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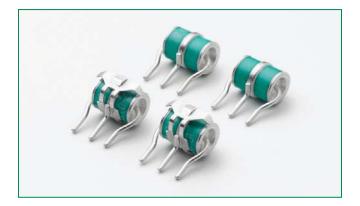
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# **Gas Discharge Tube (GDT) Products** PMT3(310) Series

### PMT3(310) Series RoHS (P6)

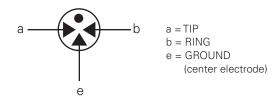




### **Agency Approvals**

AGENCY	AGENCY FILE NUMBER
<b>71</b>	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		Breako (I-g) 9500V		DC Voltage 100 V/ uSec.	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 x101	Max Single Surge 8/20	Max Single Surge 10/350	Surge Life 10/1000 µSec		
	Min	Тур	Max	нзес.	μзес.	<u>Min</u>		30-00112	X 10	X10	μSec¹	µSec¹	x 400 <sup>1</sup>		
PMT3(310)075	60	75	90	500	650	10 <sup>10</sup> Ω (at 50V) 1.5 pf 10 <sup>10</sup> Ω (at 100V)									
PMT3(310)090	72	90	108	500	650										
PMT3(310)150	120	150	180	500	600		1.5 p								
PMT3(310)230	184	230	276	600	700			1.5 pf	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.



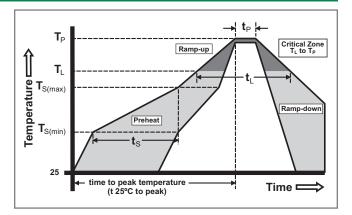
# **Product Characteristics**

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		
	-Temperature Min (T <sub>s(min)</sub> )	150°C		
Pre Heat	-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 (Liquidus Temp k	3°C/second max		
T <sub>S(max)</sub> to T <sub>L</sub>	- Ramp-up Rate	5°C/second max		
Doflow	-Temperature (T <sub>L</sub> ) (Liquidus)	217°C		
Reflow	-Temperature (t <sub>L</sub> )	60 – 150 seconds		
PeakTemp	perature (T <sub>P</sub> )	260 <sup>+0/-5</sup> °C		
Time with Temperate	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		

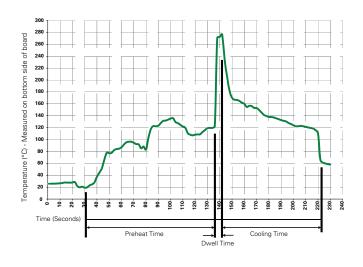


# **Soldering Parameters - Hand Soldering**

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			

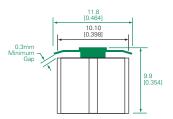
Note: Surge Arrestors with a Failsafe mechanism should be individually examined after soldering

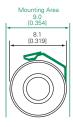
# **Gas Discharge Tube (GDT) Products** PMT3(310) Series

### **Device Dimensions**

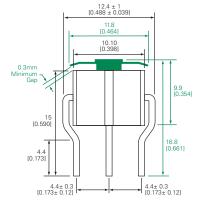
NOTE: Failsafe option dimensions shown in green.

Type 01 - Surface Mount Core



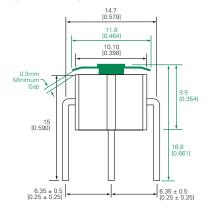


Type 04 - Shaped Radial Leads



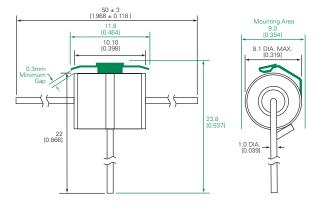


Type 06 - Straight Radial Leads





Type 14 - Straight "T" Leads

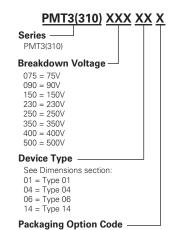


# **Packaging**

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

Dowt Number	Available Package Option						
Part Number	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**



Blank = No Failsafe F = With Failsafe

i = vvitii i alisaio