

# Gas Discharge Tubes

## 3 Electrode Mini (3RM) and Standard (3R) Series

Part Numbering System | Specifications | Dimensions

### Part Numbering System

**WPGT** - **3R** **200** **C**  
**①** **②** **③** **④**

#### ① World Products Gas Discharge Tubes

##### ② Series Code

**3RM** = 3 Electrode Mini Series  
**3R** = 3 Electrode Standard Series

##### ③ DC Breakdown Voltage (Please reference specification to determine available voltage options for each series.)

|                                    |                                     |
|------------------------------------|-------------------------------------|
| <b>75</b> = 75V - 3R Series Only   | <b>350</b> = 350V                   |
| <b>90</b> = 90V                    | <b>400</b> = 400V                   |
| <b>145</b> = 145V                  | <b>420</b> = 420V - 3RM Series Only |
| <b>200</b> = 200V                  | <b>470</b> = 470V                   |
| <b>230</b> = 230V                  | <b>550</b> = 550V - 3R Series Only  |
| <b>250</b> = 250V                  | <b>600</b> = 600V                   |
| <b>260</b> = 260V - 3R Series Only |                                     |
| <b>300</b> = 300V - 3R Series Only |                                     |

##### ④ Lead Type

**B** = No Leads  
**CF**= (1.0mm lead diameter) with Fail Safe – 3R Series Only  
**CF1**= (0.8mm lead diameter) with Fail Safe  
**C** = Radial Lead (1.0mm lead diameter) – 3R Series Only  
**C2** = Radial Lead (0.8 lead diameter) – 3R Series Only  
**C3** = Radial Lead with 3.8 ± 0.3mm lead pitch (0.8mm lead diameter) – 3RM Series Only  
**G** = Axial Lead (1.0mm lead diameter) – 3R Series Only  
**G1** = Axial Lead (0.8mm lead diameter) – 3R Series Only  
**H** = Radial lead with 4.4mm ± 0.3mm lead pitch (0.8mm lead diameter) – 3 RM series only

### Specifications

#### 3 Electrode Mini Series (3RM)

| Base Part Number | DC Breakdown Voltage (V) | Maximum Impulse Breakdown Voltage (V) |           | Maximum Impulse Discharge Current (8/20 μ s) (KA) |                                  | Alternating Discharge Current (A) |             | Impulse Life (10/ 1000μ s) (400A) | DC Holdover Voltage (V) | Minimum Insulation Resistance (G?) | Maximum Capacitance (pf) |
|------------------|--------------------------|---------------------------------------|-----------|---------------------------------------------------|----------------------------------|-----------------------------------|-------------|-----------------------------------|-------------------------|------------------------------------|--------------------------|
|                  | 100V/s                   | 100V/μ s                              | 1000V/μ s | 1 time                                            | 10 times (5 times each polarity) | 50Hz, 1 sec                       | 50Hz, 1 sec | times                             | <150ms                  | *                                  | 1MHz                     |
| WPGT-3RM90       | 90 ± 20%                 | 750                                   | 850       | 10                                                | 5                                | 5                                 | 30          | 300                               | 52                      | 10                                 | 2                        |
| WPGT-3RM145      | 145 ± 20%                | 750                                   | 850       | 10                                                | 5                                | 5                                 | 30          | 300                               | 52                      | 10                                 | 2                        |
| WPGT-3RM200      | 200 ± 20%                | 600                                   | 700       | 15                                                | 10                               | 10                                | 60          | 300                               | 135                     | 10                                 | 2                        |
| WPGT-3RM230      | 230 ± 20%                | 600                                   | 700       | 15                                                | 10                               | 10                                | 60          | 300                               | 135                     | 10                                 | 2                        |
| WPGT-3RM250      | 250 ± 20%                | 600                                   | 700       | 15                                                | 10                               | 10                                | 60          | 300                               | 135                     | 10                                 | 2                        |
| WPGT-3RM350      | 350 ± 20%                | 650                                   | 750       | 15                                                | 10                               | 10                                | 60          | 300                               | 150                     | 10                                 | 2                        |
| WPGT-3RM400      | 400 ± 20%                | 700                                   | 800       | 15                                                | 10                               | 10                                | 60          | 300                               | 150                     | 10                                 | 2                        |
| WPGT-3RM420      | 420 ± 20%                | 700                                   | 800       | 15                                                | 10                               | 10                                | 60          | 300                               | 150                     | 10                                 | 2                        |
| WPGT-3RM470      | 470 ± 20%                | 800                                   | 900       | 15                                                | 10                               | 10                                | 60          | 300                               | 150                     | 10                                 | 2                        |
| WPGT-3RM600      | 600 ± 20%                | 900                                   | 1000      | 10                                                | 5                                | 5                                 | 30          | 300                               | 150                     | 10                                 | 2                        |

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\*DC Breakdown Voltage DC Measuring Voltage

|          |      |
|----------|------|
| 90-145V  | 50V  |
| 200-400V | 100V |
| 420-600V | 250V |

#### 3 Electrode Standard Series (3R)

| Base Part Number | DC Breakdown Voltage (V) | Maximum Impulse Breakdown Voltage (V) |           | Maximum Impulse Discharge Current (8/20 μ s) (KA) |                                  | Alternating Discharge Current (A) |                 | Impulse Life (10/ 1000μ s) (400A) | DC Holdover Voltage (V) | Minimum Insulation Resistance (G?) | Maximum Capacitance (pf) |
|------------------|--------------------------|---------------------------------------|-----------|---------------------------------------------------|----------------------------------|-----------------------------------|-----------------|-----------------------------------|-------------------------|------------------------------------|--------------------------|
|                  | 100V/s                   | 100V/μ s                              | 1000V/μ s | 1 time                                            | 10 times (5 times each polarity) | 50Hz, 1 sec                       | Single 9 cycles | times                             | <150ms                  | *                                  | 1MHz                     |
| WPGT-3R75        | 75 ± 20%                 | 600                                   | 700       | 20                                                | 10                               | 10                                | 130             | 300                               | 52                      | 10                                 | 2                        |
| WPGT-3R90        | 90 ± 20%                 | 600                                   | 700       |                                                   |                                  |                                   |                 |                                   | 52                      | 10                                 | 2                        |
| WPGT-3R145       | 145 ± 20%                | 500                                   | 700       |                                                   |                                  |                                   |                 |                                   | 52                      | 10                                 | 2                        |
| WPGT-3R200       | 200 ± 20%                | 500                                   | 700       |                                                   |                                  |                                   |                 |                                   | 80                      | 10                                 | 2                        |
| WPGT-3R230       | 230 ± 20%                | 600                                   | 700       |                                                   |                                  |                                   |                 |                                   | 80                      | 10                                 | 2                        |
| WPGT-3R250       | 250 ± 20%                | 600                                   | 700       |                                                   |                                  |                                   |                 |                                   | 80                      | 10                                 | 2                        |
| WPGT-3R260       | 260 ± 20%                | 600                                   | 700       |                                                   |                                  |                                   |                 |                                   | 80                      | 10                                 | 2                        |
| WPGT-3R300       | 300 ± 20%                | 700                                   | 900       |                                                   |                                  |                                   |                 |                                   | 150                     | 10                                 | 2                        |
| WPGT-3R350       | 350 ± 20%                | 700                                   | 900       |                                                   |                                  |                                   |                 |                                   | 150                     | 10                                 | 2                        |
| WPGT-3R400       | 400 ± 20%                | 800                                   | 1000      |                                                   |                                  |                                   |                 |                                   | 150                     | 10                                 | 2                        |
| WPGT-3R470       | 470 ± 20%                | 800                                   | 1000      |                                                   |                                  |                                   |                 |                                   | 150                     | 10                                 | 2                        |
| WPGT-3R550       | 550 ± 20%                | 1100                                  | 1400      |                                                   |                                  |                                   |                 |                                   | 150                     | 10                                 | 2                        |
| WPGT-3R600       | 600 ± 20%                | 1200                                  | 1500      |                                                   |                                  |                                   |                 |                                   | 150                     | 10                                 | 2                        |

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\*DC Breakdown Voltage DC Measuring Voltage

|           |      |
|-----------|------|
| 70-90V    | 50V  |
| 145V-400V | 100V |
| 470V-600V | 250V |

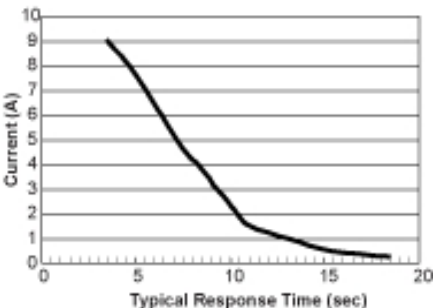
### Dimensions

#### 3 Electrode Mini Series (3RM)

Unit: mm

| Item | Dimensions (mm)           |
|------|---------------------------|
| D    | 6.0 +0.2, -0.5            |
| T    | 8.5 ± 0.4                 |
| T1   | 11.5 +0.8, -0.5           |
| L    | 7.0 ± 0.5                 |
| S    | 3.8 ± 0.3<br>or 4.4 ± 0.3 |
| d    | 0.8 ± 0.05                |
| L1   | 2.5 ± 0.5                 |
| R1   | 6.3 ± 0.3                 |
| R2   | 7.6 ± 0.4                 |

Failsafe Current - Time Curve

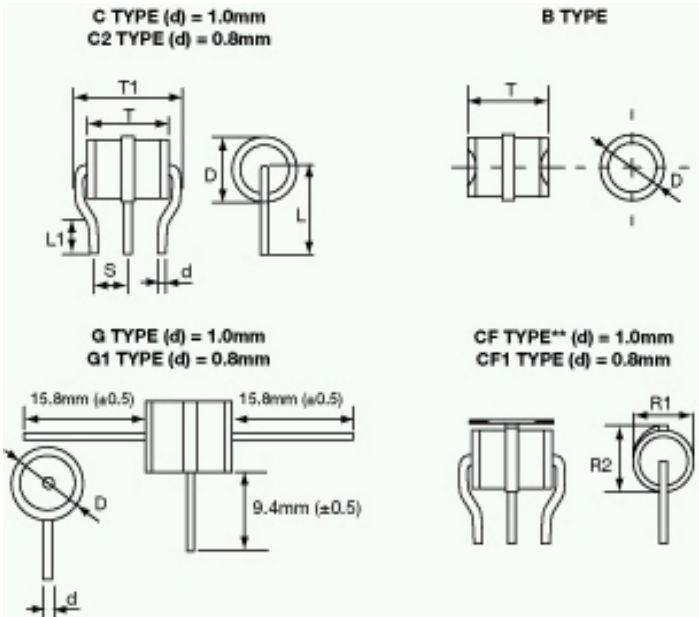
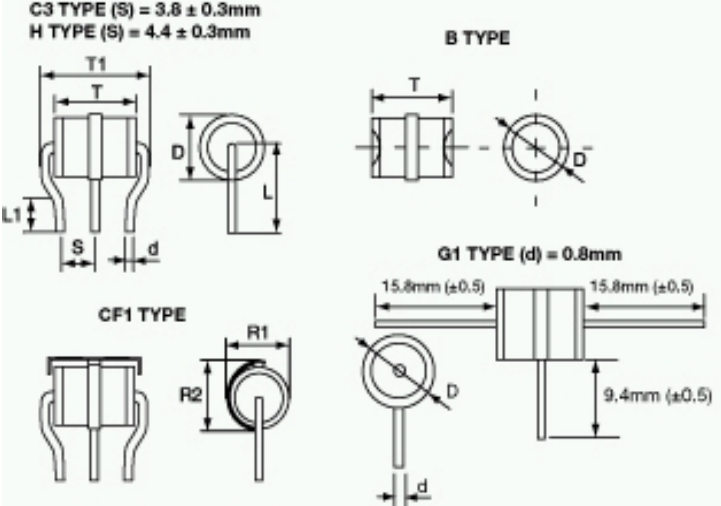
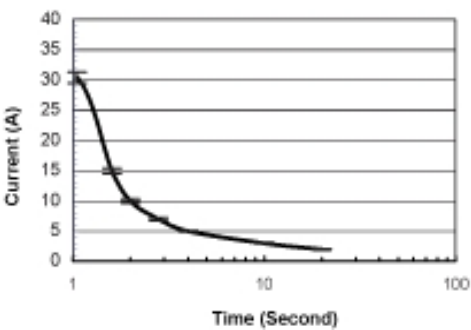


#### 3 Electrode Standard Series (3R)

Unit: mm

| Item | Dimensions (mm) |
|------|-----------------|
| D    | 8.0 ±0.2        |
| T    | 10.0 ±0.3       |
| T1   | 13.4 ±0.4       |
| L    | 11.0 ±0.5       |
| R1   | 8.1 ±0.3        |
| R2   | 9.8 ±0.4        |
| S    | 4.4 ±0.3        |
| L1   | 2.5 ± 0.5       |

Failsafe Current - Time Curve



|                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <b>Gas Discharge Tubes</b><br><b>General Characteristics</b><br><b>Features</b><br><b>Temperature Rating</b><br><b>100% Inspection</b><br><b>RoHS Information</b><br><b>Solderability</b><br><b>Part Marking</b><br><b>Terms and Definitions</b> | <b>2 Electrode Mini (2RM)</b><br><b>2 Electrode Standard and High Voltage (2R)</b><br><b>2 Electrode High Current (2N)</b><br><b>2 Electrode Extremely High Current Series (20B)</b><br><b>2 Electrode Switching Series (2T)</b><br><b>3 Electrode Mini (3RM) and Standard (3R) Series</b><br><b>2 Electrode Surface Mount Mini (2SM), Surface Mount (2S), Surface Mount Mini Square (2SS) and Surface Mount Chip (4532) Series</b><br><b>3 Electrode Surface Mount Mini (3SM and 3SSM) Series</b> | <b>Packaging</b><br><b>Standard Bulk Packaging</b><br><b>Tape &amp; Reel Specifications</b> |
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