CG4 Series
Gas Discharge Tubes

Description
The Littelfuse CG4 Gas Discharge Tubes (GDT) series provides high levels of protection against fast rising transients caused by lightning disturbances. Offered in a miniature surface mount package, it has a surge rating of 3kA 8/20μs.

Littelfuse CG4 mini GDTs are high voltage (800-3000V) components designed for surge protection and high isolation applications. It is also suitable for applications for which bias voltage or signal levels of several hundred volts are normally present. CG4 mini GDTs can be used in conjunction with Littelfuse MOVs (Metal Oxide Varistors) to provide superior protection performance for AC applications.

Features
- Voltage Ranges 800V to 3000V
- Excellent response to fast rising transients
- 3kA 8/20μs surge capability pulse as defined by IEC 61000-4-5, 2nd edition
- UL Recognized to UL 1449. CG41.2 is Recognized to both UL 1449 and CSA C22.2 No. 269.5.
- Offered in SMD package with square terminals
- Non-Radioactive
- Ultra Low capacitance (<0.8pF)
- RoHS compliant and Lead-free

Applications
- CATV equipment
- Antennas
- Air conditioning
- EV Power Station
- Inverters/Variable Frequency Drives (VFD)
- IEEE 803.2 compliant
- Ethernet interfaces
- Power Supplies
- Medical electronics
- Test Equipment
- Renewable Energy

Agency Approvals

<table>
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<th>Agency</th>
<th>Agency File Number</th>
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<td>UL</td>
<td>E320116</td>
<td>CG40.8, CG41.0</td>
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<tr>
<td>CSA</td>
<td>E320116</td>
<td>CG41.8, CG43.0</td>
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<tr>
<td>CSA</td>
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Two Electrode GDT Graphical Symbol
CG4 Series
Gas Discharge Tubes

Electrical Characteristics

<table>
<thead>
<tr>
<th>Part Number</th>
<th>DC Breakdown in Volts (at 100V/s)</th>
<th>Impulse Break-down in Volts (at 100V/µs)</th>
<th>Impulse Break-down in Volts (at 1 kV/µs)</th>
<th>Insulation Resistance (at 1MHz)</th>
<th>Capacitance (at 1MHz)</th>
<th>Max Impulse Discharge Current (50Hz, 1s)</th>
<th>AC Discharge Current (On State Voltage @ 1A, 1Min)</th>
<th>Arc Voltage (On State Voltage @ 10/1000µs)</th>
<th>Impulse Life (10/1000µs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG40.8</td>
<td>640 800 960 1200 1300</td>
<td></td>
<td></td>
<td>1GΩ*</td>
<td>0.8pF</td>
<td>±5 Shots (@ 3kA)</td>
<td>3A</td>
<td>10A</td>
<td>20V 300 Shots</td>
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<tr>
<td>CG41.0</td>
<td>800 1000 1200 1400 1500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 Shot at 5kA</td>
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<tr>
<td>CG41.2</td>
<td>960 1200 1440 1700 1800</td>
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<tr>
<td>CG41.8</td>
<td>1440 1800 2160 2700 2800</td>
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<tr>
<td>CG42.0</td>
<td>1600 2000 2400 3100 3200</td>
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<tr>
<td>CG42.5</td>
<td>2000 2500 3000 3700 4000</td>
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<td>CG42.7</td>
<td>2160 2700 3240 3800 4200</td>
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<tr>
<td>CG43.0</td>
<td>2400 3000 3600 4100 4500</td>
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Note:
* Insulation resistance measured at:
  – 250Vdc for CG40.8,
  – 500Vdc for CG41.0, CG41.2, CG41.8 and CG42.0,
  – 1000Vdc for CG42.5, CG42.7 and CG43.0

Product Characteristics

- **Materials**: Device Tin Plated 17.5 ± 12.5 Microns
- **Construction**: Ceramic Insulator
- **Storage and Operational Temperature**: -40 to +90°C

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_s - Ramp-up Rate** 5°C/second max
- **Reflow**
  - Temperature (T_L) (Liquidus) 217°C
  - Temperature (t_s) 60 – 150 seconds
- **Peak Temperature (T_P)** 260°C or 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
CG4 Series
Gas Discharge Tubes

Device Dimensions
Dimensions in millimeters

TOP VIEW

PROFILE VIEW

Recommended Soldering Pad Layout

Product Marking

Part Numbering System and Ordering Information

Series
CG4

Breakdown Voltage
0.8 = 800V
1.0 = 1000V
3.0 = 3000V
(Voltage code examples for x.x)

P0  4.0 ± 0.1
P2  2.6 ± 0.1
W  16.0 ± 0.3
F  7.5 ± 0.1
A0  4.9 ± 0.1

Packaging Quantity:
1000 pcs per reel (13"
1 reels per inner box
10 inner boxes per carton
10,000 pcs per full carton