

### 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 PLATING	SEAL	RoHS SOLDERING
Model NO.	Actuator	Actuator Color	Actuator marking		Terminal plating	Seal	RoHS soldering
3MS1	SP On-None-On	R1 13.49 long rocker-support	1	M1 Solder Lug	Q Silver	E EPOXY (std)	S RoHS & Lead Free
3MS2	SP On-None-Mom.	R2 Lever-support	2	M2 PC thru-hole	R Gold	N NO EPOXY	
3MS3	SP On-Off-On	R3 23.01 long rocker-support	5	M3 Quick Connect	C Gold over silver		
3MS4	SP Mom.-Off-Mom.	R4 Lever-support	6	M51 18.70 high, wire wrap			
3MS5	SP On-Off-Mom.	R5 33.48 long rocker-support	7	M52 24.20 high, wire wrap			
3MD1	DP On-None-On	R11 9.19 long rocker-support	8	M53 10.55 high, wire wrap			
3MD2	DP On-None-Mom.	R12 Lever-support	L	M54 26.97 high, wire wrap			
3MD3	DP On-Off-On	R13 Lever-support	J	M6 Right angle, PC thru-hole			
3MD4	DP Mom.-Off-Mom.	R16 Lever-support		M7 Vertical right angle, PC thru-hole			
3MD5	DP On-Off-Mom.	RB 17.75 long rocker-support		VS2 11.68 high, V-bracket			
3MD6	DP On-On-On	<b>P.C. Mount only</b>		V2N 11.68 high, snap-in V-bracket			
3MD7	DP Mom.-On-Mom.	J1 13.49 long rocker		VS3 16.00 high, V-bracket			
3MD8	DP On-On-Mom.	J2 Lever		VS4 11.68 high, V-bracket			
3M31	3P On-None-On	J3 23.01 long rocker		VS5 16.00 high, V-bracket			
3M32	3P On-None-Mom.	J4 Lever					
3M33	3P On-Off-On	J5 9.19 long rocker					
3M34	3P Mom.-Off-Mom.	J6 Lever					
3M35	3P On-Off-Mom.	J7 Lever					
3M41	4P On-None-On	J8 Lever					
3M42	4P On-None-Mom.	JB 17.75 long rocker					
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.						

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.

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			

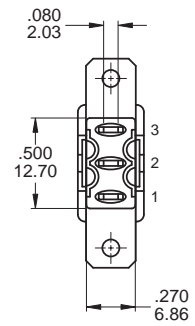
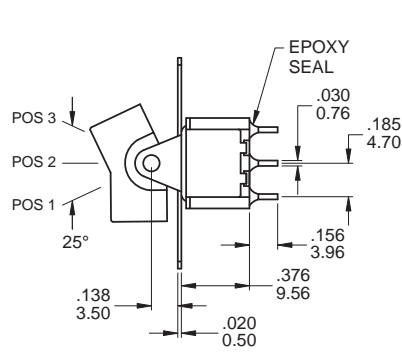
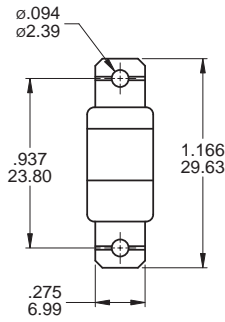
MOM=MOMENTARY

▲ Please check the availability in advance before order



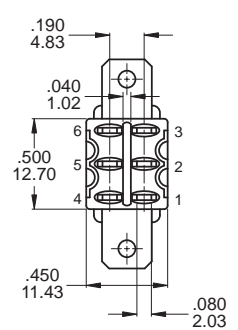
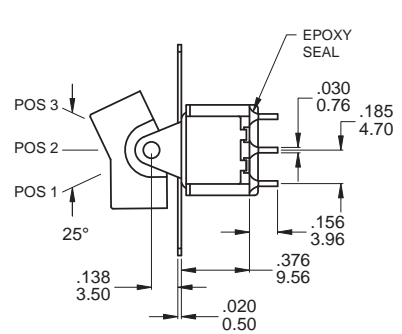
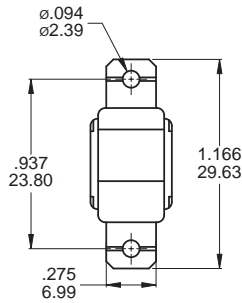
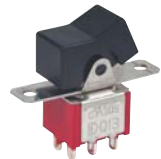
3M  
Rocker Switches

### POLE OPTIONS



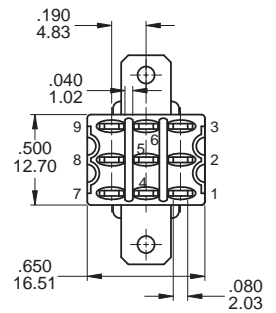
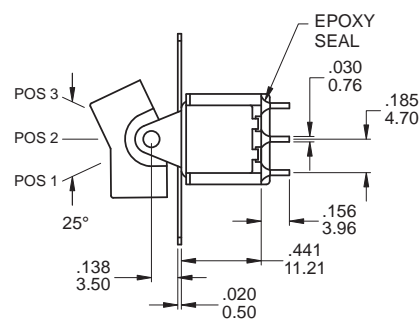
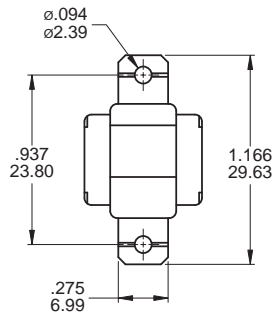
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Part No. Shown : 3MS1R102M1QES



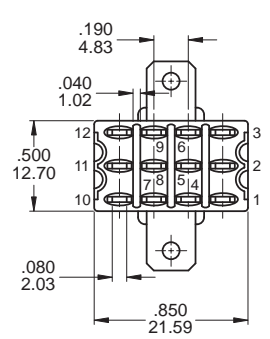
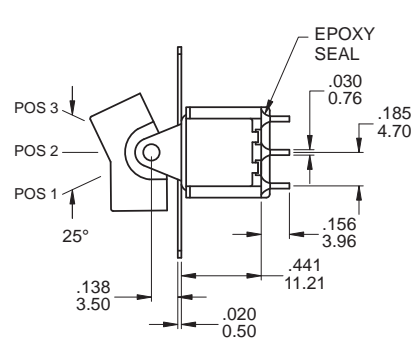
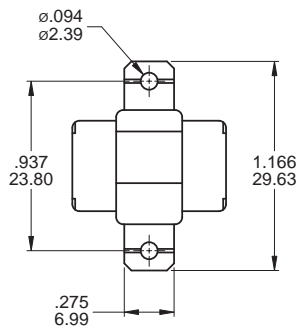
**DPDT**

Part No. Shown : 3MD1R102M1QES



**3PDT**

Part No. Shown : 3M31R102M1QES



**4PDT**

Part No. Shown : 3M41R102M1QES

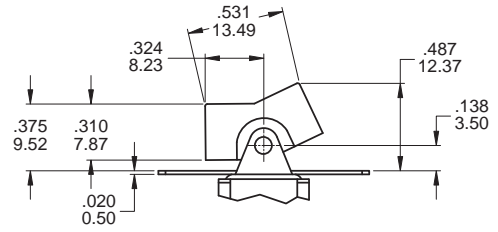
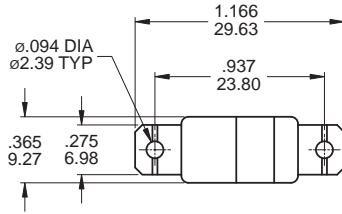


# 3M Series

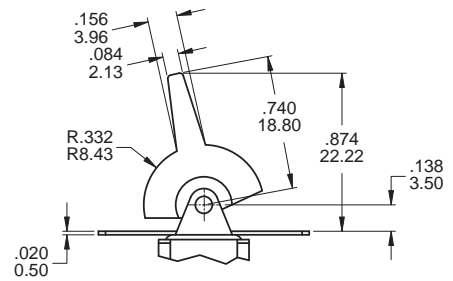
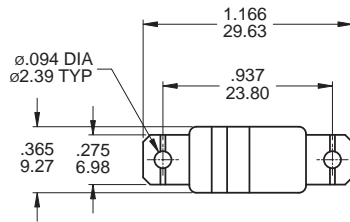
Miniature Rocker & Paddle Switches

## ACTUATOR OPTIONS FOR PANEL MOUNT ONLY

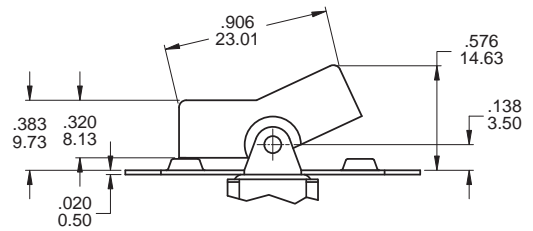
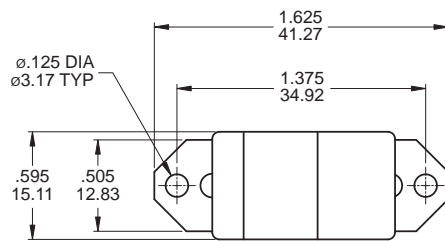
### R1



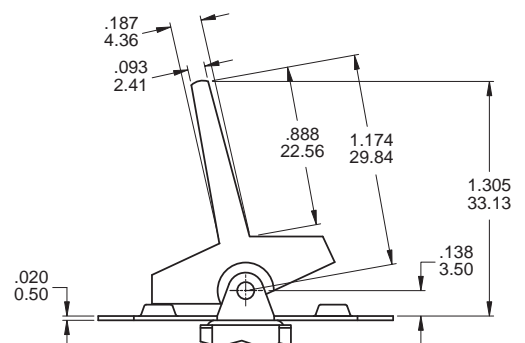
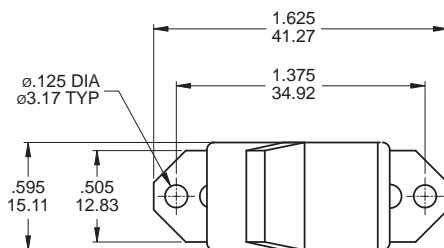
### R2



### R3



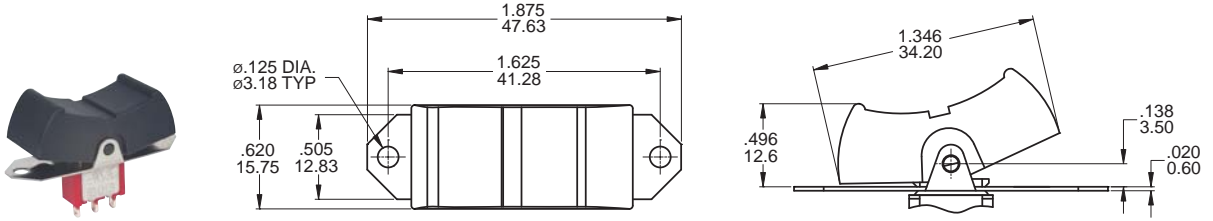
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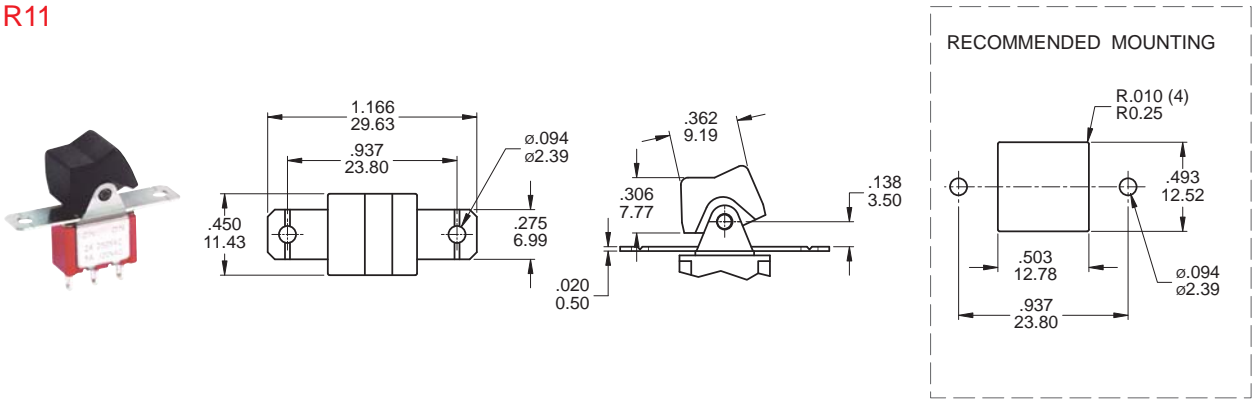
3M  
Rocker Switches

### ACTUATOR OPTIONS SNAP-IN FRONT MOUNT

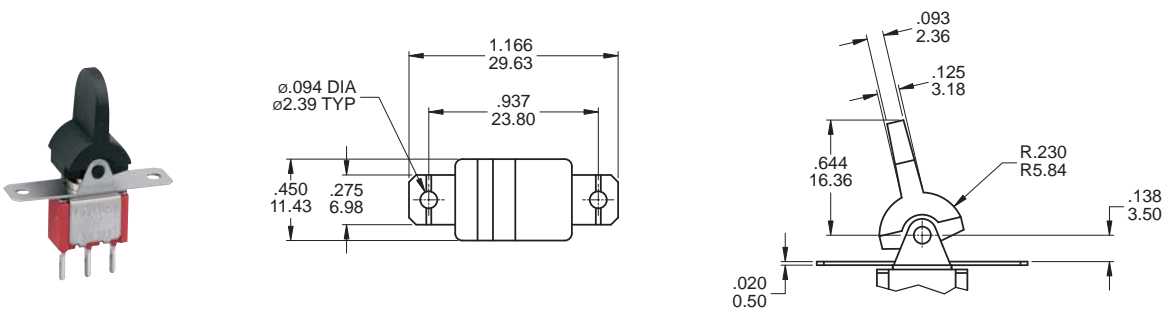
#### R5



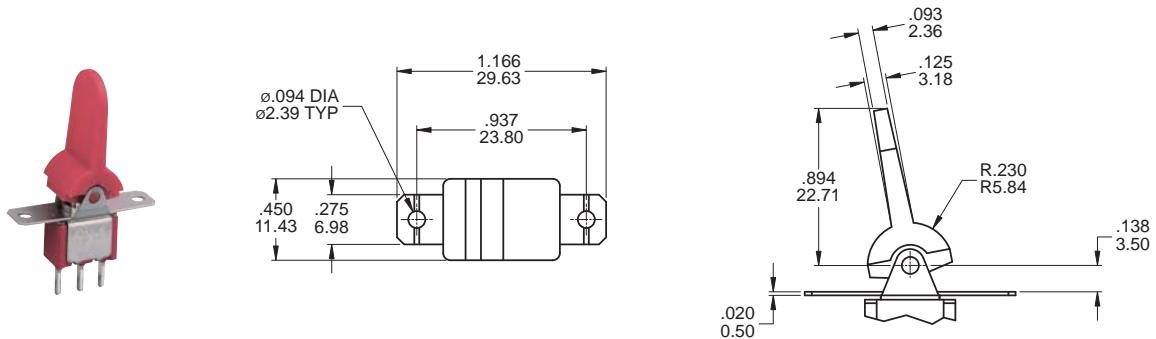
#### R11



#### R12



#### R13



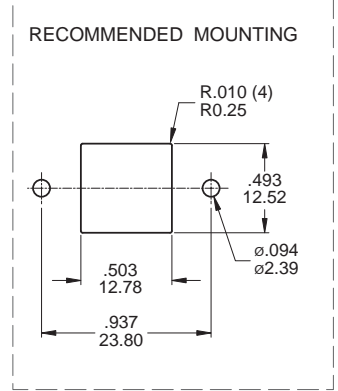
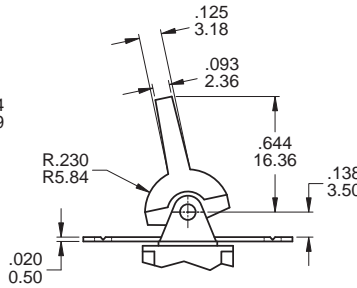
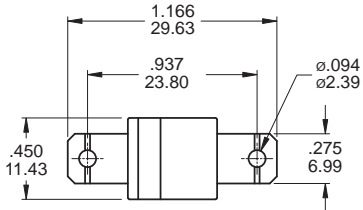
# 3M Series

Miniature Rocker & Paddle Switches

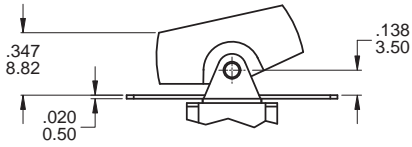
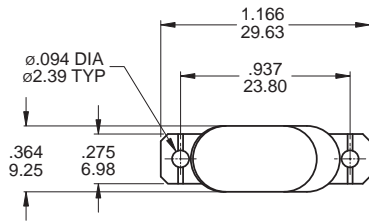


3M  
Rocker Switches

## R16

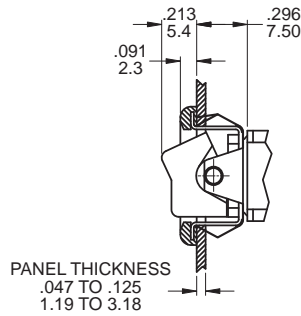
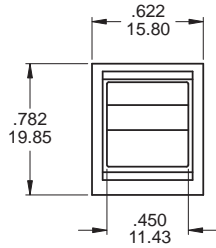


## RB

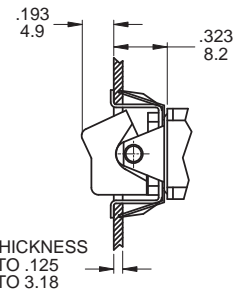


## ACTUATOR OPTIONS SNAP-IN FRONT MOUNT

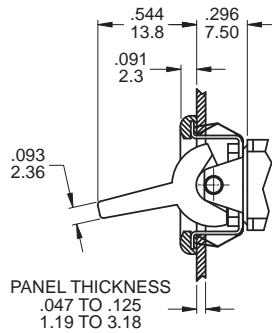
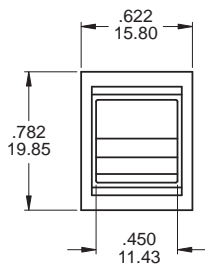
### R6



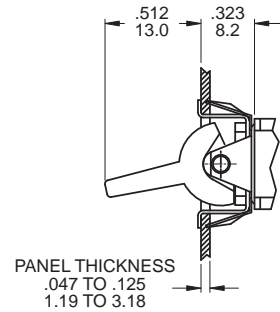
### R6K Snap-in



### R7

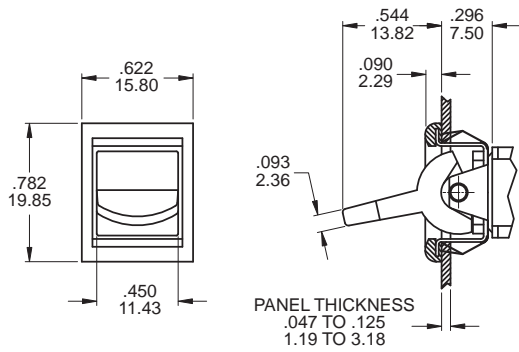


### R7K Snap-in

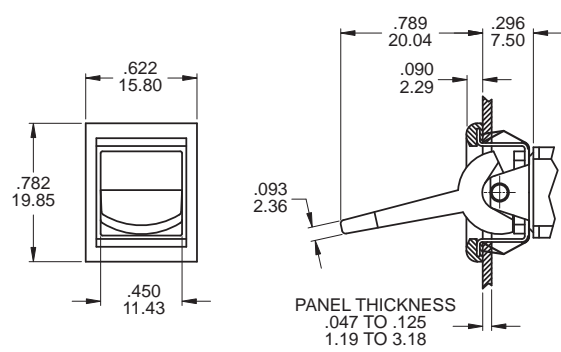




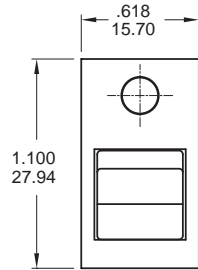
R8



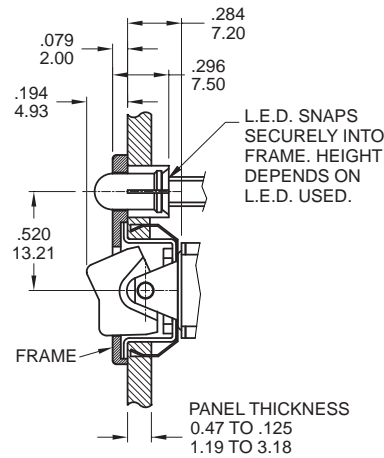
R9



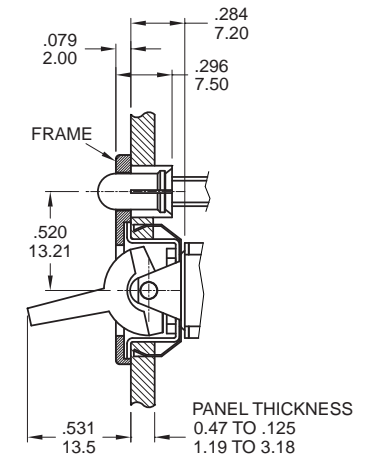
R18



▲ R17



▲ R17



**CAP and FRAME colors**

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

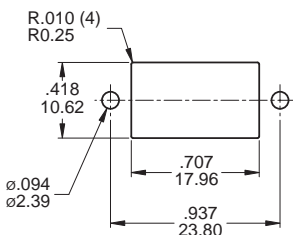
**LED colors**

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

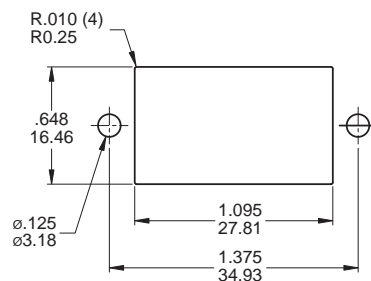
\* Besides standard color, other colors need to check stocks available.

## PANEL MOUNTING

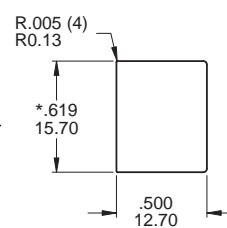
For R1-R2



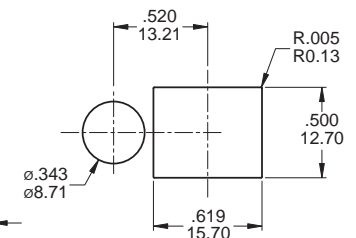
For R3-R4



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

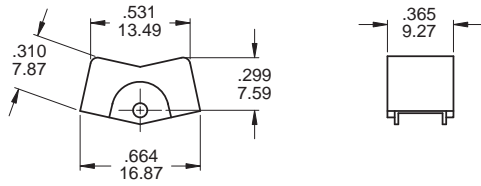
Miniature Rocker & Paddle Switches

## ACTUATOR OPTIONS FOR P.C. MOUNT ONLY

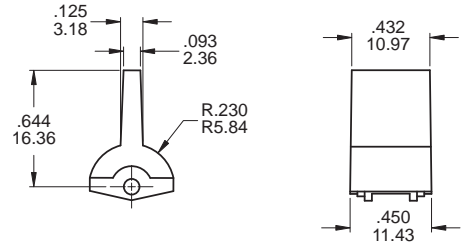


3M  
Rocker Switches

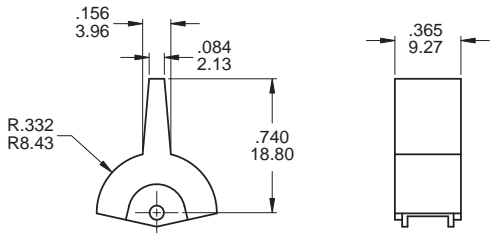
J1



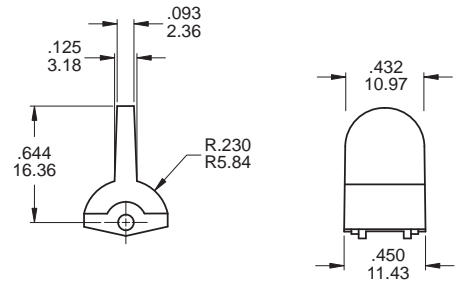
J6



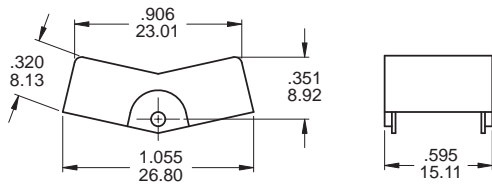
J2



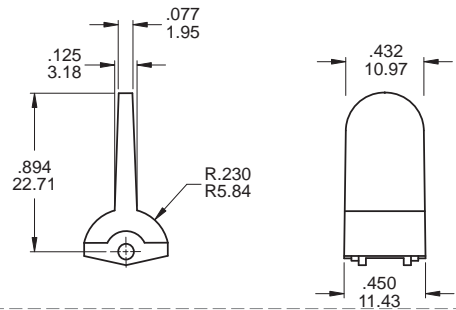
J7



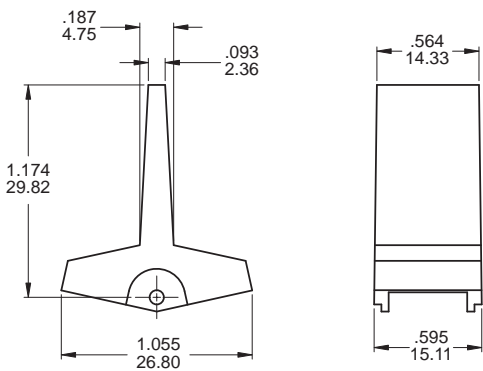
J3



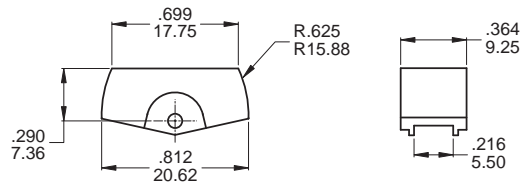
J8



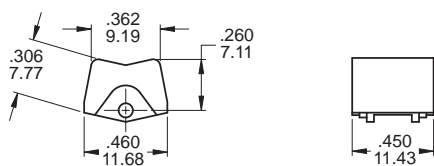
J4



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

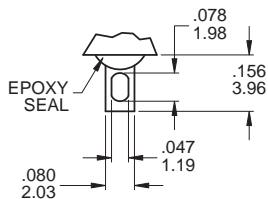
\* Besides standard color, other colors need to check stocks available.





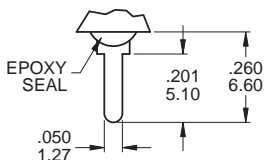
## TERMINATION OPTIONS

### M1 Solder lug



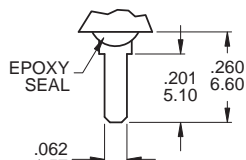
THK .030(0.76)

### M2 PC Thru-hole



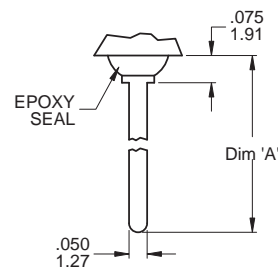
THK .030(0.76)

### 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

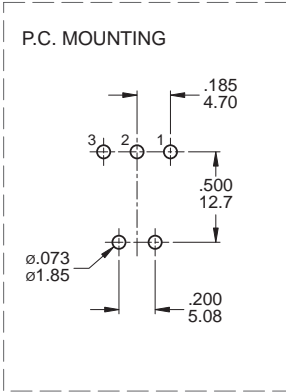
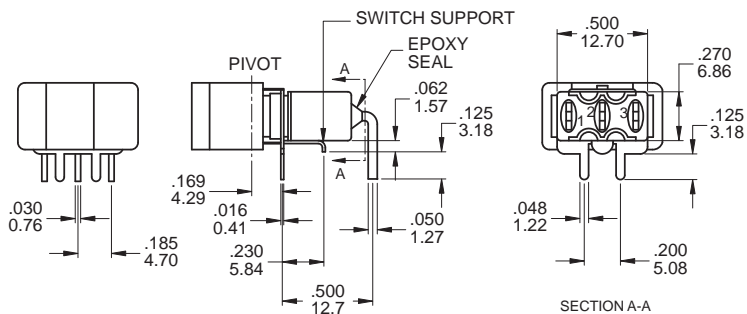
**VS5** Vertical bracket P.C. Mount

**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

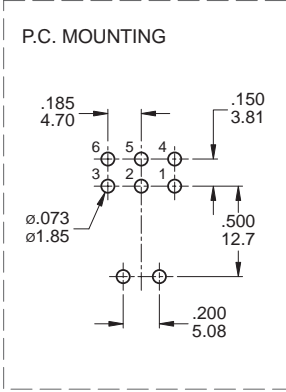
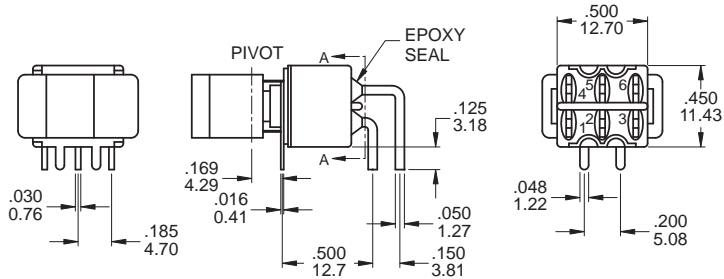


SECTION A-A  
TERM.NOS.FOR  
REFERENCE ONLY

### SPDT

Part No. Shown : 3MS1J102M6QES

### M7



SECTION A-A  
TERM.NOS.FOR  
REFERENCE ONLY

### DPDT

Part No. Shown : 3MD1J102M6QES

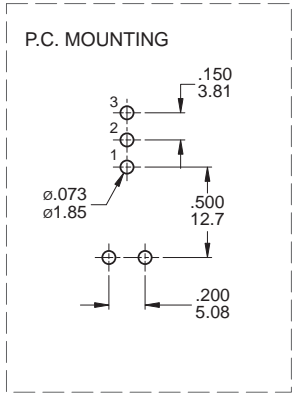
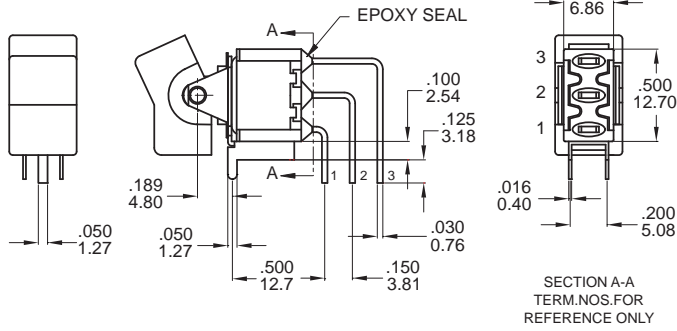
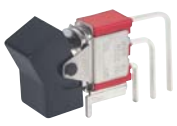
# 3M Series

Miniature Rocker & Paddle Switches



3M  
Rocker Switches

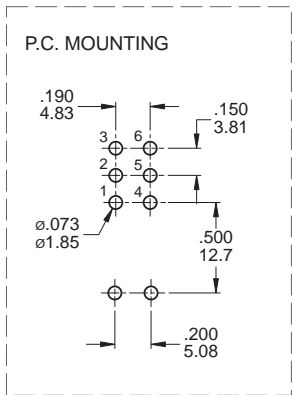
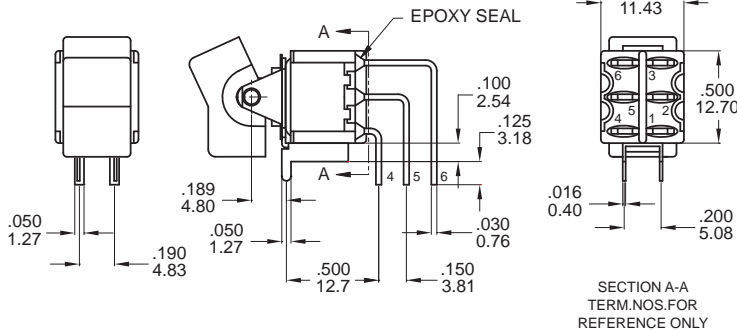
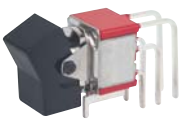
M7



SPDT

Part No. Shown : 3MS1J102M7QES

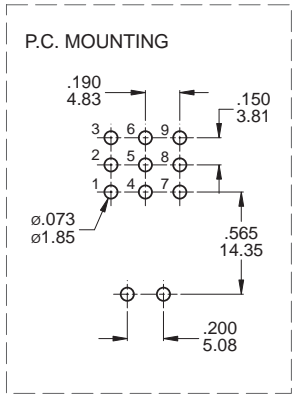
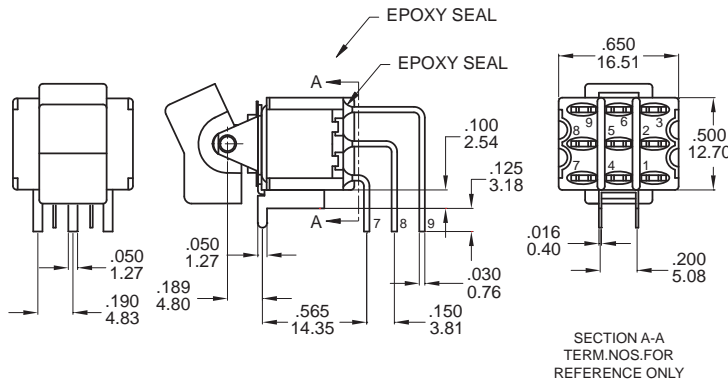
M7



DPDT

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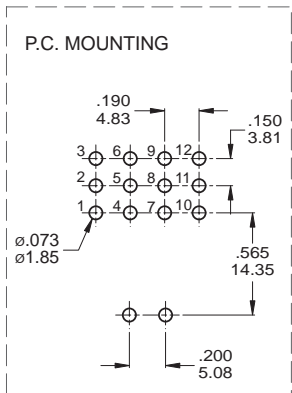
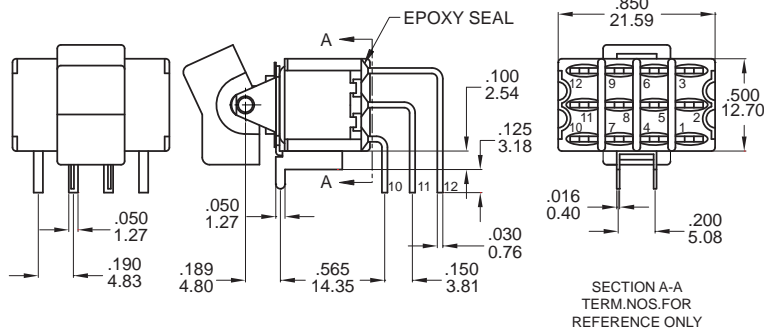
M7



3PDT

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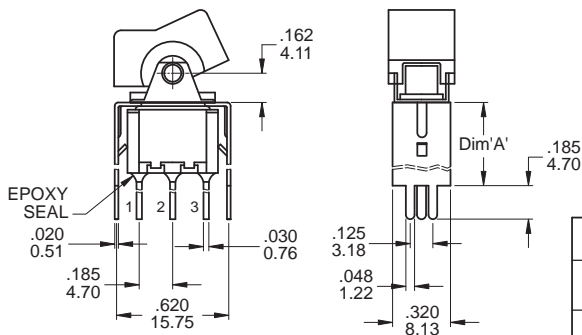
M7



4PDT

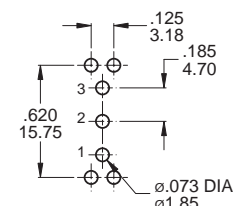
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### VS2 - VS3



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

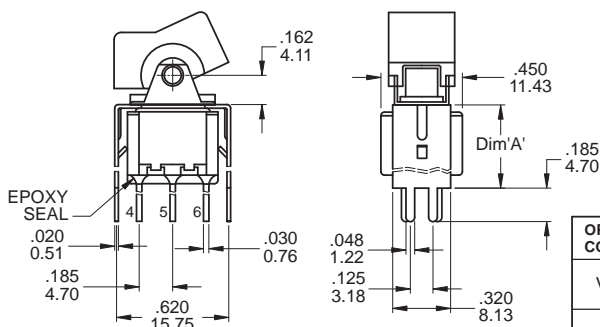
#### P.C. MOUNTING



### SPDT

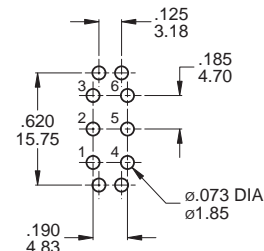
Part No. Shown : 3MS1J102VS2QES

### VS2 - VS3



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

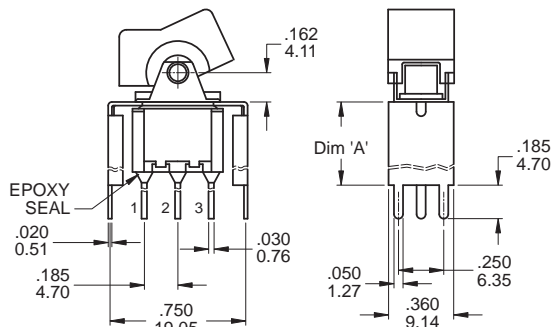
#### P.C. MOUNTING



### DPDT

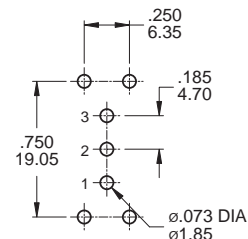
Part No. Shown : 3MD1J102VS2QES

### VS4 - VS5



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

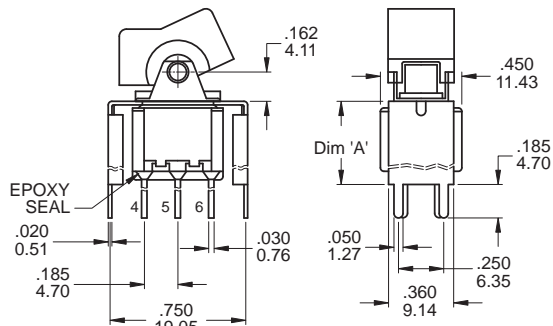
#### P.C. MOUNTING



### SPDT

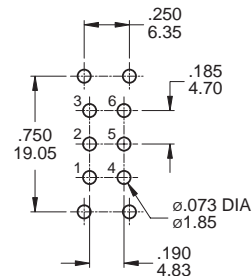
Part No. Shown : 3MS1J102VS4QES

### VS4 - VS5



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

#### P.C. MOUNTING



### DPDT

Part No. Shown : 3MD1J102VS5QES

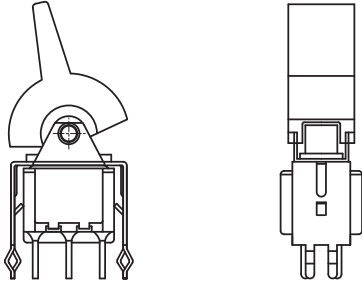


# 3M Series

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)