



### SPECIFICATIONS

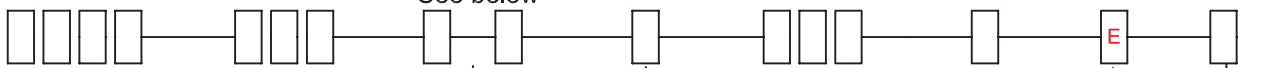
**CONTACT RATING:** Dependent upon contact material  
**MECHANICAL LIFE:** 30,000 make-and-break cycles.  
**CONTACT RESISTANCE:** 10mΩ max. initial @ 2-4VDC 100mA  
 for both silver and gold plated contacts  
**INSULATION RESISTANCE:** 1,000MΩ min.  
**DIELECTRIC STRENGTH:** 1,000 V RMS@sea level. 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

### MATERIALS

**CASE & BUSHING** -Glass filled nylon 6/6, flame retardant, heat stabilized(UL94V-0).  
**ACTUATOR** -Nylon, black std. Internal O-ring seal standard with all actuators.  
**FRAME**-Spring steel, black std.  
**SWITCH SUPPORT**-Brass or steel, tin plated.  
**ACTUATOR PIVOT & MOUNTING BRACKET** -Nylon.  
**ACTUATOR PIVOT RETAINER** -Stainless steel.  
**TERMINALS/CONTACTS** -Silver or gold plated copper alloy. (See Page 68)

### HOW TO ORDER

MODEL NO.    ACTUATOR    FRAME COLOR    ACTUATOR COLOR    CAP MARKING    TERMINATIONS    CONTACT MATERIAL    SEAL    ROHS SOLDERING



#### MODEL NO.

- 3AS1 SP On-None-On
- 3AS2 SP On-None-Mom.
- 3AS3 SP On- Off -On
- 3AS4 SP Mom.-Off-Mom.
- 3AS5 SP On- Off -Mom.
- 3AD1 DP On-None-On
- 3AD2 DP On-None-Mom.
- 3AD3 DP On- Off -On
- 3AD4 DP Mom.-Off-Mom.
- 3AD5 DP On- Off -Mom.
- 3AD6 DP On- On -On
- 3AD7 DP MOm.-On-Mom.
- 3AD8 DP On- On -Mom.
- 3A31 3P On-None-On
- 3A32 3P On-None-Mom.
- 3A33 3P On- Off -On
- 3A34 3P Mom.-Off-Mom.
- 3A35 3P On- Off -Mom.

#### ACTUATOR

- R1 13.49 long rocker - support
- R2 Lever - support
- R11 9.19 long rocker - support
- R12 Lever - support
- R13 Lever - support
- R16 Lever - support
- P.C.MOUNT Only
- J1 13.49 long rocker
- J2 Lever
- J3 23.01 long rocker
- J4 Lever
- J5 9.19 long rocker
- J6 Lever
- J7 Lever
- J8 Lever

#### CAP MARKING

1	
2	
5	
6	
7	
8	
9	
F	

FRAME COLOR    ACTUATOR COLOR

See below

ITEN NO	COLOR
1	White
2	Black (Std)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

#### 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)

#### TERMINATIONS

- M1 Solder Lug
- M2 PC thru-hole
- M5-1 18.70 high, wire wrap
- M5-2 24.20 high, wire wrap
- M5-3 10.50 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

#### ROHS SOLDERING

- Rohs Compliant
- Rohs & Lead Free

### SWITCH FUNCTION

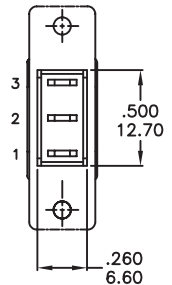
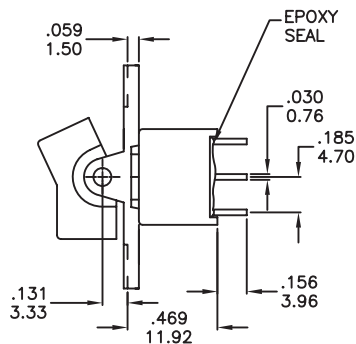
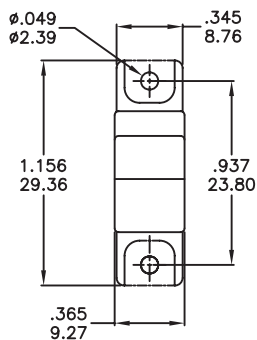
NO. POLES	UL/CSA MODEL NO.	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS / SCHEMATIC				
			POS.1	POS.2	POS.3	POS.1	POS.2	POS.3		
SP	Q13A11	3AS1	ON	NONE	ON	2-3	N/A	2-1		
	Q13A12	3AS2	ON	NONE	MOM			OPEN		
	Q13A13	3AS3	ON	OFF	ON			OPEN		
	Q13A14	3AS4	MOM	OFF	MOM				N/A	2-1,5-4
	Q13A15	3AS5	ON	OFF	MOM		2-3,5-4		2-1,5-4	
DP	Q13A21	3AD1	ON	NONE	ON			N/A	2-1,5-4	
	Q13A22	3AD2	ON	NONE	MOM				OPEN	
	Q13A23	3AD3	ON	OFF	ON				OPEN	
	Q13A24	3AD4	MOM	OFF	MOM					2-3,5-4
	Q13A25	3AD5	ON	OFF	MOM		2-3,5-4	2-1,5-4		
	▲ Q13A27	3AD7	MOM	ON	MOM			2-3,5-4	2-1,5-4	
	▲ Q13A28	3AD8	ON	ON	MOM				N/A	2-1,5-4,8-7
	3P	Q13A31	3A31	ON	NONE	ON			N/A	2-1,5-4,8-7
Q13A32		3A32	ON	NONE	MOM				OPEN	
Q13A33		3A33	ON	OFF	ON				OPEN	
Q13A34		3A34	MOM	OFF	MOM					OPEN
Q13A35		3A35	ON	OFF	MOM		OPEN			

MOM=MOMENTARY

▲ Please check the availability in advance before order

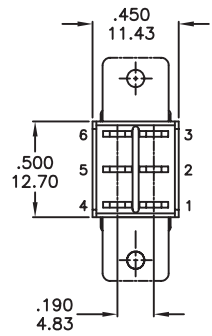
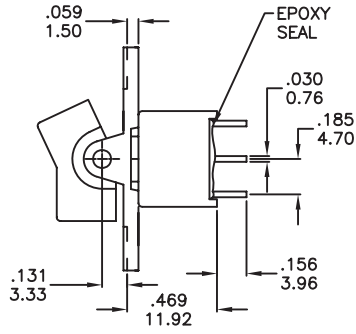
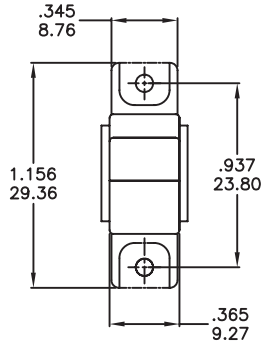
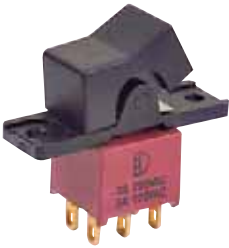
3A Sealed Miniature Rocker & Paddle Switches

### POLE OPTIONS



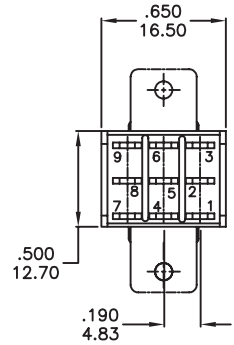
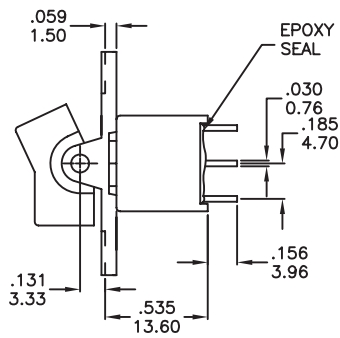
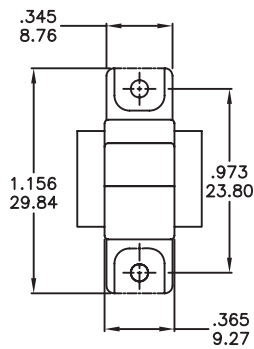
SPDT

Part No. Shown : 3AS1R12M1RE



**DPDT**

Part No. Shown : 3AD1R12M1RE

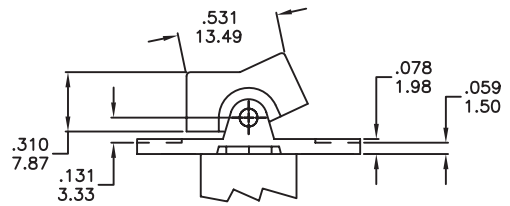
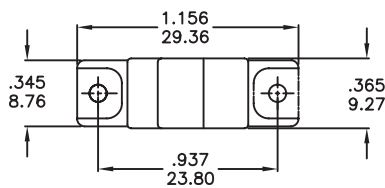
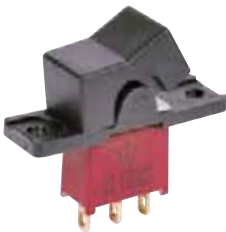


**3PDT**

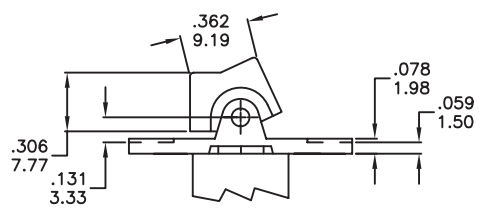
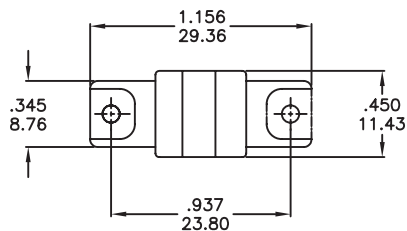
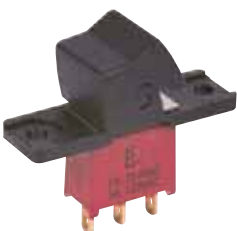
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### ACTUATOR OPTIONS FOR PANEL MOUNT ONLY

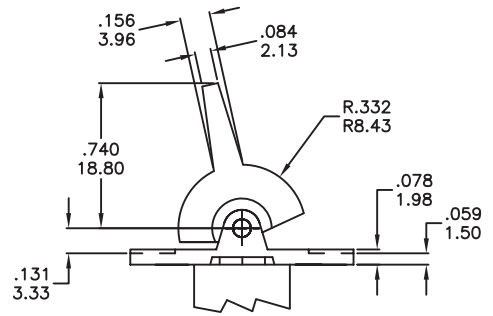
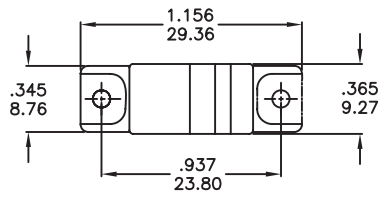
**R1**



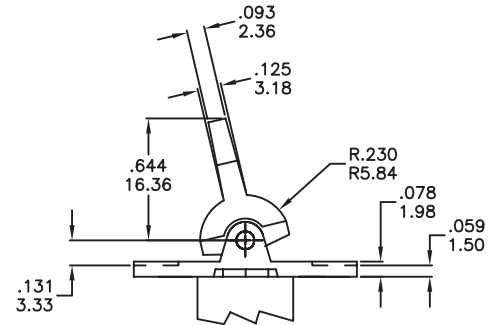
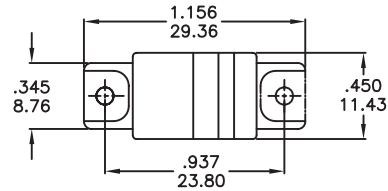
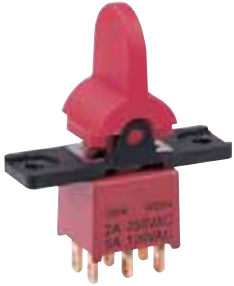
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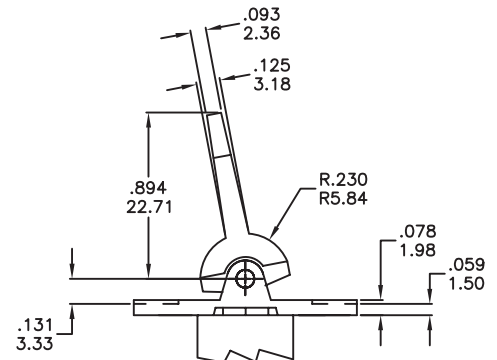
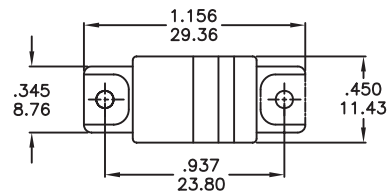
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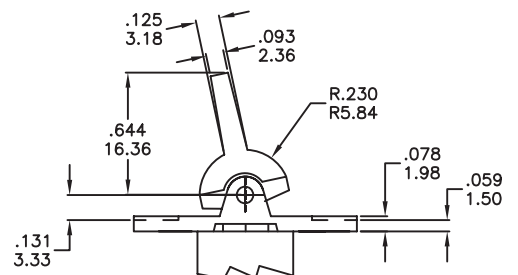
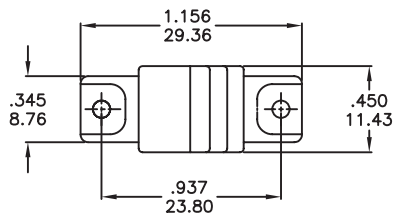
R12



R13

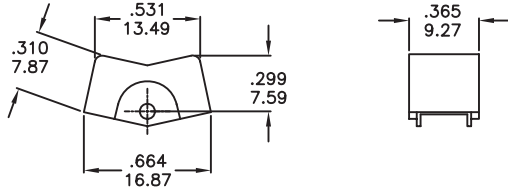


R16

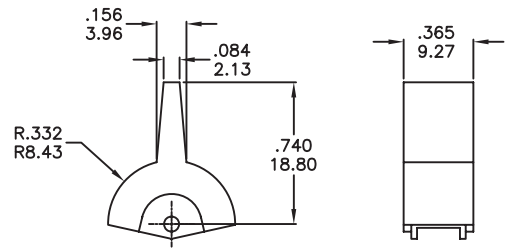


### ACTUATOR OPTIONS FOR P.C. MOUNT ONLY

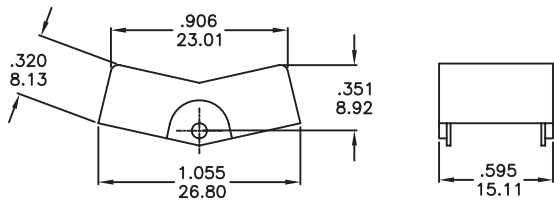
J1



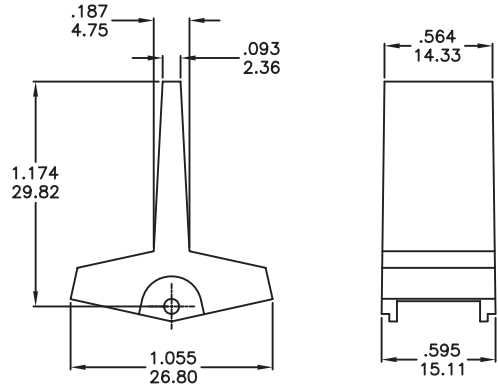
J2



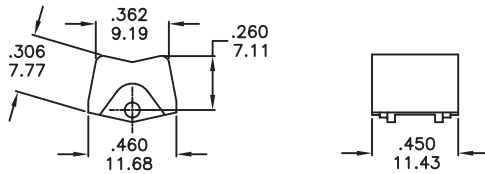
J3



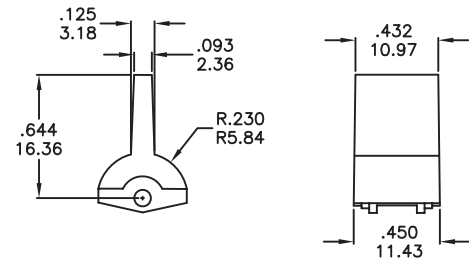
J4



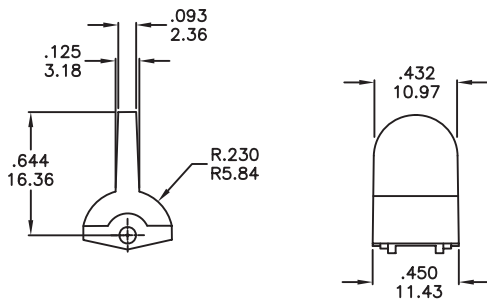
J5



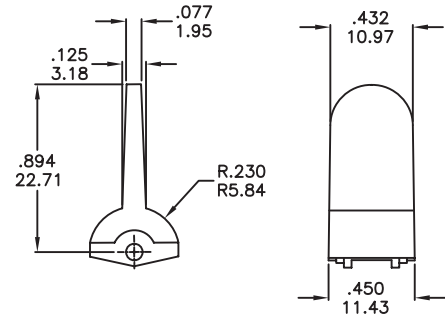
J6



J7



J8



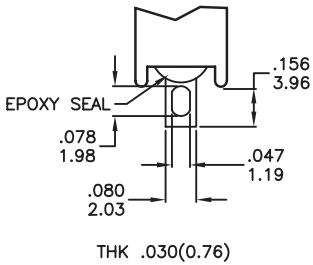
Actuator colors:

ITEM NO	COLOR
1	White
2	Black (Std)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

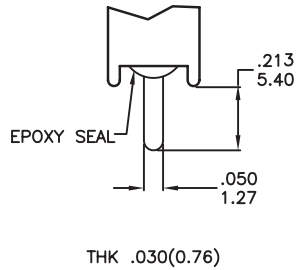
3A Sealed Miniature Rocker & Paddle Switches

### TERMINATION OPTIONS

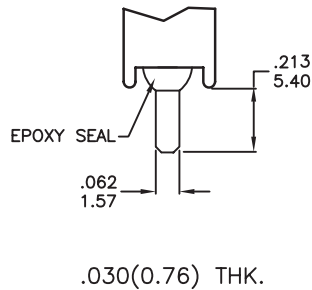
#### M1 SOLDER LUG



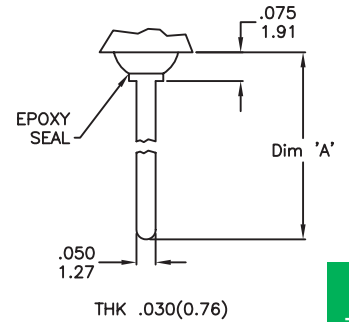
#### M2 PC THRU-HOLE



#### M3 QUICK CONNECT



#### M5 WIRE WRAP



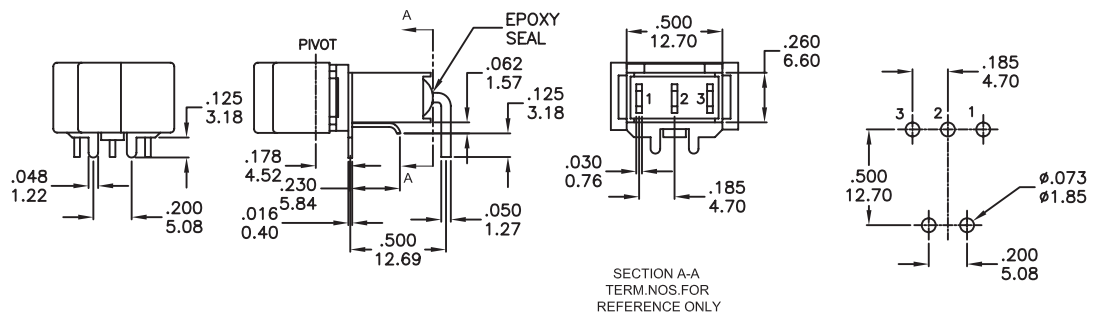
#### OTHER TERMINATION OPTIONS

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

RE Mating Quick Connector  
Amp P/N 60900-1

OPTION CODE	DIM. 'A'
M5-1	.737(18.70)
M5-2	.953(24.20)
M5-3	.415(10.55)
M5-4	1.062(26.97)

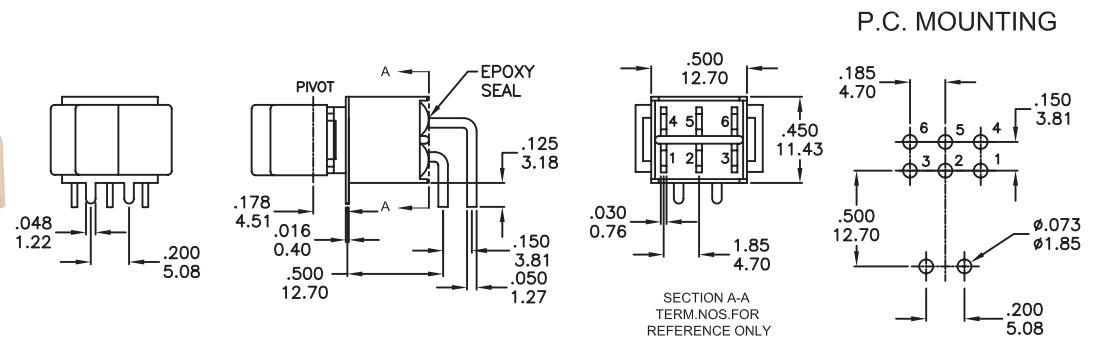
#### M6



#### SPDT

Part No. Shown : 3AS1J12M6RE

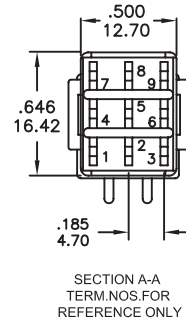
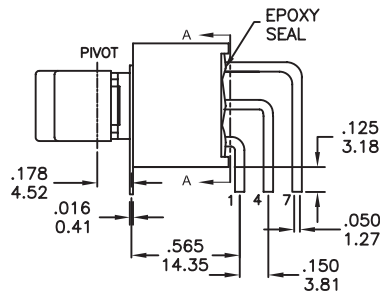
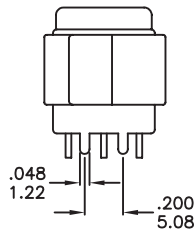
#### M6



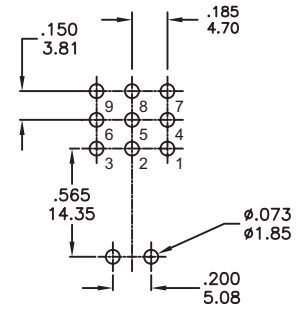
#### DPDT

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M6



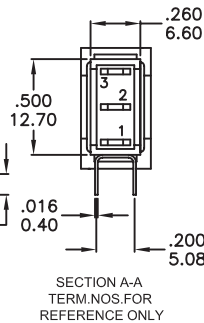
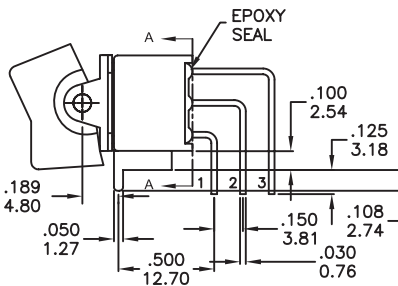
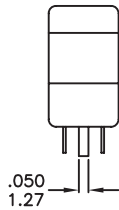
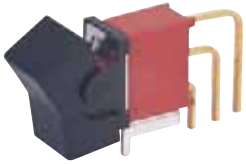
P.C. MOUNTING



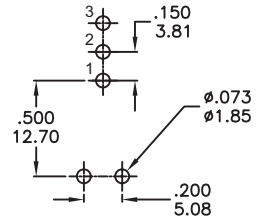
3PDT

Part No. Shown : 3A31J12M6RE

M7



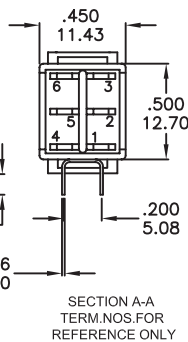
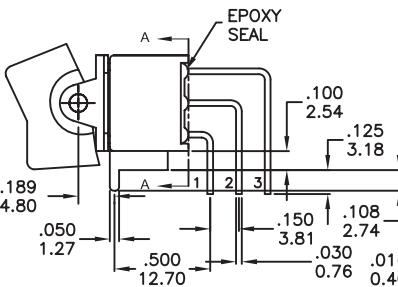
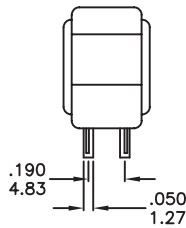
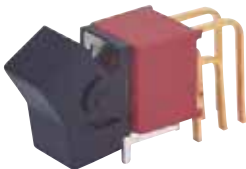
P.C. MOUNTING



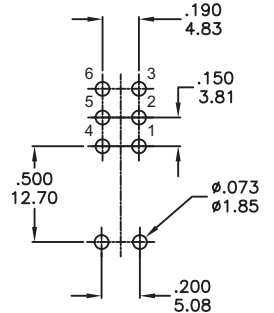
SPDT

Part No. Shown : 3AS1J12M7RE

M7



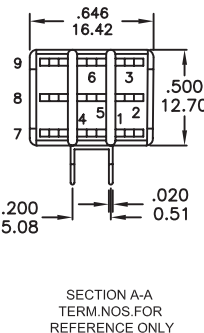
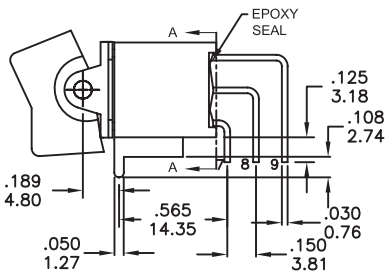
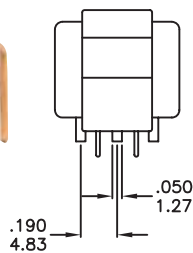
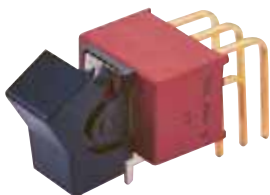
P.C. MOUNTING



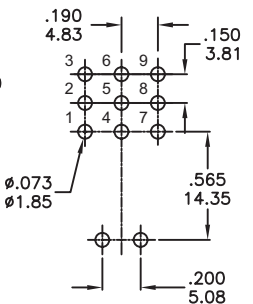
DPDT

Part No. Shown : 3AD1J12M7RE

M7



P.C. MOUNTING



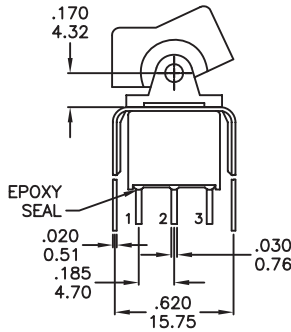
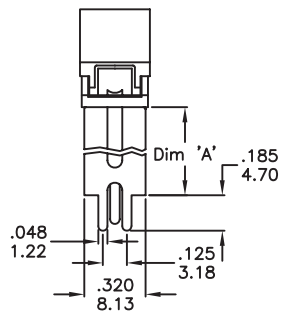
3PDT

Part No. Shown : 3A31J12M7RE

### VS2-VS3

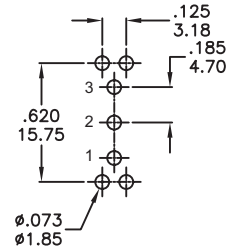


### SPDT



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

### P.C. MOUNTING

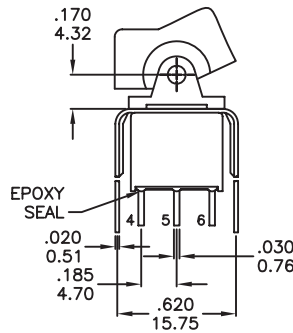
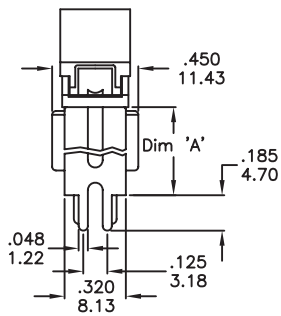


Part No. Shown : 3AS1J12VS2RE

### VS2-VS3

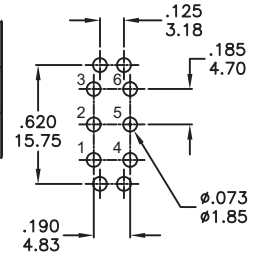


### DPDT



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

### P.C. MOUNTING

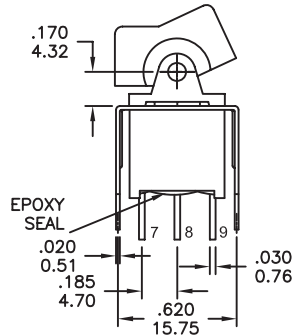
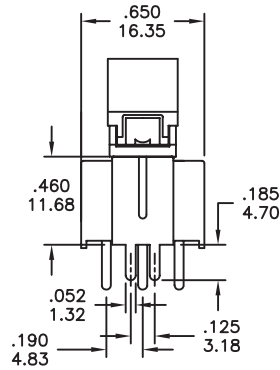


Part No. Shown : 3AD1J12VS2RE

### VS2-VS3

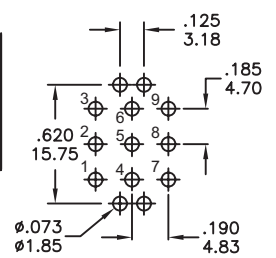


### 3PDT



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

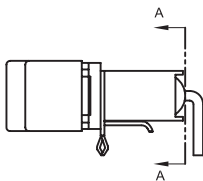
### P.C. MOUNTING



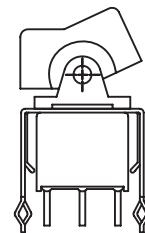
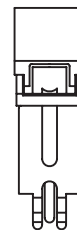
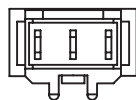
Part No. Shown : 3A31J12VS2RE

## SNAP-IN TERMINATION OPTIONS

### M6N



### V2N





### CONTACT MATERIAL OPTIONS

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



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

### 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: 5 ±1 seconds  
 (PCB is 1.6mm in thickness)

**SOLDERING** : Vapor phase

### Temperature Profile

Zone	Room temperature	Time ( Sec )
Pre-heat ( A )	150°C	Min 120s
Soak ( B )	180°C~200°C	Min 150s
Peak ( C )	200°C~235°C	Min 30s
Peak ( D )	235°C~260°C	Min 40s
Peak ( E )	260°C	Max 10s

