**DIPTRONICS type DTSM-6**

A range of 6 x 6mm size surface mount tactile switches offering a choice of button style and/or length and operating force, together with an option of packaging method. High reliability with up to 1,000,000 cycle electrical life expectancy.

- **6 x 6mm size**
- **Surface mount**
- **Positive 'click' action and tactile feedback**
- **Choice of button style, length and operating force**
- **SPNO momentary contacts**
- **4 terminal mounting**
- **High reliability, longer life**
- **Supplied in sticks or taped & reeled**

### Specification

- **Contact arrangement**
  - Single pole, single throw 4 terminal
  - Normally open, momentary action

- **Contact rating**
  - 50mA, 12Vdc

- **Contact resistance**
  - 100mΩ max.

- **Operating force**
  - 100 ±50gf (black button)
  - 160 ±50gf (brown button)
  - 260 ±50gf (red button)

- **Travel**
  - 0.25mm

- **Insulation resistance**
  - 100MΩ min. at 500Vdc

- **Dielectric strength**
  - 250Vac for 1 minute

- **Life expectancy**
  - 100 & 160gf = 1,000,000 cycles min. (electrical)
  - 260gf = 500,000 cycles min. (electrical)

### Choice of button style, length, operating force and packaging method.

#### STICK

<table>
<thead>
<tr>
<th>Button Style</th>
<th>Length</th>
<th>Operating Force (gf)</th>
<th>Manuf. Part No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round 4.3(L)</td>
<td>100</td>
<td>DTSM-61K-B</td>
<td>ST062</td>
<td></td>
</tr>
<tr>
<td>Round 4.3(L)</td>
<td>160</td>
<td>DTSM-61N-B</td>
<td>ST062B</td>
<td></td>
</tr>
<tr>
<td>Round 4.3(L)</td>
<td>260</td>
<td>DTSM-61R-B</td>
<td>ST062C</td>
<td></td>
</tr>
<tr>
<td>Round 5.0(L)</td>
<td>100</td>
<td>DTSM-62K-B</td>
<td>ST063</td>
<td></td>
</tr>
<tr>
<td>Round 5.0(L)</td>
<td>160</td>
<td>DTSM-62N-B</td>
<td>ST063B</td>
<td></td>
</tr>
<tr>
<td>Round 5.0(L)</td>
<td>260</td>
<td>DTSM-62R-B</td>
<td>ST063C</td>
<td></td>
</tr>
<tr>
<td>Round 7.0(L)</td>
<td>100</td>
<td>DTSM-63K-B</td>
<td>ST064</td>
<td></td>
</tr>
<tr>
<td>Round 7.0(L)</td>
<td>160</td>
<td>DTSM-63N-B</td>
<td>ST064B</td>
<td></td>
</tr>
<tr>
<td>Round 7.0(L)</td>
<td>260</td>
<td>DTSM-63R-B</td>
<td>ST064C</td>
<td></td>
</tr>
<tr>
<td>Square 7.3(L1)</td>
<td>100</td>
<td>DTSM-644K-B</td>
<td>ST061</td>
<td></td>
</tr>
<tr>
<td>Square 7.3(L1)</td>
<td>160</td>
<td>DTSM-644N-B</td>
<td>ST061B</td>
<td></td>
</tr>
<tr>
<td>Square 7.3(L1)</td>
<td>260</td>
<td>DTSM-644R-B</td>
<td>ST061C</td>
<td></td>
</tr>
</tbody>
</table>

#### TAPE & REEL

<table>
<thead>
<tr>
<th>Button Style</th>
<th>Length</th>
<th>Operating Force (gf)</th>
<th>Manuf. Part No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round 4.3(L)</td>
<td>100</td>
<td>DTSM-61K-T/R</td>
<td>ST062R</td>
<td></td>
</tr>
<tr>
<td>Round 4.3(L)</td>
<td>160</td>
<td>DTSM-61N-T/R</td>
<td>ST062BR</td>
<td></td>
</tr>
<tr>
<td>Round 4.3(L)</td>
<td>260</td>
<td>DTSM-61R-T/R</td>
<td>ST062CR</td>
<td></td>
</tr>
<tr>
<td>Round 5.0(L)</td>
<td>100</td>
<td>DTSM-62K-T/R</td>
<td>ST063R</td>
<td></td>
</tr>
<tr>
<td>Round 5.0(L)</td>
<td>160</td>
<td>DTSM-62N-T/R</td>
<td>ST063BR</td>
<td></td>
</tr>
<tr>
<td>Round 5.0(L)</td>
<td>260</td>
<td>DTSM-62R-T/R</td>
<td>ST063CR</td>
<td></td>
</tr>
<tr>
<td>Square 7.3(L1)</td>
<td>100</td>
<td>DTSM-644K-T/R</td>
<td>ST061</td>
<td></td>
</tr>
<tr>
<td>Square 7.3(L1)</td>
<td>160</td>
<td>DTSM-644N-T/R</td>
<td>ST061B</td>
<td></td>
</tr>
<tr>
<td>Square 7.3(L1)</td>
<td>260</td>
<td>DTSM-644R-T/R</td>
<td>ST061C</td>
<td></td>
</tr>
</tbody>
</table>

### Dimensions (mm)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>9.0</td>
</tr>
<tr>
<td>L2</td>
<td>7.3</td>
</tr>
<tr>
<td>L3</td>
<td>4.6</td>
</tr>
<tr>
<td>L4</td>
<td>1.3</td>
</tr>
</tbody>
</table>

### Pad Pattern

```
1.3
```

### Circuit Diagram

```
\( \circ \) \quad \( \circ \)
```

### Packaging

- **TAPE**: 16mm wide, 12mm pitch
- **REEL**: 330mm dia.

### N.B.

These switches are not suitable for PCB washing, see page 732 for washable types.
DIPTRONICS type DTST-6

A range of 6 x 6mm size tactile switches supplied in a radial taped package and offering a choice of button style. The switches feature high reliability with 500,000 cycle electrical life expectancy.

Key features:
- 6 x 6mm size
- Radial taped
- Positive 'click' action and tactile feedback
- Choice of button style
- SPNO momentary contacts
- 2 terminal mounting
- High reliability, longer life
- Supplied taped & boxed

**Specification**

- Contact arrangement: single pole, single throw 2 terminal normally open, momentary action
- Contact rating: 50mA, 12Vdc
- Contact resistance: 100mΩ max.
- Operating force: 100 ±50gf (black button)
- Travel: 0.25mm
- Insulation resistance: 100MΩ min. at 500Vdc
- Dielectric strength: 250Vac for 1 minute
- Operating temp. range: -25°C to +70°C
- Life expectancy: 500,000 cycles min. (electrical)

### Choice of button style.

#### TAPE & BOX

<table>
<thead>
<tr>
<th>Button Style</th>
<th>Length</th>
<th>Manf. Part No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round</td>
<td>4.3 (L)</td>
<td>DTST-641K</td>
<td>44805277448061AT</td>
</tr>
<tr>
<td>Square</td>
<td>7.3 (L1)</td>
<td>DTST-644K</td>
<td></td>
</tr>
</tbody>
</table>

**Dimensions (mm)**

```
<table>
<thead>
<tr>
<th>Footprint</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>12.4</td>
</tr>
<tr>
<td>Height</td>
<td>1.6</td>
</tr>
<tr>
<td>Diameter</td>
<td>ø1.5</td>
</tr>
<tr>
<td>Diameter</td>
<td>ø4.0</td>
</tr>
<tr>
<td>Diameter</td>
<td>5.0</td>
</tr>
<tr>
<td>Distance</td>
<td>5.0</td>
</tr>
<tr>
<td>Distance</td>
<td>ø3.5</td>
</tr>
<tr>
<td>Diameter</td>
<td>12.7</td>
</tr>
<tr>
<td>Diameter</td>
<td>5.0</td>
</tr>
<tr>
<td>Distance</td>
<td>12.7</td>
</tr>
</tbody>
</table>
```

**Circuit Diagram**

**Packaging**

**TACTILE SWITCH CAPS**

Round or Square suitable for square button switches see page 737
**DIPTRONICS type DTS-6 & DTSA-6**

A range of 6 x 6mm size pcb mounting tactile switches offering a choice of button style, length and operating force, together with an option of mounting position. High reliability with up to 500,000 cycle electrical life expectancy.

- **6 x 6mm size**
- Positive ‘click’ action and tactile feedback
- Choice of button style, length and operating force.
- SPNO momentary contacts
- 4 terminal mounting
- Established footprint
- Mounting position option
- High reliability, longer life

### Specification

<table>
<thead>
<tr>
<th>Contact arrangement</th>
<th>6 x 6mm Normally open, momentary action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact resistance</td>
<td>100mΩ max</td>
</tr>
<tr>
<td>Operating force</td>
<td>70 ±50gf (blue button) 100 ±50gf (black) 160 ±50gf (brown) 260 ±50gf (red)</td>
</tr>
<tr>
<td>Travel</td>
<td>0.25mm</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>100MΩ min at 500Vdc</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>250Vac for 1 minute</td>
</tr>
<tr>
<td>Life expectancy</td>
<td>70 to 160gf = 500,000 cycles min. (electrical) 260gf = 50,000 cycles min. (electrical)</td>
</tr>
</tbody>
</table>

### Round Button - type DTS-6/DTSA-6

Choice of button length, operating force and mounting position.

#### Vertical

<table>
<thead>
<tr>
<th>Button Length (L)</th>
<th>Operating Force (gf)</th>
<th>Manf. Part No.</th>
<th>Anglia Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.3</td>
<td>100</td>
<td>DTS-61K</td>
<td>448062</td>
</tr>
<tr>
<td>4.3</td>
<td>160</td>
<td>DTS-61N</td>
<td>448062B</td>
</tr>
<tr>
<td>4.3</td>
<td>260</td>
<td>DTS-61R</td>
<td>448062C</td>
</tr>
<tr>
<td>5.0</td>
<td>100</td>
<td>DTS-62K</td>
<td>448063</td>
</tr>
<tr>
<td>5.0</td>
<td>160</td>
<td>DTS-62N</td>
<td>448063B</td>
</tr>
<tr>
<td>5.0</td>
<td>260</td>
<td>DTS-62R</td>
<td>448063C</td>
</tr>
<tr>
<td>7.0</td>
<td>100</td>
<td>DTS-63K</td>
<td>448064</td>
</tr>
<tr>
<td>7.0</td>
<td>160</td>
<td>DTS-63N</td>
<td>448064B</td>
</tr>
<tr>
<td>7.0</td>
<td>260</td>
<td>DTS-63R</td>
<td>448064C</td>
</tr>
<tr>
<td>9.5</td>
<td>100</td>
<td>DTS-65K</td>
<td>448065</td>
</tr>
<tr>
<td>9.5</td>
<td>160</td>
<td>DTS-65N</td>
<td>448065B</td>
</tr>
<tr>
<td>9.5</td>
<td>260</td>
<td>DTS-65R</td>
<td>448065C</td>
</tr>
<tr>
<td>13.0</td>
<td>100</td>
<td>DTS-66K</td>
<td>448067</td>
</tr>
<tr>
<td>13.0</td>
<td>160</td>
<td>DTS-66N</td>
<td>448067B</td>
</tr>
<tr>
<td>13.0</td>
<td>260</td>
<td>DTS-66R</td>
<td>448067C</td>
</tr>
</tbody>
</table>

### Square Button - type DTS-64/DTSA-64

Choice of operating force and mounting position. Button ‘shoulder’ designed to accommodate actuator springs for tamper switch applications.

#### Vertical

<table>
<thead>
<tr>
<th>Operating Force (gf)</th>
<th>Manf. Part No.</th>
<th>Anglia Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>DTS-644U</td>
<td>448061</td>
</tr>
<tr>
<td>100</td>
<td>DTS-644K</td>
<td>448061A</td>
</tr>
</tbody>
</table>

### Right Angle

<table>
<thead>
<tr>
<th>Operating Force (gf)</th>
<th>Manf. Part No.</th>
<th>Anglia Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.85</td>
<td>100</td>
<td>DTS-644K</td>
</tr>
<tr>
<td>5.85</td>
<td>100</td>
<td>DTS-644K</td>
</tr>
<tr>
<td>8.35</td>
<td>100</td>
<td>DTS-644K</td>
</tr>
</tbody>
</table>

### Tactile Switch Caps

*Round or Square suitable for square button switches see page 737*

N.B. These switches are not suitable for PCB washing, see page 732 for washable types.

---

**Dimensions (mm)**

<table>
<thead>
<tr>
<th>Vertical</th>
<th>Right Angle</th>
<th>Footprint</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3</td>
<td>6.5</td>
<td>4.5</td>
</tr>
<tr>
<td>1.8</td>
<td>4.5</td>
<td>1.8</td>
</tr>
<tr>
<td>3.5</td>
<td>4.0</td>
<td>2.5</td>
</tr>
<tr>
<td>3.5</td>
<td>4.0</td>
<td>2.5</td>
</tr>
</tbody>
</table>

**Circuit Diagram**

*Vertical Right Angle*
OMRON type B3F

A range of 6 x 6mm size PCB mounting tactile switches offering a positive tactile switch action with a choice of button style and mounting position. Available with flat or projected plunger with key cap facility. High reliability with up to 1,000,000 operations life expectancy.

Specification
Contact arrangement: single pole, single throw 4 terminal normally open, momentary action
Contact rating: 50mA, 24Vdc
Contact resistance: 100mΩ max.
Bounce time: 5ms max.

6 x 6mm size
Positive ‘click’ action and tactile feedback
Choice of button style, length and operating force
SPNO momentary contacts
4 terminal mounting
Established footprint
Mounting position option
High reliability, longer life

ROUND BUTTON

VERTICAL

Button Length (L) Operating Force (gf) Manuf. Part No. & Anglia
4.3 100 B3F-1000
4.3 260 B3F-1005
5.0 100 B3F-1020
5.0 260 B3F-1025
7.0 100 B3F-1060
7.0 260 B3F-1065
9.5 100 B3F-1070
9.5 260 B3F-1075

RIGHT ANGLE

Button Length (L) Operating Force (gf) Manuf. Part No. & Anglia
3.15 100 B3F-3100
3.85 100 B3F-3120

SQUARE BUTTON

VERTICAL

Operating Force (gf) Manuf. Part No. & Anglia
100 B3F-1050
260 B3F-1055

RIGHT ANGLE

Operating Force (gf) Manuf. Part No. & Anglia
100 B3F-3150

N.B. These switches are not suitable for PCB washing, see page 733 for washable types.

Options
A wide variety of keycaps are available to special order

Dimensions (mm)

Vertical

Right Angle

Footprint

Circuit Diagram

N.B. These switches are not suitable for PCB washing, see page 733 for washable types.
SWITCHES

DIPTRONICS type DTSJW, DTSMW & DTSHW-6

A range of surface mount and through hole washable tactile switches with a round button. Choice of button length and operating force. Lead form and packaging option on surface mount parts. Designed to meet the increasing demand for sealed tactile switches to withstand pcb washing.

- **6 x 6mm size**
- **Sealed construction** suitable for pcb washing
- **SMD or through hole**
- **Positive ‘click’ action** and tactile feedback
- **Choice of button length** and operating force
- **SPNO momentary contacts**
- **4 terminal mounting**

**SURFACE MOUNT type DTSJW & DTSMW**

Choice of button length, operating force, lead form and packaging method.

**THROUGH HOLE type DTSHW**

Choice of button length and operating force. Supplied in tubes.

---

### Specification

- **Contact arrangement**: single pole, single throw 4 terminal
- **Contact rating**: 50mA, 12Vdc
- **Contact resistance**: 100mΩ max.
- **Operating force**: 160gf ±50gf (silver button, L = 2.3)
  - 180gf ±50gf (brown button, L = 3.1)
  - 260gf ±50gf (red button)
- **Travel**: 0.25mm
- **Dielectric strength**: 250Vdc for 1 minute
- **Life expectancy**: 100,000 cycles (electrical)
- **Contact application**: normally open, momentary action

### Dimension (mm)

**Surface Mount**

- **DTSJW (J Lead)**
  - L: 2.3mm
  - Terminal: 6.8mm
  - Width: 4.0mm
- **DTSMW (Gull Wing)**
  - L: 2.3mm
  - Terminal: 6.8mm
  - Width: 4.0mm

**Through Hole**

- **DTSHW**
  - L: 2.3mm
  - Terminal: 6.8mm
  - Width: 4.0mm

*Button flush with body on 68S types

### Ordering Information

**DTSJW (J Lead)**

<table>
<thead>
<tr>
<th>Button Length (L)</th>
<th>Operating Force (gf)</th>
<th>Manf. Part No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3 (flush)</td>
<td>160</td>
<td>DTSJW-68S-B</td>
<td>ST068JW</td>
</tr>
<tr>
<td>3.1</td>
<td>160</td>
<td>DTSJW-66N-B</td>
<td>ST066JW</td>
</tr>
<tr>
<td>3.8</td>
<td>260</td>
<td>DTSJW-69R-B</td>
<td>ST069JW</td>
</tr>
<tr>
<td>3.8</td>
<td>260</td>
<td>DTSJW-69N-B</td>
<td>ST069JW</td>
</tr>
</tbody>
</table>

**DTSMW (Gull Wing)**

<table>
<thead>
<tr>
<th>Button Length (L)</th>
<th>Operating Force (gf)</th>
<th>Manf. Part No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3 (flush)</td>
<td>160</td>
<td>DTSMW-68S-B</td>
<td>ST068W</td>
</tr>
<tr>
<td>3.1</td>
<td>160</td>
<td>DTSMW-66N-B</td>
<td>ST066W</td>
</tr>
<tr>
<td>3.8</td>
<td>180</td>
<td>DTSMW-69N-B</td>
<td>ST069W</td>
</tr>
<tr>
<td>3.8</td>
<td>260</td>
<td>DTSMW-69R-B</td>
<td>ST069W</td>
</tr>
</tbody>
</table>

**DTSHW**

<table>
<thead>
<tr>
<th>Button Length (L)</th>
<th>Operating Force (gf)</th>
<th>Manf. Part No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3 (flush)</td>
<td>160</td>
<td>DTSHW-68S-B</td>
<td>ST066W</td>
</tr>
<tr>
<td>3.1</td>
<td>160</td>
<td>DTSHW-66N-B</td>
<td>ST066W</td>
</tr>
<tr>
<td>3.8</td>
<td>180</td>
<td>DTSHW-69N-B</td>
<td>ST069W</td>
</tr>
<tr>
<td>3.8</td>
<td>260</td>
<td>DTSHW-69R-B</td>
<td>ST069W</td>
</tr>
</tbody>
</table>

**Circuit Diagram**

- **DTSJW (J Lead)**
- **DTSMW (Gull Wing)**
- **DTSHW**

**Packaging**

- **TAPE**: 16mm wide, 8mm pitch
- **REEL**: 330mm dia.

---

**Contact Arrangement**

<table>
<thead>
<tr>
<th>Contact</th>
<th>normally open, momentary action</th>
</tr>
</thead>
</table>

**Contact Rating**

- **Current Rating**: 50mA, 12Vdc
- **Resistance**: 100mΩ max.

**Operating Force**

- **Silver Button (L = 2.3)**: 160gf ±50gf
- **Brown Button (L = 3.1)**: 180gf ±50gf
- **Red Button**: 260gf ±50gf

**Travel**

- **0.25mm**

---

**Insulation Resistance**

- **10GΩ min. at 500Vdc**

**Dielectric Strength**

- **250Vdc for 1 minute**

---

**Life Expectancy**

- **100,000 cycles (electrical)** for DTSHW, DTSMW, DTSJW

---

**Contact Application**

- **Normally Open, Momentary Action**

---

**Contact Resistance**

- **100mΩ max.**

---

**Contact Temperature**

- **-25°C to +70°C**

---

**Contact Capacity**

- **50mA, 12Vdc**

---

**Contact Torque**

- **45gfcm ±15gfcm**

---

**Contact Life**

- **100,000 cycles (electrical) for DTSHW, DTSMW, DTSJW**
- **500,000 cycles (electrical) for DTSHW, DTSMW, DTSJW**
### OMRON type B3SN, B3S & B3W

A range of surface mount and through hole washable tactile switches with a round button. Choice of button length and operating force. Lead form and packaging option on surface mount parts. Designed to meet the increasing demand for sealed tactile switches to withstand PCB washing.

#### Specification
- **Contact arrangement**: Single pole, single throw 4 terminal normally open, momentary action
- **Contact rating**: B3S, B3SN = 30mA, 24Vdc, B3W = 50mA, 24Vdc
- **Contact resistance**: 100mΩ max
- **Bounce Time (max)**: 5ms
- **Travel**: 0.25mm
- **Insulation Resistance**: 100MΩ min. at 250Vdc

### SURFACE MOUNT type B3SN & B3S

Choice of lead form and packaging method.

**OMRON type B3SN (J Lead)**

**OMRON type B3S (Gull Lead)**

#### THROUGH HOLE type B3W

#### Choice of lead form and packaging method.

**OMRON type B3SN (J Lead)**

**OMRON type B3S (Gull Lead)**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>B3SN-3012</td>
<td>B3SN-3112</td>
<td>B3S-1000</td>
<td>B3S-1002</td>
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<tr>
<td>B3SN-3012P</td>
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<td>B3S-1000P</td>
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<td>B3S-1002P</td>
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#### OPTIONS
- Versions with grounding pin for ESD
- Other operating forces available to special order

### Dielectric strength
- B3SN = 250Vac for 1 minute
- B3S, B3W = 500Vac for 1 minute

### Operating temp range
- 25°C to 70°C

### Life expectancy
- B3SN (160gf) = 100,000 ops min.
- B3S (160gf) = 500,000 ops min.
- B3W (160gf) = 1,000,000 ops min.

### Through Hole type B3W

#### Dimensions (mm)

<table>
<thead>
<tr>
<th>Surface Mount</th>
<th>Through Hole</th>
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<tbody>
<tr>
<td><strong>B3SN (J Lead)</strong></td>
<td><strong>B3SN (J Lead)</strong></td>
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<tr>
<td><strong>B3S (Gull Wing)</strong></td>
<td><strong>B3S (Gull Wing)</strong></td>
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</tbody>
</table>

#### Footprint (through hole)

- **B3W**

#### Circuit Diagram (all types)

- **B3SN - TAPE**: 12mm wide, 8mm pitch
- **B3S - TAPE**: 16mm wide, 12mm pitch
- **REEL**: 380mm dia.
- **REEL**: 330mm dia.