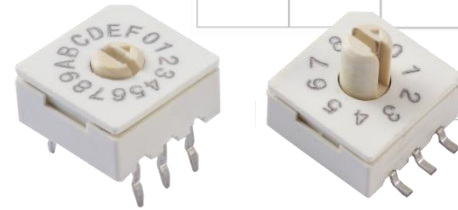




# Series 221

## 10x10mm Compact Rotary DIP Switch

- Standard through hole and surface mount gull-wing terminal configurations
- Binary coded decimal, Hexadecimal code output
- Clockwise or counterclockwise rotation
- Suitable for board spray washing



### Ordering Information

Series	Terminal Type	Actuator Height	Number of Positions	Packaging Type
221	AM	A	10	R

Code	Spec.
AM	Surface mount gull wing
AD	Standard through hole

Code	Spec.
A	Flush arrow rotor & slotted rotor
B	Arrow & slotted, 4.32mm height shaft
C	Arrow & slotted, 6.86mm height shaft

Code	Spec.
10	10 Positions
16	16 Positions

Code	Spec.
BLANK	Tube packaging, through hole switch
R	Tape & reel packaging (surface mount only)

Notes: Contact CTS for other common features not listed.

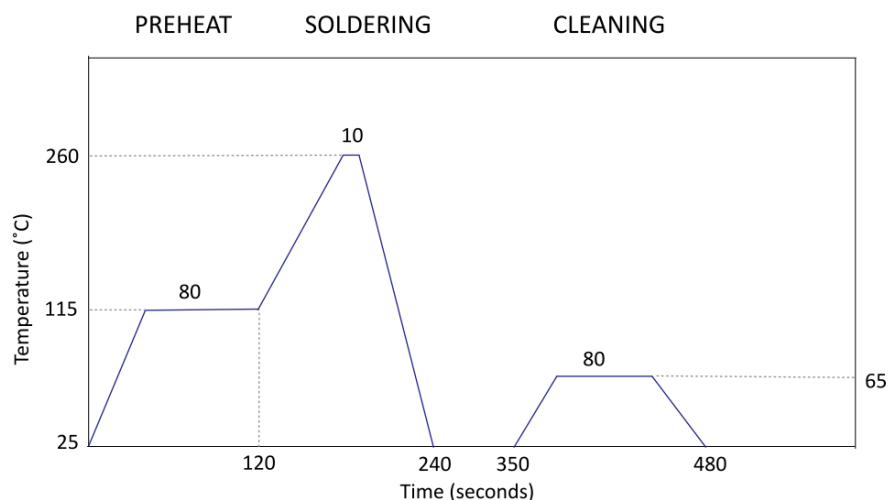
## Electrical Specifications

Parameter	Conditions & Remarks	Min	Max	Unit
Output	Binary coded decimal Hexadecimal		10 16	position
Contact Resistance			80	milliohms
Insulation Resistance	Between insulated terminals	1000		megohms
Dielectric Strength	350 Vac between adjacent switches		1	minute
Actuation Life			20,000	steps
Nonswitching Rating			100	mA
			or 50	Vdc
Load		1 $\mu$ A 20m		VDC

## Mechanical and Environmental

Soldering	Maximum reflow temperature, 260°C for 10 seconds Maximum wave temperature, 260°C for 10 seconds Maximum manual temperature, 350°C for 5 seconds
RoHS	Lead-Free. Fully compliant to RoHS
Rotational Torque:	144~432 gf-cm
Marking:	Special top marking available-consult CTS
Packaging :	Standard anti-static tube packaging for through hole terminal Standard tape and reel packaging for gull wing terminal
Operating Temperature Range:	-40°C to +85°C
Storage Temperature Range:	-40°C to +85°C

### Soldering Profile



### Mechanical Specifications

Figure 1 – Surface Mount Gull Wing

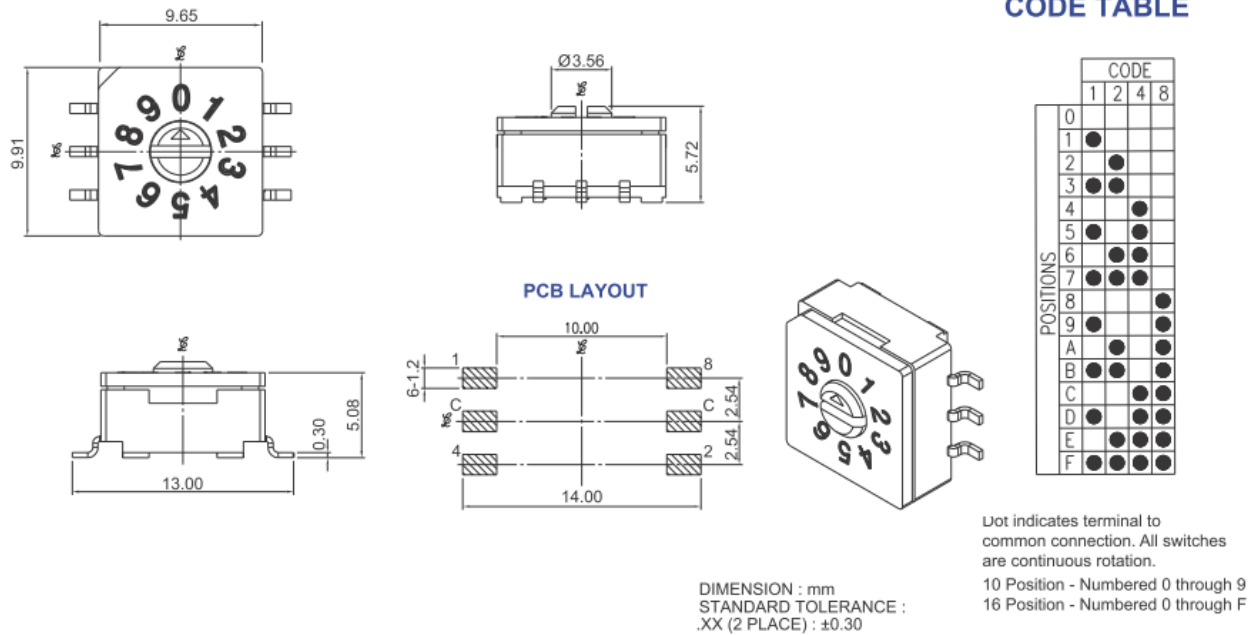
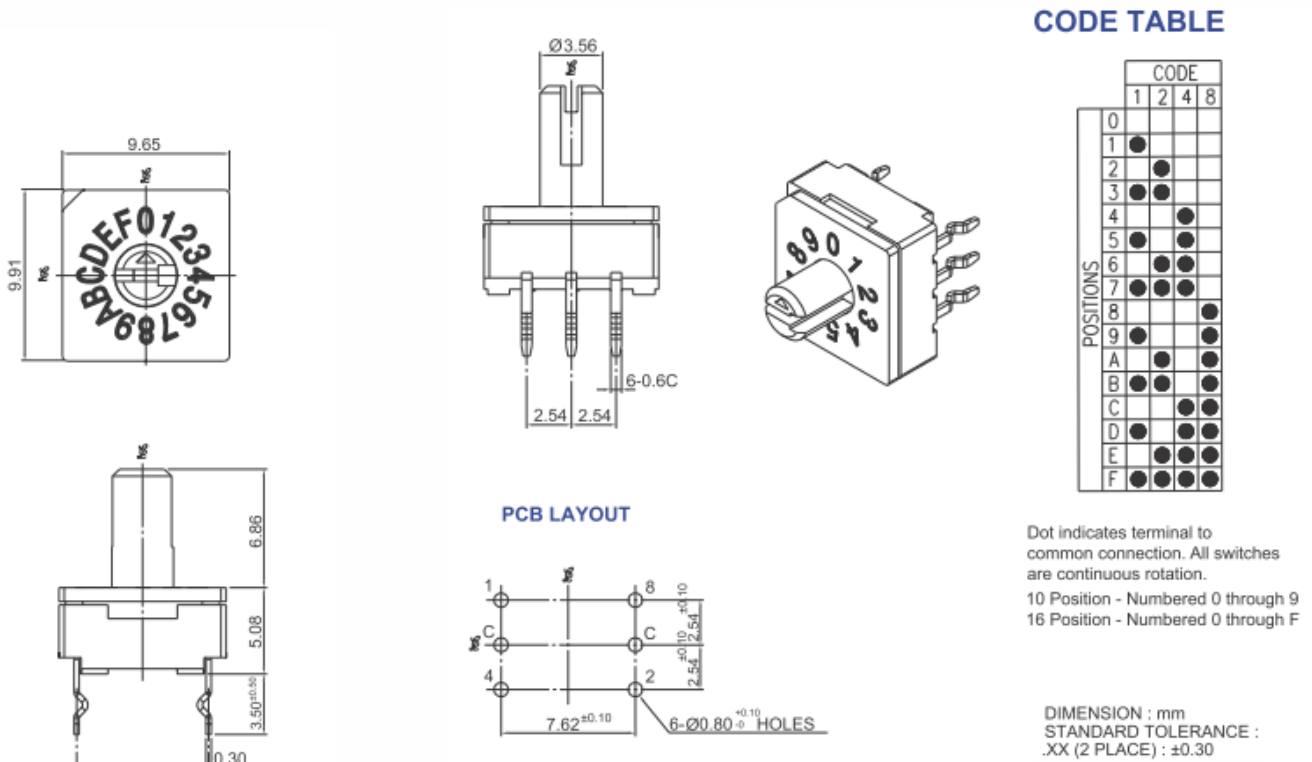
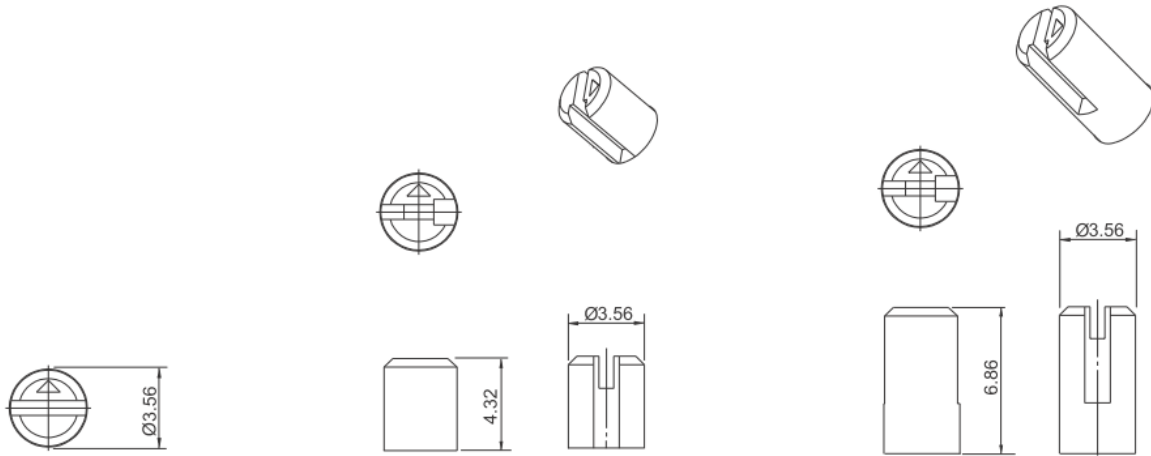


Figure 2 – Standard Through Hole





**A: FLUSH ARROW & SLOTTED ROTOR**

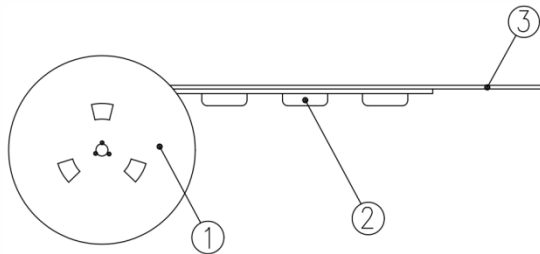
**B: ARROW & SLOTTED SHAFT**

**C: ARROW & SLOTTED SHAFT**

## Packing: Tape and Reel

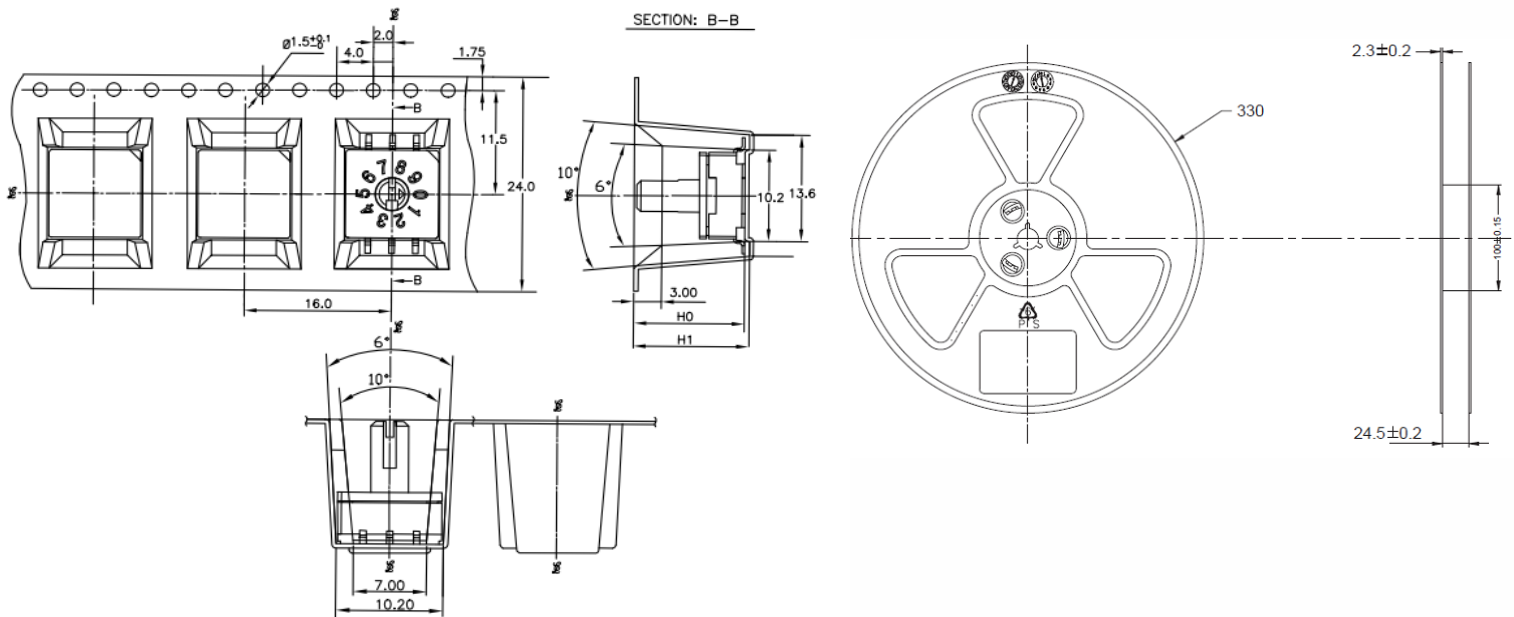
The packing specifications:

1. Structure and materials:



No	PART NAME	MATERIAL
①	REEL	POLYSTYRENE
②	CARRIER TAPE	POLYSTYRENE
③	COVER TAPE	POLYESTER

2. More than 10 empty pockets should remain at each end of the carrier tape for each reel.
3. Shortage of less than 10 pcs a reel is acceptable but no more than 3 consecutive empty pockets are allowed.
4. Stripping strength of cover tape is between 10 gf to 130 gf and stripping angle should be within 165°~180°.
5. The product in the pocket of carrier tape should be placed in a specified correct position.
6. Tape and reel per EIA-481.
7. Dimensions:



Unit: mm

CTS P/N	H0	H1	Product	Package
			total height	quantity (Pcs/reel)
221AMAxR	5.92	6.42	5.72	700
221AMBxR	9.60	10.10	9.40	450
221AMCxR	12.14	12.64	11.94	350

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