

Order Information:

R9	W	3	08	R	0	H	N	X	R
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Code:
R=Real Code
C=Complement Code

Position:
08=Octal 8 Position
10=BCD 10 Position
16=Hexa 16 Position

Special Code:
None=Blue(Standard)
W=White Color
K=Black Color

R9=10*10mm(9.9*9.9mm)
Contact area with Gold-plated Terminal with Tin-plated

Operating Force:
None=400gf/cm Max.(Standard)
N=200gf/cm Max.

Terminal Type:
H=Thru Hole
D=Thru Hole(Straight)
T=Through Hole for Relow Soldering

Sealed:
None=Sealed meet IP67
X=Non-sealed.

Package:
None=Tube(Standard)
R=Tape & Reel

Rotor Style:
0=Flat Arrow
1=0.5mm (Minus Slot)
3=3mm (Minus Slot)
7=7mm (Minus Slot)
1A=0.6mm (Minus Slot with side arrow)
2A=2.3mm (Minus Slot with side arrow)
7A=7mm (Minus Slot with side arrow)

Pin out:
2=3+2pin
3=3+3pin
4=4+1pin

Knob Order Information

Knob Color	Color Code
Blue	00
Green	02
Light Grey	03
Yellow	04
Dark Grey	05
White	06
Red	08
Black	09

Note:

- All knobs are not allowed to pass through the soldering process.
- All knobs should be assembled after all soldering processes are finished.

MODEL	SPECIFICATION		Page
R9 Series	Rotary Coded Switch	SP-002	
Thru-Hole Type	RoHS&REACH Compliant / Halogen Free		2/9

Specifications

◆ Contact Rating		
Switching	.....	24VDC 25mA
Non Switching	.....	Max. 50VDC 100mA
◆ Contact	.....	100mΩ Max.
◆ Insulation Resistance	.....	1,000MΩ Min. at 100 VDC
◆ Dielectric Strength	.....	250VAC for 1 minute
◆ Operating Force	.....	400gf/cm Max. (Standard)
	.....	200gf/cm Max. (N)
◆ Life	.....	20,000 Steps
◆ Operating Temperature	THT.....	-40℃ ~ +85℃
	THR.....	-40℃ ~ +125℃
◆ Storage Temperature	.....	-40℃ ~ +85℃
◆ Waterproof	.....	Meet IP67

Materials:

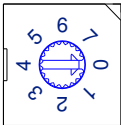
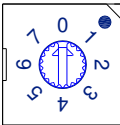
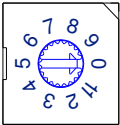
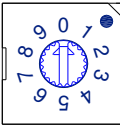
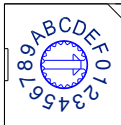
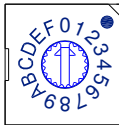
◆ Cover & Base	Halogen Free (R9).....	Thermoplastic UL 94-HB, Blue
	Halogen Free (R9-T).....	Thermoplastic UL 94-HB, Black(THR)
	Halogen Free (R9W).....	Thermoplastic UL 94-HB, White
	Halogen Free (R9K).....	Thermoplastic UL 94-HB, Black
◆ Rotor	Halogen Free (R93/R92).....	Thermoplastic UL 94-HB, White/Red
	Halogen Free (R94).....	Thermoplastic UL 94-HB, Gray/Green
◆ Knob	Halogen Free.....	Thermoplastic, ABS UL 94-HB
◆ "O" Ring	.....	Silicone Rubber
◆ Step	.....	Stainless Steel
◆ Spacer	.....	Stainless Steel
◆ Movable Contact	.....	Cooper alloy with 1u" Gold Plated over nickel plate
◆ Terminal Contact	.....	Copper alloy with 1u" Gold Plated over nickel plate
◆ Terminal	.....	Cooper alloy with (Pure) Tin-Plated over nickel plate

Code Format:

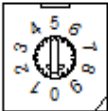
No. of Positions			16 Positions															
			10 Positions															
			08 Postions															
Position			0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Code	Real Code	8									●	●	●	●	●	●	●	●
		4					●	●	●	●					●	●	●	●
		2			●	●			●	●			●	●			●	●
		1		●		●		●		●		●		●		●		●
	Complemen- tary Code	$\overline{8}$	●	●	●	●	●	●	●	●								
		$\overline{4}$	●	●	●	●					●	●	●	●				
		$\overline{2}$	●	●			●	●			●	●			●	●		
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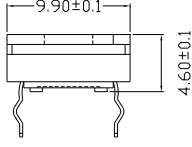
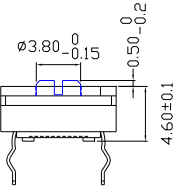
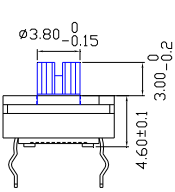
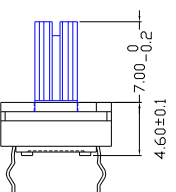
MODEL	SPECIFICATION Rotary Coded Switch RoHS&REACH Compliant / Halogen Free	SP-003	Page
R9 Series Thru-Hole Type			3/9

Position

8 Position		10 Position		16 Position	
R93	R94	R93	R94	R93	R94
					

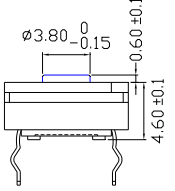
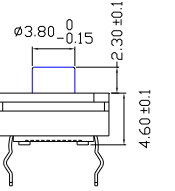
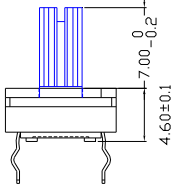
Rotor



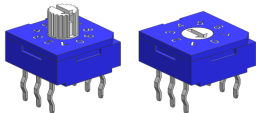
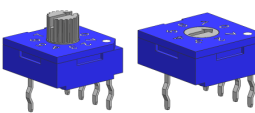
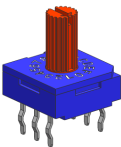
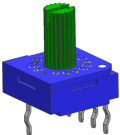
0 (Flat Type)	1 (0.5mm)	3 (3mm)	7 (7mm)
			

A Rotor



1A (0.6mm)	2A (2.3mm)	7A (7mm)
		

Rotor Color

Real Code		Complement Code	
R93/92 (White)	R94 (Gray)	R93/R92 (Red)	R94 (Green)
			

MODEL	SPECIFICATION Rotary Coded Switch RoHS&REACH Compliant / Halogen Free	SP-004	Page
R9 Series Thru-Hole Type			4/9

R92

PC board layout
as viewed from the
top of the switch

R93

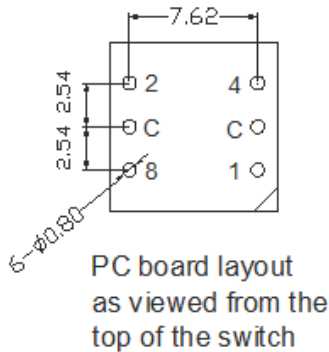
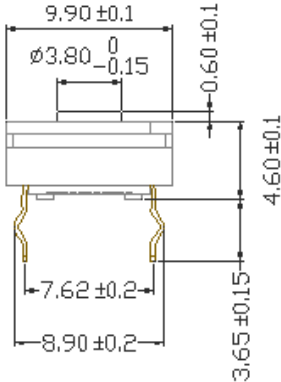
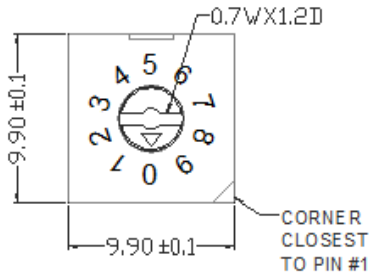
PC board layout
as viewed from the
top of the switch

R94

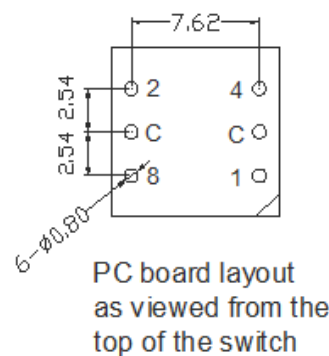
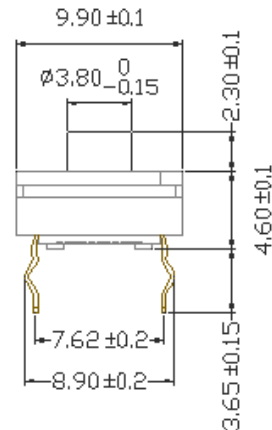
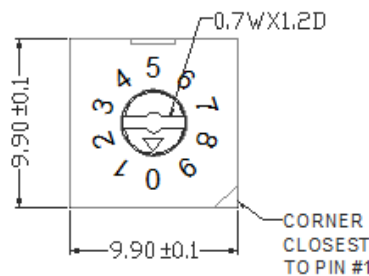
PC board layout
as viewed from the
top of the switch

MODEL	SPECIFICATION		Page
R9 Series	Rotary Coded Switch	SP-005	
Thru-Hole Type	RoHS&REACH Compliant / Halogen Free		5/9

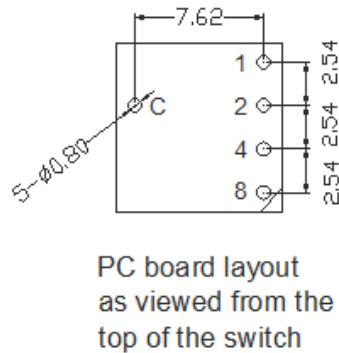
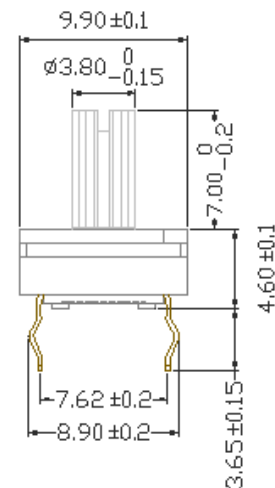
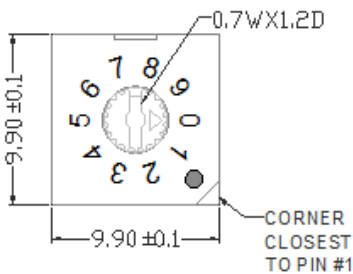
R93-1A Rotor



R93-2A Rotor



R94-7A Rotor



MODEL	SPECIFICATION		Page
R9 Series	Rotary Coded Switch		SP-006
Thru-Hole Type	RoHS&REACH Compliant / Halogen Free		6/9

Part Number Table:

Pin Out	No. Pos.	Real Code			Complementary Code		
		H/D/T Type Flat Rotor Tube Package	H/D/T Type 0.5mm Rotor Tube Package	H/D/T Type 7mm Rotor Tube Package	H/D/T Type 0.6mm Rotor Tube Package	H/D/T Type 2.3mm Rotor Tube Package	H/D/T Type 7mm Rotor Tube Package
3+2	08	R9208R0H/D/T	R9208R1H/D/T	R9208R7H/D/T	R9208C1AH/D/T	R9208C2AH/D/T	R9208C7AH/D/T
	10	R9210R0H/D/T	R9210R1H/D/T	R9210R7H/D/T	R9210C1AH/D/T	R9210C2AH/D/T	R9210C7AH/D/T
	16	R9216R0H/D/T	R9216R1H/D/T	R9216R7H/D/T	R9216C1AH/D/T	R9216C2AH/D/T	R9216C7AH/D/T
3+3	08	R9308R0H/D/T	R9308R1H/D/T	R9308R7H/D/T	R9308C1AH/D/T	R9308C2AH/D/T	R9308C7AH/D/T
	10	R9310R0H/D/T	R9310R1H/D/T	R9310R7H/D/T	R9310C1AH/D/T	R9310C2AH/D/T	R9310C7AH/D/T
	16	R9316R0H/D/T	R9316R1H/D/T	R9316R7H/D/T	R9316C1AH/D/T	R9316C2AH/D/T	R9316C7AH/D/T
4+1	08	R9408R0H/D/T	R9408R1H/D/T	R9408R7H/D/T	R9408C1AH/D/T	R9408C2AH/D/T	R9408C7AH/D/T
	10	R9410R0H/D/T	R9410R1H/D/T	R9410R7H/D/T	R9410C1AH/D/T	R9410C2AH/D/T	R9410C7AH/D/T
	16	R9416R0H/D/T	R9416R1H/D/T	R9416R7H/D/T	R9416C1AH/D/T	R9416C2AH/D/T	R9416C7AH/D/T

Soldering Information

◆ Hand Soldering

Soldering iron of 30W or under at 350°C for 3 sec. max or at 270°C for 5 sec max.

◆ Reflow Soldering

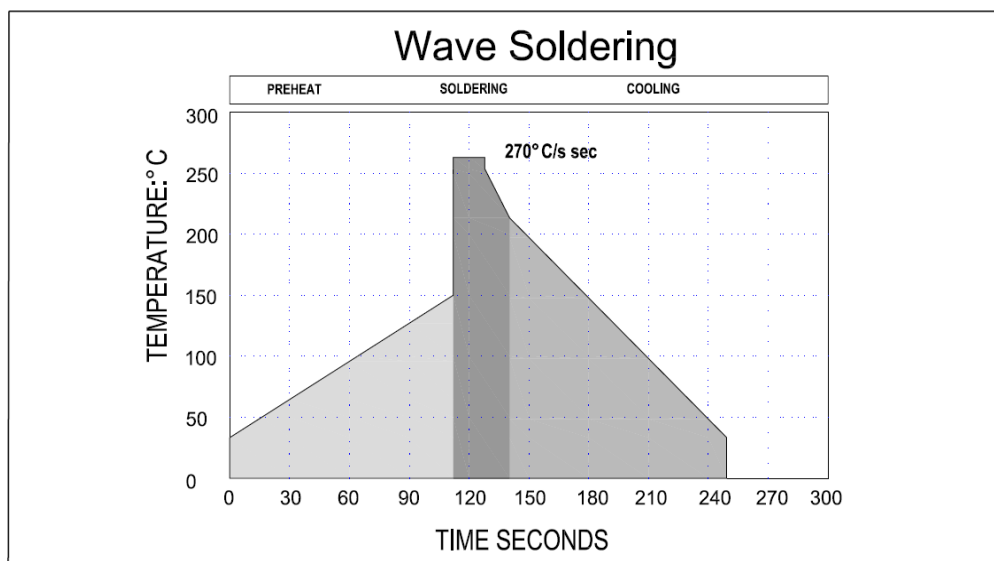
Only for THR type which allows 1-time reflow soldering.

The peak temperature of the oven should be 250°C max.

◆ Wave Soldering

For lead free wave solder simulation of typical components, the solder bath temperature shall be maintained at 270°C max./5~10 seconds.

Recommended Wave Soldering Profiles



Maximum dwell time in the solder wave (270°C) shall not exceed 10 seconds.

MODEL	SPECIFICATION Rotary Coded Switch RoHS&REACH Compliant / Halogen Free	SP-007	Page
R9 Series Thru-Hole Type			7/9

Classification Reflow Profiles

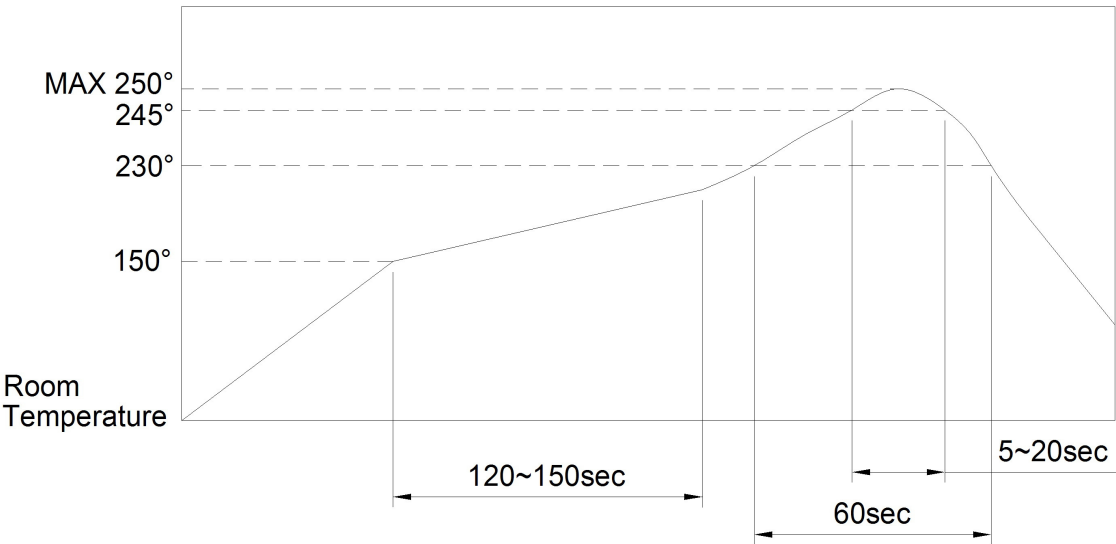
Profile Feature	Pb-Free Assembly
Preheat / Soak	
Temperature Min (T _{smin})	150℃
Temperature Max (T _{smax})	200℃
Time(ts) from (T _{smin} to T _{smax})	60 ~120 seconds
Ramp-up Rate (T _L to T _p)	3℃/second max
Liquidous temperature (T _L)	217℃
Time (t _L) maintained above to T _L	60 ~ 150 seconds
Peak package body temperature (T _p)	For users T _p must not exceed the Classification temp:260℃ (Package Thickness:1.6~2.5mm) For supilers T _p must equal or exceed the Classification temp:260℃ (Package Thickness:1.6~2.5mm)
Time (tp) within 5℃ of specified classification Temperature (T _c)	30 seconds
Ramp-Down Rate (T _p to T _L)	6℃/second max
Time 25℃ to Peak Temperature	8 minutes max
*Tolerance for peak profile temperature(T _p) is defined as a supplier minimum and a user maximum	

Note 1: All temperatures refer to topside of the package, measured on the package body surface.

Note 2: Time within 5 °C of actual peak temperature (tp) specified for the reflow profiles is a “supplier” minimum and “user” maximum.

Soruce: IPC/JEDEC J-STD-020 D.1

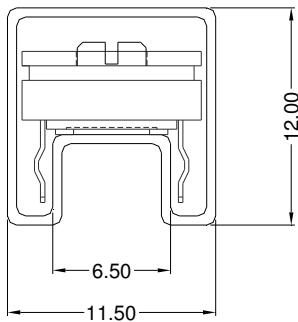
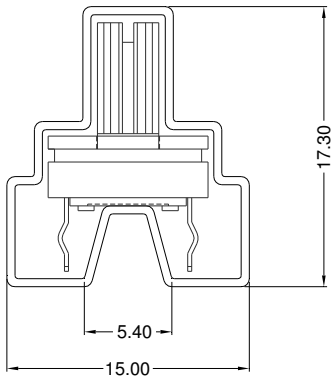
Recommended Reflow Soldering Conditions



MODEL	SPECIFICATION Rotary Coded Switch RoHS&REACH Compliant / Halogen Free	SP-008	Page
R9 Series Thru-Hole Type			8/9

Tube Package:

Thru Hole Rotor Per Tube (pcs)	H/D/T Type Flat/1mm 50	H/D/T Type 3mm/7mm 50
BOX (pcs)	4,000	2,000
CTN 1 (pcs)	8,000	4,000
CTN 2 (pcs)	16,000	8,000

R9-H (0mm ~ 1mm Rotor)	R9-H (3mm ~ 7mm Rotor)
	

Box Dimension:

◆ Tube 57.0cm x 13.0cm x 12.5cm

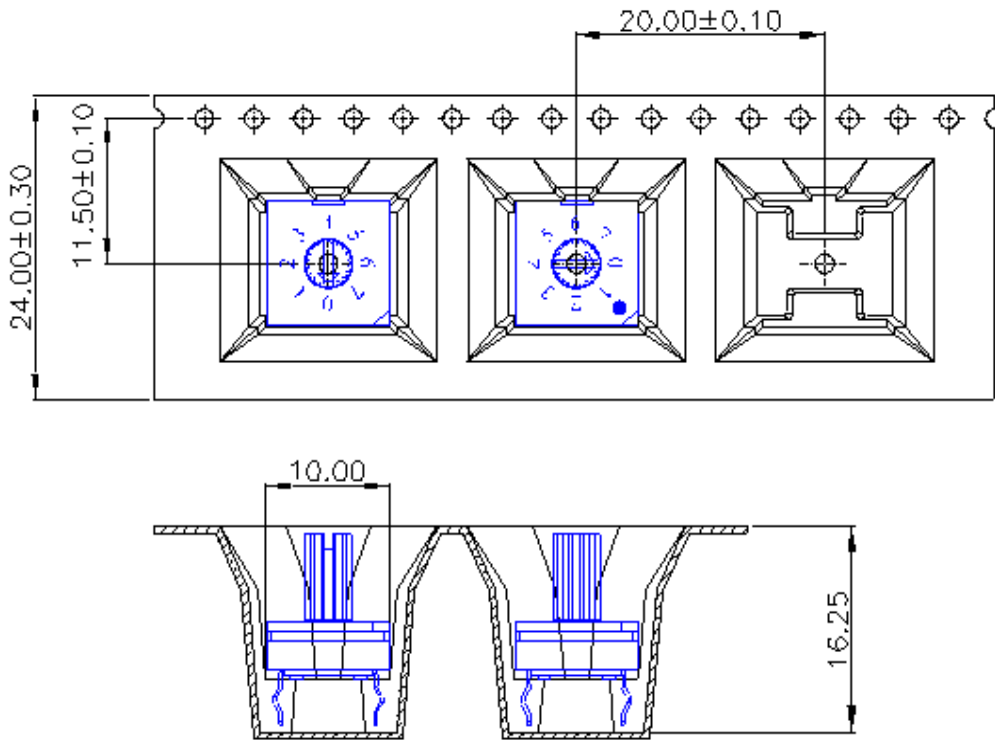
Carton Dimension:

◆ Tube 2 Boxes..... 58.5cm x 29.0cm x 15.0cm

 4 Boxes..... 58.5cm x 28.0cm x 27.0cm

MODEL	SPECIFICATION Rotary Coded Switch RoHS&REACH Compliant / Halogen Free	SP-009	Page
R9 Series Thru-Hole Type			9/9

H/T Tape & Reel package (R92.R93.R94 for 7mm Rotor)



Box Dimension:

- ◆ Tape & Reel 34.5cm x 34.5cm x 15.0cm

Carton Dimension

- ◆ Tape & Reel 1 Box..... 34.5cm x 34.5cm x 15.0cm
- 2 Boxes..... 36.0cm x 27.5cm x 37.0cm