

### SPECIFICATIONS

**CONTACT RATING:** Dependent upon contact material See Page 56.

**MECHANICAL LIFE:** 40,000 make-and-break cycles.

**CONTACT RESISTANCE:** 10 mΩ max. initial @ 2-4VDC  
100mA for both silver and gold plated contacts.

**INSULATION RESISTANCE:** 1,000 MΩ min.

**DIELECTRIC STRENGTH:** 1,000 Vrms min. @ sea level.

**OPERATING TEMPERATURE:** -30°C to 85°C.

### MATERIALS

**CASE:** Diallyl phthalate (DAP) (UL94v-0).

**ACTUATOR:** Nylon, black std.

**BUSHING:** Brass or Zinc, nickel plated.

**HOUSING:** Stainless Steel.

**SWITCH SUPPORT:** Brass, tin plated or stainless steel.

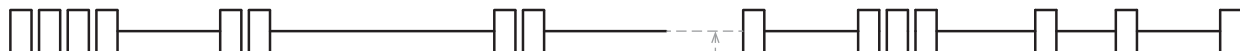
**TERMINAL/CONTACT:** Copper alloy, with silver or gold plated.  
(See Page 56)



3M  
Rocker Switches

## HOW TO ORDER

MODEL NO.      ACTUATOR      ACTUATOR COLOR      ACTUATOR MARKING      TERMINATIONS      TERMINAL SEAL      RoHS SOLDERING



- Model NO.
- 3MS1 SP On-None-On
  - 3MS2 SP On-None-Mom.
  - 3MS3 SP On-Off-On
  - 3MS4 SP Mom.-Off-Mom.
  - 3MS5 SP On-Off-Mom.
  - 3MD1 DP On-None-On
  - 3MD2 DP On-None-Mom.
  - 3MD3 DP On-Off-On
  - 3MD4 DP Mom.-Off-Mom.
  - 3MD5 DP On-Off-Mom.
  - 3MD6 DP On-On-On
  - 3MD7 DP Mom.-On-Mom.
  - 3MD8 DP On-On-Mom.
  - 3M31 3P On-None-On
  - 3M32 3P On-None-Mom.
  - 3M33 3P On-Off-On
  - 3M34 3P Mom.-Off-Mom.
  - 3M35 3P On-Off-Mom.
  - 3M41 4P On-None-On
  - 3M42 4P On-None-Mom.
  - 3M43 4P On-Off-On
  - 3M44 4P Mom.-Off-Mom.
  - 3M45 4P On-Off-Mom.
  - 3M46 4P On-On-On
  - 3M47 4P Mom.-On-Mom.
  - 3M48 4P On-On-Mom.
- Actuator
- R1 13.49 long rocker-support
  - R2 Lever-support
  - R3 23.01 long rocker-support
  - R4 Lever-support
  - R5 33.48 long rocker-support
  - R11 9.19 long rocker-support
  - R12 Lever-support
  - R13 Lever-support
  - R16 Lever-support
  - RB 17.75 long rocker-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
  - JB 17.75 long rocker

Actuator Color

ITEM NO	COLOR
0	Without
1	White
2	Black (Std)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

\* Besides standard color, other colors need to check stocks available.

Actuator marking

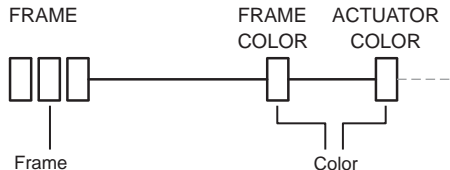
1	○ -
2	○
5	← →
6	○
7	— •
8	⊕
L	⊕
J	⊕ -

- Terminal plating
- Q Silver
  - R Gold
  - C Gold over silver
- Seal
- E EPOXY (std)
  - N NO EPOXY

- Terminations
- M1 Solder Lug
  - M2 PC thru-hole
  - M3 Quick Connect
  - M51 18.70 high, wire wrap
  - M52 24.20 high, wire wrap
  - M53 10.55 high, wire wrap
  - M54 26.97 high, wire wrap
  - M6 Right angle, 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
  - VS4 11.68 high, V-bracket
  - VS5 16.00 high, V-bracket

RoHS soldering

- S RoHS & Lead Free



- Frame
- R6 Rocker
  - R6K Rocker with snap-in
  - R7 Lever
  - R7K Lever with snap-in
  - R8 Lever
  - R9 Lever
  - R17 Rocker with frame for LED, snap-in
  - R18 Lever with frame for LED, snap-in

Color

ITEM NO	COLOR
0	Without
1	White
2	Black (Std)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

\* Besides standard color, other colors need to check stocks available.

# 3M Series

Miniature Rocker & Paddle Switches

## 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	Q1311	3MS1	ON	NONE	ON		N/A	2-1
	Q1312	3MS2	ON	NONE	MOM			
	Q1313	3MS3	ON	OFF	ON			
	Q1314	3MS4	MOM	OFF	MOM			
	Q1315	3MS5	ON	OFF	MOM			
DP	Q1321	3MD1	ON	NONE	ON		N/A	2-1,5-4
	Q1322	3MD2	ON	NONE	MOM			
	Q1323	3MD3	ON	OFF	ON			
	Q1324	3MD4	MOM	OFF	MOM			
	Q1325	3MD5	ON	OFF	MOM			
	Q1326	3MD6	ON	ON	ON			
	▲ Q1327	3MD7	MOM	ON	MOM			
	▲ Q1328	3MD8	ON	ON	MOM			
3P	Q1331	3M31	ON	NONE	ON		N/A	2-1,5-4,8-7
	Q1332	3M32	ON	NONE	MOM			
	Q1333	3M33	ON	OFF	ON			
	Q1334	3M34	MOM	OFF	MOM			
	Q1335	3M35	ON	OFF	MOM			
4P	Q1341	3M41	ON	NONE	ON		N/A	2-1,5-4,8-7,11-10
	Q1342	3M42	ON	NONE	MOM			
	Q1343	3M43	ON	OFF	ON			
	Q1344	3M44	MOM	OFF	MOM			
	Q1345	3M45	ON	OFF	MOM			
	Q1346	3M46	ON	ON	ON			
	▲ Q1347	3M47	MOM	ON	MOM			
	▲ Q1348	3M48	ON	ON	MOM			

MOM=MOMENTARY

▲ Please check the availability in advance before order

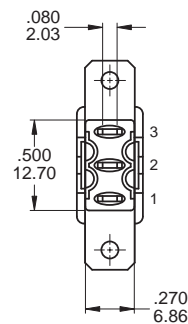
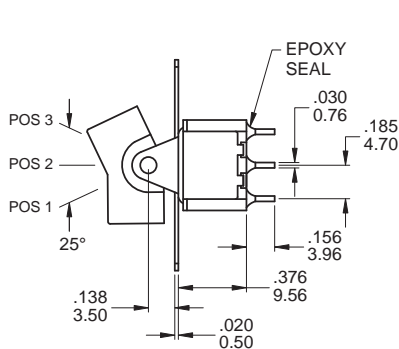
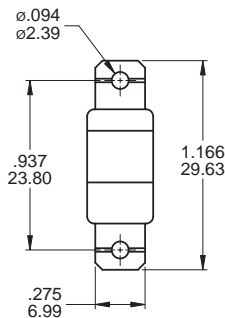


3M  
Rocker Switches

### POLE OPTIONS

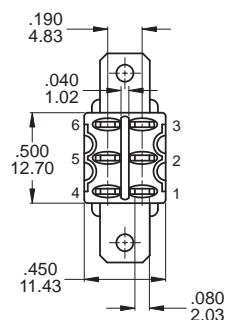
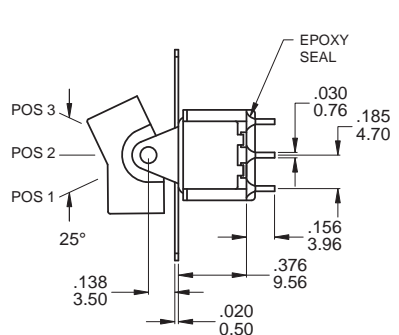
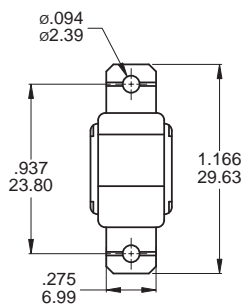
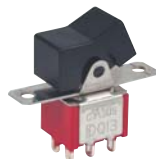


3M  
Rocker Switches



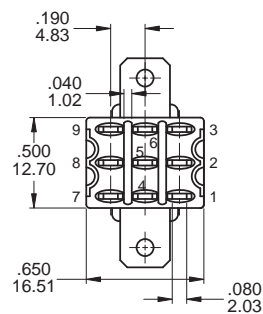
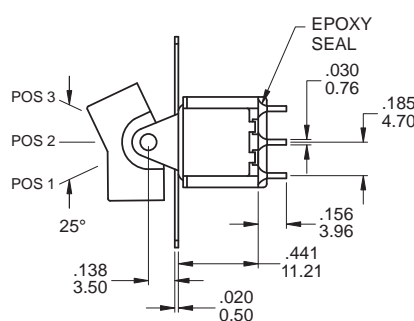
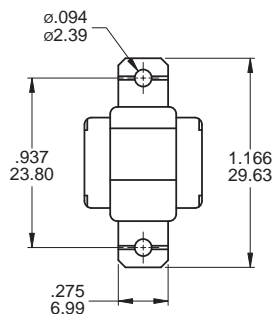
SPDT

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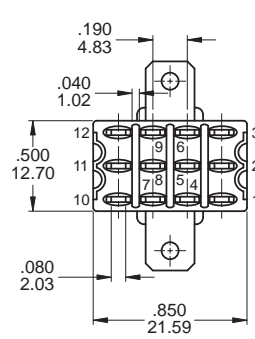
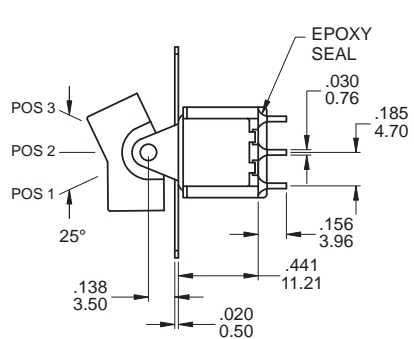
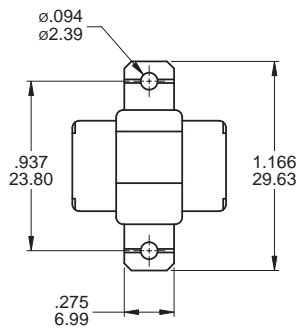
DPDT

Part No. Shown : 3MD1R102M1QES



3PDT

Part No. Shown : 3M31R102M1QES



4PDT

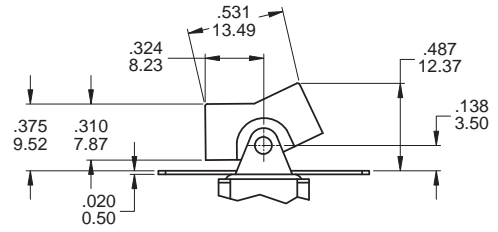
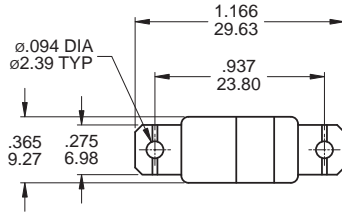
Part No. Shown : 3M41R102M1QES

# 3M Series

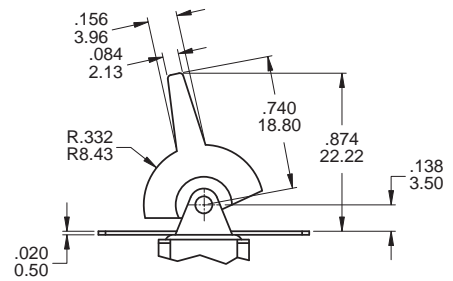
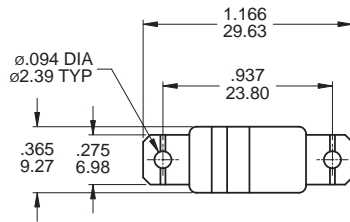
Miniature Rocker & Paddle Switches

## ACTUATOR OPTIONS FOR PANEL MOUNT ONLY

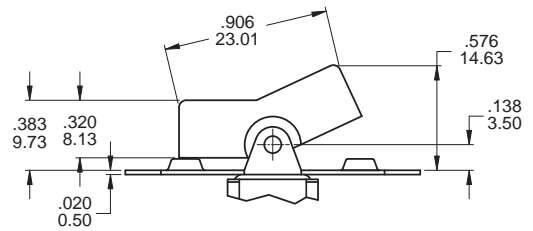
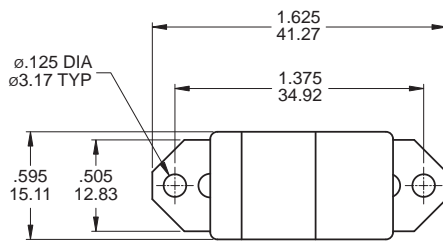
### R1



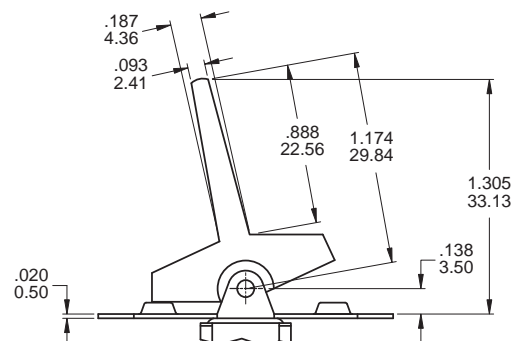
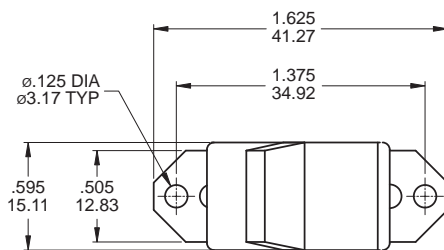
### R2



### R3



### R4

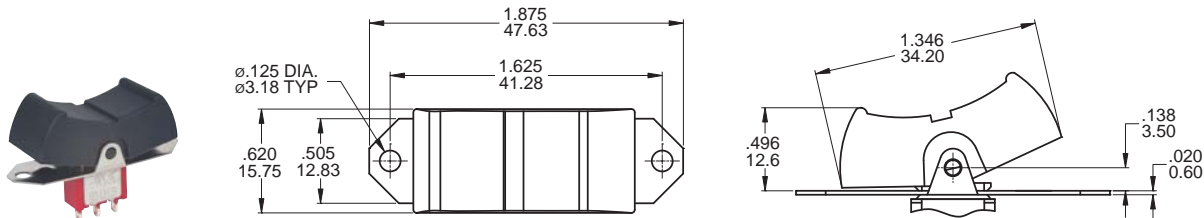


### ACTUATOR OPTIONS SNAP-IN FRONT MOUNT

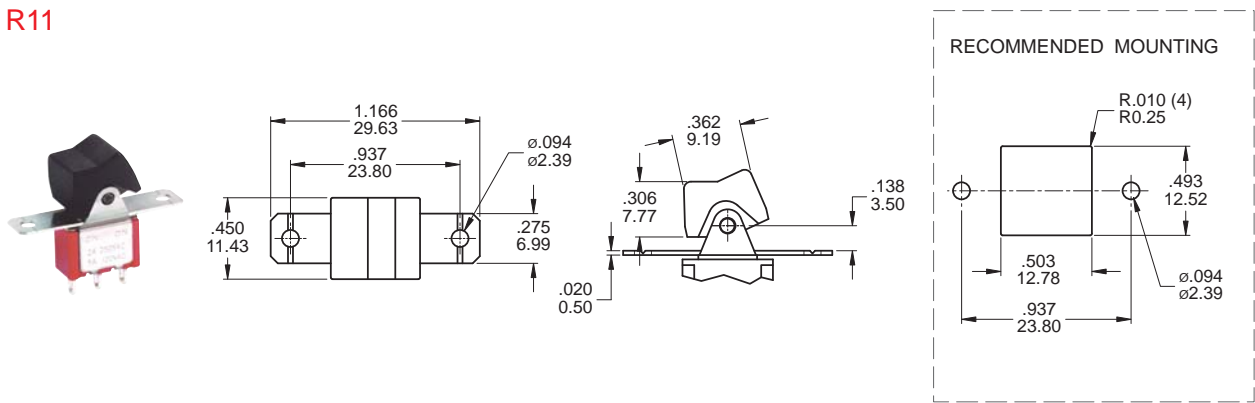


3M  
Rocker Switches

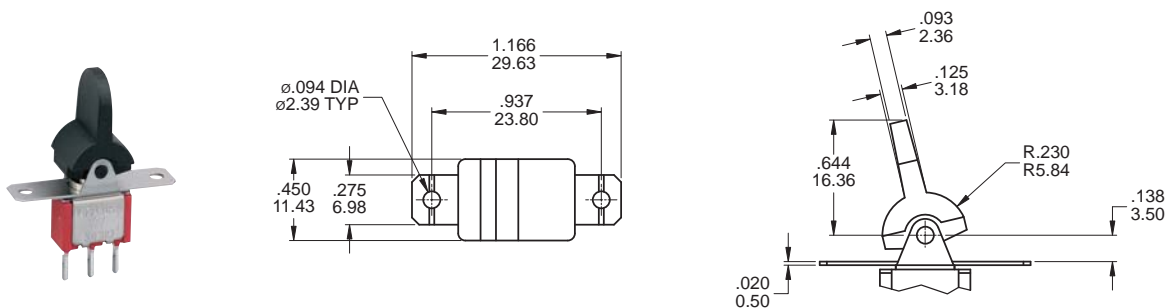
#### R5



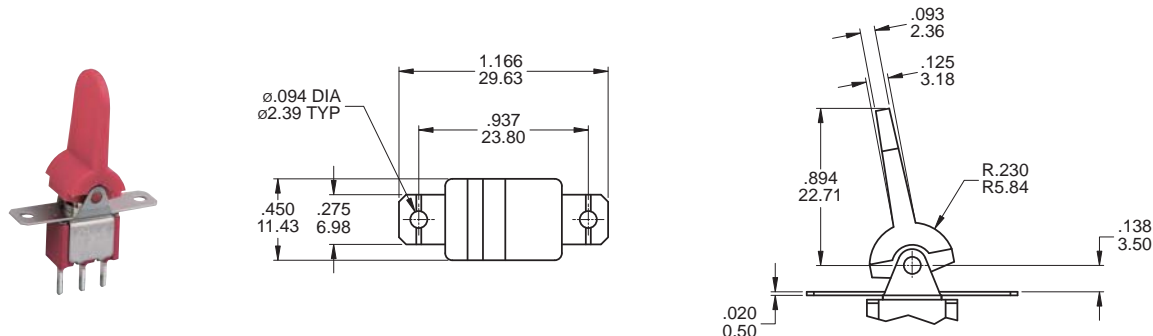
#### R11



#### R12



#### R13



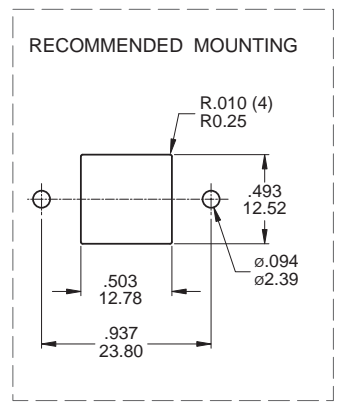
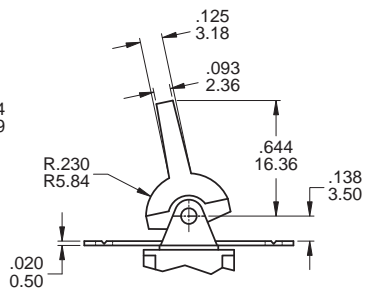
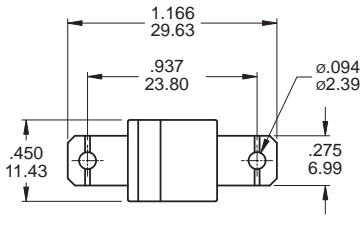
# 3M Series

Miniature Rocker & Paddle Switches

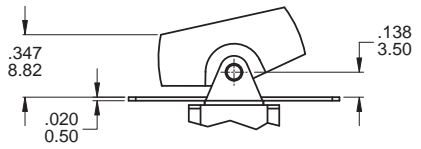
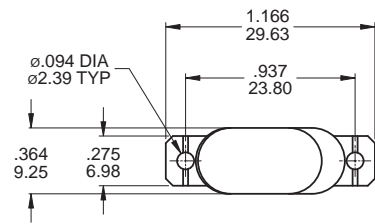


3M  
Rocker Switches

## R16

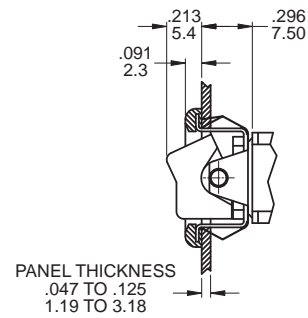
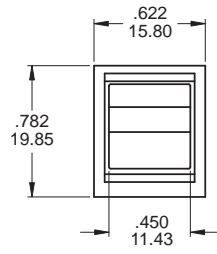


## RB

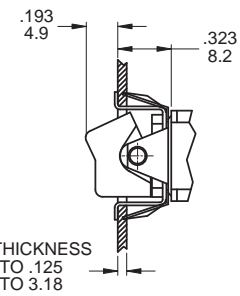


## ACTUATOR OPTIONS SNAP-IN FRONT MOUNT

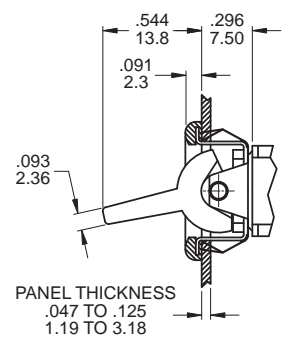
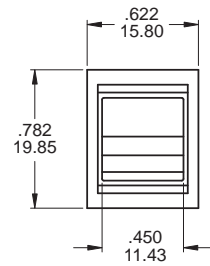
### R6



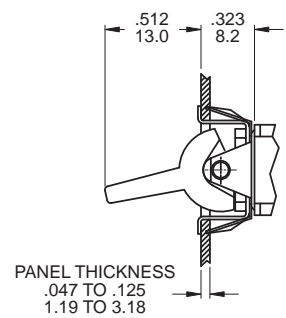
### R6K Snap-in



### R7

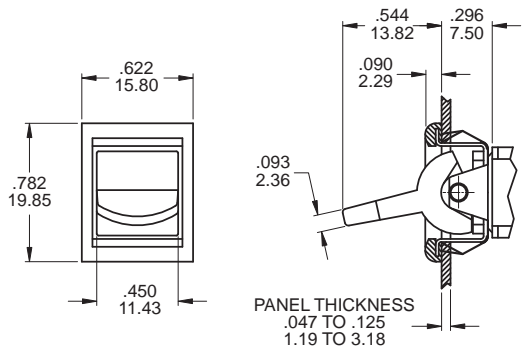


### R7K Snap-in

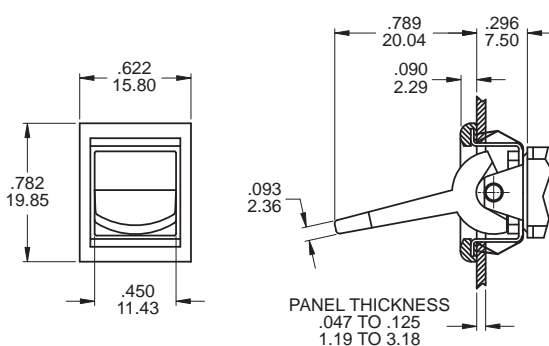




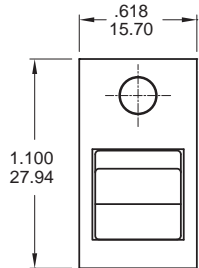
### R8



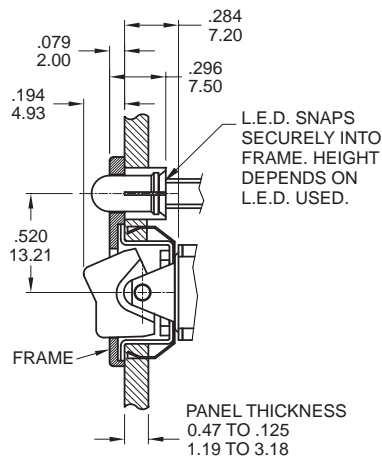
### R9



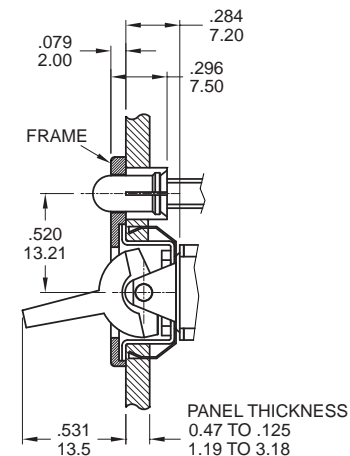
### R18



### ▲ R17



### ▲ R17



#### CAP and FRAME colors

OPTION CODE	COLOR
1	WHITE
2	BLACK (std)
3	RED

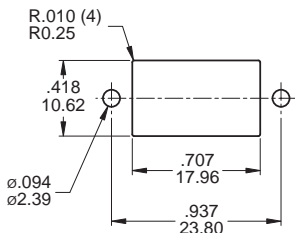
#### LED colors

OPTION CODE	COLOR
R	RED (std)
O	ORANGE
G	GREEN

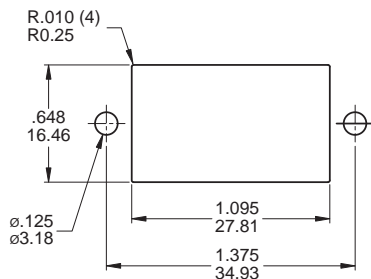
\* Besides standard color, other colors need to check stocks available.

## PANEL MOUNTING

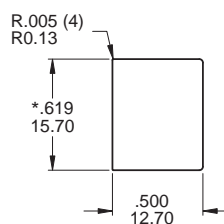
### For R1-R2



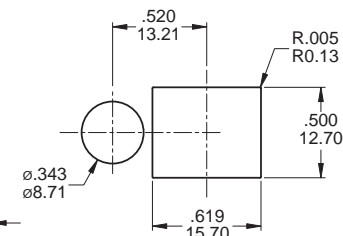
### For R3-R4



### For R6-R9



### For R17-R18



\* For R6 and R7: Increase this dim. to .620/.625(15,75/15,88) for .060/.125 (1,52/3,18) thk. panels.

\* For R8 and R9: Increase this dim. to .620/.625(15,75/15,88) for .091/.125 (2,31/3,18) thk. panels.

# 3M Series

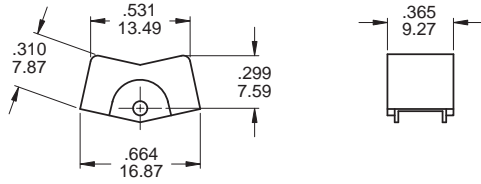
Miniature Rocker & Paddle Switches

## ACTUATOR OPTIONS FOR P.C. MOUNT ONLY

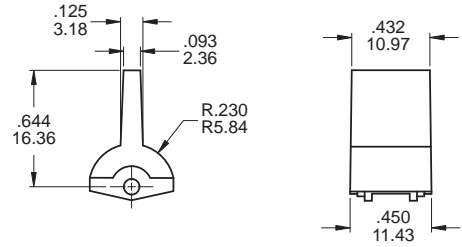


3M  
Rocker Switches

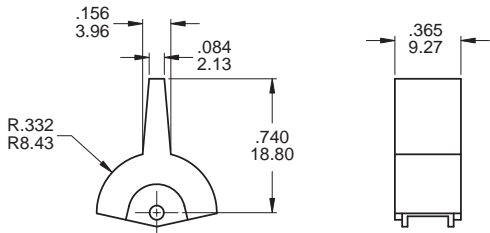
J1



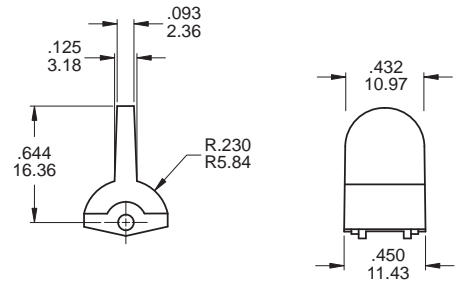
J6



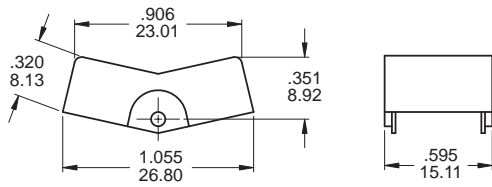
J2



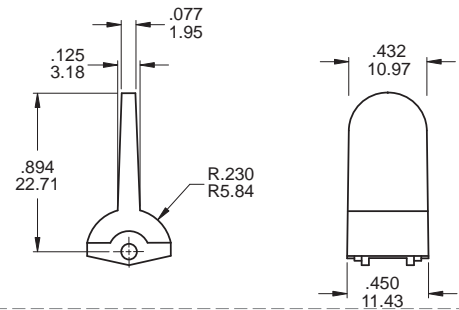
J7



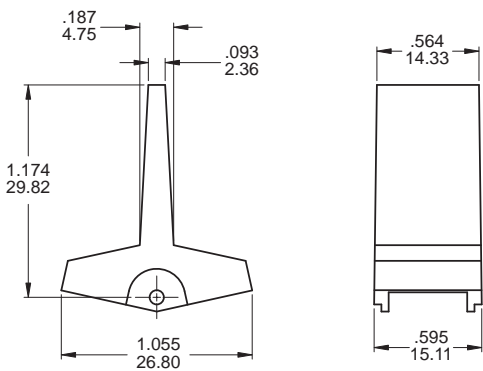
J3



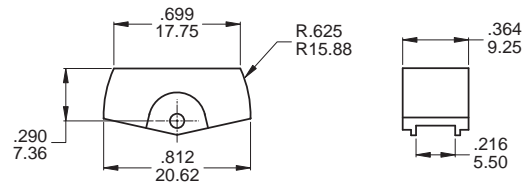
J8



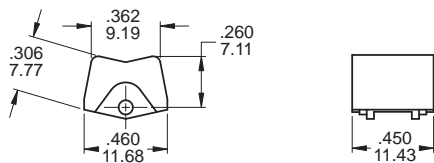
J4



JB



J5



### Actuator colors:

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

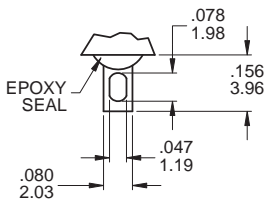
\* Besides standard color, other colors need to check stocks available.





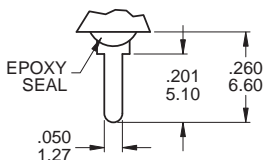
### TERMINATION OPTIONS

#### M1 Solder lug



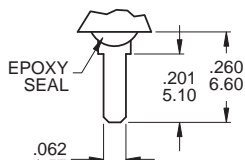
THK .030(0.76)

#### M2 PC Thru-hole



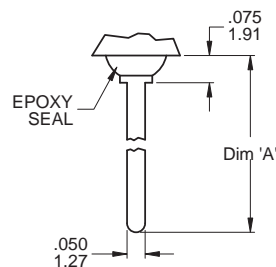
THK .030(0.76)

#### M3 Quick connect



THK .030(0.76)

#### M5 Wire Wrap



THK .030(0.76)

### 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

**VS4** Vertical bracket P.C. Mount

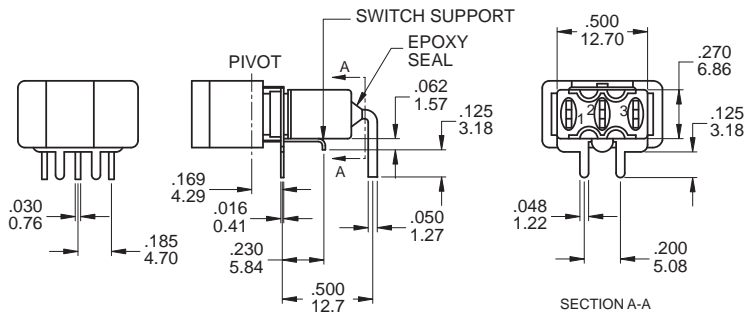
**VS5** Vertical bracket P.C. Mount

**V2N** Vertical bracket P.C. Mount with snap-in bracket

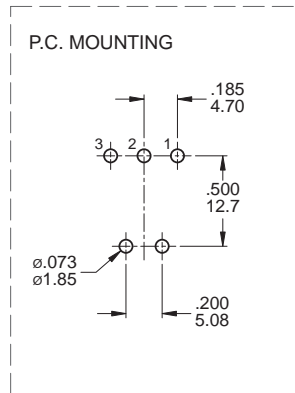
OPTION CODE	DIM. 'A'
M51	.736 (18.70)
M52	.953 (24.20)
M53	.415 (10.55)
M54	1.062 (26.97)

\* Shown with J1 Actuator

#### M6



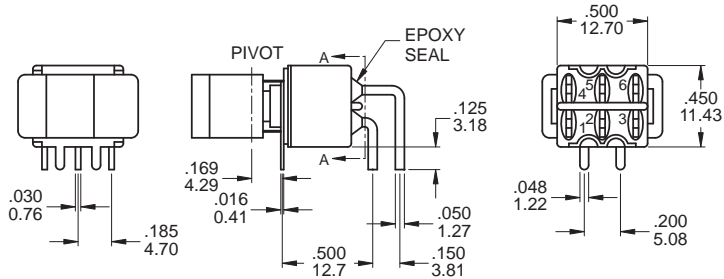
SECTION A-A  
TERM.NOS.FOR  
REFERENCE ONLY



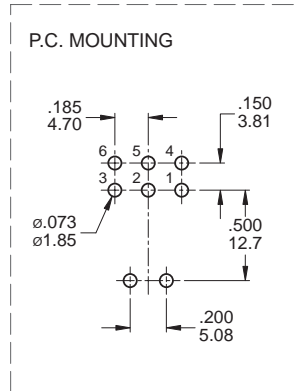
#### SPDT

Part No. Shown : 3MS1J102M6QES

#### M7



SECTION A-A  
TERM.NOS.FOR  
REFERENCE ONLY



#### DPDT

Part No. Shown : 3MD1J102M6QES

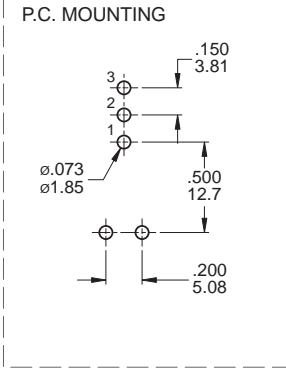
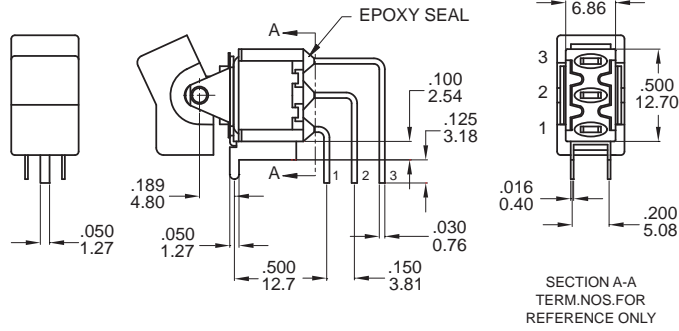
# 3M Series

Miniature Rocker & Paddle Switches



3M  
Rocker Switches

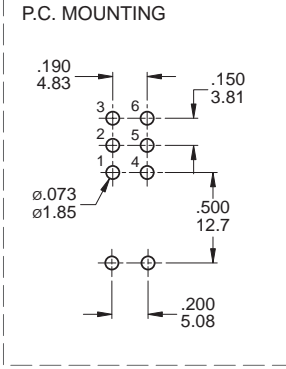
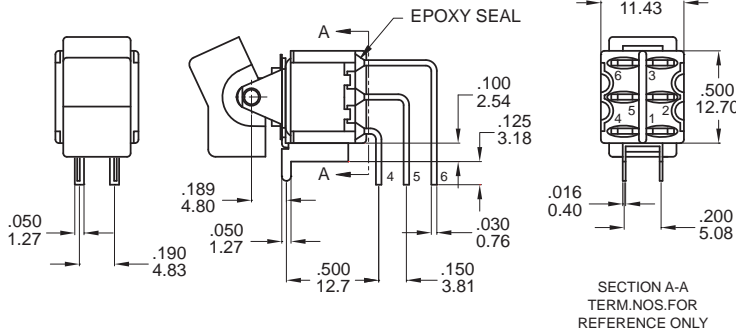
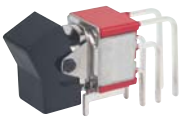
M7



SPDT

Part No. Shown : 3MS1J102M7QES

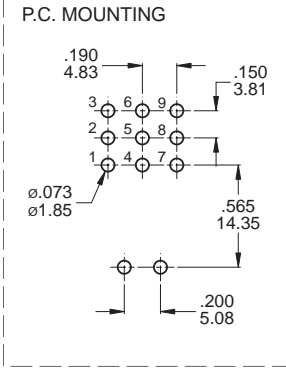
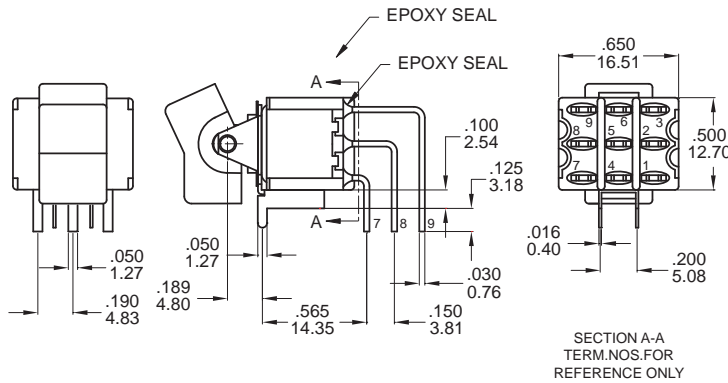
M7



DPDT

Part No. Shown : 3MD1J102M7QES

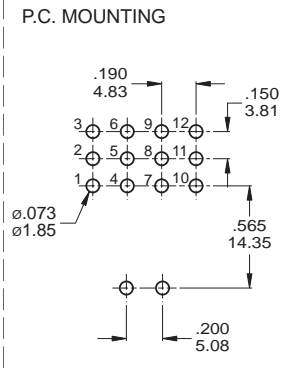
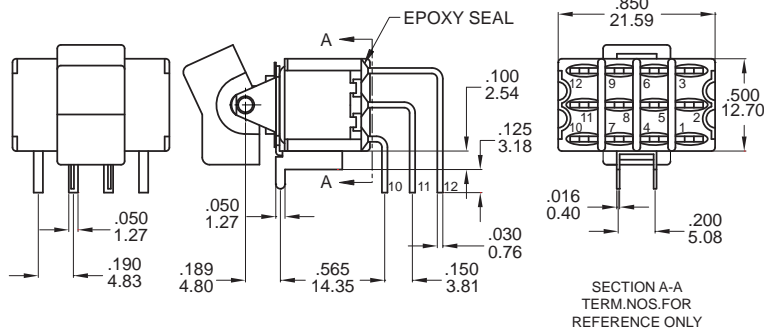
M7



3PDT

Part No. Shown : 3M31J102M7QES

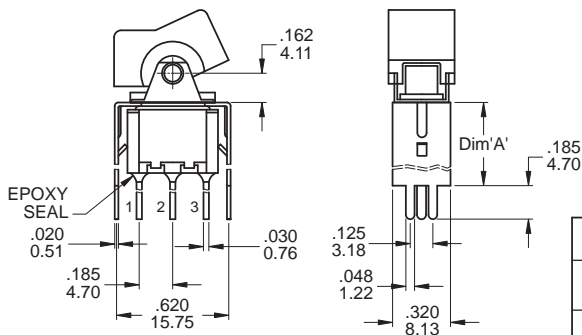
M7



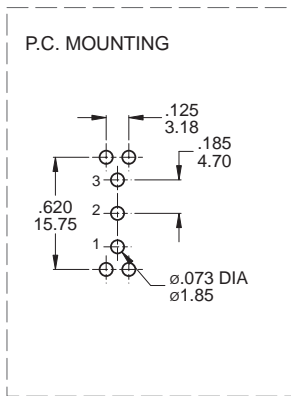
4PDT

Part No. Shown : 3M41J102M7RES

### VS2 - VS3



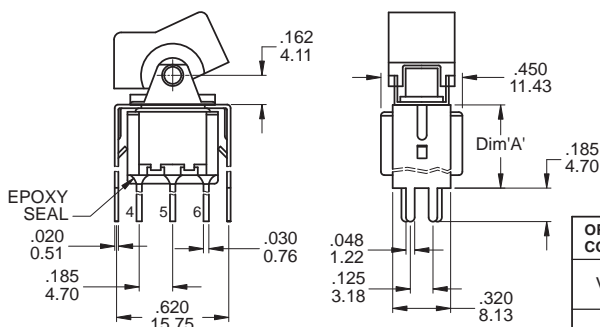
OPTION CODE	DIM. 'A'
VS2	.460 11.68
VS3	.630 16.00



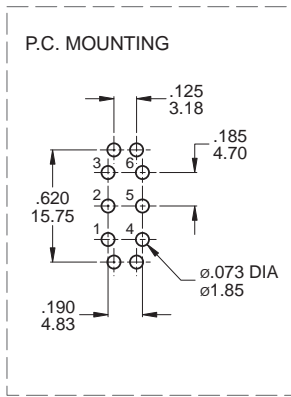
### SPDT

Part No. Shown : 3MS1J102VS2QES

### VS2 - VS3



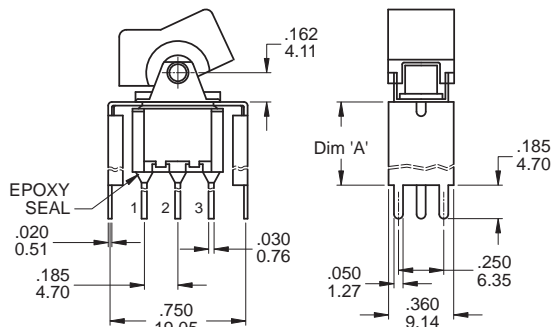
OPTION CODE	DIM. 'A'
VS2	.460 11.68
VS3	.630 16.00



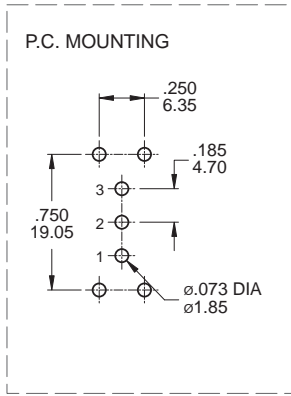
### DPDT

Part No. Shown : 3MD1J102VS2QES

### VS4 - VS5



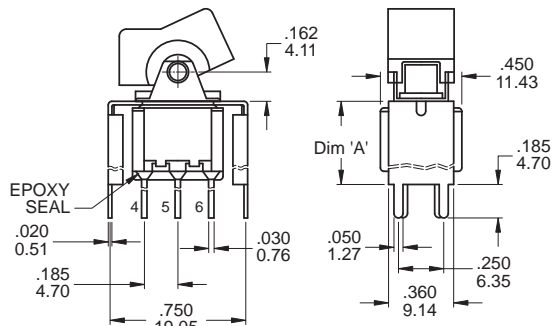
OPTION CODE	DIM. 'A'
VS4	.460 11.68
VS5	.630 16.00



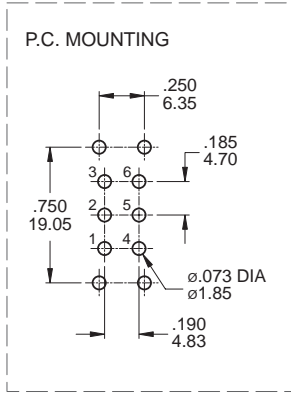
### SPDT

Part No. Shown : 3MS1J102VS4QES

### VS4 - VS5



OPTION CODE	DIM. 'A'
VS4	.460 11.68
VS5	.630 16.00



### DPDT

Part No. Shown : 3MD1J102VS5QES

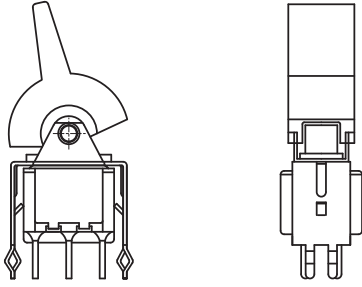


# 3M Series

Miniature Rocker & Paddle Switches

## SNAP-IN TERMINATION OPTIONS

V2N



## CONTACT MATERIAL OPTIONS

	CONTACT PLATING	TERMINAL PLATING	RATINGS
Q	Silver	Q = Silver	5 Amps with resistant load @ 120VAC or 28VDC
C	Gold over Silver	C = Gold over silver	2 Amps with resistant load @ 250VAC
R	Gold	R = Gold	0.4 Volt - Amps ( VA ) max. @ 20V max. ( AC or DC )

## 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: 270 ± 5°C  
Duration of Solder Immersion: Max 5 sec. (PCB is 1.6mm in thickness)



3M  
Rocker Switches