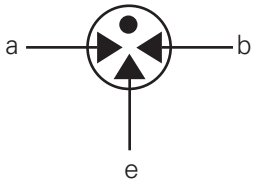
PMT3(310) Series

Agency Approvals

AGENCY	AGENCY FILE NUMBER
	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)-90	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.

Revised: October 23, 2009

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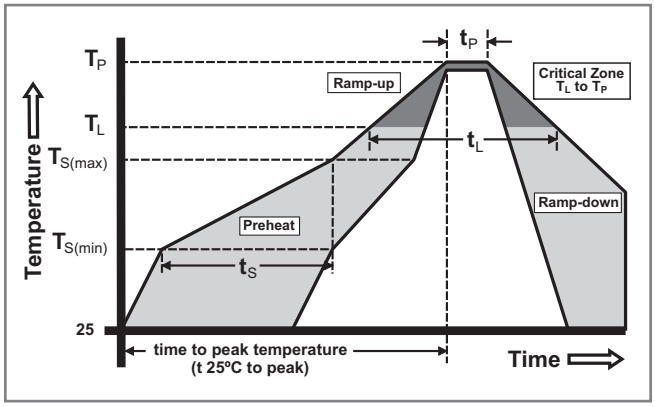
Product Characteristics

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)

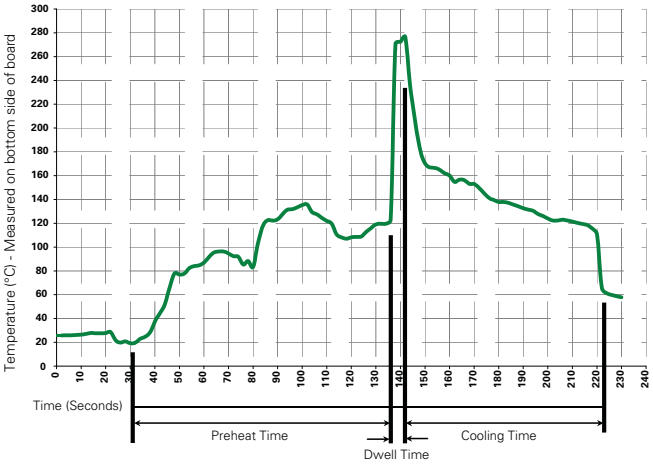
Reflow Condition		Pb – Free assembly
Pre Heat	-Temperature Min ($T_{s(min)}$)	150°C
	-Temperature Max ($T_{s(max)}$)	200°C
	-Time (Min to Max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		5°C/second max
Reflow	-Temperature (T_L) (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

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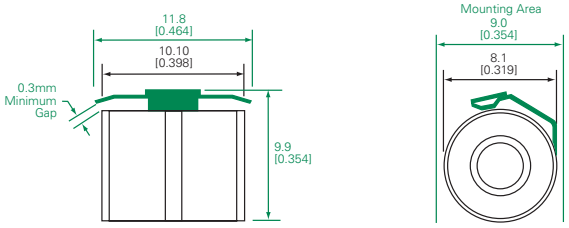
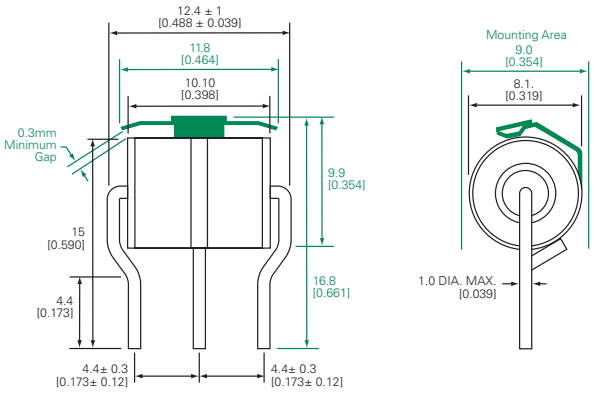
Device Dimensions

NOTE: Failsafe option dimensions shown in green.

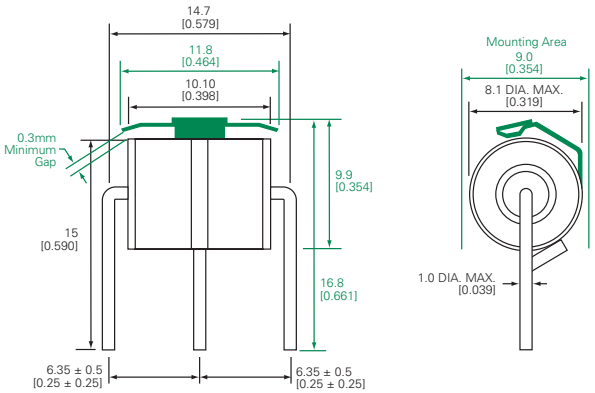
Type 01 - Surface Mount Core



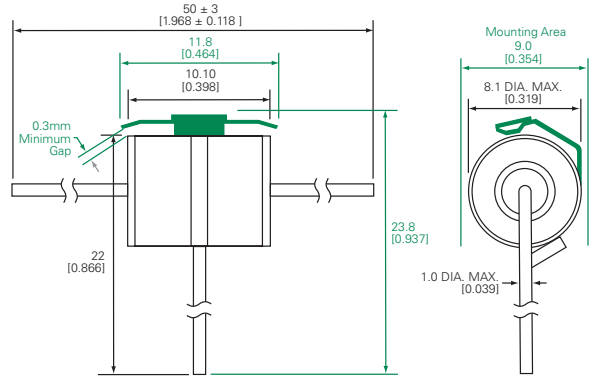
Type 04 - Shaped Radial Leads



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

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