

General Specifications

Electrical Capacity (Resistive Load)

Power Level (silver):	3VA maximum @ 28V DC maximum (Applicable Range 10mA ~ 125mA @ 0.1V ~ 28V)
Logic Level (gold):	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 ²) 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 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.

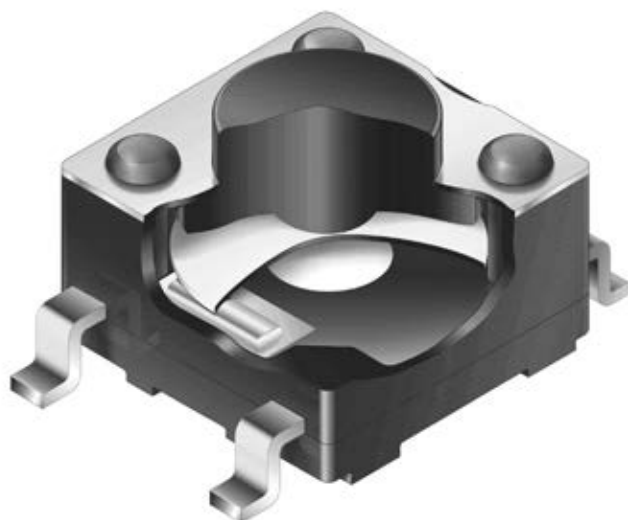
Gold plated contacts available for very low voltage/current applications offer advantages of little or no oxidization or sulfurization and stable contact resistance.

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

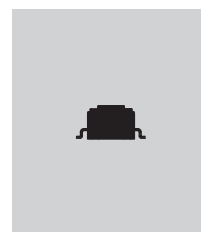
Insert molded terminals lock out flux, solvents, and other contaminants and allow automated soldering.

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 Color

K Black

Packaging

S Stick-Tube
100 Pieces/
Tube

R Tape-Reel
1,000 Pieces/
Reel

Actuator

F Flat Button

Terminals & Contacts

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

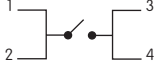
P4 Gull Wing for Upright Mount;
Gold Contacts Rated 0.4VA max. @
28V AC/DC max.

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

HP0315AFKP4-R

Flat Black Button
SPST OFF-(ON) Circuit and
Normally Open Contacts
Gold Contacts with
0.4VA Rating
Gull Wing Terminals
for Upright Mount
Tape-Reel Packaging

POLE & CIRCUIT

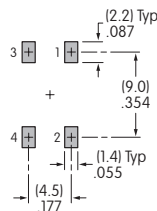
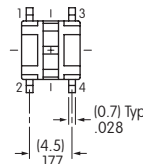
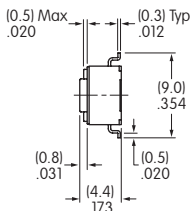
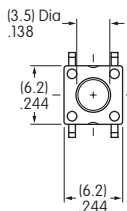
		Actuator Position () = Momentary		Switch Throw & Schematic	Note: Terminal numbers are not actually on the switch.
Pole	Model	Normal	Down		
SP	HP0315A	OFF	(ON)	SPST 	

TYPICAL SWITCH DIMENSIONS

Gull-winged



HP0315AFKP4



PACKAGING

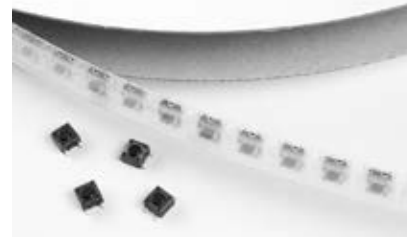
S Stick-Tube

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



R Tape-Reel

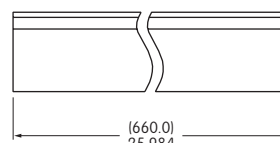
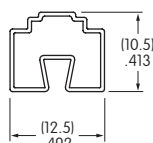
Switches must be ordered in 1,000-piece increments when tape-reel packaging is selected.



Packaging meets EIA-481-D Standard.

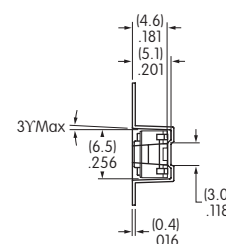
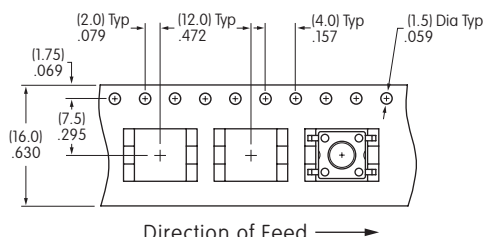
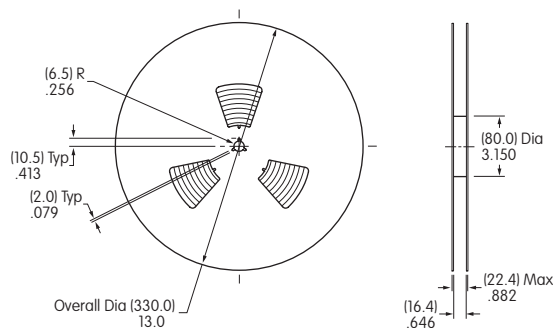
Stick-Tube Dimensions

Each stick-tube contains 100 switches



Tape-Reel Dimensions

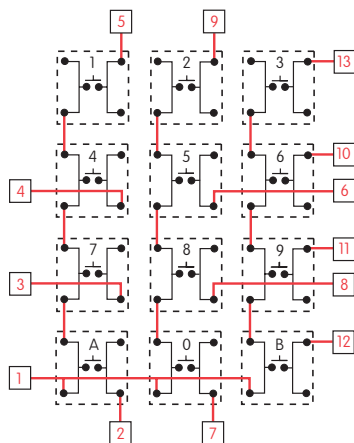
Each tape-reel of 1,100 pockets contains 1,000 switches.
Minimum Leader Length: 15.748" (400mm). Minimum Trailer Length: 6.299" (160mm).



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.

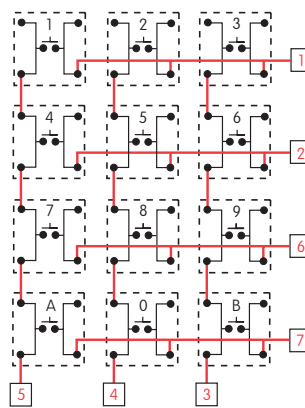


PC Terminations													
	1	2	3	4	5	6	7	8	9	10	11	12	13
Keys (Switches)	1												
2													
3													
4													
5													
6													
7													
8													
9													
0													
A													
B													

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							

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NKK Switches:

[HP0315AFKP4](#) [HP0315AFKP2-S](#) [HP0315AFKP4-S](#) [HP0315AFKP2-R](#) [HP0315AFKP4-R](#) [HP0315AFKP2](#)