ET Series
Sealed Subminiature Toggle Switches

Features/Benefits
• Sealed against solder and cleaning process contaminants
• ESD protection available
• Thru-hole and surface mount models
• Compact size and small footprint save PCB space
• RoHS compliant models available

Specifications
CONTACT RATING: B contact material: 0.4 VA max. @ 20 V AC or DC max. See page F-35 for additional ratings.
ELECTRICAL LIFE: ETX1 models: 60,000 make-and-break cycles at full load. All other models: 30,000 cycles.
CONTACT RESISTANCE: Below 20 mΩ typ. initial @ 2–4 V DC, 100 mA, for both silver and gold plated contacts.
INSULATION RESISTANCE: 10^6 Ω min.
ELECTROSTATIC DISCHARGE (ESD) RESISTANT OPTION:
M3 & S3 Insulating actuator only: 5,000 V DC min. @ sea level, actuator to terminals.
DIELECTRIC STRENGTH: 1000 Vrms min. @ sea level.
OPERATING TEMPERATURE: -30°C to 85°C.
SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).
DEGREE OF PROTECTION: IP57; Protection against harmful dust deposit, full-scale voltage protection, temporary immersion.
PACKAGING: Surface mount switches are shipped in tape and reel packaging, see page F-36 for drawings and reel information.

Materials
CASE & BUSHING: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0) or glass filled 4/6 nylon, flame retardant, heat stabilized (UL 94V-0).
ACTUATOR: M3 & S3 anti-static actuator: Nylon 4/6, black standard (UL 94V-0). All other actuators: Brass, chrome plated. Internal o-ring seal standard with all actuators.
SWITCH SUPPORT: Brass, tin plated.
CONTACTS & TERMINALS: B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Copper alloy, silver plated. See F-35 for additional contact materials.

Typical Applications
• Hand-held telecommunications
• Instrumentation
• Medical equipment

Build-A-Switch
To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages F–31 thru F–36. For additional options not shown in catalog, consult our Customer Service Center. All models are process sealed to withstand machine soldering temperatures and pressure wash cleaning methods.
## ET Series
### Sealed Subminiature Toggle Switches

#### SWITCH FUNCTION

<table>
<thead>
<tr>
<th>NO. POLES</th>
<th>MODEL NO.</th>
<th>SWITCH FUNCTION</th>
<th>CONNECTED TERMINALS</th>
<th>SCHEMATIC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ET01</td>
<td>ON</td>
<td>2-3,5-6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ET02</td>
<td>OFF</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ET03</td>
<td>ON OFF ON</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ET05</td>
<td>MOM OFF MOM</td>
<td>2-3,5-6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ET07</td>
<td>ON OFF MOM</td>
<td>2-3,5-6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ET08</td>
<td>ON OFF MOM</td>
<td>2-3,5-6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ET21</td>
<td>ON</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ET23</td>
<td>ON OFF ON</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ET24**</td>
<td>ON ON ON</td>
<td>2-3,5-6</td>
<td></td>
</tr>
</tbody>
</table>

#### SPDT

- **ET01**: ON NONE ON
- **ET02**: OFF NONE ON
- **ET03**: ON OFF ON
- **ET05**: MOM. OFF MOM.
- **ET07**: ON OFF MOM.
- **ET08**: ON NONE MOM.
- **ET21**: ON OFF ON
- **ET23**: ON OFF ON
- **ET25**: MOM. OFF MOM.
- **ET27**: ON OFF MOM.
- **ET28**: ON NONE MOM.
- **ET24**: ON ON ON

#### DPDT

- **ET01**: ON NONE ON
- **ET02**: OFF NONE ON
- **ET03**: ON OFF ON
- **ET05**: MOM. OFF MOM.
- **ET07**: ON OFF MOM.
- **ET08**: ON NONE MOM.
- **ET21**: ON OFF ON
- **ET23**: ON OFF ON
- **ET25**: MOM. OFF MOM.
- **ET27**: ON OFF MOM.
- **ET28**: ON NONE MOM.
- **ET24**: ON ON ON

#### DP

- **ET21**: On NONE ON
- **ET23**: Off ON ON
- **ET25**: Mom. OFF MOM.
- **ET27**: On OFF MOM.
- **ET28**: On NONE MOM.
- **ET24**: On ON ON

**MOM. = Momentary**

- **Part number shown: ET01MD1CBE**
- **ET02 Models: Omit terminal 2**
- **Part number shown: ET21MD1CBE**

**Wiring for 3-way switch, see Section N.**

All models with all options (except M3 actuator) when ordered with G, L, R or Q contact material.

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Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

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ET Series
Sealed Subminiature Toggle Switches

ACTUATOR

M .240" HIGH

M3 PLASTIC, ANTISTATIC, .240" HIGH

S .400" HIGH

L .320" HIGH

Standard with A, AV, V3 & V31 terminations.

Material: Nylon 4/6 (UL 94V-0), black standard. Static resistance: 9,000 V DC min. @ sea level, actuator to terminals. Not UL approved.

Standard with C or W terminations.

NOTE: All actuators have chrome finish (except M3 & S3).

BUSHING

D1 .177" HIGH, UNTHREADED

NOTE: Internal actuator o-ring seal standard.

TERMINATIONS

C PC THRU-HOLE

SP

DP

EPOXY SEAL

.020 THK, (.5, 0,05)

.030 (.076)

.100 TYP. (2, 54)

.043 DIA, (.1098) TYP.

PC MOUNTING

ET02 – omit center hole.

SP and DP

W WIRE WRAP

SP

DP

EPOXY SEAL

.030 (.076)

.060 (1, 52)

.070 (1, 79)

.400 (10, 16)

.500 (12, 70)

.600 (15, 24)

SP and DP

Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

www.ckswitches.com
ET Series
Sealed Subminiature Toggle Switches

TERMINATIONS

A  RIGHT ANGLE, PC THRU-HOLE

ET01MD1ABE
Horizontal Actuation
SPDT

Actuator Shown in Pos. 1

ET21MD1ABE
Horizontal Actuation
DPDT

Actuator Shown in Pos. 1

AV  VERTICAL RIGHT ANGLE, PC THRU-HOLE

ET01MD1AVBE
Vertical Actuation
SPDT

Actuator Shown in Pos. 1

ET21MD1AVBE
Vertical Actuation
DPDT

Actuator Shown in Pos. 1

PC MOUNTING

NOTE: Terminal bend radii and lead-in manufacturing option.

Dimensions are shown: inches (mm)
Specifications and dimensions subject to change

www.ckswitches.com
ET Series
Sealed Subminiature Toggle Switches

TERMINATIONS

AV3  VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE

Actuator Shown In Pos. 1

SA  RIGHT ANGLE, SURFACE MOUNT

Actuator Shown In Pos. 1

SA1  RIGHT ANGLE, SURFACE MOUNT

Not available in ET02.
Actuators M and M3, bushing D1, contact material B.
Standard with tape and reel packaging-see page F-36.

V3  VERTICAL MOUNT, V-BRACKET
V31  VERTICAL MOUNT, V-BRACKET, SNAP-IN

Actuator Shown In Pos. 1
ET02 Models: Omit terminal 2

ET01SD1AV2BE
Vertical Actuation
SPDT

ET01M3D1SAPE
Horizontal Actuation
SPDT Only

ET01M3D1SA1BE
Horizontal Actuation
SPDT Only

Not available with S and S1 actuators. Standard with tape & reel packaging. See page F-36.

ET01MD1V3BE
SPDT
Sealed Subminiature Toggle Switches

ET Series

TERMINATIONS

V3 VERTICAL MOUNT, V-BRACKET

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>B</td>
<td>GOLD 1</td>
<td>LOW LEVEL/DRY CIRCUIT</td>
<td>0.4 VA MAX. @ 20 V AC OR DC MAX.</td>
</tr>
<tr>
<td>P</td>
<td>MATTE-TIN 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q</td>
<td>SILVER 4,5</td>
<td>POWER</td>
<td>ETX1 MODELS: 3 AMPS @ 120 V AC OR 28 V DC</td>
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<tr>
<td>S</td>
<td>MATTE-TIN 6</td>
<td></td>
<td>ALL OTHER MODELS: 2 AMPS @ 120 V AC OR 28 V DC</td>
</tr>
<tr>
<td>G</td>
<td>GOLD OVER SILVER 2,3</td>
<td>LOW LEVEL/DRY CIRCUIT OR POWER</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>MATTE-TIN 6</td>
<td></td>
<td>ETX1 MODELS: 0.4 VA MAX. @ 20 V AC OR DC MAX. OR 3 AMPS @ 120 V AC OR 28 V DC</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>ALL OTHER MODELS: 0.4 VA MAX. @ 20 V AC OR DC MAX. OR 2 AMPS @ 120 V AC OR 28 V DC</td>
</tr>
</tbody>
</table>

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

1 CONTACTS & TERMINALS: Copper alloy, with gold plate over nickel plate.
2 END CONTACTS: Coin silver, with gold plate over nickel plate.
3 CENTER CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.
4 END CONTACTS: Coin silver, silver plated.
5 CENTER CONTACT & ALL TERMINALS: Copper alloy, silver plated.
6 TERMINALS: Copper alloy, with matte tin over nickel plate.

NOTE: Any models supplied with Q, B, G, P or R contact material are RoHS compliant.

All models with all options (except M3 actuator) when ordered with G, L, R or Q contact material.

SEAL

E EPOXY SEAL

AVAILABLE HARDWARE

Cap

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>COLOR</th>
<th>MATERIAL</th>
<th>FINISH</th>
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<tbody>
<tr>
<td>706201000</td>
<td>WHITE</td>
<td>Vinyl</td>
<td>Matte</td>
</tr>
<tr>
<td>706202000</td>
<td>BLACK</td>
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<tr>
<td>706203000</td>
<td>RED</td>
<td>Vinyl</td>
<td>Matte</td>
</tr>
</tbody>
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NOTE: Other colors available, consult Customer Service Center.