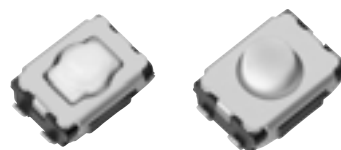


### 4.7 mm×3.5 mm SMD Light Touch Switches

Type: **EVQP2/EVQP9/EVQ3P2**



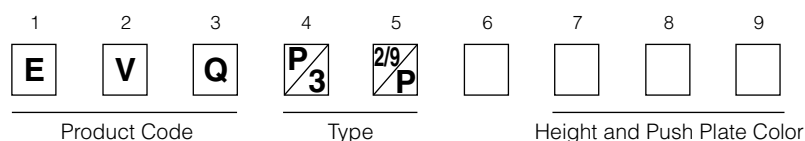
#### ■ Features

- 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

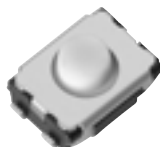
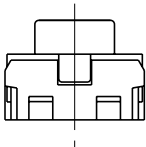
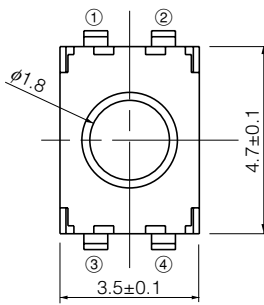
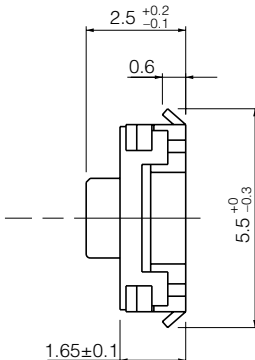
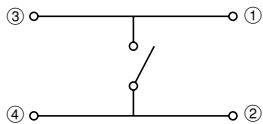
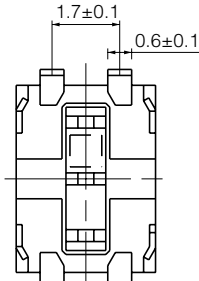
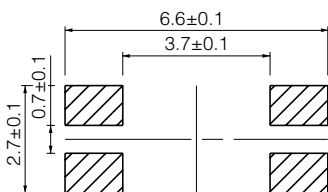


#### ■ Specifications

| Travel Type                   |                                 | Middle Push Travel                                                                   | Short Push Travel                                                                                                                                     |
|-------------------------------|---------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type                          |                                 | Snap action / Push-on type SPST                                                      |                                                                                                                                                       |
| Electrical                    | Rating                          | 10 $\mu$ A 2 Vdc to 20 mA 15 Vdc (Resistive load)                                    |                                                                                                                                                       |
|                               | Contact Resistance              | 100 m $\Omega$ max. / 1000 m $\Omega$ max. (Switch enduring high load)               |                                                                                                                                                       |
|                               | Insulation Resistance           | 100 M $\Omega$ min. (at 100 Vdc)                                                     |                                                                                                                                                       |
|                               | Dielectric Withstanding Voltage | 250 Vac (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±0.20 mm                                                                      | 0.25 mm <sup>+0.05</sup> <sub>-0.15</sub> mm                                                                                                          |
| Endurance                     | Operating Life                  | 2.5 N: 1000000 cycles min.<br>3.5 N: 500000 cycles min.<br>5.0 N: 200000 cycles min. | 1.0 N, 1.6 N: 1000000 cycles min.<br>2.4 N: 500000 cycles min.<br>3.5 N: 200000 cycles min.<br>4.0 N: 200000 cycles min.<br>5.0 N: 200000 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 |                                 | 4000 pcs. Embossed Taping (Reel Pack)                                                |                                                                                                                                                       |
| Quantity/Cartron              |                                 | 20000 pcs.                                                                           |                                                                                                                                                       |

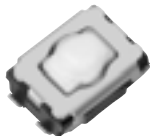
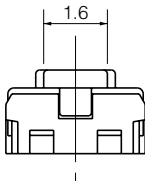
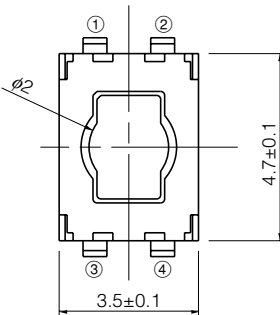
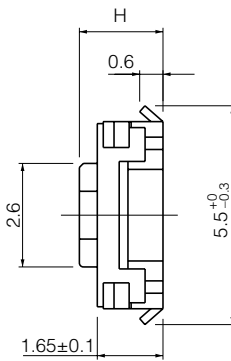
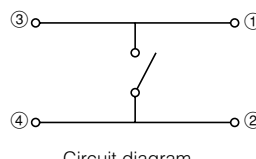
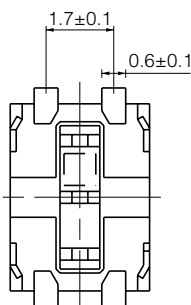
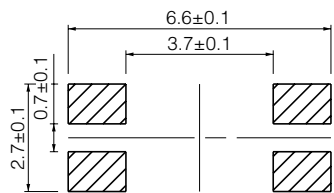
Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.  
Should a safety concern arise regarding this product, please be sure to contact us immediately.

### ■ Dimensions in mm (not to scale)

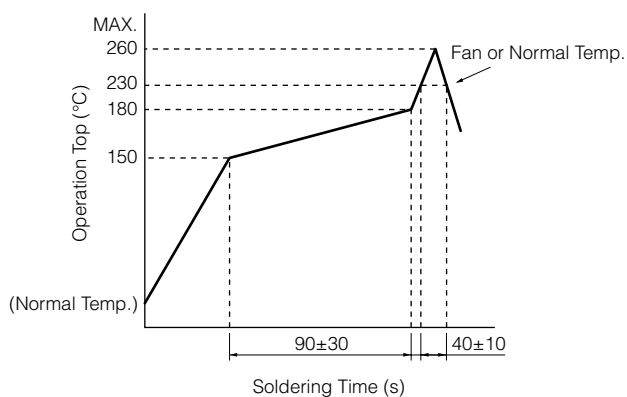
|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |        |                  |                |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------|------------------|----------------|
| No. 1                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |        |                  |                |
| EVQP2<br>EVQ3P2                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |        |                  |                |
| Middle push travel<br>With J-bent terminals<br>(With Ground terminal)              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |        |                  |                |
|  | <div>(General dimension tolerance±0.2)</div> <div></div> <div></div> <div></div> <div></div> <div>Circuit diagram</div> <div></div> <div></div> <div>PWB land pattern for reference</div> |                 |        |                  |                |
| Part Numbers                                                                       | Ground Terminal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Operating Force | Height | Push Plate Color | Operating Life |
| EVQP2B02B                                                                          | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2.5 N           | 2.5 mm | Blue             | 1000000 cycles |
| EVQP2D02Q                                                                          | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3.5 N           | 2.5 mm | Gray             | 500000 cycles  |
| EVQP2F02K                                                                          | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5.0 N           | 2.5 mm | Black            | 200000 cycles  |
| EVQP2H02B                                                                          | Without                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2.5 N           | 2.5 mm | Blue             | 1000000 cycles |
| EVQP2K02Q                                                                          | Without                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3.5 N           | 2.5 mm | Gray             | 500000 cycles  |
| EVQ3P202K                                                                          | Without                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5.0 N           | 2.5 mm | Black            | 200000 cycles  |

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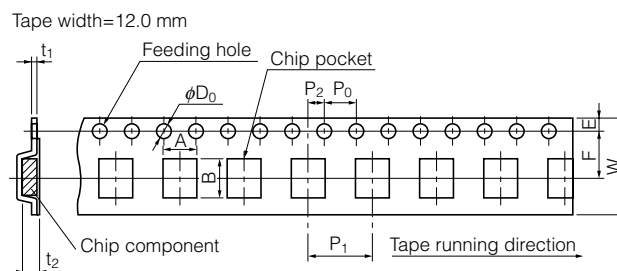
### ■ Dimensions in mm (not to scale)

| No. 2                                                                              |                                                                                                                            |                                                                                                            |                                                                                                                                                                                   |                  |                |   |                                     |                                     |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------|---|-------------------------------------|-------------------------------------|
| EVQP2<br>EVQP9                                                                     |                                                                                                                            | (General dimension tolerance±0.2)                                                                          |                                                                                                                                                                                   |                  |                |   |                                     |                                     |
| Short push travel<br>With J-bent terminals<br>(With Ground terminal)               |                                           |                           | <table border="1"><thead><tr><th>H</th></tr></thead><tbody><tr><td>2.1<sup>+0.2</sup><sub>-0.1</sub></td></tr><tr><td>2.5<sup>+0.2</sup><sub>-0.1</sub></td></tr></tbody></table> |                  |                | H | 2.1 <sup>+0.2</sup> <sub>-0.1</sub> | 2.5 <sup>+0.2</sup> <sub>-0.1</sub> |
|                                                                                    | H                                                                                                                          |                                                                                                            |                                                                                                                                                                                   |                  |                |   |                                     |                                     |
|                                                                                    | 2.1 <sup>+0.2</sup> <sub>-0.1</sub>                                                                                        |                                                                                                            |                                                                                                                                                                                   |                  |                |   |                                     |                                     |
|                                                                                    | 2.5 <sup>+0.2</sup> <sub>-0.1</sub>                                                                                        |                                                                                                            |                                                                                                                                                                                   |                  |                |   |                                     |                                     |
|   |                                          |  <p>Circuit diagram</p> |                                                                                                                                                                                   |                  |                |   |                                     |                                     |
|  |  <p>PWB land pattern for reference</p> |                                                                                                            |                                                                                                                                                                                   |                  |                |   |                                     |                                     |
| Part Numbers                                                                       | Ground Terminal                                                                                                            | Operating Force                                                                                            | H=Height                                                                                                                                                                          | Push Plate Color | Operating Life |   |                                     |                                     |
| EVQP2P02M                                                                          | With                                                                                                                       | 1.0 N                                                                                                      | 2.1 mm                                                                                                                                                                            | White            | 1000000 cycles |   |                                     |                                     |
| EVQP2P02W                                                                          | With                                                                                                                       | 1.0 N                                                                                                      | 2.5 mm                                                                                                                                                                            | White            | 1000000 cycles |   |                                     |                                     |
| EVQP2R02M                                                                          | With                                                                                                                       | 1.6 N                                                                                                      | 2.1 mm                                                                                                                                                                            | White            | 1000000 cycles |   |                                     |                                     |
| EVQP2R02W                                                                          | With                                                                                                                       | 1.6 N                                                                                                      | 2.5 mm                                                                                                                                                                            | White            | 1000000 cycles |   |                                     |                                     |
| EVQP2T02M                                                                          | With                                                                                                                       | 2.4 N                                                                                                      | 2.1 mm                                                                                                                                                                            | White            | 500000 cycles  |   |                                     |                                     |
| EVQP2T02W                                                                          | With                                                                                                                       | 2.4 N                                                                                                      | 2.5 mm                                                                                                                                                                            | White            | 500000 cycles  |   |                                     |                                     |
| EVQP2V02M                                                                          | With                                                                                                                       | 3.5 N                                                                                                      | 2.1 mm                                                                                                                                                                            | White            | 200000 cycles  |   |                                     |                                     |
| EVQP2V02W                                                                          | With                                                                                                                       | 3.5 N                                                                                                      | 2.5 mm                                                                                                                                                                            | White            | 200000 cycles  |   |                                     |                                     |
| EVQP9H02M                                                                          | With                                                                                                                       | 5.0 N                                                                                                      | 2.1 mm                                                                                                                                                                            | White            | 200000 cycles  |   |                                     |                                     |
| EVQP9H02W                                                                          | With                                                                                                                       | 5.0 N                                                                                                      | 2.5 mm                                                                                                                                                                            | White            | 200000 cycles  |   |                                     |                                     |
| EVQP2002M                                                                          | Without                                                                                                                    | 1.0 N                                                                                                      | 2.1 mm                                                                                                                                                                            | White            | 1000000 cycles |   |                                     |                                     |
| EVQP2002W                                                                          | Without                                                                                                                    | 1.0 N                                                                                                      | 2.5 mm                                                                                                                                                                            | White            | 1000000 cycles |   |                                     |                                     |
| EVQP2202M                                                                          | Without                                                                                                                    | 1.6 N                                                                                                      | 2.1 mm                                                                                                                                                                            | White            | 1000000 cycles |   |                                     |                                     |
| EVQP2202W                                                                          | Without                                                                                                                    | 1.6 N                                                                                                      | 2.5 mm                                                                                                                                                                            | White            | 1000000 cycles |   |                                     |                                     |
| EVQP2402M                                                                          | Without                                                                                                                    | 2.4 N                                                                                                      | 2.1 mm                                                                                                                                                                            | White            | 500000 cycles  |   |                                     |                                     |
| EVQP2402W                                                                          | Without                                                                                                                    | 2.4 N                                                                                                      | 2.5 mm                                                                                                                                                                            | White            | 500000 cycles  |   |                                     |                                     |
| EVQP2602M                                                                          | Without                                                                                                                    | 3.5 N                                                                                                      | 2.1 mm                                                                                                                                                                            | White            | 200000 cycles  |   |                                     |                                     |
| EVQP2602W                                                                          | Without                                                                                                                    | 3.5 N                                                                                                      | 2.5 mm                                                                                                                                                                            | White            | 200000 cycles  |   |                                     |                                     |
| EVQP9W02W                                                                          | Without                                                                                                                    | 4.0 N                                                                                                      | 2.5 mm                                                                                                                                                                            | White            | 200000 cycles  |   |                                     |                                     |
| EVQP9P02M                                                                          | Without                                                                                                                    | 5.0 N                                                                                                      | 2.1 mm                                                                                                                                                                            | White            | 200000 cycles  |   |                                     |                                     |
| EVQP9P02W                                                                          | Without                                                                                                                    | 5.0 N                                                                                                      | 2.5 mm                                                                                                                                                                            | White            | 200000 cycles  |   |                                     |                                     |

### ■ Recommended Reflow Soldering Conditions



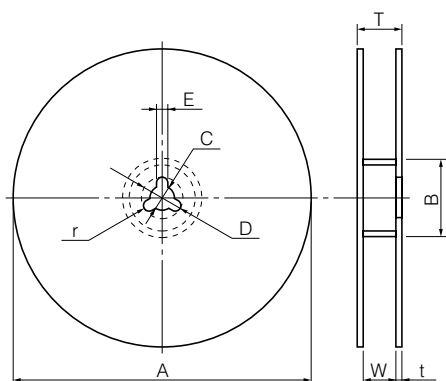
### ● Embossed Carrier Taping



Unit: mm

| Part No. | Height | A       | B       | W        | F       | E         | P <sub>1</sub> | P <sub>2</sub> | P <sub>0</sub> | D <sub>0</sub> Dia.               | t <sub>1</sub> | t <sub>2</sub> |
|----------|--------|---------|---------|----------|---------|-----------|----------------|----------------|----------------|-----------------------------------|----------------|----------------|
| 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   |        |         |         |          |         |           |                |                |                |                                   |                |                |

### ● Standard Reel Dimensions in mm (not to scale)

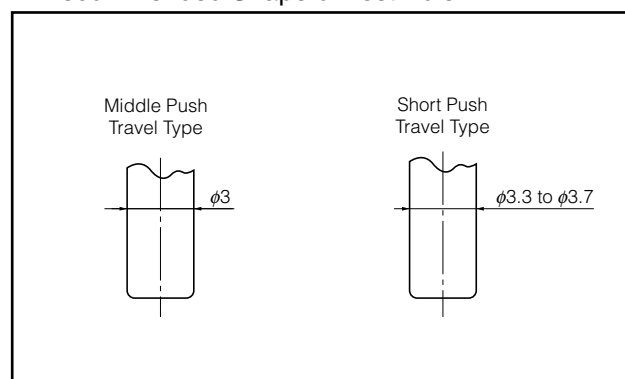


| Item      | A          | B          | C         | D         | E       |
|-----------|------------|------------|-----------|-----------|---------|
| Rate (mm) | φ370.0±2.0 | φ50.0 min. | φ13.0±0.5 | φ21.0±1.0 | 2.0±0.5 |

| Item      | W        | T | t          | r       |
|-----------|----------|---|------------|---------|
| Rate (mm) | 14.0±1.5 | — | 1.0 to 3.0 | 1.0±0.5 |

### ■ Recommended Shape of Test Pole



### ■ Recommended Operating Conditions

