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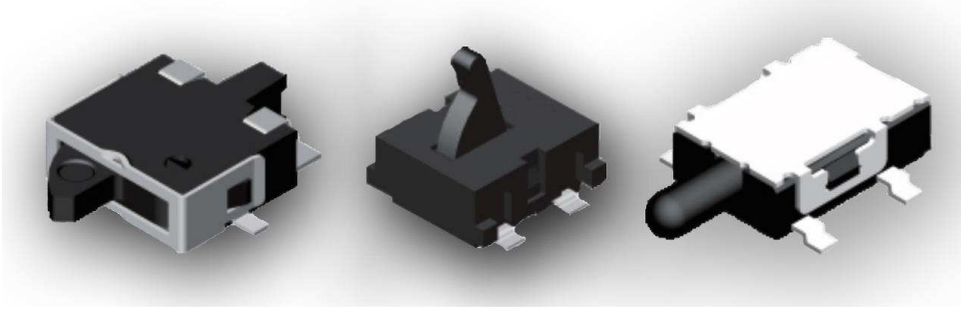
## Applications

- Automotive
- Instrumentation
- White goods
- Telecommunications

## Benefits

- RoHS Compliant
- Halogen and Lead Free
- Sharp detection feeling
- Compact Size

# JJ Series – Detector Switches



TE Connectivity is pleased to introduce its JJ Series of Detector Switches, suitable for a wide variety of applications given their several presentations ranging from horizontal or vertical actuated options as well as Gull-winged, J-leaded and Through-Hole mounting possibilities.

The Detector Switches will be offered in a wide range of sizes giving the possibility for countless applications going from automotive to telecommunications.

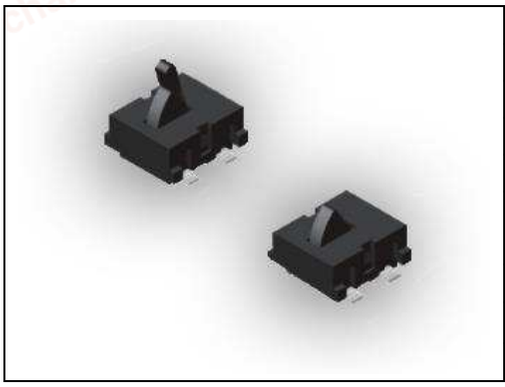
## JJ Series – Family Classification

| Series | Body Size |
|---|---|
| JJA | 3.5x2.8 mm |
| JJB | 3.5x2.98 mm |
| JJC | 3.5x3.3 mm |
| JJD | 4.2x3.6 mm |
| JJE | 4.7x3.5 mm |
| JJF | 4.7x3.8 mm |
| JJG | 5.7x4.0 mm (High-Rating) |
| JJH | 5.7x4.0 mm (Standard-Rating) |
| JJI | 5.0x4.4 mm |
| JJJ | 6.0x4.85 mm / 5.5x4.7 mm |
| JJK | 6.3x3.0 mm |
| JJL | 6.5x3.9 mm |
| JJM | 5.7x4.0 mm |
| JJN | 5.7x4.0 mm (Wedge) |
| JJO | 10.0x3.8 mm |
| JJP | 10.6x10.0 mm |

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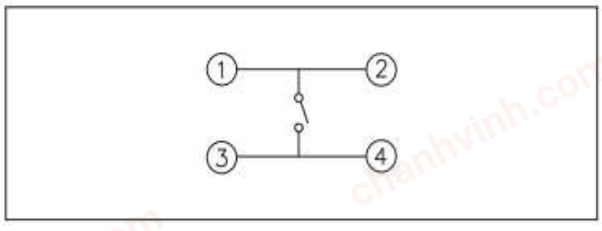
## JJF Family – *4.7x3.8 mm*



| | |
|---|---|
| Contact Rating | 1mA, 5VDC Max. |
| Contact Resistance | 1Ω Max. |
| Insulation Resistance | 100MΩ Min. 100VDC |
| Dielectric Strength | 100VAC/1 minute |
| Operating Force | 40gF Max. |
| Travel | 5.30mm Stem--3.9mm<br>3.80mm Stem--2.6mm |
| Operating Life | 100,000 cycles |
| Operating Temperature | -10˚C to 60˚C |
| Storage Temperature | -20˚C to 70˚C |

| Features | Applications |
|---|---|
| • Guiding post for easy orientation<br>• 3.80 & 5.30mm stem height | • DSC<br>• Detection of disc loading |

## Circuit




## How To Order

**JJF – V0 – U – G – ☐ – NO – ☐ – ☐ – R - TR**

**Family: JJF**

**Orientation:**
V0 – Vertical (Push)

**Grounding:**
U - Ungrounded

**Mounting:**
G – Gull-winged

**Height:**
380 – 3.80mm
530 – 5.30mm

**Packaging:**
TR – Tape and Reel

**Contact/Terminal Plating:**
R – Silver Plating

**Cover:**
P – Plastic Cover
M – Metal Cover

**Guiding post:**
N – No Post
P - Post

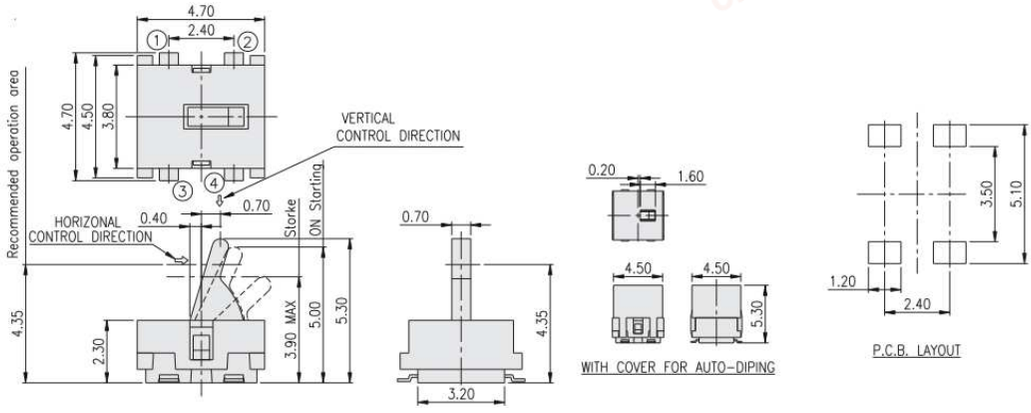
**Circuit:**
NO – Normal Open

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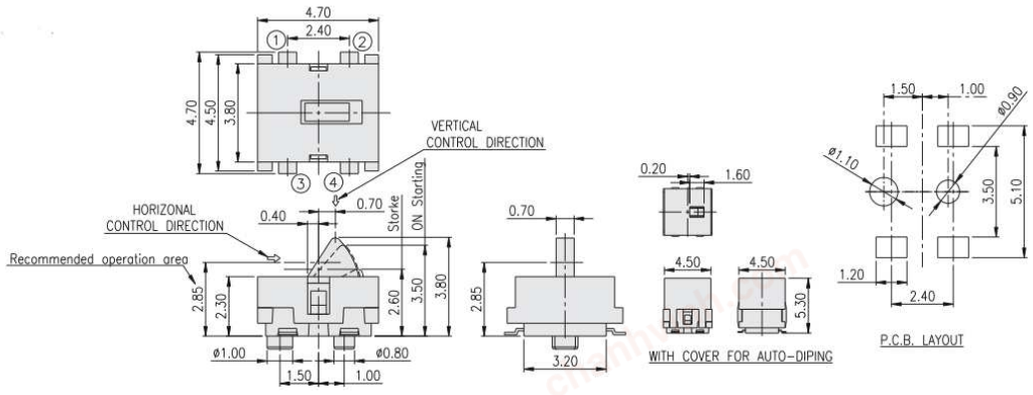


## Diagrams

-5.30mm




-3.80mm




## PN List

| Smart PN | Orientation | Grounding | Mounting | Height | Circuit | Guide Post | Cover | Plating | Packaging | MOQ | TE PN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| JJFV0UG530NOPMRTR | Vertical Push | Ungrounded | Gull-winged | 5.30 mm | NO | Post | Metal | Silver | Tape and Reel | 900 | 2331364-1 |
| JJFV0UG530NOPPRTR | Vertical Push | Ungrounded | Gull-winged | 5.30 mm | NO | Post | Plastic | Silver | Tape and Reel | 900 | 2331365-1 |
| JJFV0UG530NONMRTR | Vertical Push | Ungrounded | Gull-winged | 5.30 mm | NO | No Post | Metal | Silver | Tape and Reel | 900 | 2331366-1 |
| JJFV0UG530NONPRTR | Vertical Push | Ungrounded | Gull-winged | 5.30 mm | NO | No Post | Plastic | Silver | Tape and Reel | 900 | 2331367-1 |
| JJFV0UG380NOPMRTR | Vertical Push | Ungrounded | Gull-winged | 3.80 mm | NO | Post | Metal | Silver | Tape and Reel | 900 | 2331368-1 |
| JJFV0UG380NOPPRTR | Vertical Push | Ungrounded | Gull-winged | 3.80 mm | NO | Post | Plastic | Silver | Tape and Reel | 1,000 | 2331369-1 |
| JJFV0UG380NONMRTR | Vertical Push | Ungrounded | Gull-winged | 3.80 mm | NO | No Post | Metal | Silver | Tape and Reel | 900 | 2331370-1 |
| JJFV0UG380NONPRTR | Vertical Push | Ungrounded | Gull-winged | 3.80 mm | NO | No Post | Plastic | Silver | Tape and Reel | 1,000 | 2331372-1 |

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**1. Style**

"Detector Switches" are mainly used as signal switches of electric devices, with the general requirements of mechanical and electrical characteristic.

1.1 Operating Temperature Range: -10℃ to 60℃

1.2 Storage Temperature Range: -20℃ to 70℃

1.3 The shelf life of product is within 6 months.

**2. Current Range:** 1mA, 5 VDC

**3. Type of Actuation:** Tactile feedback

**4. Test Sequence:**

| | Item | Description | Test Conditions | Requirements |
|---|---|---|---|---|
| Appearance | 1 | Visual Examination | Physical inspection without applying any external forces. | There shall be no defects that affect the serviceability of the product. |
| Electric Performance | 2 | Contact Resistance | Actuate the switch 4.35mm (5.30mm Stem); 2.85mm (3.80mm Stem) and measure contact resistance using a micro-Ohmmeter. | 1Ω Max. |
| | 3 | Insulation Resistance | Measurements shall be made at 100 VDC potential between terminals and cover. | 100MΩ Min. |
| | 4 | Dielectric Withstanding Voltage | 100 VAC (50Hz or 60Hz) shall be applied across terminals and cover for 1 minute | There shall be no breakdown or flashover |
| | 5 | Capacitance | Capacitance shall be measured at 1 MHz between terminals. | 5 pF Max. |
| | 6 | Operating Force | As the specification shows operating force is measured | 40gF Max (.4N Max) |

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<table>
<tr><td rowspan="6">Mechanical Performance</td><td>7</td><td>Contact (On) point</td><td>----------</td><td>As the specification shows ON start position</td></tr>
<tr><td>8</td><td>Stop Strength</td><td>Apply vertical static load of 1KgF(9.8N) shall be applied in the direction of stem operation for a period of 60 seconds</td><td>As shown in items 2 through 7.</td></tr>
<tr><td>9</td><td>Solder Heat Resistance</td><td>(See chart below)<br><br>ON starting before reflow:<table><tr><td colspan="2">5.30mm Stem</td><td colspan="2">3.80mm Stem</td></tr><tr><td rowspan="2">5.00</td><td>+0.2</td><td rowspan="2">3.50</td><td>+0.2</td></tr><tr><td>-0.3</td><td>-0.3</td></tr></table></td><td>1) Shall be free from pronounced backlash and falling-off or breakage terminals<br>2) As shown in items 2 through 8.</td></tr>
<tr><td>10</td><td>Vibration</td><td>Test per Method 201A of MIL-STD-202F<br>1) Swing distance=1.5mm<br>2) Frequency: 10-55-10Hz in 1-min/cycle.<br>3) Direction: 3 vertical directions including the directions of operation<br>4)Test time: 2 hours each direction</td><td>As shown in items 2 through 8.</td></tr>
<tr><td>11</td><td>Shock</td><td>Test per Method 213B condition A of MIL-STD-202F<br>1) Acceleration; 50G<br>2) Action time: 11±1m seconds<br>3) Testing Direction: 6 sides<br>4) Test Cycle: 3 times in each direction</td><td>As shown in items 2 through 8.</td></tr>
<tr><td>12</td><td>Solderability</td><td>1) Temperature: 245±3℃<br>Lead-Free solder: M705E JIS Z 3282 A (Tin 96.5%, Silver 3%, Copper 0.5%)<br>2) Flux: 5-10 sec.<br>3) Duration of solder Immersion: 3±0.5sec.</td><td>No anti-soldering and the coverage of dipping into solder must more than 75% was requested.</td></tr>
<tr><td>Durability</td><td>13</td><td>Operating Life</td><td>Measurements shall be made following the test forth below:<br>1) 1mA,5 VDC resistive load<br>2) Apply a static load in the direction of operation equal to the operating force to the center of the stem.<br>3) Rate of Operation: 20 to 25 operations per minute.<br>4) Cycle of Operation: 100,000 cycles Min.</td><td>1) As shown in items 4 to 5<br>2) Insulation Resistance: 10MΩ Min.<br>3) Contact Resistance: 2Ω Max.</td></tr>
</table>

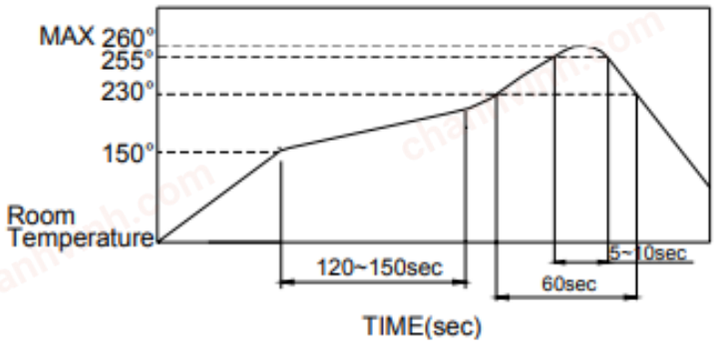
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| | | | | |
|---|---|---|---|---|
| Weather-proof | 14 | Resistance Low Temperature | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made:<br>1) Temperature: -40±2℃<br>2) Time: 96 hours | As shown in items 2 to 8. |
| | 15 | Heat Resistance | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made:<br>1) Temperature: 85±2℃<br>2) Time: 96 hours | |
| | 16 | Humidity Resistance | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made:<br>1) Temperature: 40±2℃<br>2) Relative Humidity: 90 to 95%<br>3) Time: 96 hours | 1) As shown in items 4 to 8.<br>2) Insulation Resistance: 10MΩ Min. |

**5. Soldering Conditions:**

■ Recommended Soldering Profile for the JJF Series




■ The temperatures defined above are the temperatures measured on the surface of the Printed Circuit Board. There are cases where the printed circuit board's temperature differs greatly from the temperature of the switch. Critical note: the switch's surface temperature must not exceed 260℃.

■ Manual Soldering

Soldering Temperature: 350℃ Max.
Continuous Soldering Time: 5 second Max.

■ Precautions in Handling

1. Care must be taken to ensure excess flux on the top surface of the printed circuit board does not adhere to the switch.
2. Do not wash the switch.

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■ Recommended storage conditions:

Store the products in the original packaging material. After opening the package, the remaining products must be stored in the appropriate moisture-proof & airtight environment.

Do not store the switch in the following environment or it may affect performance and solderability:

1. temperatures below -10° C to 40°C & humidity at 85% (min)

2. environment with corrosive gas

3. storage over 6 months

4. place in direct sunlight