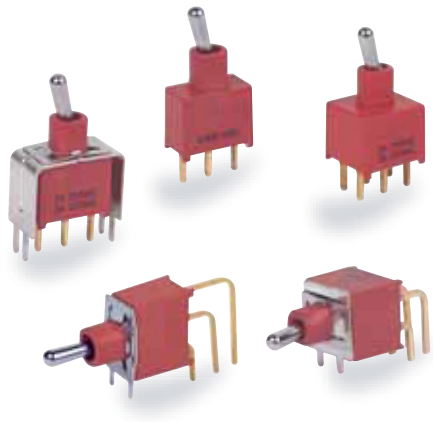
# S1A Series

Sealed Miniature Toggle Switches



IP 67
ACCORDING TO EN 60529:1991+A1:2001 IEC 60529:2001

## SPECIFICATIONS

**CONTACT RATING:** Dependent upon contact material.
**MECHANICAL LIFE:** 30,000 make-and-break cycles.
**CONTACT RESISTANCE:** 10mΩmax. initial @ 2-4VDC
100mA for both silver and gold plated contacts.
**INSULATION RESISTANCE:** 1,000MΩmin.
**DIELECTRIC STRENGTH:** 1,000 V RMS@sea level.
**OPERATING TEMPERATURE:** -30°C to 85°C.

## MATERIALS

**CASE & BUSHING:** Glass filled nylon 66,flame retardant.heat srabilized (UL94v-0).
**ACTUATOR:** Brass,chrome plated with internal,O-ring seal atandard.
**SWITCH SUPPORT:** Brass or steel,tin plated.
**SWITCH SUPPORT RETAINER:** Stainless steel.
**CONTACT / TERMINALS:** Copper alloy,with Silver or gold plated.

## HOW TO ORDER

MODEL NO. | ACTUATOR | BUSHING | TERMINATIONS | CONTACT MATERIAL | SEAL | ROHS SOLDERING

□□□□ — □□ — □□□ — □□□ — □ — E — □

MODEL NO.
S1AS1 SP On-None-On
S1AS2 SP On-None-Mom
S1AS3 SP On-Off-On
S1AS4 SP Mom-Off-Mom
S1AS5 SP On-Off -Mom
S1AD1 DP On-None-On
S1AD2 DP On-None-Mom
S1AD3 DP On-Off-On
S1AD4 DP Mom-Off-Mom
S1AD5 DP On-Off-Mom
S1AD6 DP On-On-On
S1AD7 DP MOm-On-Mom
S1AD8 DP On-On-Mom
S1A31 3P On-None-On
S1A32 3P On-None-Mom
S1A33 3P On-Off-On
S1A34 3P Mom-Off-Mom
S1A35 3P On-Off-Mom

ACTUATOR
T1 12.70 high
T2 7.62 high
TA Plastic,anti-static, black 12.70 high
TB Plastic,anti-static, black 7.62 high
TC Plastic,anti-static, silver 12.70 high

BUSHING
B1 8.89 high
B4 6.10 high

TERMINATIONS
M1 Solder Lug
M2 PC thru-hole
M5-1 18.70 high, wire wrap
M5-2 24.20 high, wire wrap
M5-3 10.55 high, wire wrap
M5-4 26.97 high, wire wrap
M6 Right angle, PC thru-hole
M6N Right angle, snap-in, PC thru-hole
M7 Vertical right angle, PC thru-hole
VS2 11.68 high, V-bracket
V2N 11.68 high, snap-in V-bracket
VS3 16.00 high, V-bracket

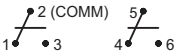
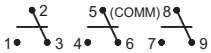
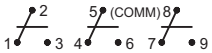
CONTACT MATERIAL
Q Silver
R Gold
G Gold,tin-lead
S Silver,tin-lead
C Gold over silver
K Gold over silver,tin-lead

SEAL
E EPOXY (std)

ROHS SOLDERING
□ Rohs Compliant
S Rohs & Lead Free
F Halogen Free+RoHS

KKG

## SWITCH FUNCTION

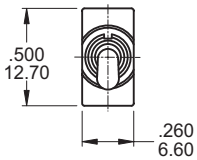
| NO. POLES | UL/CSA MODEL NO. | MODEL NO. | SWITCH FUNCTION | | | CONNECTED TERMINALS / SCHEMATIC | | |
|---|---|---|---|---|---|---|---|---|
| | | | POS.1 | POS.2 | POS.3 | POS.1 | POS.2 | POS.3 |
| | | |  |  |  |  |  |  |
| SP | Q11A11 | S1AS1 | ON | NONE | ON | 2-3   | N/A | 2-1   |
| | Q11A12 | S1AS2 | ON | NONE | MOM | | | |
| | Q11A13 | S1AS3 | ON | OFF | ON | | OPEN | |
| | Q11A14 | S1AS4 | MOM | OFF | MOM | | | |
| | Q11A15 | S1AS5 | ON | OFF | MOM | | | |
| DP | Q11A21 | S1AD1 | ON | NONE | ON | 2-3,5-6   | N/A | 2-1,5-4   |
| | Q11A22 | S1AD2 | ON | NONE | MOM | | | |
| | Q11A23 | S1AD3 | ON | OFF | ON | | OPEN | |
| | Q11A24 | S1AD4 | MOM | OFF | MOM | | | |
| | Q11A25 | S1AD5 | ON | OFF | MOM | | | |
| | Q11A26 | S1AD6 | ON | ON | ON | 2-3,5-6 | 2-3,5-4 | 2-1,5-4 |
| ▲ | Q11A27 | S1AD7 | MOM | ON | MOM | | | |
| ▲ | Q11A28 | S1AD8 | ON | ON | MOM | | | |
| 3P | Q11A31 | S1A31 | ON | NONE | ON | 2-3,5-6,8-9   | N/A | 2-1,5-4,8-7   |
| | Q11A32 | S1A32 | ON | NONE | MOM | | | |
| | Q11A33 | S1A33 | ON | OFF | ON | | OPEN | |
| | Q11A34 | S1A34 | MOM | OFF | MOM | | | |
| | Q11A35 | S1A35 | ON | OFF | MOM | | | |

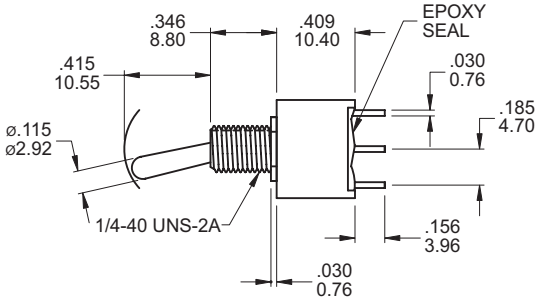
MOM=MOMENTARY

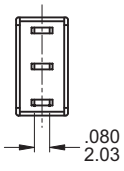
▲ Please check the availability in advance before order

## POLE OPTIONS





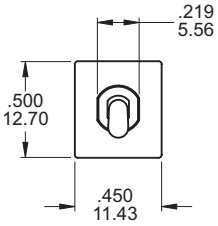



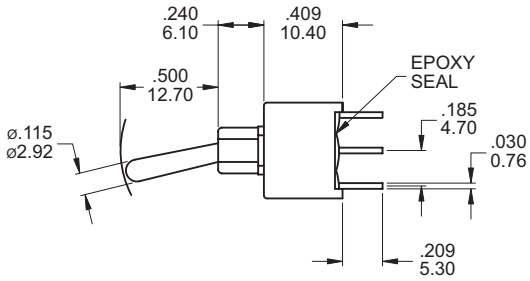



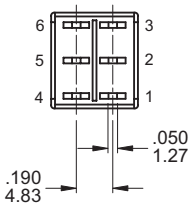

SPDT

Part No. Shown : S1AS1T1B1M1QE





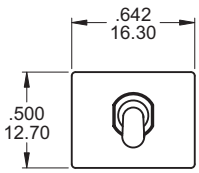



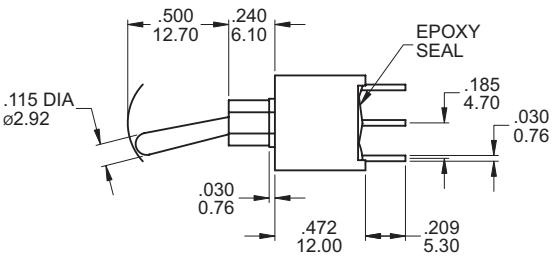

DPDT

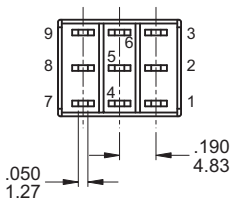
Part No. Shown : S1AD1T1B4M2RE

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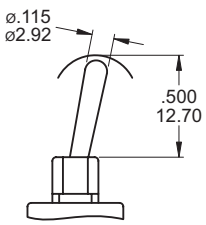

3PDT

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## ACTUATOR OPTIONS

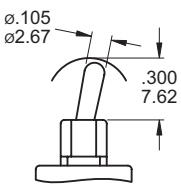
Actuator shown with standard B4 Bushing,
Subtract .085 (2.15) for B1 bushing.

### T1



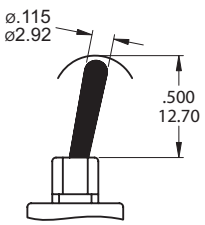

Standard with
M1,M2 terminations.

### T2

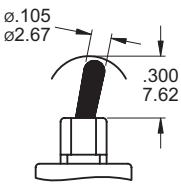



Standard with
M6,M7,VS2-3 terminations.

### TA



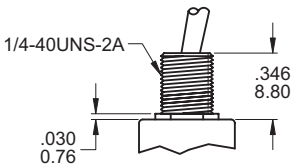

### TB




ESD
PLASTIC ACTUATOR
(TC anti-static , silver)

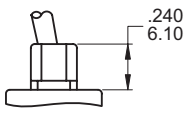
## BUSHING OPTIONS

### B1




Std for M1

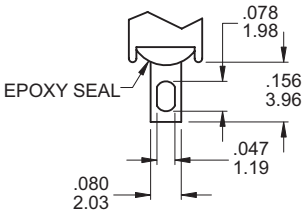
### B4




Std for M2, M6, M7, VS termination

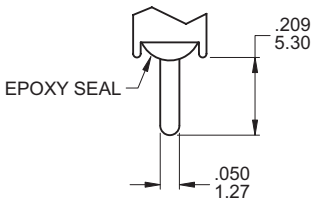
# TERMINATION OPTIONS

## M1 SOLDER LUG



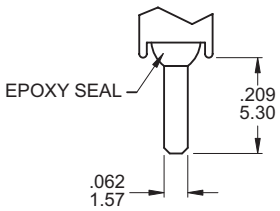

THK .030(0.76)

## M2 PC THRU-HOLE



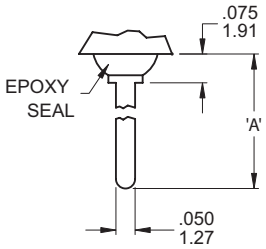

THK .030(0.76)

## M3 QUICK CONNECT




.030(0.76) THK.

## M5 WIRE WRAP




THK .030(0.76)

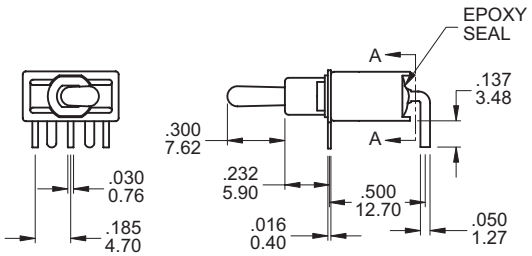
| OPTION CODE | DIM. 'A' |
|---|---|
| M5-1 | .736 ( 18.70 ) |
| M5-2 | .953 ( 24.20 ) |
| M5-3 | .415 ( 10.55 ) |
| M5-4 | 1.062 ( 26.97 ) |

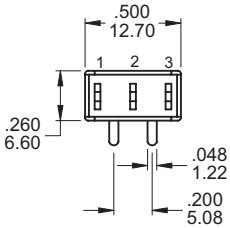
## OTHER TERMINATION OPTIONS

M6 RIGHT ANGLE P.C. MOUNT
M7 RIGHT ANGLE P.C. MOUNT
VS2 VERTICAL BRACKET P.C. MOUNT
VS3 VERTICAL BRACKET P.C. MOUNT

## M6

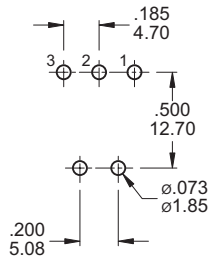





SECTION A-A
TERM. NOS. FOR
REFERENCE ONLY

P.C. MOUNTING

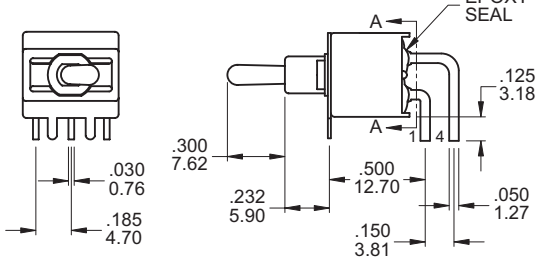


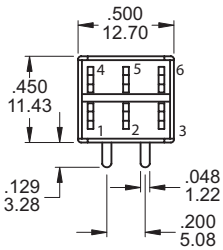

## SPDT

Part No. Shown : S1AS1T2B4M6QE

## M6

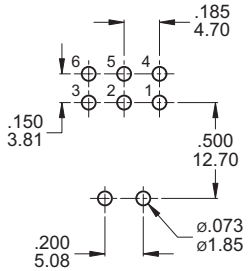





SECTION A-A
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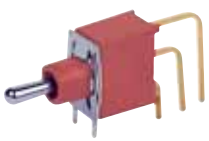
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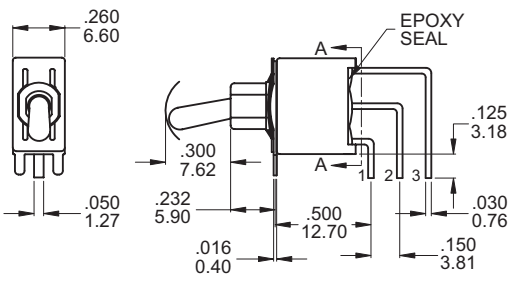


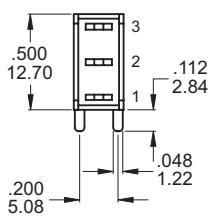

## DPDT

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## M7

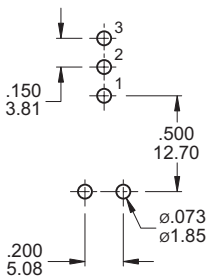





SECTION A-A
TERM. NOS. FOR
REFERENCE ONLY

P.C. MOUNTING

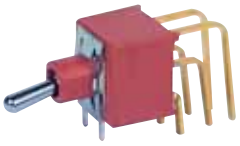


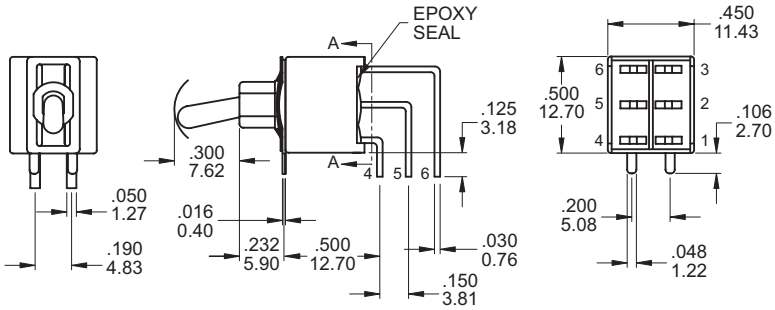

## SPDT

Part No. Shown : S1AS1T2B4M7RE

KKG

## M7

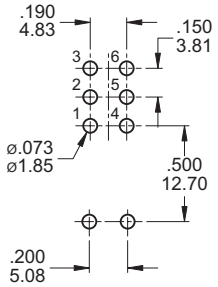





### DPDT

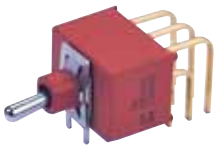
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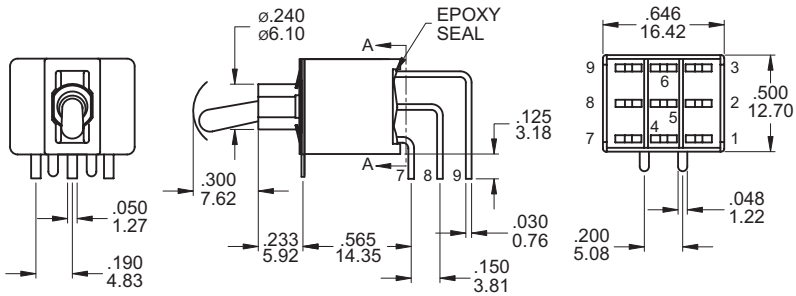
**P.C. MOUNTING**




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## M7

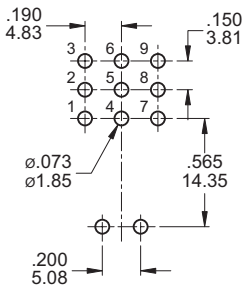





### 3PDT

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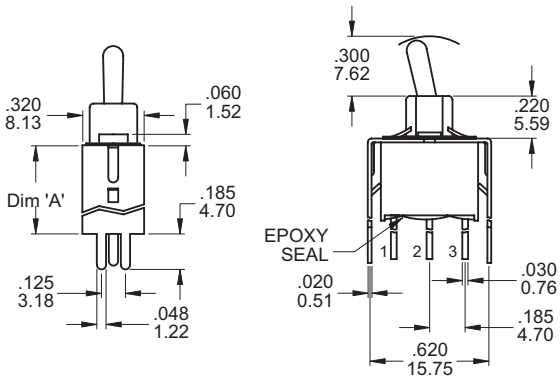
**P.C. MOUNTING**




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## VS2 - VS3



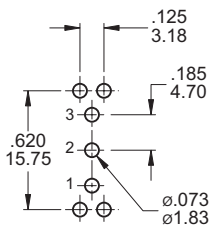



| OPTION CODE | DIM. 'A' |
|---|---|
| VS2 | .460 11.68 |
| VS3 | .630 16.00 |

### SPDT

Part No. Shown : S1AS1T2B4VS2RE

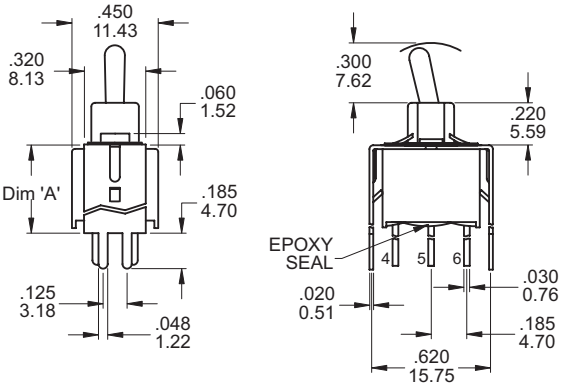
**P.C. MOUNTING**




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## VS2 - VS3



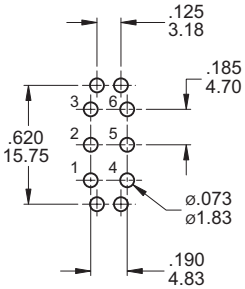



| OPTION CODE | DIM. 'A' |
|---|---|
| VS2 | .460 11.68 |
| VS3 | .630 16.00 |

### DPDT

Part No. Shown : S1AD1T2B4VS2RE

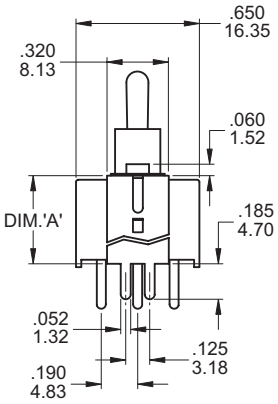
**P.C. MOUNTING**

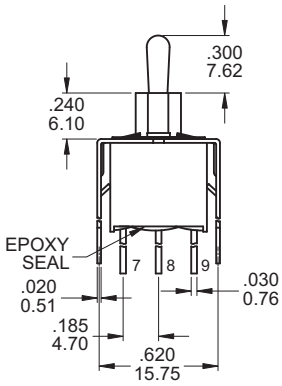


VS2 - VS3



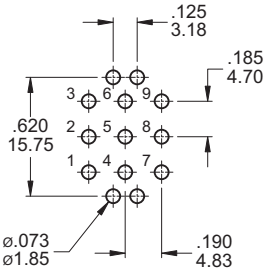
3PDT




| OPTION CODE | DIM. 'A' |
|---|---|
| VS2 | .460<br>11.68 |
| VS3 | .630<br>16.00 |

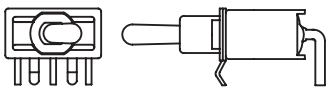
P.C. MOUNTING



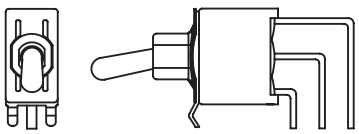

Part No. Shown : S1A31T2B4VS2QE

## SNAP-IN TERMINATION OPTIONS

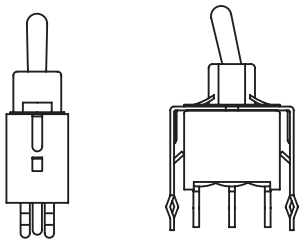
M6N



M7N



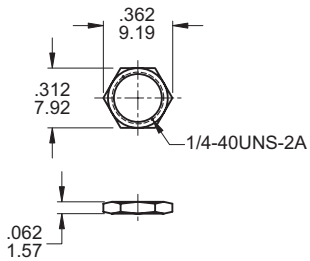
V2N



## HARDWARE

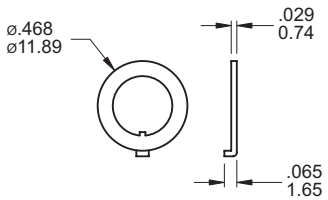
### NUT

HDW2



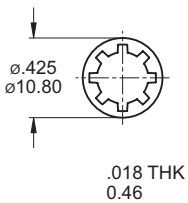

### LOCKING RING

HDW15




### LOCK WASHER

HDW11




## CONTACT MATERIAL OPTIONS

| | CONTACT PLATIGN | TERMINAL PLATING | RATINGS |
|---|---|---|---|
| Q | Silver | Q = Gold flash over silver | 5 Amps with resistant load @ 120VAC or 28VDC<br>2 Amps with resistant load @ 250VAC |
| S | | S = Gold flash over silver,pure - tin | |
| C | Gold over Silver | C = Gold over silver | |
| K | | K = Gold over silver,pure - tin | |
| R | Gold | R = Gold | 0.4 Volt - Amps ( VA ) max. @ 20V max. ( AC or DC ) |
| G | | G = Gold,pure - tin | |

## SOLDERING PROCESSES

MANUAL SOLDERING : Use soldering iron of 30 watts, controlled at 350°C approximately 5 seconds while applying solder.

WAVE SOLDERING : Recommended Soldering Temperature : 260 ± 5°C

Duration of Solder Immersion : Max 5sec. (PCB is 1.6mm in thickness)

**SOLDERING : Vapor phase**

KKG