

# 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.

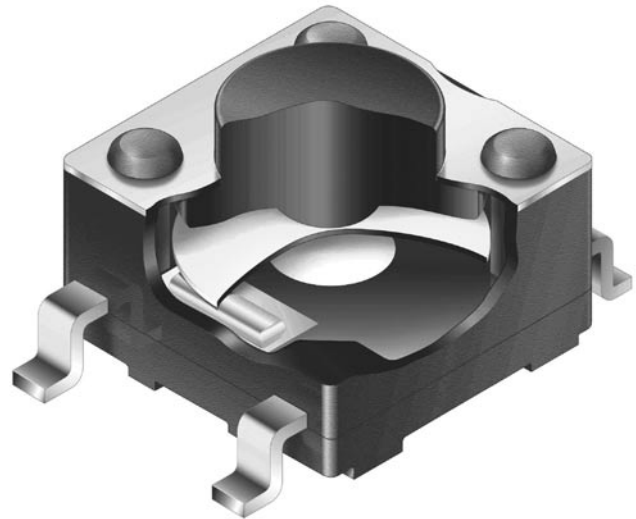
Gold plated contacts available for very low voltage/current applications offer advantages of little or no oxidization or sulfurization and stable contact resistance.

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

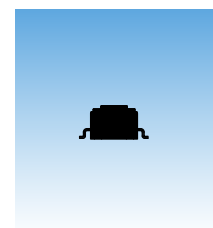
Insert molded terminals lock out flux, solvents, and other contaminants and allow automated soldering.

Tape-reel packaging meets EIA-481-2 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



# General Specifications

## Electrical Capacity (Resistive Load)

- Power Level (code P2):** 3VA maximum @ 28V DC maximum  
(Applicable Range 10mA ~ 125mA @ 0.1V ~ 28V)
  - Logic Level (code P4):** 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

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

## Materials & Finishes

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

## Environmental Data

- Operating Temperature Range:** -20°C through +70°C (-4°F through +158°F)
- Humidity:** 90 ~ 95% humidity for 240 hours @ 40°C (104°F)
- Vibration:** 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
- Shock:** 100G (981m/s<sup>2</sup>) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

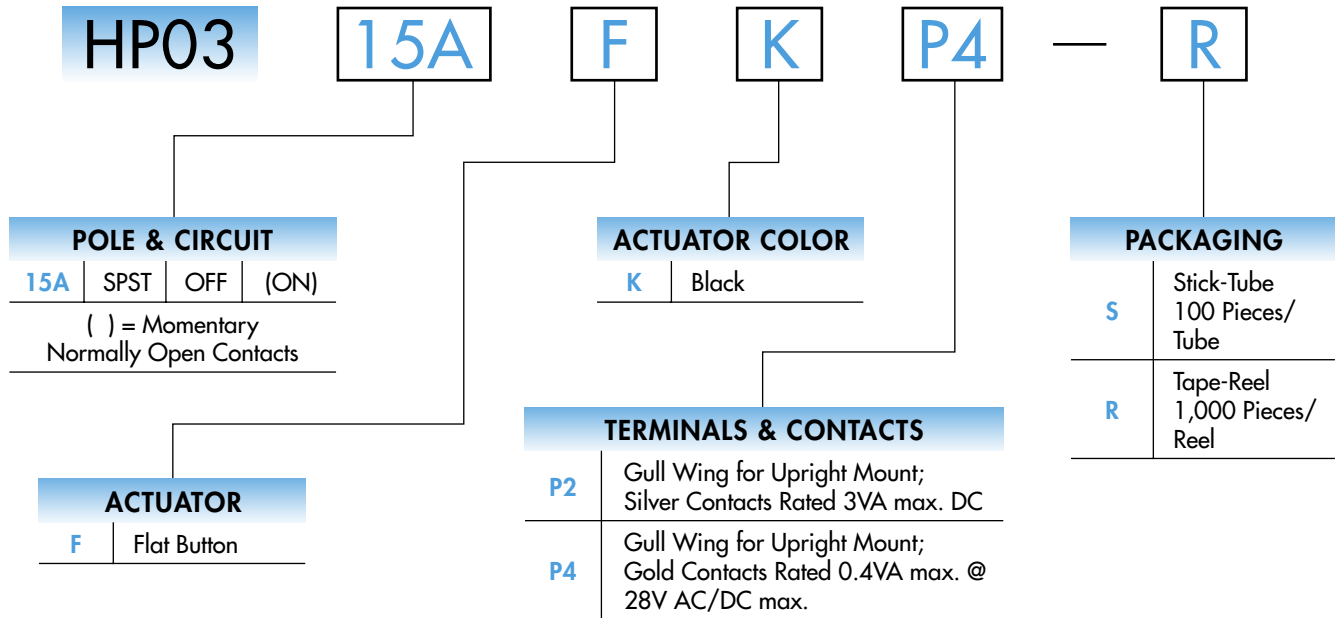
## Processing

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

## Standards & Certifications

- Flammability Standards:** UL94V-0 actuator and base
- UL Recognition & CSA Certification:** These switches are designed for use in a low-voltage, low-current circuit. When used as intended, the results do not produce hazardous energy.

### TYPICAL SWITCH ORDERING EXAMPLE



### DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

#### HP0315AFKP4-R



### POLE & CIRCUIT

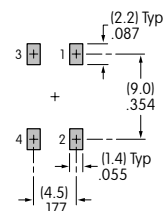
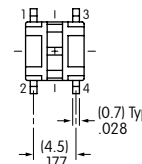
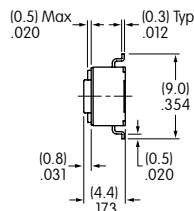
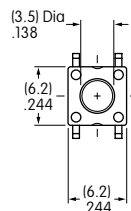
		Actuator Position ( ) = Momentary		Switch Throw & Schematic	Note: Terminal numbers are not actually on the switch.
Pole	Model	Normal	Down		
SP	HP0315A	OFF	(ON)	SPST	

### TYPICAL SWITCH DIMENSIONS

#### Gull-winged



HP0315AFKP4



## PACKAGING

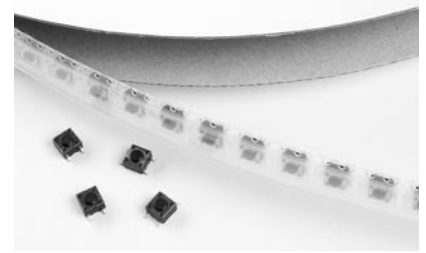
### S Stick-Tube

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



### R Tape-Reel

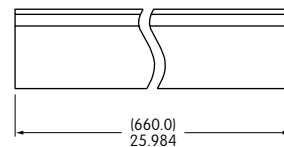
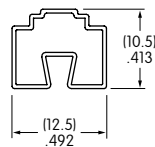
Switches must be ordered in 1,000-piece increments when tape-reel packaging is selected.



Packaging meets EIA-481-2 Standard.

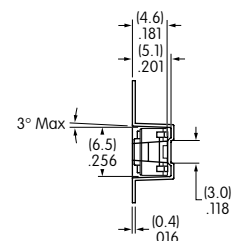
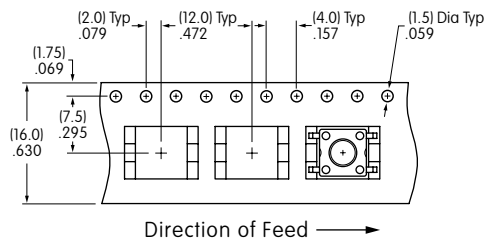
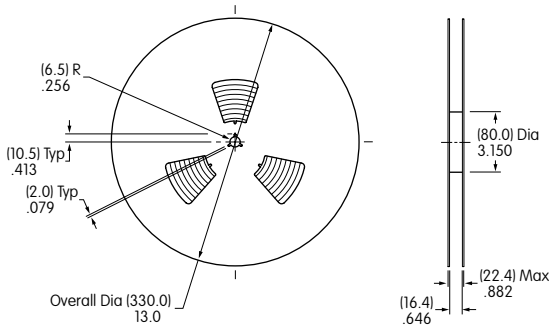
### Stick-Tube Dimensions

Each stick-tube contains 100 switches



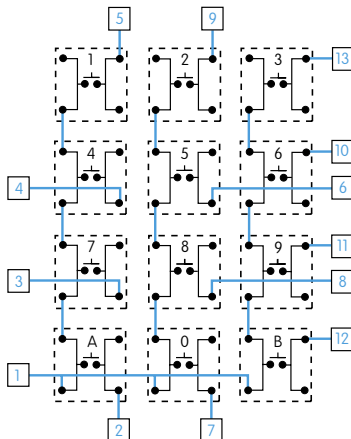
### Tape-Reel Dimensions

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



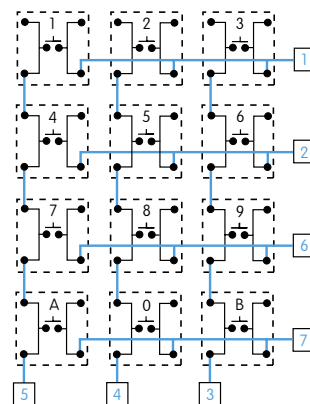
PC Terminations		1	2	3	4	5	6	7	8	9	10	11	12	13
Keys (Switches)	1													
2														
3														
4														
5														
6														
7														
8														
9														
0														
A														
B														

● = ON

Blue = PCB Trace, Black = Switch Circuit

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.

### X-Y Matrix



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

● = ON

Blue = PCB Trace, Black = Switch Circuit

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.