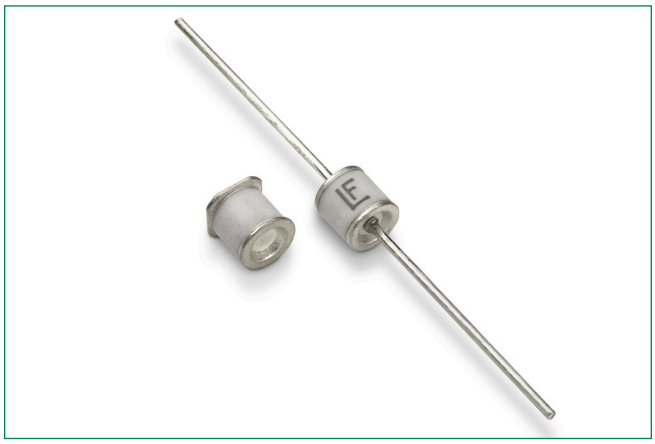
CG10 Series
Gas Discharge Tubes



Agency Approvals

Agency	Agency File Number
	E128662

Two Electrode GDT Graphical Symbol

Description

The Littelfuse highly reliable CG10 Series GDTs provide a high surge capability in a small size ideal for board level circuit protection.

GDTs function as switches which dissipate a minimum amount of energy and therefore handle currents that far surpass other types of transient voltage protection. Their gas-filled, rugged ceramic metal construction make them well suited to adverse environments.

The CG10 series comes different forms including surface mount, straight leads, to serve a variety of mounting methods.

Features

- High surge current rating
- Rugged ceramic-metal construction
- Low Capacitance (<1.0 pf)
- High operating temperature up to 125 °C
- Available in surface mount and axial straight leads options
- RoHS-compliant and lead-free

Applications

- Communication lines and equipment
- CATV equipment
- Test equipment
- Data lines
- Power supplies
- Instrumentation circuits
- Medical electronics
- ADSL equipment
- Telecom SLIC protection
- Alarm system

Electrical Characteristics

Part Number	Device Specifications (at 25 °C)								Life Rating			
	DC Breakdown in Volts (@100 V/s)			Impulse Break-down In Volts (@100 V/µs)	Impulse Break-down In Volts (@1 kV/µs)	Insulation Resistance	Capa-citance (@1 MHz)	Arc Voltage (on state Voltage) @1Amp Min	Surge Life (@100A 10/1000µs)	Nominal Impulse Discharge Current (8/20µs)	Nominal AC Discharge Current (10x1sec @50Hz)	Max Impulse Discharge Current (1 Application @ 10/350 µs)
	MIN	TYP	MAX			MIN		TYP				
CG1090	72	90	108	500	600	$10^{10}\Omega$ at 50VDC	<1 pF	10 V	300 shots	10 shots (@20 kA)	10 A	2.5 kA
CG10230	184	230	276	550	650		<1 pF	10 V	300 shots	10 shots (@20 kA)	20 A	2.5 kA
CG10350	280	350	420	700	900		<1 pF	10 V	300 shots	10 shots (@20 kA)	20 A	2.5 kA
CG10470	376	470	564	1000	1100	$10^{9}\Omega$ at 100VDC	<1 pF	10 V	300 shots	10 shots (@20 kA)	20 A	2.5 kA
CG10600	480	600	720	1100	1400	$10^{10}\Omega$ at 100VDC	<1 pF	10 V	300 shots	10 shots (@20 kA)	20 A	2.5 kA
CG10800	640	800	960	1300	1500	$10^{10}\Omega$ at 100VDC	<1 pF	25 V	300 shots	10 shots (@20 kA)	20 A	1.5 kA
CG101000	800	1000	1200	1400	1500	$10^{9}\Omega$ at 100VDC	<1 pF	30 V	–	10 shots (@10 kA), 1 shot (@15 kA)	10 A	–

Revised: VL 07/16/25

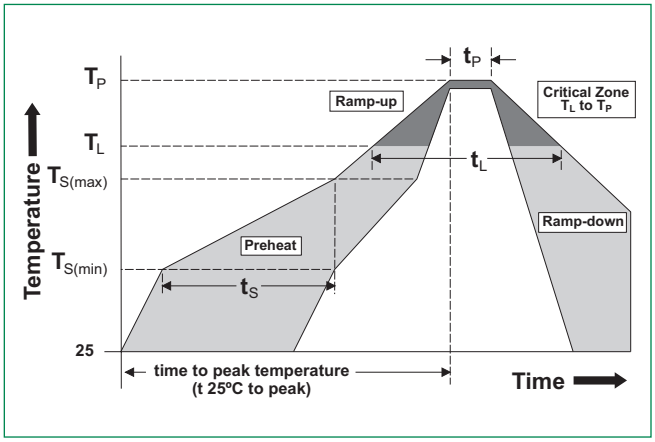
CG10 Series
Gas Discharge Tubes

Product Characteristics

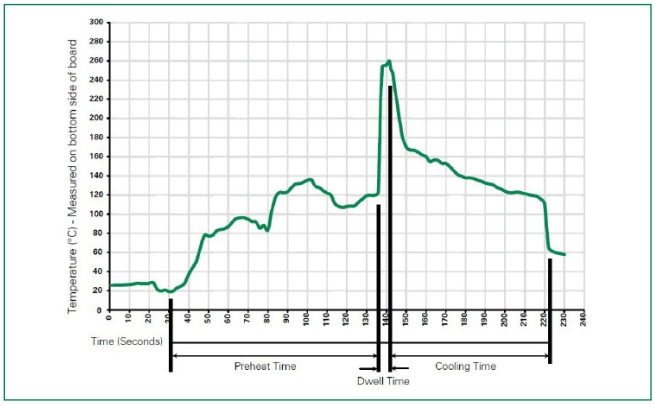
Materials	**LTR, Axial** Device: 17.5±12.5 Microns Lead Wires: 6-9 Microns **SM, SMD** Device: 17.5±12.5 Microns
Operating & Storage Temperature	-40 °C to 125 °C
Product Marking	LF Logo, Voltage and date code; Black ink positive print
Glow to arc transition current	<0.5 Amps
Glow Voltage	65 to 180 Volts
Storage & Operational Temperature	-40 to +125

Soldering Parameters - Reflow Soldering (Surface Mount Devices)

Reflow Condition		Pb-free assembly
Number of allowed reflow cycles		3
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		3 °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: Wave Soldering (Thru-Hole Devices)



Wave Parameter	Lead-Free Recommendation
Preheat: (Depends on Flex 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

Recommended Hand-Solder Parameters:
Solder Iron Temperature: 350 °C +/- 5 °C
Heating Time: 5 seconds max.
Note: These devices are not recommended for IR or Convection Reflow process.

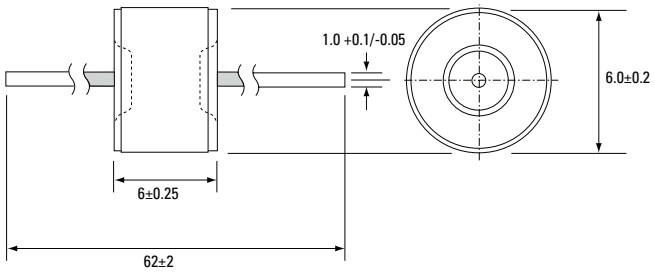
Soldering Parameters: Hand Soldering

Solder Iron Temperature: 350 °C +/- 5 °C
Heating Time: 5 seconds max.

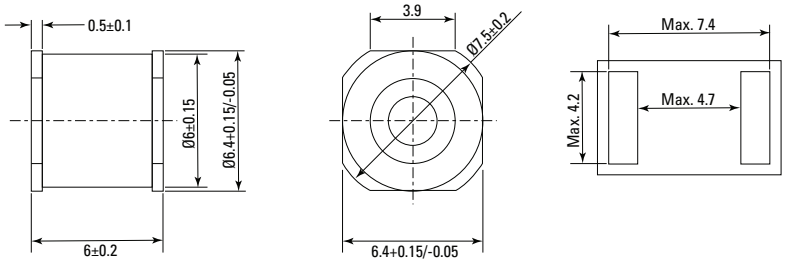
CG10 Series
Gas Discharge Tubes

Device Dimensions

Leaded LTR Type Straight Axial Devices

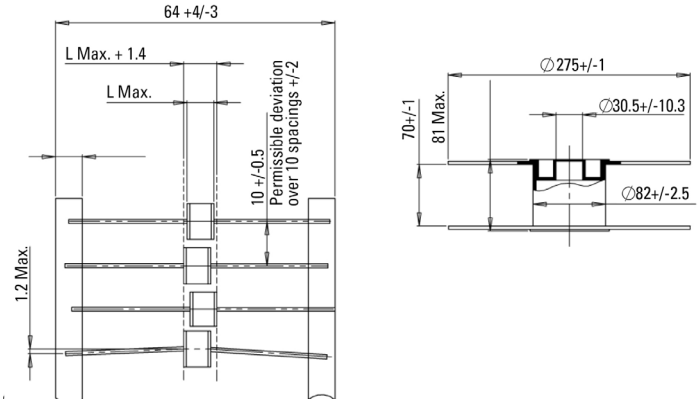


SM Type Devices

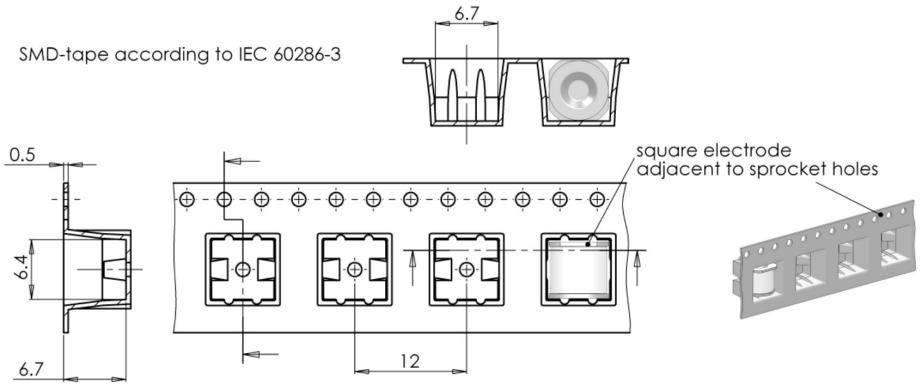


Packaging Dimensions

For LTR Type Axial Lead Items



For SM Type Items



CG10 Series
Gas Discharge Tubes

Part Numbering System and Ordering Information

CG10 XXX XX

Series

Breakdown Voltage
- **90**
- **230**
- **350**
- **470**
- **600**
- **800**
- **1000**

Packaging Option Code

SM = Surface Mount
700 pcs on SMD tape, per IEC60286-3

LTR = Straight Lead, Tape and Reel
per IEC60286-1, 800 pcs per reel

Examples: **CG1090SM =** SMD 90 V device
CG1090LTR = LTR 90 V device

Revised: VL 07/16/25