<table>
<thead>
<tr>
<th>Key Switches</th>
<th>K12S</th>
<th>K12</th>
<th>D6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Series</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Size (mm)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L x W x H</td>
<td>12 x 11,6 x 9,1</td>
<td>12 x 12 x 11</td>
<td>12 x 11,4 x 14,5</td>
</tr>
<tr>
<td><strong>Poles/Throws</strong></td>
<td>SPST / DPST 2 x SPST</td>
<td>SPST 2 x SPST momentary</td>
<td>SPST momentary</td>
</tr>
<tr>
<td><strong>Maximum Load</strong></td>
<td>30 V / 100 mA</td>
<td>30 V / 100 mA</td>
<td>32 V / 100 mA*</td>
</tr>
<tr>
<td><strong>Operating Force</strong></td>
<td>3 N; 3,5N; 5 N; 6 N 9 N; 4/8 N; 6/12 N</td>
<td>1,5 N; 2,5 N; 3,5 N; 5 N 3,5/7 N; 6/12 N</td>
<td>1,3 N 2,75 N</td>
</tr>
<tr>
<td><strong>Travel (standard)</strong></td>
<td>1,5 mm</td>
<td>1 mm, 1,5 mm, 2 mm</td>
<td>1 mm 1,10 mm</td>
</tr>
<tr>
<td><strong>Life Cycle</strong></td>
<td>1,000,000</td>
<td>1,000,000</td>
<td>250,000</td>
</tr>
<tr>
<td><strong>Sealed</strong></td>
<td>IP40/IP67</td>
<td>K12C only</td>
<td></td>
</tr>
<tr>
<td><strong>Illumination</strong></td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td><strong>Termination</strong></td>
<td>SMT</td>
<td>Thru-hole</td>
<td>Thru-hole</td>
</tr>
<tr>
<td><strong>Page Number</strong></td>
<td>D-4</td>
<td>D-7</td>
<td>D-13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key Switches</th>
<th>KS</th>
<th>Digitast</th>
<th>ED / EDM</th>
<th>MD / MDP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Series</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Size (mm)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L x W x H</td>
<td>12,4 x 12,4 x 9,9</td>
<td>17,1x12,3 x 14,3</td>
<td>12,7 x 11,3 x 1,2</td>
<td>12,7 x 12,8 x 4,7</td>
</tr>
<tr>
<td><strong>Poles/Throws</strong></td>
<td>SPST</td>
<td>SPD</td>
<td>SPST momentary or push-on/push off</td>
<td>SPST momentary</td>
</tr>
<tr>
<td><strong>Maximum Load</strong></td>
<td>50 V /25 mA</td>
<td>24 V /10 mA</td>
<td>100 V / 100 mA</td>
<td>100 V / 100 mA</td>
</tr>
<tr>
<td><strong>Operating Force</strong></td>
<td>1,5 N</td>
<td>2,4 N to 6,5N</td>
<td>2,4 N / 2,6 N</td>
<td></td>
</tr>
<tr>
<td><strong>Travel (standard)</strong></td>
<td>0,71 mm</td>
<td>3 mm</td>
<td>0,3 mm</td>
<td>0,95 mm / 0,4 mm</td>
</tr>
<tr>
<td><strong>Life Cycle</strong></td>
<td>100,000</td>
<td>5,000,000</td>
<td>1,000,000</td>
<td>1,000,000 / 200,000</td>
</tr>
<tr>
<td><strong>Sealed</strong></td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Illumination</strong></td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Termination</strong></td>
<td>Thru-hole</td>
<td>Thru-hole</td>
<td>Thru-hole/SMT</td>
<td>Thru-hole</td>
</tr>
<tr>
<td><strong>Page Number</strong></td>
<td>D-16</td>
<td>D-19</td>
<td>D-22</td>
<td>D-24</td>
</tr>
</tbody>
</table>

* Maximum value are for voltage and current separately

Dimensions are shown: mm
Specifications and dimensions subject to change

www.ckswitches.com
K12S
High Performance SMT Key Switches

Features/Benefits
- Harsh environment applications - IP67
- Compatible with SMT lead free soldering process
- Illuminated
- Excellent tactile feel
- High reliability / long life
- DPST and detect versions available
- RoHS compliant

Typical Applications
- Automotive
- Joysticks
- Off-road transportation
- Motorcycles
- Industrial
- Medical

Construction:
FUNCTION: Momentary
CONTACT ARRANGEMENT: SPST or DPST
CONTACT TYPE: NO or NC
TERMINALS: SMT

Mechanical
TOTAL TRAVEL: 1.5 mm
OPERATING FORCE: 3N; 3.5N; 5N; 6N; 9N 4/8 N; 6/12 N
SEALING: IP40 or IP67

Packaging
Reels of 900 pieces

How To Order
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

Typical Applications
- Automotive
- Joysticks
- Off-road transportation
- Motorcycles
- Industrial
- Medical

---

Electrical
SWITCHING POWER MIN./MAX.: 0.02 mW/3 W DC
SWITCHING VOLTAGE MIN./MAX.: 2 V / 30 V DC
SWITCHING CURRENT MIN./MAX.: 10 mA /100 mA DC
DIELECTRIC STRENGTH: > 300 V RMS
OPERATING LIFE: > 10^6 operations (detect version) / 2x10^5 operations (versions with tactile effect)
CONTACT RESISTANCE: Initial < 100 mΩ - After test < 250 mΩ
INSULATION RESISTANCE: >10^9 Ω
BOUNCE TIME: < 10 ms

Environmental
OPERATING TEMPERATURE: -40°C to 85°C.
STORAGE TEMPERATURE: -40°C to 95°C.
RoHS compliant and Halogen free.

Process
SOLDERABILITY: Lead free soldering compatible.

---

Key Switches
Dimensions are shown: mm
Specifications and dimensions subject to change
www.ckswitches.com

---

Contact Arrangement
O Normally open (SPST)
C Normally closed (SPST)
OC Normally open (DPST)
CC Normally closed (DPST)

Option
S SPST version
L LED version (SPST)
D DPST version

LED Color
NONE No LED
YE0 Yellow
RD0 Red
GN0 Green
OR0 Orange
WH0 White
AM0 Amber

Operating Force
3N 3 N (detect - no tactile)
3.5N 3.5 N
5N 5 N
6N 6 N
9N 9 N
4/8N 4/8 N DPST (double step actuation)
6/12N 6/12 N DPST (double step actuation)

LFTX Lead free, RoHS terminals tin plated
Transparent button

---

Travel
1.5 1.5 mm

---

Contact Arrangement
O Normally open (SPST)
C Normally closed (SPST)
OC Normally open (DPST)
CC Normally closed (DPST)
K12S
High Performance SMT Key Switches

K12SA/K12SC  IP40 with peg / IP40 without peg

K12SB / K12SD  IP67 with peg / IP67 without peg

Dimensions are shown: mm
Specifications and dimensions subject to change

www.ckswitches.com
K12S
High Performance SMT Key Switches

OPTION

S  SPST version
L  LED version
D  DPST version

LED COLOR

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>LED COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>No LED</td>
<td>Yellow</td>
</tr>
<tr>
<td>YE0</td>
<td>Red</td>
</tr>
<tr>
<td>RD0</td>
<td>Green</td>
</tr>
<tr>
<td>GN0</td>
<td>Orange</td>
</tr>
<tr>
<td>OR0</td>
<td>White</td>
</tr>
<tr>
<td>WH0</td>
<td>Amber</td>
</tr>
</tbody>
</table>

TRAVEL

1.5  1.5 mm

OPERATING FORCE

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>OPERATING FORCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3N</td>
<td>3N (detect - no tactile)</td>
</tr>
<tr>
<td>3.5N</td>
<td>3.5N</td>
</tr>
<tr>
<td>5N</td>
<td>5N</td>
</tr>
<tr>
<td>6N</td>
<td>6N</td>
</tr>
<tr>
<td>9N</td>
<td>9N</td>
</tr>
<tr>
<td>4/8N</td>
<td>4/8N (double step actuation)</td>
</tr>
<tr>
<td>6/12N</td>
<td>6/12N (double step actuation)</td>
</tr>
</tbody>
</table>

CONTACT ARRANGEMENT

O  Normally open (SPST and LED versions)
C  Normally closed (SPST and LED versions)
OO 2 Normally open (DPST version)
CC  2 Normally closed (DPST version)
OC  1 Normally open/ 1 Normally closed (DPST)

TAPE AND REEL

Dimensions are shown: mm
Specifications and dimensions subject to change

www.ckswitches.com
Key Switches

### K12 High Performance Key Switches

**Features/Benefits**
- Excellent tactile feel
- Wide choice of LED colors, travel and actuator forces
- High reliability / long life
- Sealed version available
- Designed for low-level switching
- Double stroke version available
- Detector version available

**Specifications and dimensions subject to change**

Visit www.ckswitches.com for more information.

**How To Order**

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**Note:** Some of the configurations may not be available or could require some development.

---

**Construction:**

**FUNCTION:** momentary

**DISTANCE BETWEEN BUTTON CENTERS:**

- 1.1 (0.433) K12C = 1.3 (0.512)

**TERMINALS:** PC pins, tinned

**MOUNTING:** Locating pins; K12G and K12P additionally with snap-in housing

**Mechanical**

**TOTAL TRAVEL:** 1 mm, 1.5 mm, 2 mm

**SWITCHING TRAVEL:** 0.6 mm*

**OPERATING FORCE:** 1.5 N OD without snap-point as detector switch, 2.5 N, 3.5 N, 5 N, 3.5/7 N, 6/12 N. Additional operating force 7N, 9N and 20N, available on request.

**PROTECTION CLASS:** K12C IP 67 (dust tight, protected against the effects of immersion in water; other versions IP 40)

---

**Electrical**

- **SWITCHING POWER MIN./MAX.:** 0.02mW/3 W
- **SWITCHING VOLTAGE MIN./MAX.:** 2 V DC / 30 V DC
- **SWITCHING CURRENT MIN./MAX.:** 10 mA / 100 mA
- **DIELECTRIC STRENGTH (50 Hz, 1 min):** ≥ 500 V
- **OPERATING LIFE with max. switching power:** ≥ 10⁶ operations
- **OPERATING LIFE with second switch:** 5 x 10⁵ operations, operating life K12C and version with more than 6N (7N, 9N 20N) please consult factory.
- **CONTACT RESISTANCE:** Initial ≤ 50 mΩ
- **INSULATION RESISTANCE:** ≥ 10¹⁰ Ω
- **BOUNCE TIME:** ≤ 1 ms
- **Operating speed:** 100 mm/s (3.94/s)

---

**Environmental**

- **OPERATING TEMPERATURE:** -40°C to 85°C.
- **STORAGE TEMPERATURE:** -40°C to 95°C.

---

**Process**

- **SOLDERABILITY:** Wave soldering, compatible with lead free soldering profile
- **Hand soldering:** 350°C

---

**Series**

- **K12A** No snap-in pegs
- **K12AL** No snap-in pegs with central LED
- **K12P** With snap-in pegs
- **K12PL** With central LED
- **K12C** Sealed contact with rubber cap (IP 67)
- **K12GO** Two-step switch

**Typical Applications**

- Automotive
- Off-road transportation
- Industrial electronics
- Computers & network equipment
- Joysticks

---

**Features/Benefits**

- Excellent tactile feel
- Wide choice of LED colors, travel and actuator forces
- High reliability / long life
- Sealed version available
- Designed for low-level switching
- Double stroke version available
- Detector version available

---

**Construction:**

**FUNCTION:** momentary

**DISTANCE BETWEEN BUTTON CENTERS:**

- 1.1 (0.433) K12C = 1.3 (0.512)

**TERMINALS:** PC pins, tinned

**MOUNTING:** Locating pins; K12G and K12P additionally with snap-in housing

**Mechanical**

**TOTAL TRAVEL:** 1 mm, 1.5 mm, 2 mm

**SWITCHING TRAVEL:** 0.6 mm*

**OPERATING FORCE:** 1.5 N OD without snap-point as detector switch, 2.5 N, 3.5 N, 5 N, 3.5/7 N, 6/12 N. Additional operating force 7N, 9N and 20N, available on request.

**PROTECTION CLASS:** K12C IP 67 (dust tight, protected against the effects of immersion in water; other versions IP 40)

---

**Electrical**

- **SWITCHING POWER MIN./MAX.:** 0.02mW/3 W
- **SWITCHING VOLTAGE MIN./MAX.:** 2 V DC / 30 V DC
- **SWITCHING CURRENT MIN./MAX.:** 10 mA / 100 mA
- **DIELECTRIC STRENGTH (50 Hz, 1 min):** ≥ 500 V
- **OPERATING LIFE with max. switching power:** ≥ 10⁶ operations
- **OPERATING LIFE with second switch:** 5 x 10⁵ operations, operating life K12C and version with more than 6N (7N, 9N 20N) please consult factory.
- **CONTACT RESISTANCE:** Initial ≤ 50 mΩ
- **INSULATION RESISTANCE:** ≥ 10¹⁰ Ω
- **BOUNCE TIME:** ≤ 1 ms
- **Operating speed:** 100 mm/s (3.94/s)

---

**Environmental**

- **OPERATING TEMPERATURE:** -40°C to 85°C.
- **STORAGE TEMPERATURE:** -40°C to 95°C.

---

**Process**

- **SOLDERABILITY:** Wave soldering, compatible with lead free soldering profile
- **Hand soldering:** 350°C

---

**Series**

- **K12A** No snap-in pegs
- **K12AL** No snap-in pegs with central LED
- **K12P** With snap-in pegs
- **K12PL** With central LED
- **K12C** Sealed contact with rubber cap (IP 67)
- **K12GO** Two-step switch

**Packaging**

Bulk in boxes of 250 pieces (version C or GO) or 300 pieces (version A, AL, P or PL)

---

**LED Color**

- **NONE** No LED
- **GN** Green
- **YE** Yellow
- **OG** Orange
- **RD** Red
- **WH** White
- **BU** Blue

**Cap Color**

- **NONE** version with LED, version C
- **BK** Black cap – No LED
- **YE** Yellow cap – No LED
- **RD** Red cap – No LED
- **GY** Gray cap – No LED

**Contact Arrangement**

- **NONE** SPST N0 (STD)
- **1R** SPST NC (Special request)

---

* K12C – 1 mm MAX
  K12 with LED – 1.5 mm MAX
** K12G & K12GO version only
*** Additional operating force: 7N, 9N available on request

---

**Dimensions are shown: mm**

Specifications and dimensions subject to change

15 Nov 18

D-7

www.ckswitches.com
K12 High Performance Key Switches

SERIES

K12A without snap in

Dimensions are shown: mm
Specifications and dimensions subject to change

K12AL

PCB LAYOUT, MOUNTING SIDE

ELECTRICAL GRAPH

First Angle Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

[Table and diagrams are included here showing the dimensions and specifications of the switches.]
### K12P with snap-in

![Diagram of K12P with snap-in](image)

#### PCB Layout, Mounting Side

Center of actuation area (notice LED)

<table>
<thead>
<tr>
<th>Hole</th>
<th>Ø</th>
<th>Without LED</th>
<th>Description</th>
<th>Terminal Section</th>
<th>Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø1.7</td>
<td>2x</td>
<td>snap-in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ø1.6</td>
<td>1x</td>
<td>coding hole</td>
<td>(L,M,N)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ø1.1</td>
<td>2x</td>
<td>center hole</td>
<td></td>
<td></td>
<td>Sn</td>
</tr>
<tr>
<td>ø0.9</td>
<td>2x</td>
<td>switch</td>
<td>0.7 x 0.2 (0.028 x 0.081)</td>
<td>Sn</td>
<td></td>
</tr>
</tbody>
</table>

### K12PL

![Diagram of K12PL](image)

#### PCB Layout, Mounting Side

ELECTRICAL GRAPH

1 — 2

<table>
<thead>
<tr>
<th>Hole</th>
<th>Ø</th>
<th>Without LED</th>
<th>Description</th>
<th>Terminal Section</th>
<th>Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø1.7</td>
<td>2x</td>
<td>snap-in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ø1.6</td>
<td>1x</td>
<td>coding hole</td>
<td>(L,M,N)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ø1.1</td>
<td>2x</td>
<td>center hole</td>
<td></td>
<td></td>
<td>Sn</td>
</tr>
<tr>
<td>ø0.9</td>
<td>2x</td>
<td>LED</td>
<td>m0.5 (0.020)</td>
<td></td>
<td>Sn</td>
</tr>
<tr>
<td></td>
<td>2x</td>
<td>switch</td>
<td>0.7 x 0.2 (0.028 x 0.081)</td>
<td>Sn</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions are shown: mm
Specifications and dimensions subject to change

15 Nov 18
K12 High Performance Key Switches

**SCHÉMATIQUE**

<table>
<thead>
<tr>
<th>Hole Ø</th>
<th>Without LED</th>
<th>Description</th>
<th>Terminal Section</th>
<th>Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 (.043)</td>
<td>2x</td>
<td>center hole</td>
<td>0.7 x 0.2 (.0275 x .0787)</td>
<td>Sn</td>
</tr>
<tr>
<td>0.9 (.035)</td>
<td>2x</td>
<td>switch</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dimensions are shown: mm

Specifications and dimensions subject to change
K12GO

<table>
<thead>
<tr>
<th>Hole</th>
<th>Ø</th>
<th>Without LED</th>
<th>Description</th>
<th>Terminal Section</th>
<th>Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>🗝️</td>
<td>1.7</td>
<td>2x</td>
<td>snap-in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>🗝️</td>
<td>1.6</td>
<td>1x</td>
<td>code</td>
<td></td>
<td></td>
</tr>
<tr>
<td>🗝️</td>
<td>0.9</td>
<td>2x</td>
<td>LED</td>
<td>m0.5 (.020)</td>
<td>Sn</td>
</tr>
<tr>
<td>🗝️</td>
<td></td>
<td>2x</td>
<td>switch 2</td>
<td>0.7 x 0.3 (.028 x .12)</td>
<td>Sn</td>
</tr>
<tr>
<td>🗝️</td>
<td></td>
<td>2x</td>
<td>switch 1</td>
<td>0.7 x 0.2 (.028 x .081)</td>
<td>Sn</td>
</tr>
</tbody>
</table>

Dimensions are shown: mm
Specifications and dimensions subject to change

www.ckswitches.com
K12
High Performance Key Switches

CAP COLOR

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>NONE</td>
<td>Version with LED</td>
</tr>
<tr>
<td>BK</td>
<td>Black - no LED</td>
</tr>
<tr>
<td>YE</td>
<td>Yellow - no LED</td>
</tr>
<tr>
<td>RD</td>
<td>Red - no LED</td>
</tr>
<tr>
<td>GY</td>
<td>Gray - no LED</td>
</tr>
</tbody>
</table>

LED COLOR

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>NONE</td>
<td>Models without LED</td>
</tr>
<tr>
<td>GN</td>
<td>Green</td>
</tr>
<tr>
<td>YE</td>
<td>Yellow</td>
</tr>
<tr>
<td>OG</td>
<td>Orange</td>
</tr>
<tr>
<td>RD</td>
<td>Red</td>
</tr>
<tr>
<td>WH</td>
<td>White</td>
</tr>
<tr>
<td>BU</td>
<td>Blue</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STANDARD LED CODE</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>NONE</td>
<td>Models without LED</td>
</tr>
<tr>
<td>LV306</td>
<td>Green</td>
</tr>
<tr>
<td>LV327</td>
<td>Yellow</td>
</tr>
<tr>
<td>LV315</td>
<td>Orange</td>
</tr>
<tr>
<td>LV352</td>
<td>Red</td>
</tr>
<tr>
<td>LV302</td>
<td>White</td>
</tr>
<tr>
<td>LV328</td>
<td>Blue</td>
</tr>
</tbody>
</table>

TRAVEL

1 1 mm
1.5 1.5 mm
2 2 mm

OPERATING FORCE

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>OPERATING FORCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5N OD</td>
<td>1.5 N, 150g without snap-point</td>
</tr>
<tr>
<td>2.5N</td>
<td>2.5 N, 250g</td>
</tr>
<tr>
<td>3.5N</td>
<td>3.5 N, 350g</td>
</tr>
<tr>
<td>5N</td>
<td>5 N, 500g</td>
</tr>
<tr>
<td>3.5/7N</td>
<td>3.5/7 N, 350/700g</td>
</tr>
<tr>
<td>6/12N</td>
<td>6/12 N, 600-1200g</td>
</tr>
</tbody>
</table>

CONTACT ARRANGEMENT OPTION

1R SPST NC (SPECIAL REQUEST FOR NORMALLY CLOSED OPTION)
Features/Benefits
• Easy X, Y coding on single side PCB
• Positive/ smooth tactile feedback
• High temperature
• Wide variety of colors & styles
• Illuminated versions available
• RoHS compliant and compatible

Typical Applications
• Video
• Electronic games
• Appliances

Construction
FUNCTION: momentary
CONTACT ARRANGEMENT: 1 make contact (SPST), NO
DISTANCE BETWEEN BUTTON CENTERS, MIN.: 12.7 (0.500)
TERMINALS: PC pins

Electrical

<table>
<thead>
<tr>
<th></th>
<th>Non-Illuminated</th>
<th>Illuminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWITCHING POWER MAX.:</td>
<td>3 VA</td>
<td>0.35 VA</td>
</tr>
<tr>
<td>SWITCHING VOLTAGE MAX.:</td>
<td>32 V DC</td>
<td>35 V DC</td>
</tr>
<tr>
<td>SWITCHING CURRENT MAX.:</td>
<td>100 mA DC</td>
<td>10 mA DC</td>
</tr>
<tr>
<td>OPERATING LIFE with max. switching power:</td>
<td>250 000 operations</td>
<td>Version F1: 100 000 operations Version F2: 30 000 operations</td>
</tr>
<tr>
<td>CONTACT RESISTANCE:</td>
<td>≤100 mΩ</td>
<td>≤200 mΩ</td>
</tr>
<tr>
<td>DIELECTRIC STRENGTH (50 Hz / 1 min):</td>
<td>250 V</td>
<td></td>
</tr>
<tr>
<td>INSULATION RESISTANCE:</td>
<td>≥10^8 Ω</td>
<td></td>
</tr>
<tr>
<td>BOUNCE TIME:</td>
<td>≤10 ms</td>
<td></td>
</tr>
</tbody>
</table>

Mechanical

<table>
<thead>
<tr>
<th></th>
<th>Non-Illuminated</th>
<th>Illuminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWITCHING TRAVEL:</td>
<td>Version F1: 0.2 mm ≤ Te ≤ 1.0 mm Version F2: 0.3 mm ≤ Te ≤ 1.1 mm</td>
<td>0.4 mm ≤ Te ≤ 0.8 mm</td>
</tr>
<tr>
<td>OPERATING FORCE:</td>
<td>Version F1: 0.8N ≤ Fa ≤ 1.8N Version F2: 2.0N ≤ Fa ≤ 3.5N</td>
<td>Version F1: 0.8N ≤ Fa ≤ 1.8N Version F2: 1.5N ≤ Fa ≤ 2.5N</td>
</tr>
<tr>
<td>SEALING:</td>
<td>IP40</td>
<td></td>
</tr>
</tbody>
</table>

Environmental

<table>
<thead>
<tr>
<th></th>
<th>Non-Illuminated</th>
<th>Illuminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPERATING TEMPERATURE:</td>
<td>-20°C to 85°C</td>
<td>-20°C to 60°C</td>
</tr>
</tbody>
</table>

Process
SOLDERABILITY:
Wave soldering, compatible with lead free soldering profile
Hand soldering, 350°C for 3 seconds

Packaging
The D6 switches are delivered in boxes containing 10 trays with 250 pieces each:
Total 2,500 pieces per box.
The D6 buttons are delivered in bulk with 2500 pieces per box.

Dimensions are shown: mm
Specifications and dimensions subject to change
www.ckswitches.com
### D6

**SPST Momentary Key Switches**

#### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

#### NON-ILLUMINATED

<table>
<thead>
<tr>
<th>Switch Color</th>
<th>Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 White</td>
<td>F1 1.3N (STD)</td>
</tr>
<tr>
<td>10 Gray</td>
<td>F2 2.5N</td>
</tr>
<tr>
<td>30 Yellow</td>
<td></td>
</tr>
<tr>
<td>40 Red</td>
<td></td>
</tr>
<tr>
<td>50 Green</td>
<td></td>
</tr>
<tr>
<td>60 Blue</td>
<td></td>
</tr>
<tr>
<td>90 Black</td>
<td></td>
</tr>
</tbody>
</table>

*Available only in color 90 (black) and 00 (white)*

#### Button

Buttons can be ordered separately

- Shipped in bulk
- D6 button for use with D6C only

#### LED

- Signal LED
- LED Color 1: WH White, YE Yellow, RD Red, GN Green, BU Blue, PG Pure Green, AM Amber
- LED Color 2: WH White, YE Yellow, RD Red, GN Green, BU Blue, PG Pure Green, AM Amber

---

**ILLUMINATED**

<table>
<thead>
<tr>
<th>Switch Color</th>
<th>Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 White</td>
<td>F1 1.3N</td>
</tr>
<tr>
<td>10 Gray</td>
<td>F2 2.0N</td>
</tr>
<tr>
<td>30 Yellow</td>
<td></td>
</tr>
<tr>
<td>40 Red</td>
<td></td>
</tr>
<tr>
<td>50 Green</td>
<td></td>
</tr>
<tr>
<td>60 Blue</td>
<td></td>
</tr>
<tr>
<td>90 Black</td>
<td></td>
</tr>
</tbody>
</table>

**Specifications and dimensions subject to change**

www.ckswitches.com
D6

SPST Momentary Key Switches

SERIES

D6C

D6R

D6F

D6L ONLY AVAILABLE IN BLACK

Dimensions are shown: mm
Specifications and dimensions subject to change
D6
SPST Momentary Key Switches

PCB LAYOUT

Switch
(Non-Illuminated)

Switch
(Illuminated)

BUTTON AVAILABLE

BTND6  Buttons must be ordered separately. Shipped in bulk.

NOTE: Only compatible with D6C

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>BUTTON COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>WHITE</td>
</tr>
<tr>
<td>10</td>
<td>GRAY</td>
</tr>
<tr>
<td>30</td>
<td>YELLOW</td>
</tr>
<tr>
<td>40</td>
<td>RED</td>
</tr>
<tr>
<td>50</td>
<td>GREEN</td>
</tr>
<tr>
<td>60</td>
<td>BLUE</td>
</tr>
<tr>
<td>90</td>
<td>BLACK</td>
</tr>
</tbody>
</table>
KS
Single Pole Key Switches

Features/Benefits
- Positive tactile feel
- Variety of cap colors
- SPST and SPDT configurations
- RoHS compliant

Typical Applications
- Telecommunications
- Industrial
- Instrumentation

Specifications
CONTACT RATING: Q contact material: 25mA @ 50V AC .or DC max.
ELECTRICAL LIFE: 100,000 actuations.
CONTACT RESISTANCE: Below 100 mΩ initial @ 2-4 V DC, 100 mΑ
INSULATION RESISTANCE: 10Ω min.
DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.
OPERATING TEMPERATURE: -30°C to 65°C.
SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

Materials
CASE: Glass filled nylon (UL 94V-0).
ACTUATOR: ABS, matte finish, black standard.
MOVABLE CONTACT: Q contact material: Stainless steel, silver plated.
STATIONARY CONTACTS AND TERMINALS: Q contact material: copper alloy, silver plated.
TERMINAL SEAL: Epoxy

Note: Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

How To Order
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.
### KS11 / KS12

**Key Switches**

Dimensions are shown: mm

Specifications and dimensions subject to change

![Diagram of key switch dimensions and symbols](image)

#### Switch Function and Connected Terminals

<table>
<thead>
<tr>
<th>No. Poles</th>
<th>Model No.</th>
<th>Switch Function</th>
<th>Connected Terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>KS11</td>
<td>OFF MOM.</td>
<td>1–3</td>
</tr>
<tr>
<td></td>
<td>KS12</td>
<td>ON MOM.</td>
<td>1–4 1–3</td>
</tr>
</tbody>
</table>

#### Schematic

- **KS11** (SPST):
  - POS. 1: 1 (COMM)
  - POS. 2: 3 NO

- **KS12** (SPDT):
  - NC 4

#### Cap Options

**R2** Cap with Round Depression

- **Option Code**
  - 2: BLACK
  - 1: WHITE
  - 3: RED
  - 9: GRAY

![Diagram of cap options](image)
KS
Single Pole Key Switches

TERMINATION

C PC THRU-HOLE

PC MOUNTING

MULTIPLE SWITCH SPACING

CONTACT MATERIAL

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>CONTACT MATERIAL</th>
<th>TERMINAL PLATING</th>
<th>RATINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q</td>
<td>SILVER</td>
<td>SILVER</td>
<td>POWER</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25 mA MAX. @ 50 V AC OR DC MAX.</td>
</tr>
<tr>
<td>B</td>
<td>GOLD</td>
<td>GOLD</td>
<td>LOW LEVEL/DRY CIRCUIT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.4 VA MAX. @ 20 V AC OR DC MAX.</td>
</tr>
</tbody>
</table>

1) MOVABLE CONTACT: Stainless steel, with gold plate over nickel plate.
   STATIONARY CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.

2) MOVABLE CONTACT: Stainless steel, silver plated.
   STATIONARY CONTACTS & ALL TERMINALS: Copper alloy, silver plated.

NOTE: Any models supplied with Q or B contact material are RoHS compliant.

SEAL

D NO EPOXY SEAL

E EPOXY SEAL
**Features/Benefits**
- High reliability/long life
- Designed for low level switching
- Ready to implement on PCB
- Latching function available
- Several button options
- RoHS compliant and compatible

**Typical Applications**
- Medical
- Instrumentation
- Industrial electronics
- Audio electronics

**Construction**
FUNCTION: momentary or push-push
CONTACT ARRANGEMENT: 1 change over contact SPDT, NO
MODE OF SWITCHING: Non-shorting
DISTANCE BETWEEN BUTTON CENTERS:  
- HORIZONTAL MINIMUM: 12.7 (0.500) or 17.78 (0.700)
- VERTICAL MINIMUM: 17.78 (0.700)
TERMINALS: PC pins
MOUNTING: Soldering, centering pins

**Mechanical**
TOTAL TRAVEL: ≤ 3 (.0018)
SWITCHING TRAVEL: 1.5 (0.0591)
LATCHING TRAVEL: 1.8 (0.0709)
OPERATING FORCE: 1.5 +/- 0.5 N (150 +/- 50 grams)

**Process**
SOLDERABILITY:  
- Wave soldering, compatible with lead free soldering profile
- Hand soldering, 350˚C for 3 seconds

**Environmental**
OPERATING TEMPERATURE: -25˚C to 85˚C.

**How To Order**
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box. Some of the configurations may not be available or could require some development.

**Switch**

<table>
<thead>
<tr>
<th>Series</th>
<th>LED</th>
<th>Button Color***</th>
<th>LED Spacing*</th>
<th>Function</th>
<th>Contact Material</th>
<th>Body Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>SER</td>
<td>NONE</td>
<td>SERU (SERU)</td>
<td>None (SERU)</td>
<td>EE</td>
<td>AU</td>
<td>NONE</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>BK</td>
<td>Black</td>
<td></td>
<td></td>
<td>BRN</td>
</tr>
<tr>
<td></td>
<td>2L</td>
<td>GY</td>
<td>Gray</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>WH</td>
<td>White</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>RD</td>
<td>Red</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BU</td>
<td>Blue</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Button**

<table>
<thead>
<tr>
<th>Reference</th>
<th>Button Style</th>
<th>Button Color**</th>
<th>LED Holes</th>
<th>Latching</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR K</td>
<td>Narrow</td>
<td>BK</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>ST</td>
<td>Wide</td>
<td>GY</td>
<td>L</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WH</td>
<td>2L</td>
<td>EE</td>
</tr>
</tbody>
</table>

* LED spacing only applies when 1 LED requested
** Additional button colors available by request
*** Additional LED colors available by request including Bi color configurations

Dimensions are shown: mm
Specifications and dimensions subject to change

www.ckswitches.com
DIGITAST
Microminiature SPDT, Key Switches

SER  NARROW BUTTON

SET  WIDE BUTTON

SERU  NO BUTTON

DESIGNATION

Specifications and dimensions subject to change

www.ckswitches.com
**Key Switches**

**Dimensions are shown: mm**

Specifications and dimensions subject to change

www.ckswitches.com

### LED

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>NONE</td>
<td>Models without LED</td>
</tr>
<tr>
<td>RD</td>
<td>Red</td>
</tr>
<tr>
<td>GN</td>
<td>Green</td>
</tr>
<tr>
<td>YE</td>
<td>Yellow</td>
</tr>
</tbody>
</table>

### Contact Material

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>Gold</td>
</tr>
</tbody>
</table>

### Function

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>COLOR</th>
<th>SCHEMATIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>OA</td>
<td>Momentary</td>
<td><img src="image1" alt="Schematic" /></td>
</tr>
<tr>
<td>EE</td>
<td>Push-Push</td>
<td><img src="image2" alt="Schematic" /></td>
</tr>
</tbody>
</table>

**Button Color**

- **BK** Black
- **GY** Gray

Other button colors available by request [red (RD), green (GN), white (WH), yellow (YE), blue (BU), orange (OG)].

### LED Color

- **NONE** NO LED
- **L** 1 LEDs
- **2L** 2 LEDs

### Narrow Spacing (TYP Europe)

Dimensions: 7.62 mm Spacing (TYP No. America)

- Ø 1.0 ± 0.1 (0.0394 ± 0.00349)
- Ø 1.1 ± 0.05 (0.0433 ± 0.00197)

**TOP VIEW OF PCB**
ED & EDM Disc

Features
• Short travel
• Good tactile feedback
• Self cleaning
• 3 actuation forces

Typical Applications
• Aircraft
• Instrument
• Panels
• Radio equipment

Specification
ED: Disc element
EDM: Disc element and double dome
FUNCTION: Momentary action
CONTACT TYPE: Normally open - SPST
TERMINALS: Through hole PCB terminations or Tabs
OPERATING LIFE: 1,000,000 cycles

Packaging
Trays 50 pieces

Characteristics
Environmental & Electrical

<table>
<thead>
<tr>
<th></th>
<th>Silver</th>
<th>Gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPERATING TEMPERATURE</td>
<td>-25°C to 65°C</td>
<td>-55°C to 85°C</td>
</tr>
<tr>
<td>MAXIMUM POWER</td>
<td>1 VA</td>
<td>0.2 VA</td>
</tr>
<tr>
<td>MAXIMUM VOLTAGE</td>
<td>100 VDC</td>
<td>100 VDC</td>
</tr>
<tr>
<td>MINIMUM VOLTAGE</td>
<td>20m VDC</td>
<td>20m VDC</td>
</tr>
<tr>
<td>MIN/MAX CURRENT</td>
<td>1 mA to 100 mA</td>
<td>50 µA to 50 mA</td>
</tr>
<tr>
<td>DIELECTRIC STRENGTH</td>
<td>≥ 250 Vrms</td>
<td></td>
</tr>
<tr>
<td>CONTACT RESISTANCE</td>
<td>≤ 100 mΩ</td>
<td></td>
</tr>
<tr>
<td>INSULATION RESISTANCE</td>
<td>(between terminals)</td>
<td>Initial measurement: ≥ 1 GΩ After damp heat: ≥ 10 MΩ</td>
</tr>
<tr>
<td>BOUNCE TIME</td>
<td>≤ 3 ms</td>
<td></td>
</tr>
<tr>
<td>SIMULTANEITY</td>
<td>≤ 0.05 mm</td>
<td></td>
</tr>
</tbody>
</table>

Mechanical

<table>
<thead>
<tr>
<th>Type</th>
<th>Operating force N (grams)</th>
<th>Tactile feeling Δ%</th>
<th>Return force N</th>
<th>Travel mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDXXXX LFX</td>
<td>2.4 (240) ± 25%</td>
<td>≥ 30%</td>
<td>≥ 0.4</td>
<td>0.3 ± 0.15</td>
</tr>
<tr>
<td>EDM450XXX LFX</td>
<td>4.5 (450) ± 25%</td>
<td>≥ 25%</td>
<td>≥ 1</td>
<td>0.5 ± 0.15</td>
</tr>
<tr>
<td>EDM650XXX LFX</td>
<td>6.5 (650) ± 25%</td>
<td>≥ 25%</td>
<td>≥ 1.6</td>
<td>0.6 ± 0.15</td>
</tr>
</tbody>
</table>

How To Order
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

Contact Material
- S Silver
- G Gold

Terminals
- AC with pc pins
- SC with tabs

Disc
1 Sealed, IP 50

Lead Free Compatible
- LFS RoHS, Silver tabs
- LFG RoHS, Gold tabs

Operation Force
- 450 4.5 N (450 grams)
- 650 6.5 N (650 grams)

Diaphragm Plating
- S Silver
- G Gold

Dimensions are shown: mm
Specifications and dimensions subject to change
www.ckswitches.com
Switch Action Principal

The disc contact is essentially made of two separate conductive dome diaphragms separated by an insulated material.

The upper diaphragm is shaped so that under pressure it collapses suddenly and establishes contact with the lower diaphragm.
MD & MDP Series

Features
• Short travel
• Good tactile feedback
• Self cleaning
• 2 actuator materials
• RoHS

Typical Applications
• Aircraft
• Instrument
• Panels
• Radio equipment

Specifications

Features
- Short travel
- Good tactile feedback
- Self cleaning
- 2 actuator materials
- RoHS

Typical Applications
- Aircraft
- Instrument
- Panels
- Radio equipment

Specifications and dimensions subject to change

www.ckswitches.com