

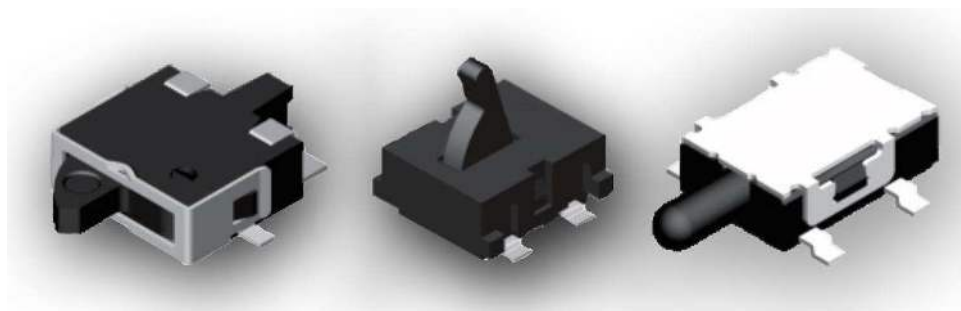
Applications

- Automotive
- Instrumentation
- White goods
- Telecommunications

Benefits

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

JJ Series – Detector Switches



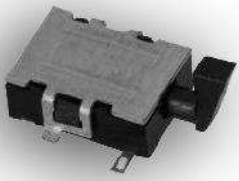
TE Connectivity is pleased to introduce its JJ Series of Detector Switches, suitable for a wide variety of applications given their several presentations ranging from horizontal or vertical actuated options as well as Gull-winged, J-leaded and Through-Hole mounting possibilities.

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

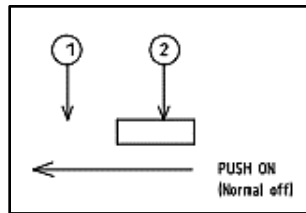
| Series | Body Size |
|--------|------------------------------|
| JJA | 3.5x2.8 mm |
| JJB | 3.5x2.98 mm |
| JJC | 3.5x3.3 mm |
| JJD | 4.2x3.6 mm |
| JJE | 4.7x3.5 mm |
| JJF | 4.7x3.8 mm |
| JJG | 5.7x4.0 mm (High-Rating) |
| JJH | 5.7x4.0 mm (Standard-Rating) |
| JJI | 5.0x4.4 mm |
| JJJ | 6.0x4.85 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 |

JJN Family – 5.7x4.0 mm (Wedge)

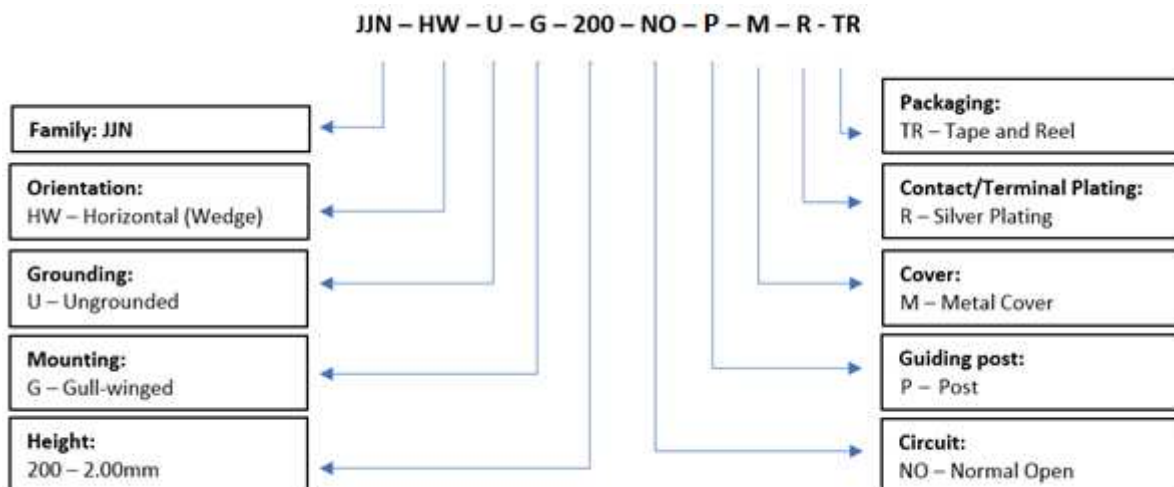
| | | |
|---|-----------------------|-------------------|
|  | Contact Rating | 100mA, 12VDC |
| | Contact Resistance | 80mΩ Max. |
| | Insulation Resistance | 100MΩ Min. 100VDC |
| | Dielectric Strength | 100VAC/1 minute |
| | Operating Force | 70gF Max. |
| | Travel | 2.00mm |
| | Operating Life | 50,000 cycles |
| | Operating Temperature | -10°C to 60°C |
| | Storage Temperature | -30°C to 80°C |

| Features | Applications |
|--|---|
| <ul style="list-style-type: none"> • Easy orientation provided by guiding post • Wedge type actuator | <ul style="list-style-type: none"> • Automotive. • Telecommunications. • Measurement instrumentations. |

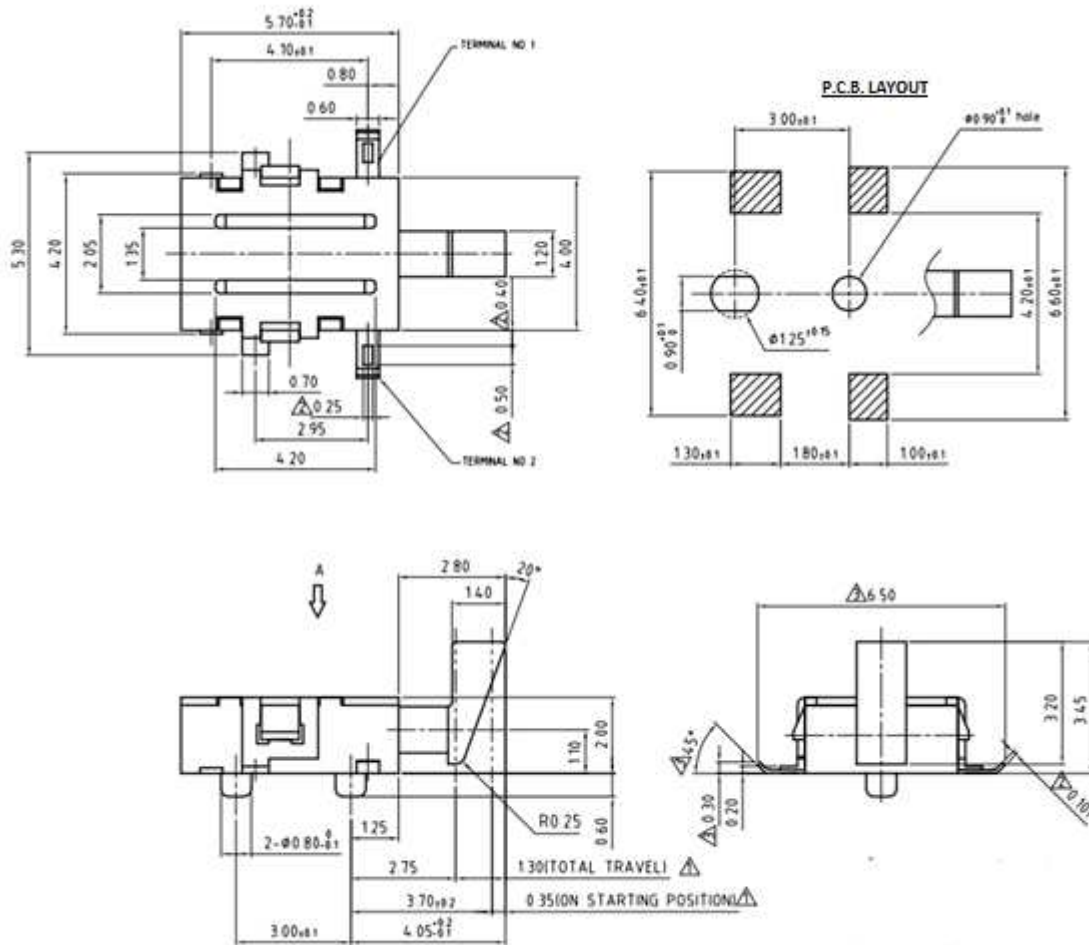
Circuit



How To Order



Diagrams



PN List

| Smart PN | Orientation | Grounding | Mounting | Height | Circuit | Guiding Post | Cover | Plating | Packaging | MOQ | TE PN |
|------------------|------------------|------------|-------------|--------|---------|--------------|-------|---------|---------------|-------|-----------|
| JJNHWUG200NOPMTR | Horizontal Wedge | Ungrounded | Gull-Winged | 2.00mm | NO | Post | Metal | Silver | Tape and Reel | 1,200 | 2331329-1 |



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°C to 60°C

1.2 Storage Temperature Range: -30°C to 80°C

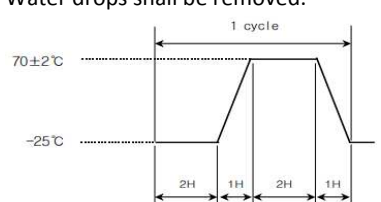
1.3 The shelf life of product is within 6 months.

2. Current Range: 100mA, 12VDC

3. Type of Actuation: Auto Return

4. Test Sequence:

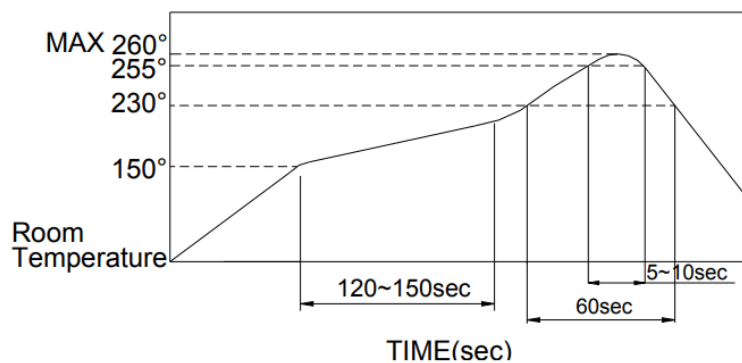
| | Item | Description | Test Conditions | Requirements |
|----------------------|------|---------------------------------|---|--|
| Appearance | 1 | Visual Examination | Physical inspection without applying any external forces. | There shall be no defects that affect the serviceability of the product. |
| Electric Performance | 2 | Contact Resistance | Shall be measured at 1KHz ± 200Hz (20mV Max, 50mA Max) or 1A 5VDC by voltage drop method. | 80mΩ Max. |
| | 3 | Insulation Resistance | Measurements shall be made at 100 VDC potential between terminals and cover. | 100MΩ Min. |
| | 4 | Dielectric Withstanding Voltage | Apply 100 VAC (50Hz or 60Hz) between terminals and cover for 1 minute. | There shall be no breakdown or flashover |

| | | | | |
|------------------------|---|---------------------|---|---|
| Mechanical Performance | 5 | Operating Force | Apply force in the direction of operating stroke for 2.00mm | 70gF Max. |
| | 6 | Terminal Strength | Fix the switch then apply a static load of 0.3KgF to the tip of the terminal in the desired direction for 1 minute | Shall be free from any terminal damage and looseness and breakage of terminal holding position. Terminal may be bent after test, electrical performance requirement specified in item 4 shall be satisfied. |
| | 7 | Control Strength | 1) A static load of 1KgF shall be applied in the operating direction of actuator for 15 seconds. 2) A static load of 0.3KgF shall be applied in the pulling direction of actuator for 15 seconds. (For construction with lock, the test shall be conducted at the condition of lock released) 3) A static load of 0.7KgF shall be applied to the vertical direction of operation at the tip of actuator for 15 seconds. | Shall be free from mechanical and electrical abnormalities. |
| Durability | 8 | Operating Life | Tested as follows: 50,000 cycles operations at a rate of 15 to 20 cycles/min without load. (When pushing the actuator at right angle) | 1) Contact resistance: 150mΩ Min. 2) Insulation resistance: 10MΩ Min. 3) Voltage proof: Applying 100VAC for 1 minute, no dielectric breakdown shall occur. 4) Operating force: Within 30% of specified value. 5) No abnormalities shall be recognised in appearance construction. |
| Weather-proof | 9 | Temperature cycling | After 5 cycles of following conditions, the switch shall be allowed to stand under normal temperature and humidity condition for 1 hour and then measurement shall be made within 1 hour after that. Water drops shall be removed.  | 1) Contact resistance: 150mΩ Min. 2) Insulation resistance: 10MΩ Min. 3) Voltage proof: Applying 100VAC for 1 minute, no dielectric breakdown shall occur. 4) Operating force: Within 30% of specified value. 5) No abnormalities shall be recognised in appearance construction. |

| | | | | |
|---------------|----|----------------------------|--|--|
| Weather-proof | 10 | 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: 1) Temperature: $-30\pm 2^{\circ}\text{C}$ 2) Time: 96 hours Water drops shall be removed. | 1) Contact resistance: $150\text{m}\Omega$ Min. 2) Insulation resistance: $10\text{M}\Omega$ Min. 3) Voltage proof: Applying 100V AC for 1 minute, no dielectric breakdown shall occur. 4) Operating force: Within 30% of specified value. 5) No abnormalities shall be recognised in appearance construction. |
| | 11 | 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: 1) Temperature: $85\pm 2^{\circ}\text{C}$ 2) Time: 96 hours Water drops shall be removed. | |
| | 12 | 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: 1) Temperature: $60\pm 2^{\circ}\text{C}$ 2) Relative Humidity: 90 to 95% 3) Time: 96 hours Water drops shall be removed. | |
| | 13 | Salt mist | Switch shall be checked after the following test: 1) Temperature: $35\pm 2^{\circ}\text{C}$ 2) Salt saturation: $5\pm 1\%$ (Solids by weight) 3) Duration: 24 ± 1 hours After the test, salt deposit shall be removed in running water. | |

5. Soldering Conditions:

■ Recommended Soldering Profile for the JJN 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°C .

■ Manual Soldering

Preheat: 150°C to 200°C , 120 ± 20 (sec)

Soldering area temperature: 217°C , 90 to 120 (sec)

■ 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.

■ 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