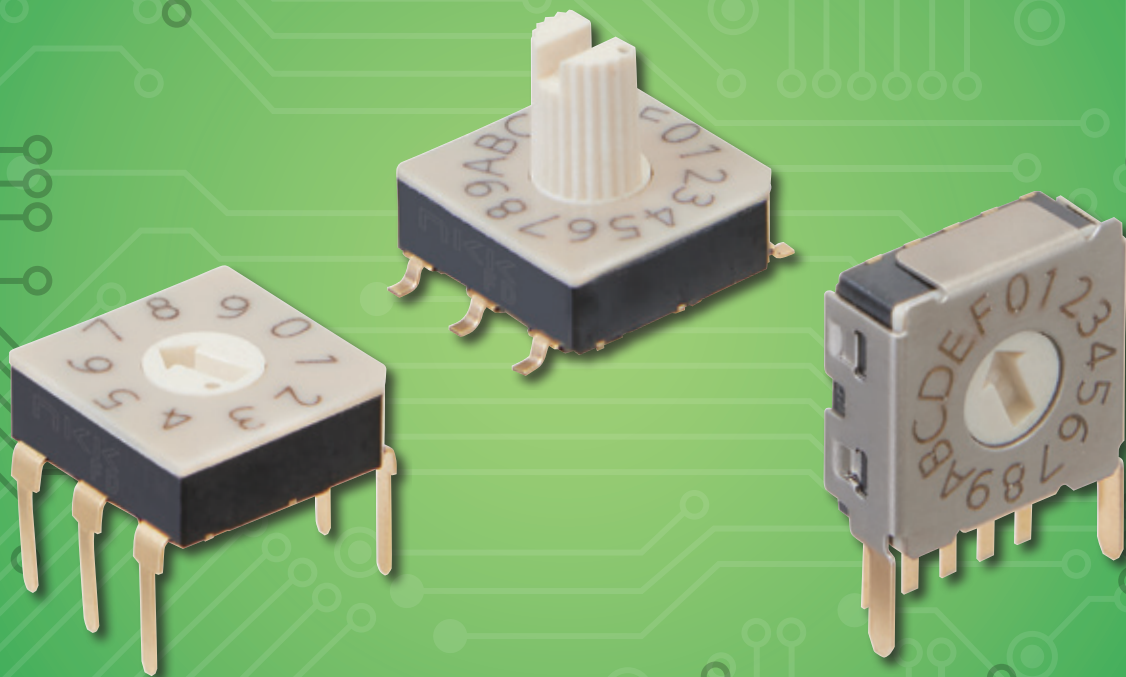


Series FD01 & FD02

Ultra-Thin DIP Rotary Switches

Through-Hole & Surface Mount



Compact 7.2mm & 7.7mm Square
Low Profile 3.1 - 3.3mm

General Specifications

Electrical Capacity (Resistive Load)

Rating: 0.4VA maximum, 20V maximum, AC/DC

Other Ratings

Contact Resistance: 100 milliohms maximum (at 20mV, 10mA)
Insulation Resistance: 250V DC, 1 GΩ minimum
Dielectric Strength: 250V AC minimum for 1 minute minimum
Mechanical Life: 10,000 operations minimum
Electrical Life: 10,000 operations minimum
Nominal Operating Torque: 0.002Nm ± 0.02Nm

Materials & Finishes

Rotor: LCP resin
Case Cover & Base: PPS resin
O-ring: Fluoro rubber
Movable Contacts: Corson alloy with gold plating
Terminals: Brass with gold plating

Environmental Data

Operating Temperature Range: -25°C through +85°C (-13°F through +185°F)

PCB Processing

Wave Soldering: Preheat temperature: 110°C @ 40 seconds maximum
 Peak temperature: 270°C @ 6 seconds maximum; Cycles: 2

Reflow Soldering (FD02 Series): Preheat temperature: 180° ~ 200°C @ 2 minutes maximum
 Heating temperature: 230°C @ 60 seconds maximum
 Peak temperature: 250°C; Cycles: 2

Manual Soldering: 390°C @ 4 seconds maximum; Cycles: 2

Series FD01	Series FD02
During soldering process, set the switch to the following position: FD01FR10P, FD01FR16P, FD01FR10H, FD01FR16H, FD01KR10P, FD01KR16P: 0 position; FD01FC10P, FD01FC10H: 7 position; FD01FC16P, FD01FC16H: F position	During soldering process, set the switch to the following position: FD02FR10P, FD02FR16P, FD02FR10H, FD02FR16H, FD02KR10P, FD02KR16P: 0 position; FD02FC10P, FD02FC10H: 7 position; FD02FC16P, FD02FC16H: F position

Cleaning: These devices are not process sealed. Hand clean locally using alcohol based solution.

TRUTH TABLES (CIRCUITS & POSITIONS)

Terminal No. (Output)	Actuator Position ● = ON	10 Decimal									16 Hexadecimal																
		0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
R Real Coded Model Numbers: FD01FR, FD01KR, FD02FR, FD02KR	1		●		●		●		●		●		●		●		●		●		●		●		●		●
	2			●	●			●	●				●	●			●	●			●	●			●	●	
	4					●	●	●	●					●	●	●	●					●	●	●	●		
	8								●	●									●	●	●	●			●	●	●
C Complement Coded Model Numbers: FD01FC, FD02FC	1	●		●		●		●		●		●		●		●		●		●		●		●		●	
	2	●	●			●	●			●	●			●	●			●	●			●	●			●	
	4	●	●	●	●					●	●	●	●					●	●	●	●					●	
	8	●	●	●	●	●	●	●						●	●	●	●	●									

Terminal numbers are actually on the switch.

Distinctive Characteristics

Compact dimensions of 7.2mm (.283") or 7.7mm (.303") square, with a height of 3.1 to 3.3mm (.122" to .130"), accommodates high density mounting.

Internal construction incorporating metal springs promotes smooth, crisp operation.

Reaction force is evenly distributed by movable contact components, ensuring consistent connection. Advanced contact reliability is achieved through gold plated contacts.

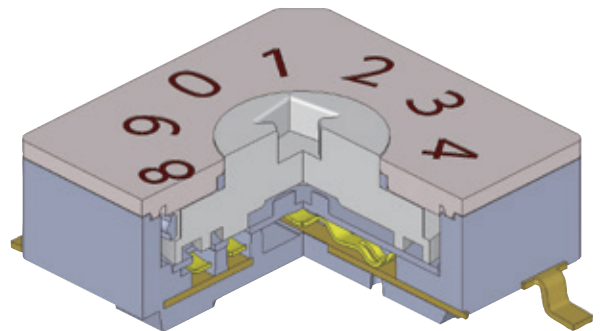
Heat resistant resin used for Series FD02 body maintains switch reliability through vapor phase and infrared convection reflow soldering.

Series FD01 features through-hole terminals with .100 inch terminal grid spacing.

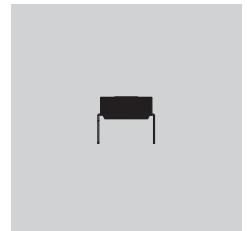
Surface mount (gull wing) terminals on Series FD02 provide mechanical stability during soldering and simplified solder joint inspection.

Packaging in tape-reel for Series FD02 meets EIA-481-D Standard.

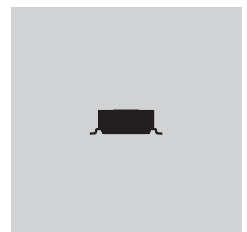
Remarkably precise coplanarity: all considered surfaces lying between two parallel planes are a maximum distance apart of .0039" (0.1 mm).



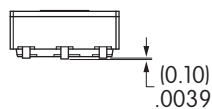
Actual Size: FD01



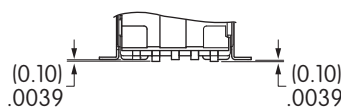
Actual Size: FD02



Series FD02 Surface Mount Coplanarity

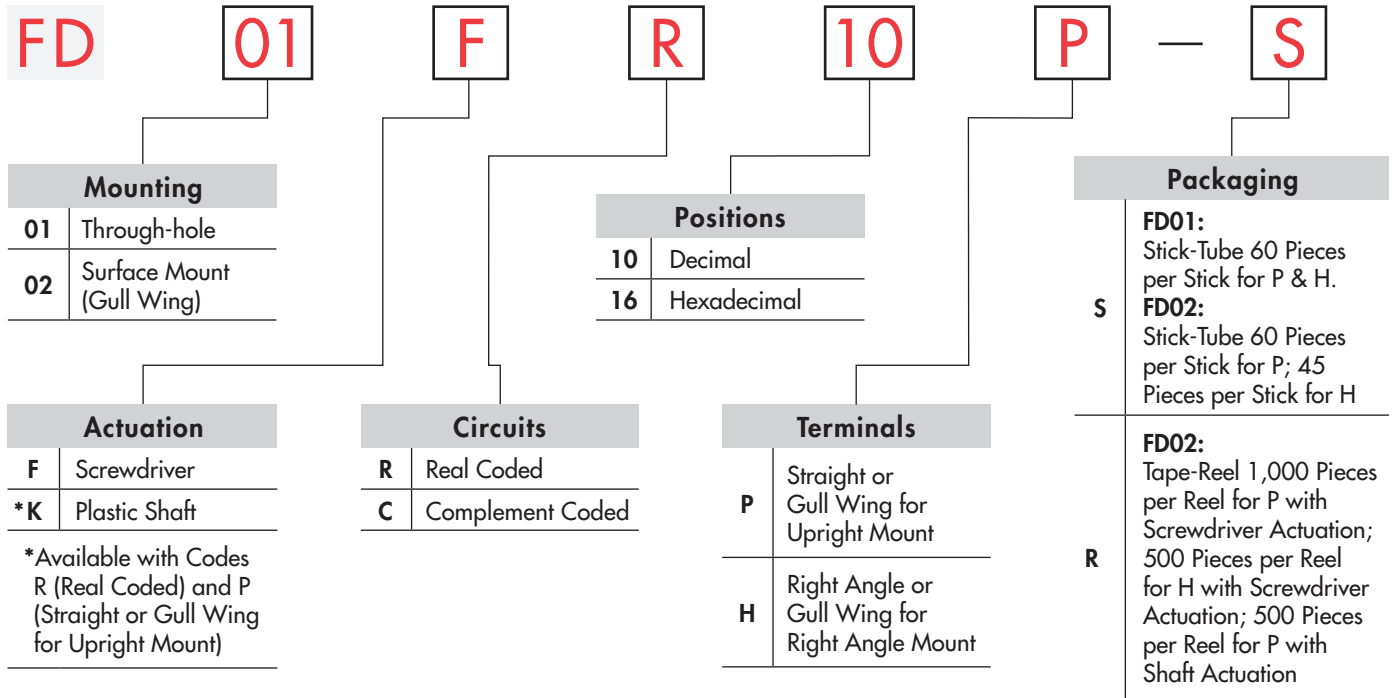


For Upright



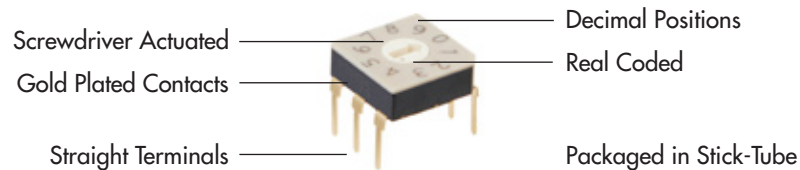
For Right Angle

TYPICAL SWITCH ORDERING EXAMPLE



DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

FD01FR10P-S



ACTUATION

F Screwdriver Actuated
Adjusted with flat tipped screwdriver



K Shaft Actuated
Adjusted by hand or with flat tipped screwdriver

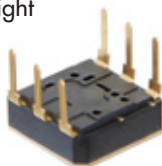


Actuators are fully rotational in either direction.

TERMINALS

P Straight or Gull Wing for Upright Mount

Straight



Gull Wing



H Right Angle or Gull Wing for Right Angle Mount

Right Angle



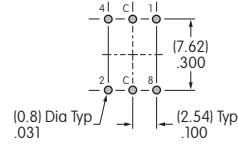
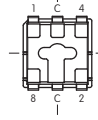
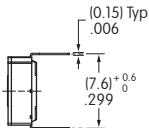
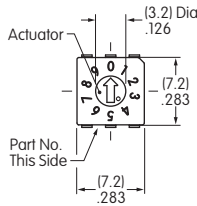
Gull Wing



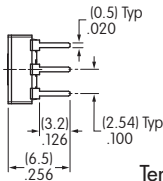
TYPICAL SWITCH DIMENSIONS

Screwdriver Actuated • Decimal • Straight

FD01FR10P
Real Coded



FD01FC10P
Complement Coded

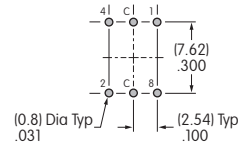
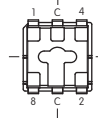
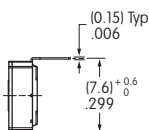
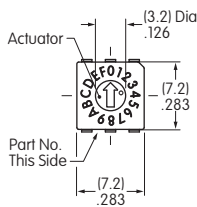


Terminal numbers are not on switch.

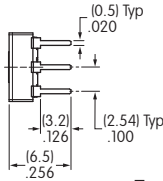
FD01FR10P

Screwdriver Actuated • Hexadecimal • Straight

FD01FR16P
Real Coded



FD01FC16P
Complement Coded

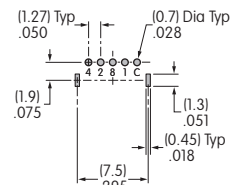
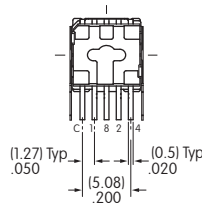
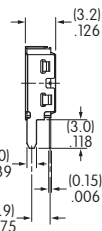
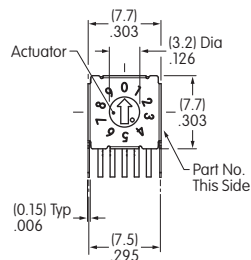


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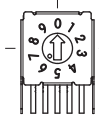
FD01FR16P

Screwdriver Actuated • Decimal • Right Angle

FD01FR10H
Real Coded



FD01FC10H
Complement Coded

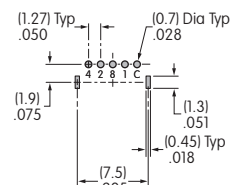
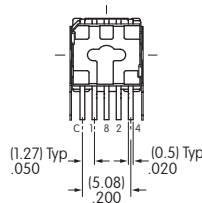
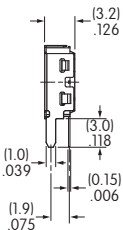
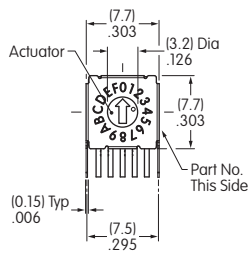


Terminal numbers are not on switch.

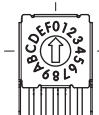
FD01FR10H

Screwdriver Actuated • Hexadecimal • Right Angle

FD01FR16H
Real Coded



FD01FC16H
Complement Coded



Terminal numbers are not on switch.

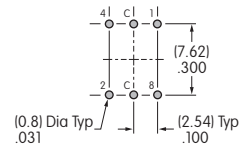
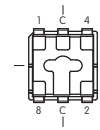
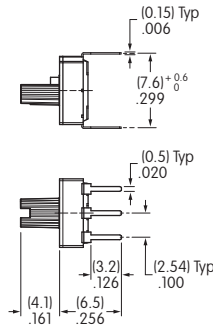
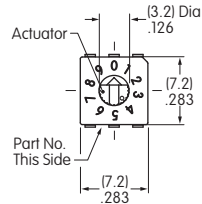
FD01FR16H

TYPICAL SWITCH DIMENSIONS

Shaft Actuated • Decimal • Straight



Real Coded



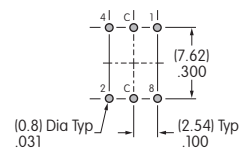
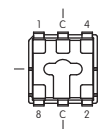
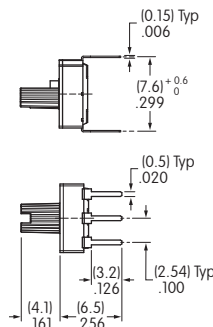
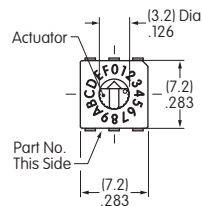
FD01KR10P

Terminal numbers are not on switch.

Shaft Actuated • Hexadecimal • Straight



Real Coded



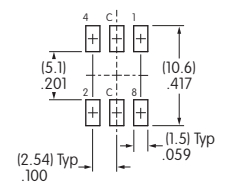
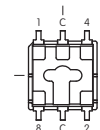
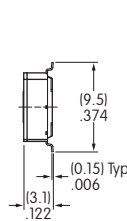
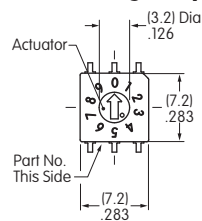
FD01KR16P

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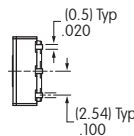
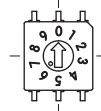
Screwdriver Actuated • Decimal • Gull Wing • Upright



FD02FR10P
Real Coded



FD02FC10P
Complement
Coded



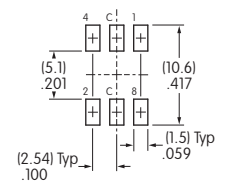
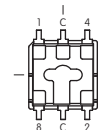
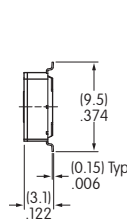
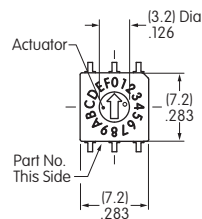
FD02FR10P

Terminal numbers are not on switch.

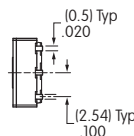
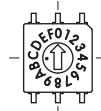
Screwdriver Actuated • Hexadecimal • Gull Wing • Upright



FD02FR16P
Real Coded



FD02FC16P
Complement
Coded



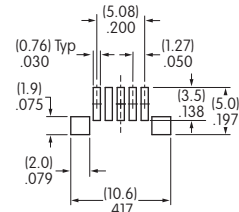
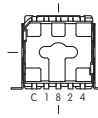
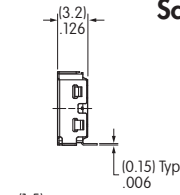
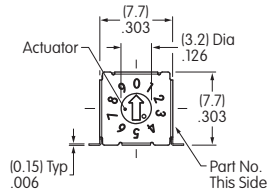
FD02FR16P

Terminal numbers are not on switch.

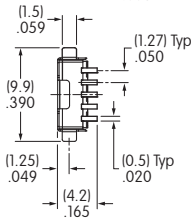
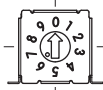
TYPICAL SWITCH DIMENSIONS

Screwdriver Actuated • Decimal • Gull Wing • Right Angle

FD02FR10H
Real Coded



FD02FC10H
Complement Coded

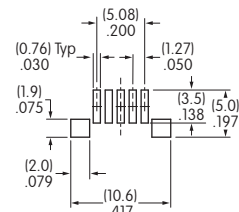
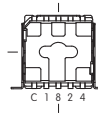
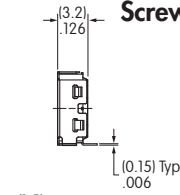
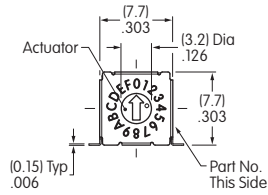


Terminal numbers are not on switch.

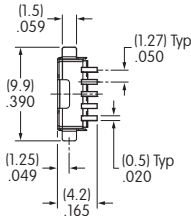
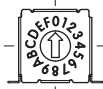
FD02FR10H

Screwdriver Actuated • Hexadecimal • Gull Wing • Right Angle

FD02FR16H
Real Coded



FD02FC16H
Complement Coded

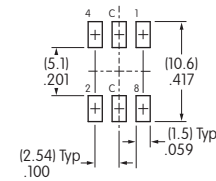
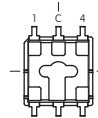
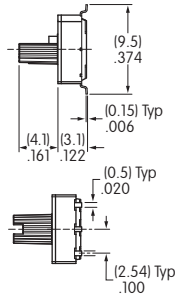
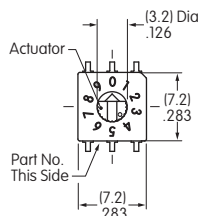


Terminal numbers are not on switch.

FD02FR16H

Shaft Actuated • Decimal • Gull Wing • Upright

Real Coded

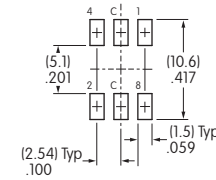
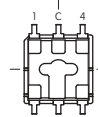
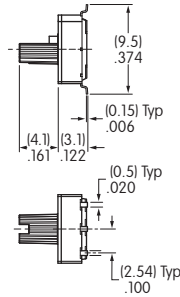
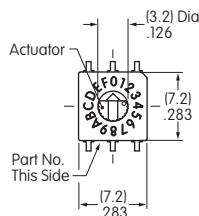


Terminal numbers are not on switch.

FD02KR10P

Shaft Actuated • Hexadecimal • Gull Wing • Upright

Real Coded



Terminal numbers are not on switch.

FD02KR16P

PACKAGING

S Stick-Tube

FD01

Each stick-tube contains 60 switches for straight or right angle.

FD02

Each stick-tube contains 60 switches for upright or 45 switches for right angle.

R Tape-Reel

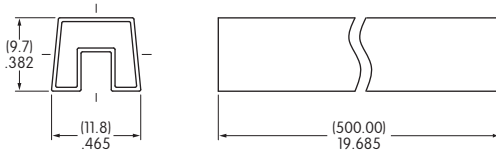
FD02

Each tape-reel contains 1,000 switches for screwdriver actuated with upright.

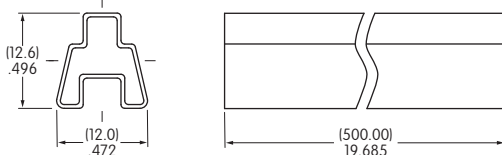
Each tape-reel contains 500 switches for screwdriver actuated with right angle.

Each tape-reel contains 500 switches for shaft actuated with upright.

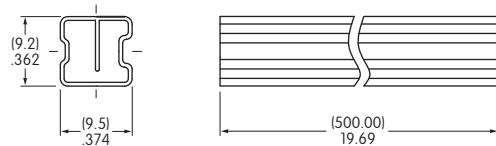
FD01FR10P-S, FD01FC10P-S, FD01FR16P-S, FD01FC16P-S



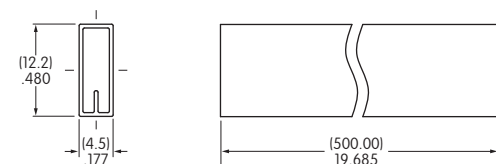
FD01KR10P-S, FD01KR16P-S



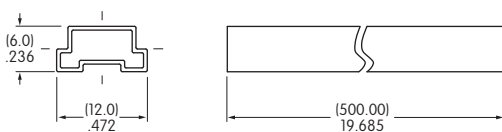
FD02FR10H-S, FD02FC10H-S, FD02FR16H-S, FD02FC16H-S



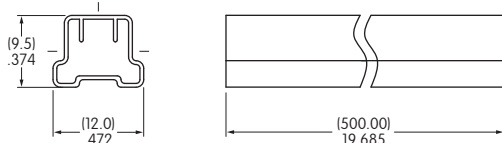
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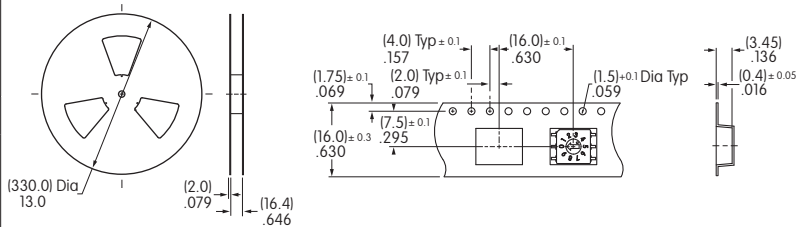
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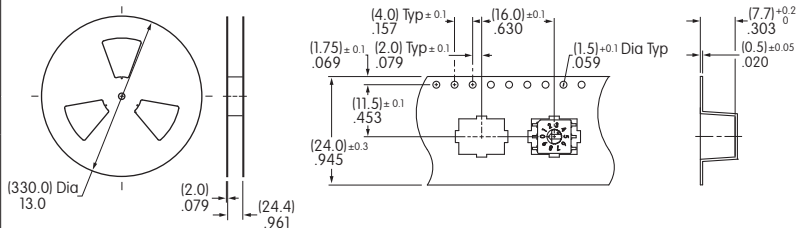
FD02KR10P-S, FD02KR16P-S



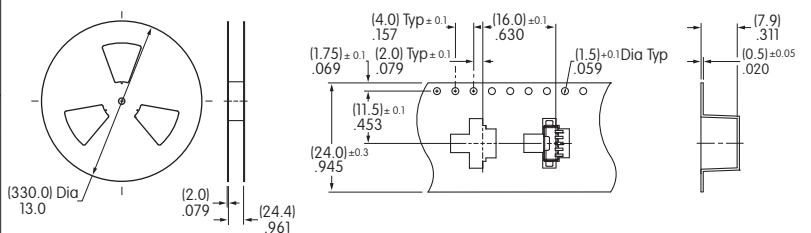
FD02FR10P-R, FD02FC10P-R, FD02FR16P-R, FD02FC16P-R



FD02KR10P-R, FD02KR16P-R



FD02FR10H-R, FD02FC10H-R, FD02FR16H-R, FD02FC16H-R



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