

# General Specifications

## Electrical Capacity (Resistive Load)

<b>Power Level (silver):</b>	3VA maximum @ 28V DC maximum (Applicable Range 10mA ~ 125mA @ 0.1V ~ 28V)
<b>Logic Level (gold):</b>	0.4VA maximum @ 28V AC/DC maximum (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)
	Note: See Supplement for further explanation of operating range.

## Other Ratings

<b>Contact Resistance:</b>	100 milliohms maximum
<b>Insulation Resistance:</b>	100 megohms minimum @ 100V DC
<b>Dielectric Strength:</b>	250V AC minimum for 1 minute minimum between contacts & between contacts & case
<b>Mechanical Life:</b>	500,000 operations minimum
<b>Electrical Life:</b>	500,000 operations minimum
<b>Nominal Operating Force:</b>	1.60N
<b>Total Travel:</b>	.008" (0.2mm)

## Materials & Finishes

<b>Actuator:</b>	Glass fiber reinforced polyamide (UL94V-0)
<b>Case:</b>	Stainless steel
<b>Base:</b>	Glass fiber reinforced polyamide (UL94V-0)
<b>Movable Contacts:</b>	Stainless steel with silver or gold plating
<b>Stationary Contacts:</b>	Brass with silver or gold plating
<b>Terminals:</b>	Brass with silver or gold plating

## Environmental Data

<b>Operating Temperature Range:</b>	-20°C through +70°C (-4°F through +158°F)
<b>Humidity:</b>	90 ~ 95% humidity for 240 hours @ 40°C (104°F)
<b>Vibration:</b>	10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range & returning in 1 minute; 3 right angled directions for 2 hours
<b>Shock:</b>	100G (981m/s <sup>2</sup> ) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

## Processing

<b>Soldering:</b>	Reflow Soldering Recommended. See Profile A in Supplement section. Manual Soldering: See Profile A in Supplement section.
<b>Cleaning:</b>	These devices are not process sealed. Hand clean locally using alcohol based solution.

## Standards & Certifications

<b>Flammability Standards:</b>	UL94V-0 actuator and base These switches are designed for use in a low-voltage, low-current circuit. When used as intended, the results do not produce hazardous energy.
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# Distinctive Characteristics

.244" (6.2mm) square body allows compact mounting.

Heat resistant resin body meets lead-free solder processing requirements and UL flammability rating of 94V-0.

Stick-tube and tape-reel packaging allow rapid automated placement of devices.

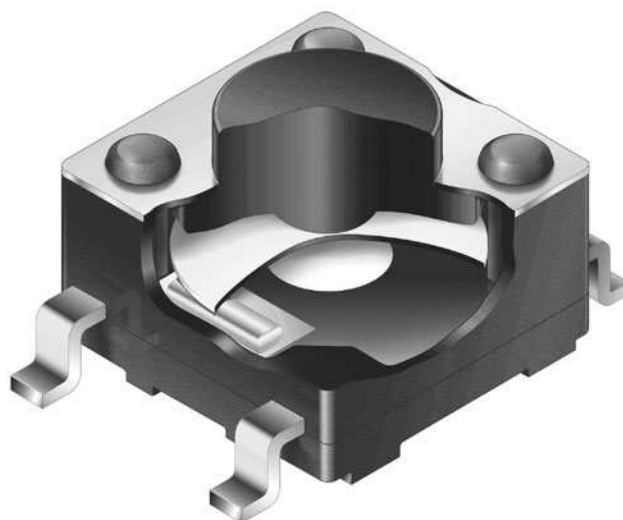
Gold plated contacts available for very low voltage/current applications offer advantages of little or no oxidization or sulfurization and stable contact resistance.

Gull-winged terminals ensure mechanical stability during soldering and simplified solder joint inspection.

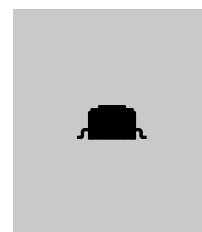
Insert molded terminals lock out flux, solvents, and other contaminants and allow automated soldering.

Tape-reel packaging meets EIA-481-D Standard.

Coplanarity: all considered surfaces must lie between two parallel planes that are a maximum distance apart of .0039" (0.10mm). (Additional coplanarity details in Terms and Acronyms in the Supplement section.)



Actual Size



TYPICAL SWITCH ORDERING EXAMPLE

HP03

15A

F

K

P4

R

Pole & Circuit

15A SPST OFF (ON)

( ) = Momentary  
Normally Open Contacts

Actuator

F Flat Button

Actuator Color

K Black

Terminals & Contacts

P2 Gull Wing for Upright Mount;  
Silver Contacts Rated 3VA max. DC

P4 Gull Wing for Upright Mount;  
Gold Contacts Rated 0.4VA max. @  
28V AC/DC max.

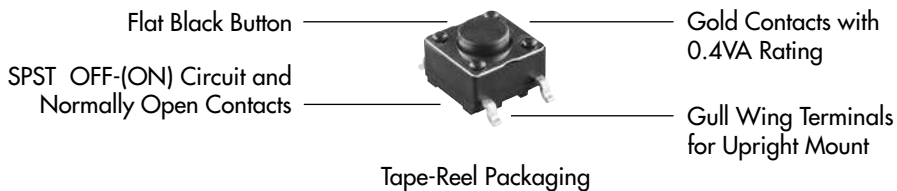
Packaging

S Stick-Tube  
100 Pieces/  
Tube

R Tape-Reel  
1,000 Pieces/  
Reel

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

HP0315AFKP4-R



POLE & CIRCUIT

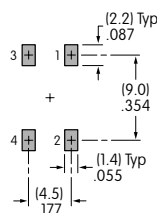
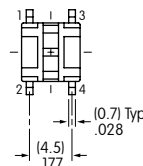
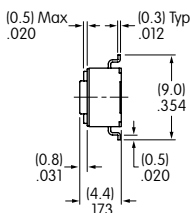
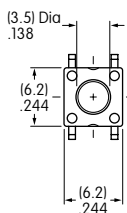
		Actuator Position ( ) = Momentary		Switch Throw & Schematic	Note: Terminal numbers are not actually on the switch.
Pole	Model	Normal	Down		
SP	HP0315A	OFF	(ON)	SPST 	

TYPICAL SWITCH DIMENSIONS

Gull-winged



HP0315AFKP4



## PACKAGING

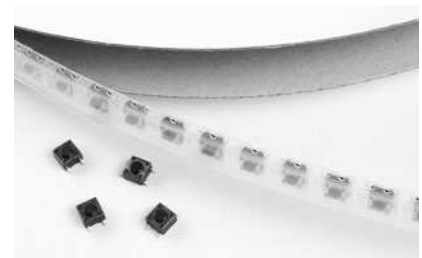
### S Stick-Tube

Switches must be ordered in 100-piece increments when stick-tube packaging is selected.



### R Tape-Reel

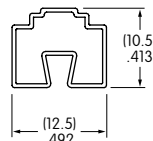
Switches must be ordered in 1,000-piece increments when tape-reel packaging is selected.



Packaging meets EIA-481-D Standard.

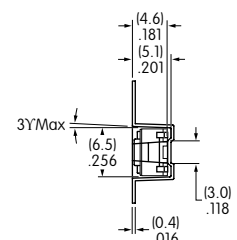
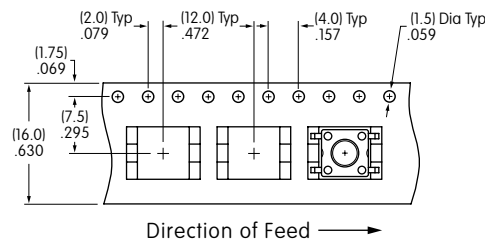
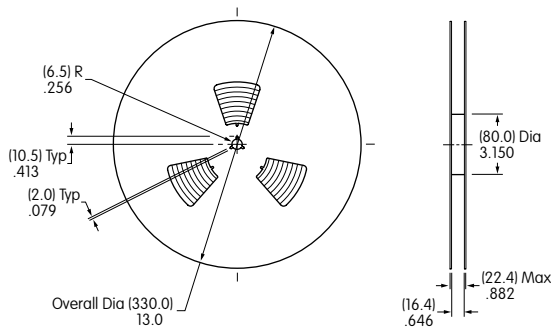
### Stick-Tube Dimensions

Each stick-tube contains 100 switches



### Tape-Reel Dimensions

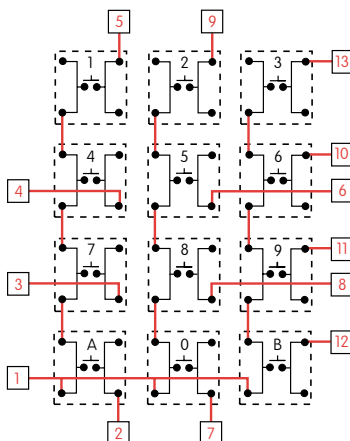
Each tape-reel of 1,100 pockets contains 1,000 switches.  
Minimum Leader Length: 15.748" (400mm). Minimum Trailer Length: 6.299" (160mm).



## KEYBOARD MATRIX

### Common Bus Matrix

These single pole, single throw switches can be used in a keyboard matrix and, using strapped terminals, achieve a common bus electrical configuration on a single-sided PC board.

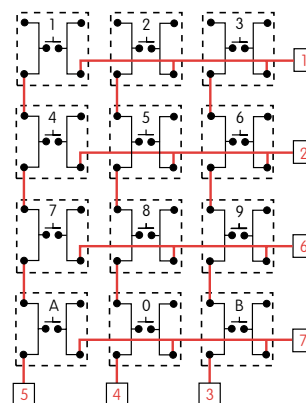


PC Terminations													
	1	2	3	4	5	6	7	8	9	10	11	12	13
Keys (Switches)													
1	●												
2	●												
3	●												
4	●												
5	●												
6	●												
7	●												
8	●												
9	●												
0	●												
A	●												
B	●												

Red = PCB Trace Black = Switch Circuit

### X-Y Matrix

These single pole, single throw switches can be arranged on a single-sided PC board matrix with strapped terminals to achieve an X-Y type electrical interconnection.



PC Terminations							
	1	2	3	4	5	6	7
Keys (Switches)							
1	●						
2	●						
3	●						
4	●						
5	●						
6	●						
7	●						
8	●						
9	●						
0	●						
A	●						
B	●						