

# Gas Discharge Tube

## 6.0x8.5mm 3 Poles Round End

MGT6-3 Series

MERITEK

### FEATURE

- Ultra-Fast Surge Response
- High Surge Current Capability
- High Holder Voltage, High Insulation Resistance
- Low capacitance ( $\leq 2\text{pF}$ ), Micro-Gap Design
- Applications: Repeaters, Modems, Telephone Interface, Line Cards, Data Communication Equipment, Line Test Equipment
- UL Safety Approved Certification No: E223045

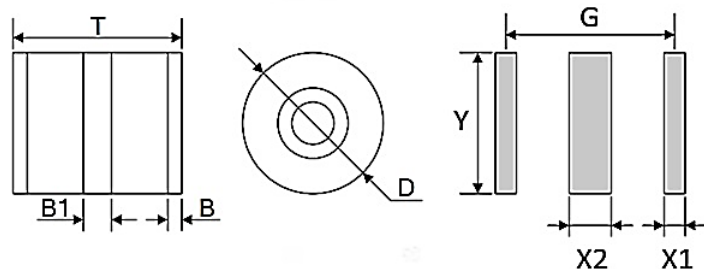


### ELECTRICAL CHARACTERISTICS

| Part Number  | DC Spark-over Voltage | Impulse Spark-over Voltage | Impulse Discharge Current    | Alternating Discharge Current | Impulse Life               | Minimum Insulation Resistance |               | Maximum Capacitance |
|--------------|-----------------------|----------------------------|------------------------------|-------------------------------|----------------------------|-------------------------------|---------------|---------------------|
|              | 100V/s                | 1KV/ $\mu\text{s}$         | 8/20 $\mu\text{s}$ , 10times | 50Hz, 1sec                    | 10/1K $\mu\text{s}$ , 100A | $V_T$                         | IR            | 1MHz/1V             |
| 6.0x8.5mm    | (V)                   | (V)                        | (KA)                         | (A)                           | (Times)                    | (V <sub>DC</sub> )            | (G $\Omega$ ) | (pF)                |
| MGT6L075MCB3 | 75 $\pm 20\%$         | 750                        | 5                            | 5                             | 300                        | 25                            | 1             | 2                   |
| MGT6L090MCB3 | 90 $\pm 20\%$         | 750                        | 5                            | 5                             | 300                        | 50                            | 1             | 2                   |
| MGT6L150MCB3 | 150 $\pm 20\%$        | 800                        | 5                            | 5                             | 300                        | 100                           | 1             | 2                   |
| MGT6L230MCB3 | 230 $\pm 20\%$        | 800                        | 5                            | 5                             | 300                        | 100                           | 1             | 2                   |
| MGT6L250MCB3 | 250 $\pm 20\%$        | 800                        | 5                            | 5                             | 300                        | 100                           | 1             | 2                   |
| MGT6L300MCB3 | 300 $\pm 20\%$        | 900                        | 5                            | 5                             | 300                        | 100                           | 1             | 2                   |
| MGT6L350MCB3 | 350 $\pm 20\%$        | 900                        | 5                            | 5                             | 300                        | 100                           | 1             | 2                   |
| MGT6L470MCB3 | 470 $\pm 20\%$        | 950                        | 5                            | 5                             | 300                        | 250                           | 1             | 2                   |
| MGT6L600MCB3 | 600 $\pm 20\%$        | 1300                       | 5                            | 5                             | 300                        | 250                           | 1             | 2                   |
| MGT6M075MCB3 | 75 $\pm 20\%$         | 750                        | 10                           | 10                            | 300                        | 25                            | 1             | 2                   |
| MGT6M090MCB3 | 90 $\pm 20\%$         | 750                        | 10                           | 10                            | 300                        | 50                            | 1             | 2                   |
| MGT6M150MCB3 | 150 $\pm 20\%$        | 600                        | 10                           | 10                            | 300                        | 100                           | 1             | 2                   |
| MGT6M230MCB3 | 230 $\pm 20\%$        | 650                        | 10                           | 10                            | 300                        | 100                           | 1             | 2                   |
| MGT6M250MCB3 | 250 $\pm 20\%$        | 650                        | 10                           | 10                            | 300                        | 100                           | 1             | 2                   |
| MGT6M300MCB3 | 300 $\pm 20\%$        | 800                        | 10                           | 10                            | 300                        | 100                           | 1             | 2                   |
| MGT6M350MCB3 | 350 $\pm 20\%$        | 800                        | 10                           | 10                            | 300                        | 100                           | 1             | 2                   |
| MGT6M470MCB3 | 470 $\pm 20\%$        | 1100                       | 10                           | 10                            | 300                        | 250                           | 1             | 2                   |
| MGT6M600MCB3 | 600 $\pm 20\%$        | 1300                       | 10                           | 10                            | 300                        | 250                           | 1             | 2                   |

Note: Operating Temperature: -40°C ~ +85°C

### DIMENSIONS AND RECOMMENDATION PAD



Unit: mm

| Series | D             | T             | B             | B1            | X1  | X2  | Y   | G   |
|--------|---------------|---------------|---------------|---------------|-----|-----|-----|-----|
| MGT6-3 | 6.0 $\pm 0.2$ | 8.5 $\pm 0.5$ | 1.0 $\pm 0.1$ | 1.5 $\pm 0.2$ | 1.6 | 2.2 | 6.0 | 8.5 |

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MGT6-3 Series

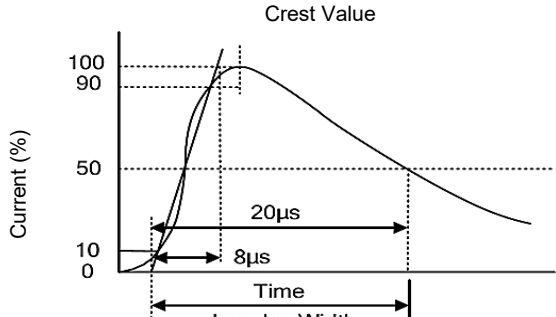
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### PART NUMBERING SYSTEM

**MGT** **6** **L** **075M** **CB3**  
 (1) (2) (3) (4) (5)

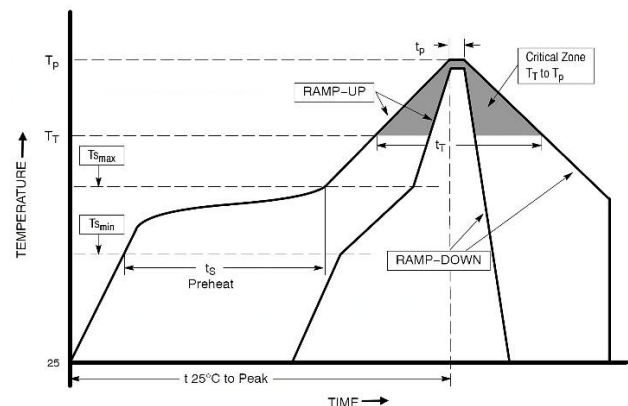
| No  | Item                  | Code | Description               |
|-----|-----------------------|------|---------------------------|
| (1) | Product Code          | MGT  | Gas Discharge Tube series |
| (2) | Size Code             | 6    | 6.0mm Diameter            |
| (3) | Discharge Current     | L    | L: 5KA, 8/20μs, 10 times  |
| (4) | DC Spark Over Voltage | 075M | 75V ±20%(M)               |
| (5) | Series Code           | CB3  | CB3: 3 Poles Round End    |

### ELECTRICAL RATING

| Item                                      | Test Condition                                                                                                                                                                                                                                                                                          | Requirement                 |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <b>DC Spark-over Voltage</b>              | The voltage is measured with voltage ramp $dv/dt = 100V/s$ . Test is between each side electrode and center electrode.                                                                                                                                                                                  |                             |
| <b>Maximum Impulse Spark-over Voltage</b> | The voltage is measured with voltage ramp $dv/dt = 1000V/\mu s$ . Test is between each side electrode and center electrode.                                                                                                                                                                             |                             |
| <b>Impulse Discharge Current</b>          | <p>Maximum surge current that can be applied through center electrode with 8/20μs waveform, for 10 times with 3min interval time, which will be equally divided between each side electrode to center electrode</p>  | To meet the specified value |
| <b>Alternating Discharge Current</b>      | Rated RMS value of AC current at 50Hz, 1 second for 10 times with interval time 3 minutes. Test is between each side electrode and center electrode.                                                                                                                                                    |                             |
| <b>Insulation Resistance</b>              | The resistance of gas tube shall be measured between each side electrodes and center electrode                                                                                                                                                                                                          |                             |
| <b>Capacitance</b>                        | The capacitance of gas tube shall be measured between each side electrodes and center electrode. Test frequency: 1MHz                                                                                                                                                                                   |                             |

### RECOMMENDED SOLDERING PROFILES

| Reflow Soldering Condition             |                               |              |
|----------------------------------------|-------------------------------|--------------|
| Pre Heat                               | Temp. Min $T_{s(min)}$        | 150°C        |
|                                        | Temp. Max $T_{s(max)}$        | 200°C        |
|                                        | Time (min. to max.) ( $t_s$ ) | 60~180 sec   |
| Average ramp up rate ( $T_L$ ) to peak |                               | 3°C/sec Max. |
| $T_{s(max)}$ to $T_L$ (Ramp-up rate)   |                               | 3°C/sec Max. |
| Reflow                                 | Temp. ( $T_L$ )               | 217°C        |
|                                        | Time (min. to max.) ( $t_L$ ) | 60~150 sec   |
| Peak Temperature ( $T_p$ )             |                               | 260°C        |
| Time within 5°C of Peak Temp ( $t_p$ ) |                               | 20~40 sec    |
| Ramp-down Rate                         |                               | 6°C/sec Max. |
| Time (25°C to Peak Temp)               |                               | 8 mins Max.  |

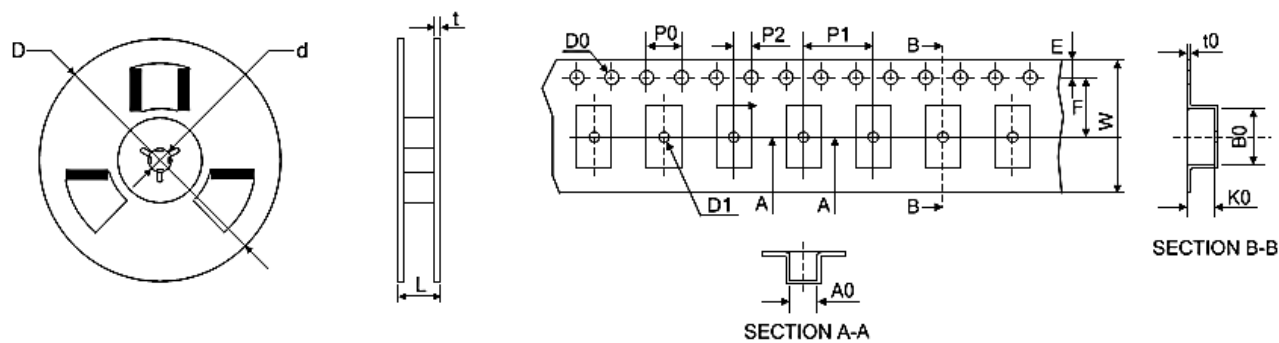


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PACKAGING SPECIFICATION



Unit: mm

| Package | D<br>±2.0 | d<br>±0.5 | L<br>±2.0 | t<br>±0.20 | W<br>±0.20 | P0<br>±0.10 | P1<br>±0.20 | P2<br>±0.10 | D0<br>±0.05 | E<br>±0.10 | F<br>±0.10 | A0<br>±0.10 | K0<br>±0.10 | B0<br>±0.10 | t0<br>±0.10 | Qty/<br>Reel |
|---------|-----------|-----------|-----------|------------|------------|-------------|-------------|-------------|-------------|------------|------------|-------------|-------------|-------------|-------------|--------------|
| Reel    | 330       | 13.0      | 20.0      | 2.00       | 16.0       | 4.00        | 16.0        | 2.00        | 1.55        | 1.75       | 7.50       | 8.80        | 6.20        | 6.35        | 0.50        | 600          |