° C
Temperature Maximum:	150° C
Preheat Time:	60-180 seconds
<b>Solder Pot Temperature:</b>	
Solder Pot Temperature:	280° C Maximum
<b>Solder Dwell Time:</b>	
Solder Dwell Time:	2-5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

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

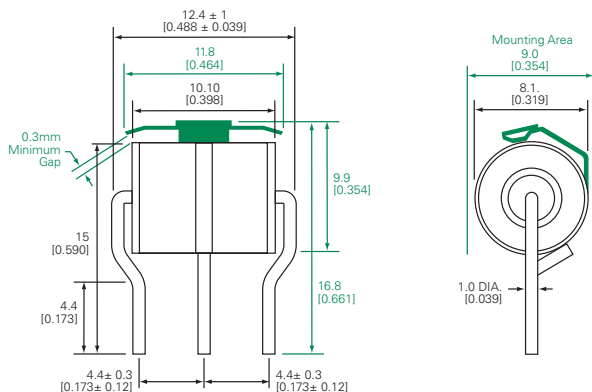
### Device Dimensions

NOTE: Failsafe option dimensions shown in green.

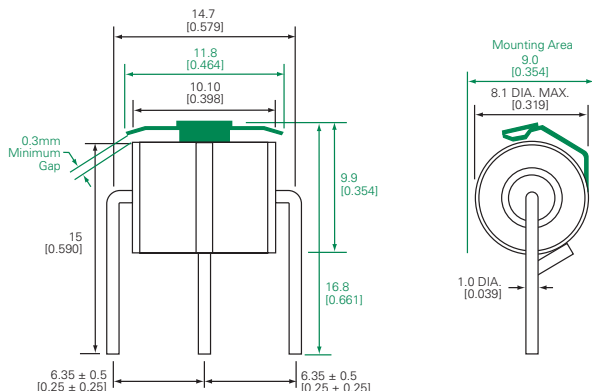
#### Type 01 - Surface Mount Core



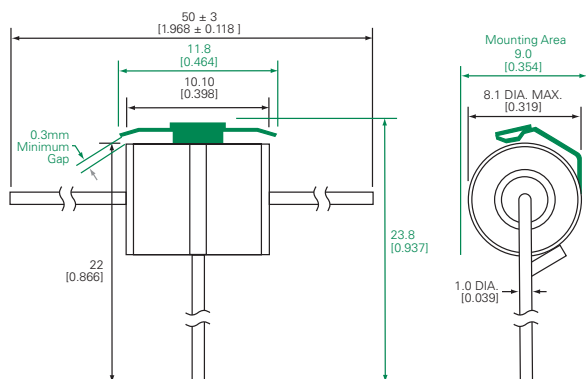
#### Type 04 - Shaped Radial Leads



#### 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**

Series

PMT3(310)

Breakdown Voltage

075 = 75V

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