

# Switching Gas Discharge Tubes

## Gas Plasma Voltage Dependent Switches

### RoHS LT Series

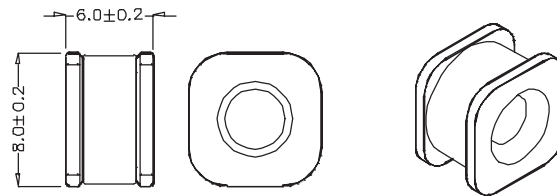
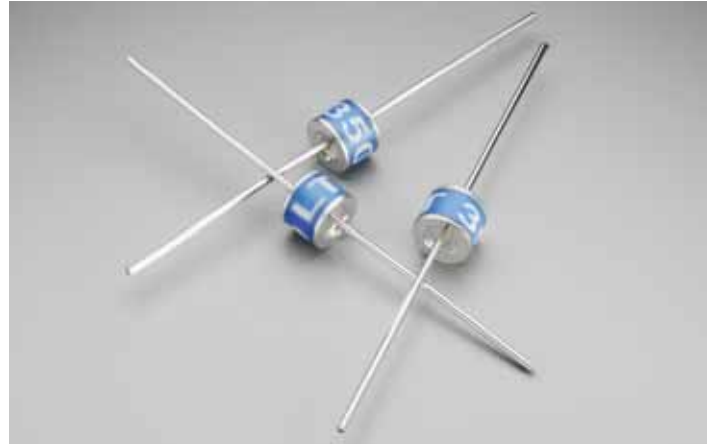
The LT Series is a 2-terminal bi-directional, voltage triggered switch is designed for ignition circuits used in high pressure HID lighting. Switching voltages for the devices are fixed depending on the part number selected. The gas plasma trigger technology offers very fast switching speeds, resulting in significantly better di/dt values when compared to silicon based SIDAC devices. Due to the high switching voltage of the devices, step-up transformer sizes and specifications can be reduced saving cost, size and weight.

#### Features

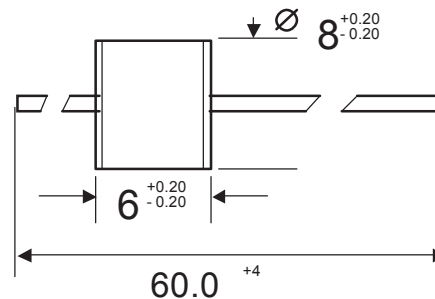
- RoHS compliant
- Ceramic chamber for ultimate reliability.
- Very high switching speed once switching voltage has been reached, resulting in high di/dt to be generated enabling the best performance to be extracted from ignition transformers.
- Tape and reel to EIA 481-1

#### Applications

- For switching stored electrical energy (such as capacitive discharge) at predetermined voltages.
- Designed for ignition circuits used in high pressure HID lighting.



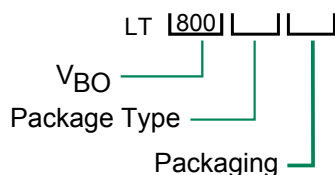
LT xxx SM



LTxxx A

Dimensions in mm

#### ORDERING INFORMATION



A= Axial lead, tape and Reel  
SM= Surface Mount

#### Mechanical Specifications:

**Weight (ballast circuit only):** 1.42g (0.049oz.)

#### Materials:

Electrode Base: Copper alloy  
Electrode Plating material: Bright Sn  
Body: Ceramic  
Littelfuse 'LF' marking, voltage and product code (red print)

#### Device Marking:

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### RoHS LT Series

#### Device Ratings and Specifications

| Part Number | $V_{BO}^{(1)}$<br>(V) | $V_S$<br>(V) | $V_T @ 5A$<br>(V) | $I_{DRM}^{(2)}$<br>(A) | $I_{BO}^{(3)}$<br>(mA) | $C_O^{(4)}$<br>(pF) | $V_{BO}$ to $V_T$<br>(nS) |
|-------------|-----------------------|--------------|-------------------|------------------------|------------------------|---------------------|---------------------------|
| LT230       | 195 – 265             | 184 – 276    | 15                | 1.0                    | 50                     | 2.0                 | 25                        |
| LT800       | 680 – 920             | 640 – 960    | 15                | 1.0                    | 50                     | 2.0                 | 25                        |

#### Electrical Life:

Switching Cycles <sup>(5)</sup> ..... 400,000  
 Peak Discharge Current <sup>(5)</sup> ..... 400 A

#### Maximum Ratings:

Max Switching Frequency ..... 100 Hz  
 Storage Temperature  $T_{STG}$  ..... -40 - +150°C  
 Operating Temperature ..... -40 - +150°C

#### Notes:

- (1) Measured on recommended test circuit (fig 1.)
- (2) Measured @ 100 Volts DC
- (3) Current required for transition to on-state
- (4) Measured @ 1 MHz, zero Volt bias
- (5) Measured on recommended test circuit (fig 2.)

#### Definitions:

$V_{BO}$  – Breakover Voltage

$V_S$  – Switching Voltage

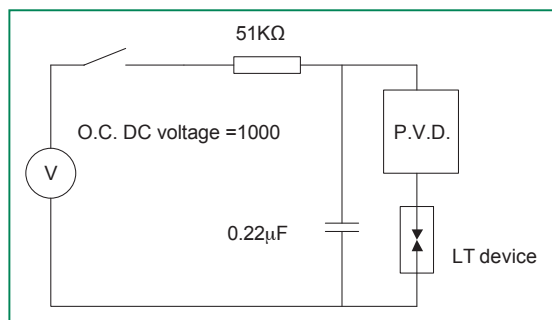
$V_T @ 5A$  – Nominal Off-state Voltage at 5A

$I_{DRM}$  – Off-state Current

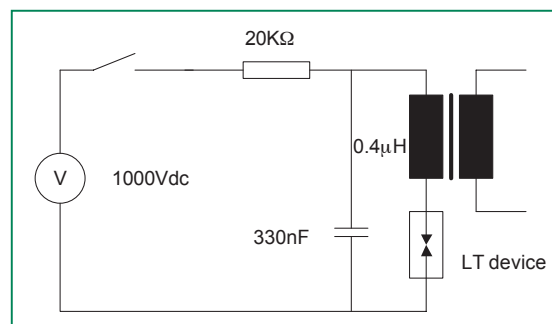
$I_{BO}$  – Nominal Breakover Current

$C_O$  - Max Capacitance

$V_{BO}$  to  $V_T$  – Max switching time from  $V_{BO}$  to  $V_T$



**Fig 1.** Recommended breakover voltage test circuit  
 (Discharge current = 10-20mA, sensitivity of  
 Peak Voltage Detect = 10-30mA)



**Fig 2.** Recommended Life Circuit