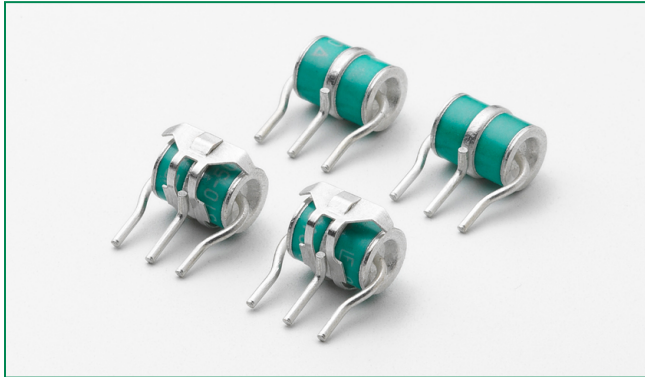


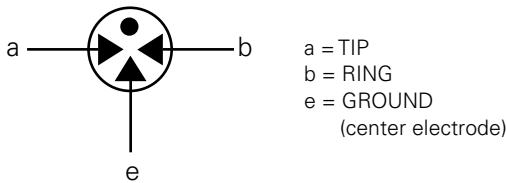
### PMT3(310) Series



#### 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 lead spacings
- 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/ $\mu$ Sec.	DC Voltage 1kV/ $\mu$ Sec.	Insulation Resistance	Capacitance (@1Mhz)	AC Current 11 cycles @ 50-60Hz <sup>1</sup>	AC Current 50Hz 1Sec. x10 <sup>1</sup>	Surge Current 8/20 $\mu$ Sec x10 <sup>1</sup>	Max Single Surge 8/20 $\mu$ Sec <sup>1</sup>	Max Single Surge 10/350 $\mu$ Sec <sup>1</sup>	Surge Life 10/1000 $\mu$ Sec x 400 <sup>1</sup>
	Min	Typ	Max										
PMT3(310)075	60	75	90	500	650	10 <sup>10</sup> $\Omega$ (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> $\Omega$ (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.

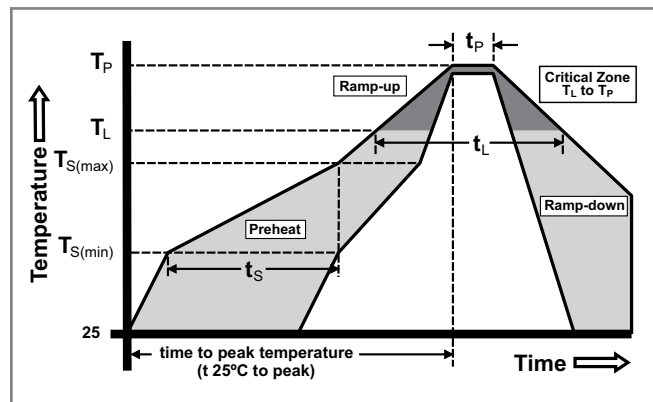
**Product Characteristics**

<b>Materials</b>	Dull Tin Plate 175 ± 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)**

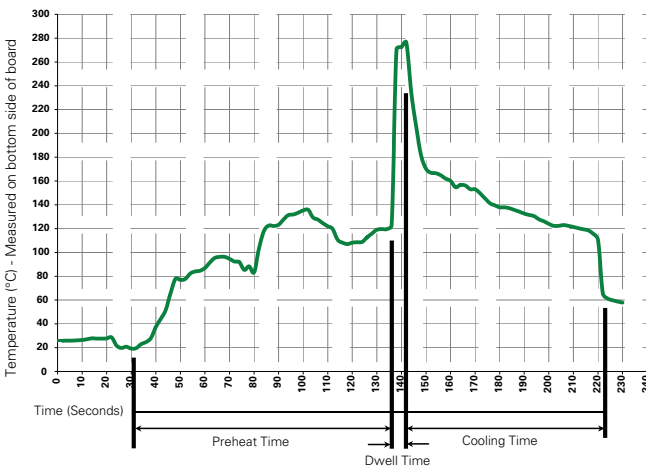
<b>Reflow Condition</b>		Pb – Free assembly
<b>Pre Heat</b>	- Temperature Min ( $T_{s(min)}$ )	150°C
	- Temperature Max ( $T_{s(max)}$ )	200°C
	- Time (Min to Max) ( $t_s$ )	60 – 180 secs
<b>Average ramp up rate (Liquidus Temp (<math>T_L</math>) to peak)</b>		3°C/second max
<b><math>T_{s(max)}</math> to <math>T_L</math> - Ramp-up Rate</b>		5°C/second max
<b>Reflow</b>	- Temperature ( $T_L$ ) (Liquidus)	217°C
	- Temperature ( $t_L$ )	60 – 150 seconds
<b>Peak Temperature (<math>T_p</math>)</b>		260 <sup>+0/-5</sup> °C
<b>Time within 5°C of actual peak Temperature (<math>t_p</math>)</b>		10 – 30 seconds
<b>Ramp-down Rate</b>		6°C/second max
<b>Time 25°C to peak Temperature (<math>T_p</math>)</b>		8 minutes Max.
<b>Do not exceed</b>		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)	(Typical Industry Recommendation)
Temperature Minimum:	100° C
Temperature Maximum:	150° C
Preheat Time:	60-180 seconds
<b>Solder Pot Temperature:</b>	280° C Maximum
<b>Solder Dwell Time:</b>	2-5 seconds

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