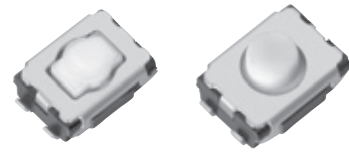


### 4.7 mm×3.5 mm SMD Light Touch Switches

Type: **EVQP2/EVQP9/EVQ3P2**



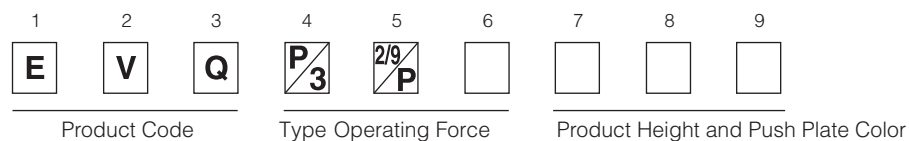
#### ■ Features

- External dimensions : 4.7 mm×3.5 mm,  
Height : Middle Push Travel 2.5 mm  
Short Push Travel 2.1 mm, 2.5 mm
- High operating force and long operational life
- High mountability with J-bent (4 terminals)

#### ■ Recommended Applications

- Operation switches for portable electronic equipment  
(Mobile phones, Digital still cameras, Camcorders,  
Portable audio players, etc.)
- Keyless entry systems (automotive)
- Car audio equipment

#### ■ Explanation of Part Numbers

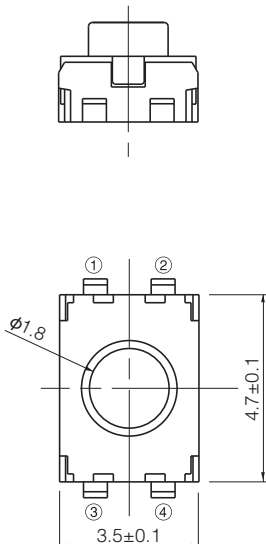
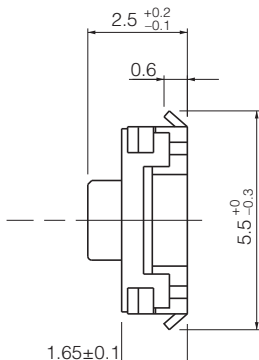
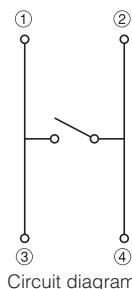
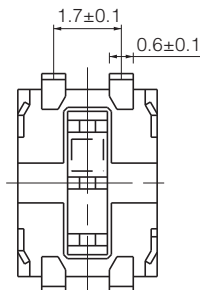
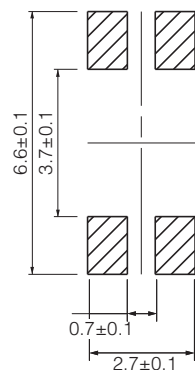


#### ■ Specifications

| Travel Type                   |                                 | Middle Push Travel                                                                       | Short Push Travel                                                                                                                                           |
|-------------------------------|---------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type                          |                                 | Snap action / Push-on V DC type SPST                                                     |                                                                                                                                                             |
| Electrical                    | Rating                          | 10 $\mu$ A 2 V DC to 20 mA 15 V DC (Resistive load)                                      |                                                                                                                                                             |
|                               | Contact Resistance              | 100 m $\Omega$ max.                                                                      |                                                                                                                                                             |
|                               | Insulation Resistance           | 100 M $\Omega$ min. (at 100 V DC)                                                        |                                                                                                                                                             |
|                               | Dielectric Withstanding Voltage | 250 V AC (1 minute)                                                                      |                                                                                                                                                             |
|                               | Bouncing                        | 10 ms max. (ON, OFF)                                                                     |                                                                                                                                                             |
| Mechanical                    | Operating Force                 | 2.5 N, 3.5 N, 5.0 N                                                                      | 1.0 N, 1.6 N, 2.4 N, 3.5 N, 4.0 N, 5.0 N                                                                                                                    |
|                               | Travel                          | 0.70 mm $\pm$ 0.20 mm                                                                    | 0.25 mm <sup>+0.05</sup> <sub>-0.15</sub> mm                                                                                                                |
| Endurance                     | Operating Life                  | 2.5 N: 1,000,000 cycles min.<br>3.5 N: 500,000 cycles min.<br>5.0 N: 200,000 cycles min. | 1.0 N, 1.6 N: 1,000,000 cycles min.<br>2.4 N: 500,000 cycles min.<br>3.5 N: 200,000 cycles min.<br>4.0 N: 200,000 cycles min.<br>5.0 N: 200,000 cycles min. |
| Operating Temperature         |                                 | -40 °C to +85 °C                                                                         |                                                                                                                                                             |
| Storage Temperature           |                                 | -40 °C to +85 °C (Bulk)<br>-20 °C to +60 °C (Taping)                                     |                                                                                                                                                             |
| Minimum Quantity/Packing Unit |                                 | 4,000 pcs. Embossed Taping (Reel Pack)                                                   |                                                                                                                                                             |
| Quantity/Cartron              |                                 | 20,000 pcs.                                                                              |                                                                                                                                                             |

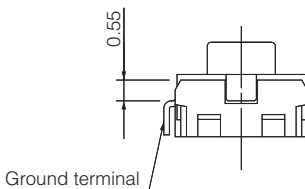
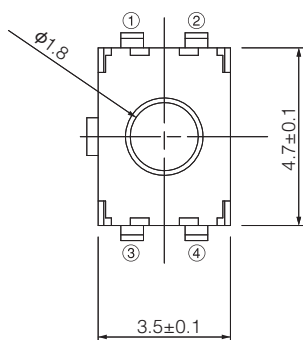
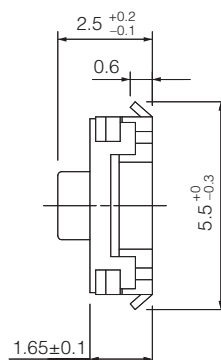
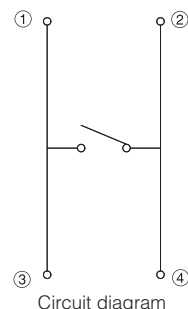
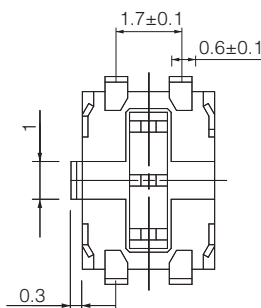
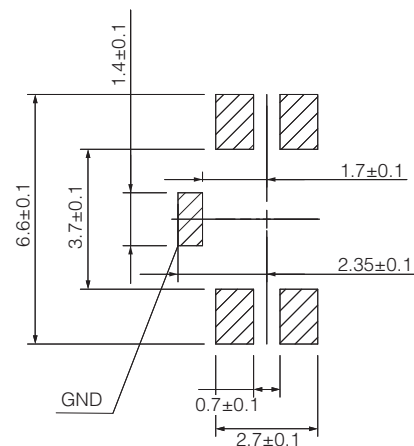
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Should a safety concern arise regarding this product, please be sure to contact us immediately.

### ■ Dimensions in mm (not to scale)

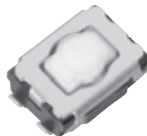
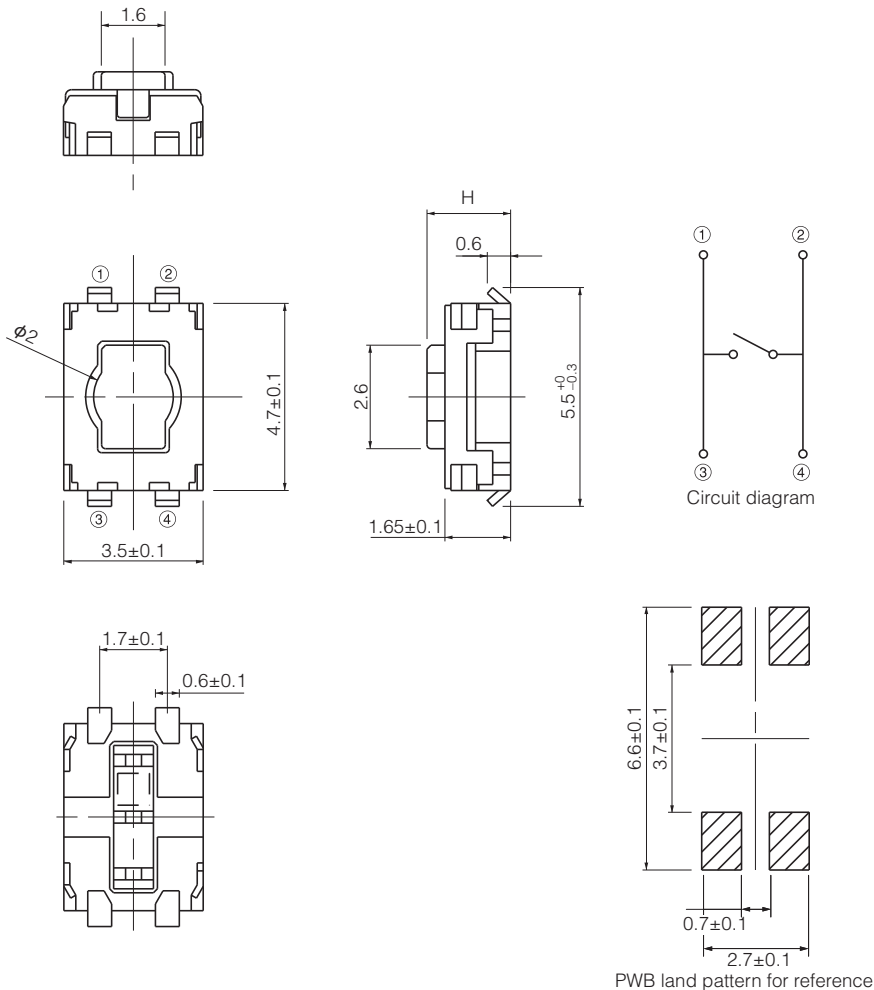
|                                                                                    |                                                                                                                         |                 |        |                  |                  |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------|--------|------------------|------------------|
| No. 1                                                                              |                                                                                                                         |                 |        |                  |                  |
| EVQP2<br>EVQ3P2                                                                    |                                                                                                                         |                 |        |                  |                  |
| Middle push travel<br>With J-bent terminals<br>Without<br>Ground Terminal          |                                                                                                                         |                 |        |                  |                  |
|  |                                                                                                                         |                 |        |                  |                  |
|                                                                                    | (General dimension tolerance±0.2)                                                                                       |                 |        |                  |                  |
|                                                                                    |                                       |                 |        |                  |                  |
|                                                                                    |                                      |                 |        |                  |                  |
|                                                                                    | <br>Circuit diagram                 |                 |        |                  |                  |
|                                                                                    |                                      |                 |        |                  |                  |
|                                                                                    | <br>PWB land pattern for reference |                 |        |                  |                  |
| Part Numbers                                                                       | Ground Terminal                                                                                                         | Operating Force | Height | Push Plate Color | Operating Life   |
| EVQP2H02B                                                                          | Without                                                                                                                 | 2.5 N           | 2.5 mm | Blue             | 1,000,000 cycles |
| EVQP2K02Q                                                                          | Without                                                                                                                 | 3.5 N           | 2.5 mm | Gray             | 500,000 cycles   |
| EVQ3P202K                                                                          | Without                                                                                                                 | 5.0 N           | 2.5 mm | Black            | 200,000 cycles   |

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### ■ Dimensions in mm (not to scale)

|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |        |                  |                  |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------|------------------|------------------|
| No. 2                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |        |                  |                  |
| EVQP2<br>EVQ3P2                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |        |                  |                  |
| Middle push travel<br>With J-bent terminals<br>With<br>Ground Terminal             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |        |                  |                  |
|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |        |                  |                  |
|                                                                                    | <div>(General dimension tolerance : <math>\pm 0.2</math>)</div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div>Land pattern plan</div> <div>We recommend to connect the GND land shown in the switch spec. with the GND of your P.C.B for withstanding electric-static discharge.</div> |                 |        |                  |                  |
| Part Numbers                                                                       | Ground Terminal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Operating Force | Height | Push Plate Color | Operating Life   |
| EVQP2B02B                                                                          | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2.5 N           | 2.5 mm | Blue             | 1,000,000 cycles |
| EVQP2D02Q                                                                          | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3.5 N           | 2.5 mm | Gray             | 500,000 cycles   |
| EVQP2F02K                                                                          | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5.0 N           | 2.5 mm | Black            | 200,000 cycles   |

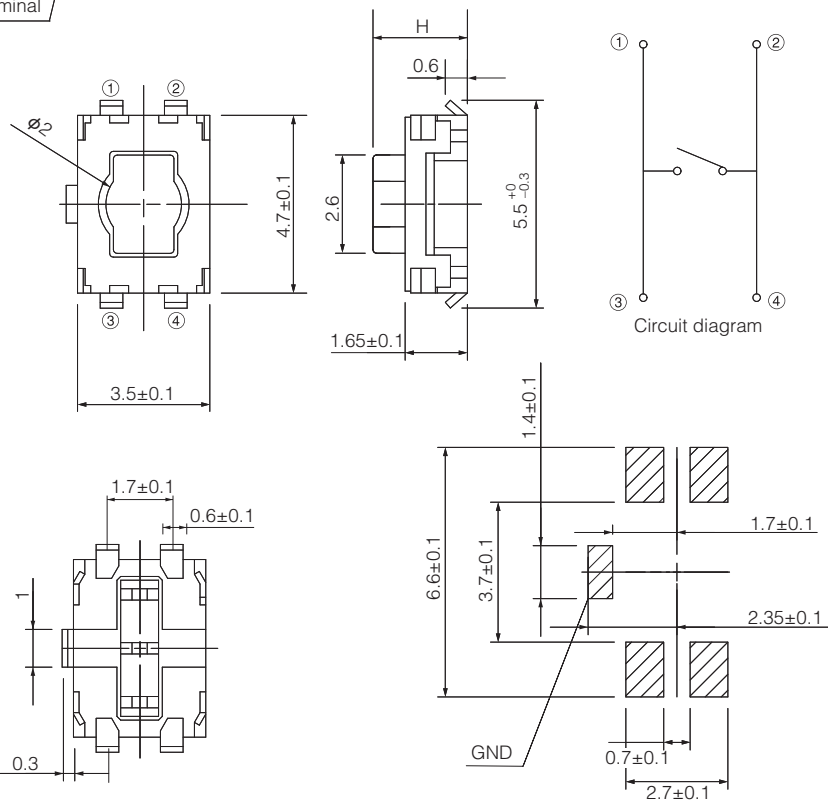
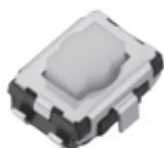
### ■ Dimensions in mm (not to scale)

| <div>No. 3</div> <div>EVQP2<br/>EVQP9</div> <div>Short push travel<br/>With J-bent terminals<br/>Without<br/>Ground Terminal</div> <div></div> | <div>(General dimension tolerance±0.2)</div> <div></div> |                 |          |                  |                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------|------------------|------------------|
| Part Numbers                                                                                                                                                                                                                    | Ground Terminal                                                                                                                             | Operating Force | H=Height | Push Plate Color | Operating Life   |
| EVQP2002M                                                                                                                                                                                                                       | Without                                                                                                                                     | 1.0 N           | 2.1 mm   | White            | 1,000,000 cycles |
| EVQP2002W                                                                                                                                                                                                                       | Without                                                                                                                                     | 1.0 N           | 2.5 mm   | White            | 1,000,000 cycles |
| EVQP2202M                                                                                                                                                                                                                       | Without                                                                                                                                     | 1.6 N           | 2.1 mm   | White            | 1,000,000 cycles |
| EVQP2202W                                                                                                                                                                                                                       | Without                                                                                                                                     | 1.6 N           | 2.5 mm   | White            | 1,000,000 cycles |
| EVQP2402M                                                                                                                                                                                                                       | Without                                                                                                                                     | 2.4 N           | 2.1 mm   | White            | 500,000 cycles   |
| EVQP2402W                                                                                                                                                                                                                       | Without                                                                                                                                     | 2.4 N           | 2.5 mm   | White            | 500,000 cycles   |
| EVQP2602M                                                                                                                                                                                                                       | Without                                                                                                                                     | 3.5 N           | 2.1 mm   | White            | 200,000 cycles   |
| EVQP2602W                                                                                                                                                                                                                       | Without                                                                                                                                     | 3.5 N           | 2.5 mm   | White            | 200,000 cycles   |
| EVQP9W02W                                                                                                                                                                                                                       | Without                                                                                                                                     | 4.0 N           | 2.5 mm   | White            | 200,000 cycles   |
| EVQP9P02M                                                                                                                                                                                                                       | Without                                                                                                                                     | 5.0 N           | 2.1 mm   | White            | 200,000 cycles   |
| EVQP9P02W                                                                                                                                                                                                                       | Without                                                                                                                                     | 5.0 N           | 2.5 mm   | White            | 200,000 cycles   |

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## No. 4

Short push travel  
With J-bent terminals  
With  
Ground Terminal

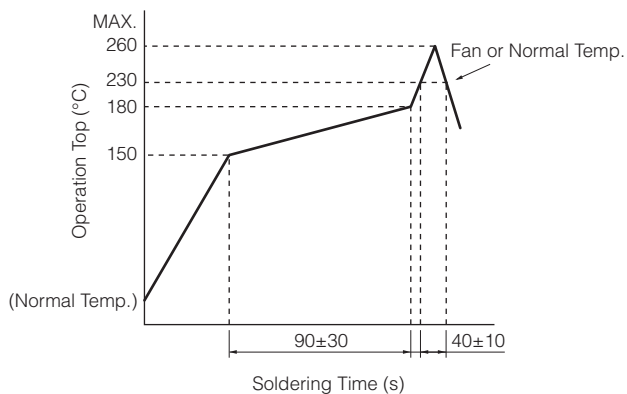


We recommend to connect the GND land shown in the switch spec. with the GND of your P.C.B for withstanding electric-static discharge.

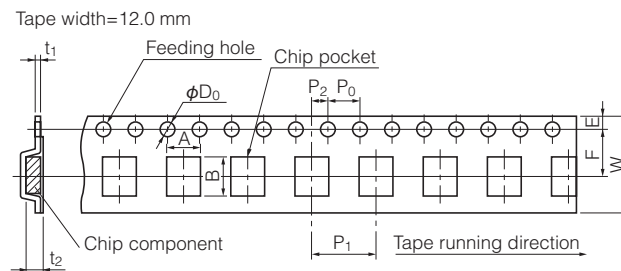
| Part Numbers | Ground Terminal | Operating Force | H=Height | Push Plate Color | Operating Life   |
|--------------|-----------------|-----------------|----------|------------------|------------------|
| EVQP2P02M    | With            | 1.0 N           | 2.1 mm   | White            | 1,000,000 cycles |
| EVQP2P02W    | With            | 1.0 N           | 2.5 mm   | White            | 1,000,000 cycles |
| EVQP2R02M    | With            | 1.6 N           | 2.1 mm   | White            | 1,000,000 cycles |
| EVQP2R02W    | With            | 1.6 N           | 2.5 mm   | White            | 1,000,000 cycles |
| EVQP2T02M    | With            | 2.4 N           | 2.1 mm   | White            | 500,000 cycles   |
| EVQP2T02W    | With            | 2.4 N           | 2.5 mm   | White            | 500,000 cycles   |
| EVQP2V02M    | With            | 3.5 N           | 2.1 mm   | White            | 200,000 cycles   |
| EVQP2V02W    | With            | 3.5 N           | 2.5 mm   | White            | 200,000 cycles   |
| EVQP9H02M    | With            | 5.0 N           | 2.1 mm   | White            | 200,000 cycles   |
| EVQP9H02W    | With            | 5.0 N           | 2.5 mm   | White            | 200,000 cycles   |

ANCTB19E 201701-Fd

### ■ Recommended Reflow Soldering Conditions



### ● Embossed Carrier Taping



Taping condition : Lack of products in the middle of taping should be one MAX, but total quantity specified in the specifications should be secured.

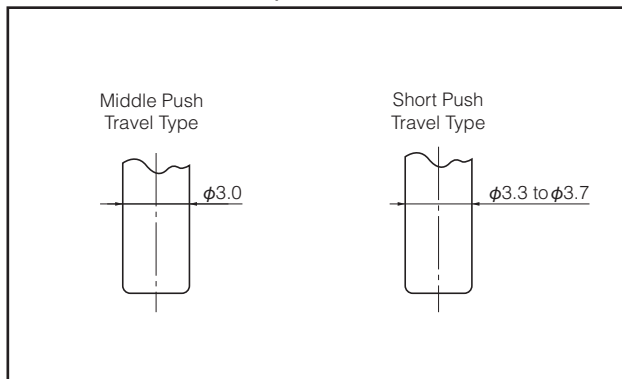
Peeling off strength of top tape : It should be within 0.2N to 1.0N at 165 degree in peeling off angle.

Joint of carrier tape : One joint per one reel may exist.

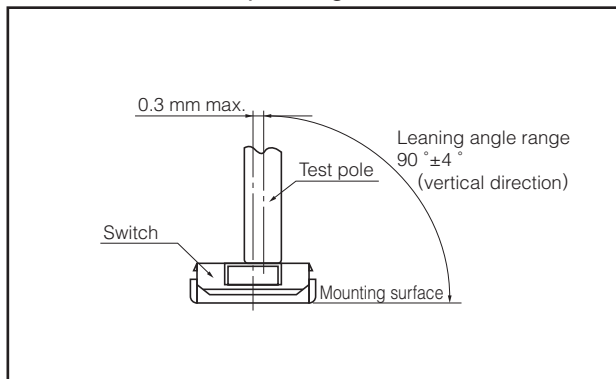
Unit: mm

| Part No. | Height | A       | B       | W        | F       | E         | $P_1$   | $P_2$   | $P_0$   | $D_0$ Dia.                        | $t_1$   | $t_2$   |
|----------|--------|---------|---------|----------|---------|-----------|---------|---------|---------|-----------------------------------|---------|---------|
| EVQP2    | 2.1    | 6.0±0.2 | 4.7±0.2 | 12.0±0.3 | 5.5±0.1 | 1.75±0.10 | 8.0±0.1 | 2.0±0.1 | 4.0±0.1 | 1.5 <sup>+0.1</sup> <sub>-0</sub> | 0.3±0.1 | 2.7±0.2 |
| EVQP9    | 2.5    |         |         |          |         |           |         |         |         |                                   |         |         |
| EVQ3P2   |        |         |         |          |         |           |         |         |         |                                   |         |         |

### ■ Recommended Shape of Test Pole



### ■ Recommended Operating Conditions



# Mouser Electronics

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