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# **Gas Discharge Tube (GDT) Products** PMT3(310) Series

### PMT3(310) Series RoHS (Po)

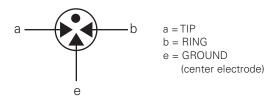




### **Agency Approvals**

AGENCY	AGENCY FILE NUMBER
. <b>7</b> U	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**

	Device Specifications						Life Ratings						
Part Number	DC Breakdown (l-g) @500V/µs		DC Voltage 100 V/ µSec.	DC Voltage 1kV/ µSec.	Insulation Capaci- Resistance 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	Max Single Surge 10/350	Surge Life 10/1000 µSec		
	Min	Тур	Max	μοσσ.	μοσσ.	<u>Min</u>		30-001 IZ	X10	1 710	μSec¹	μSec¹	x 400¹
PMT3(310)090	72	90	108	500	650	10¹º Ω (at 50V)							
PMT3(310)150	120	150	180	500	600	10 <sup>10</sup> Ω (at 100V)							
PMT3(310)230	184	230	276	600	700		1010 Ω	130Amps	20Amps	20kA	25kA	5kA	1kA
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								

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.



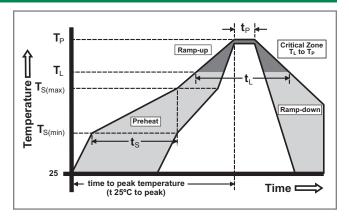
### **Product Characteristics**

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 Co	ndition	Pb – Free assembly		
Pre Heat	-Temperature Min (T <sub>s(min)</sub> )	150°C		
	-Temperature Max (T <sub>s(max)</sub> )	200°C		
	-Time (Min to Max) (t <sub>s</sub> )	60 – 180 secs		
Average ra	amp up rate (LiquidusTemp k	3°C/second max		
T <sub>S(max)</sub> to T <sub>L</sub>	- Ramp-up Rate	5°C/second max		
Reflow	-Temperature (T <sub>L</sub> ) (Liquidus)	217°C		
	-Temperature (t <sub>L</sub> )	60 – 150 seconds		
PeakTemp	erature (T <sub>P</sub> )	260 <sup>+0/-5</sup> °C		
Time with	in 5°C of actual peak ure (t <sub>p</sub> )	10 – 30 seconds		
Ramp-dov	vn Rate	6°C/second max		
Time 25°C	to peakTemperature (T <sub>P</sub> )	8 minutes Max.		
Do not exc	ceed	260°C		

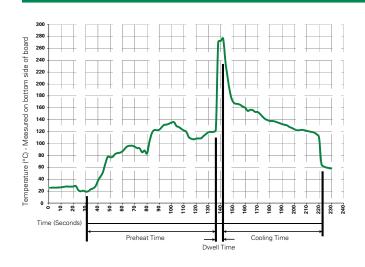


## **Soldering Parameters - Hand Soldering**

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 DwellTime:	2-5 seconds			

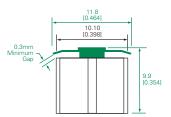
Note: Surge Arrestors with a Failsafe mechanism should be individually examined after soldering

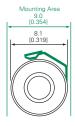
# Gas Discharge Tube (GDT) Products PMT3(310) Series

### **Device Dimensions**

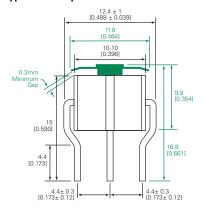
NOTE: Failsafe option dimensions shown in green.

Type 01 - Surface Mount Core



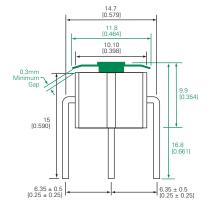


Type 04 - Shaped Radial Leads



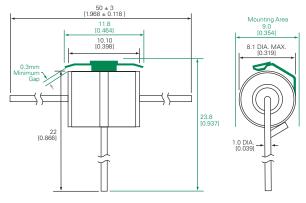


Type 06 - Straight Radial Leads





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**

