

# General Specifications

## Electrical Capacity (Resistive Load)

Low/Logic Level: 50mA @ 24V DC

## Other Ratings

<b>Contact Resistance:</b>	50 milliohms maximum
<b>Insulation Resistance:</b>	500 megohms minimum @ 250V DC
<b>Dielectric Strength:</b>	250V AC minimum for 1 minute minimum
<b>Mechanical Life:</b>	1,000,000 operations minimum
<b>Electrical Life:</b>	1,000,000 operations minimum
<b>Nominal Operating Force:</b>	3.0N
<b>Total Travel:</b>	.030" (0.75mm)

## Materials & Finishes

<b>Actuator:</b>	Polycarbonate
<b>Case:</b>	Glass fiber reinforced polyamide
<b>Base:</b>	Glass fiber reinforced polybutylene terephthalate (PBT)
<b>Movable Contact:</b>	Stainless steel
<b>Stationary Contacts:</b>	Brass with silver plating
<b>Switch Terminals:</b>	Brass with silver plating
<b>Lamp Terminals:</b>	Brass with tin plating

## Environmental Data

<b>Operating Temperature Range:</b>	-25°C through +50°C (-13°F through +122°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>	50G (490m/s <sup>2</sup> ) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

## PCB Processing

<b>Soldering:</b>	Wave Soldering: 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

The JL Series tactiles have not been tested for UL recognition or 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.

# Distinctive Characteristics

Bright, full face illumination with choice of red, green, or amber LEDs.

Multiple LED arrays and interior reflectors enhance illumination of the large, .75" (19mm) square actuator surface.

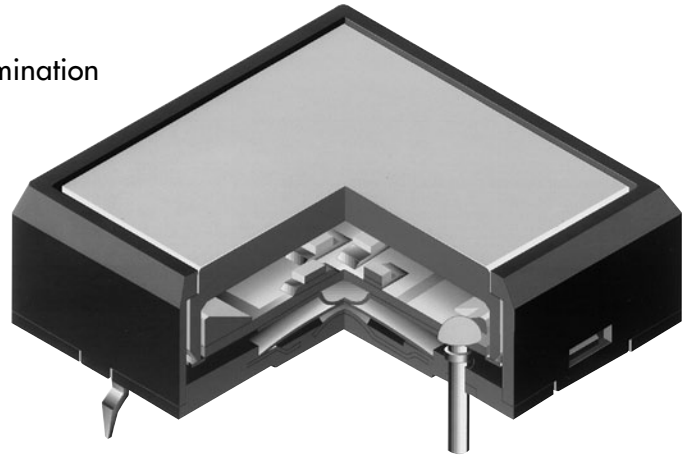
Distinctive design allows full face illumination in extra low profile of 0.31" (7.85mm) from PCB to top of switch.

Dome contact gives crisp tactile and audible feedback with short stroke and assures high reliability and long life of 1,000,000 operations.

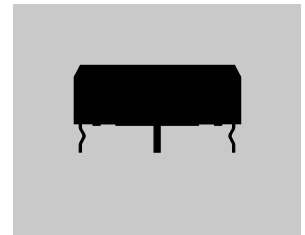
Crimped terminals provide a spring type action to ensure secure mounting and prevent dislodging during the soldering process.

Streamlined housing dimensions provide for compact, side-by-side mounting on a standard grid.

Terminal spacing conforms to standard .100" (2.54mm) PCB grid.

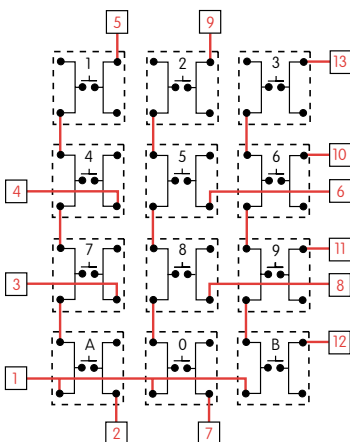


Actual Size



## 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.

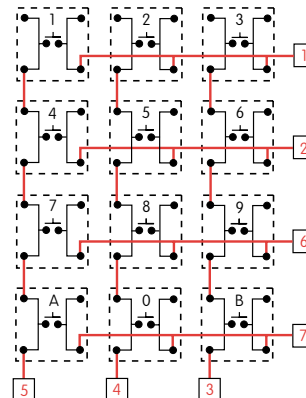


PC Terminations		1	2	3	4	5	6	7	8	9	10	11	12	13
Keys (Switches)	1					●								
2		●												
3			●											
4				●										
5					●									
6						●								
7							●							
8								●						
9									●					
0										●				
A											●			
B												●		

● = ON

## 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.

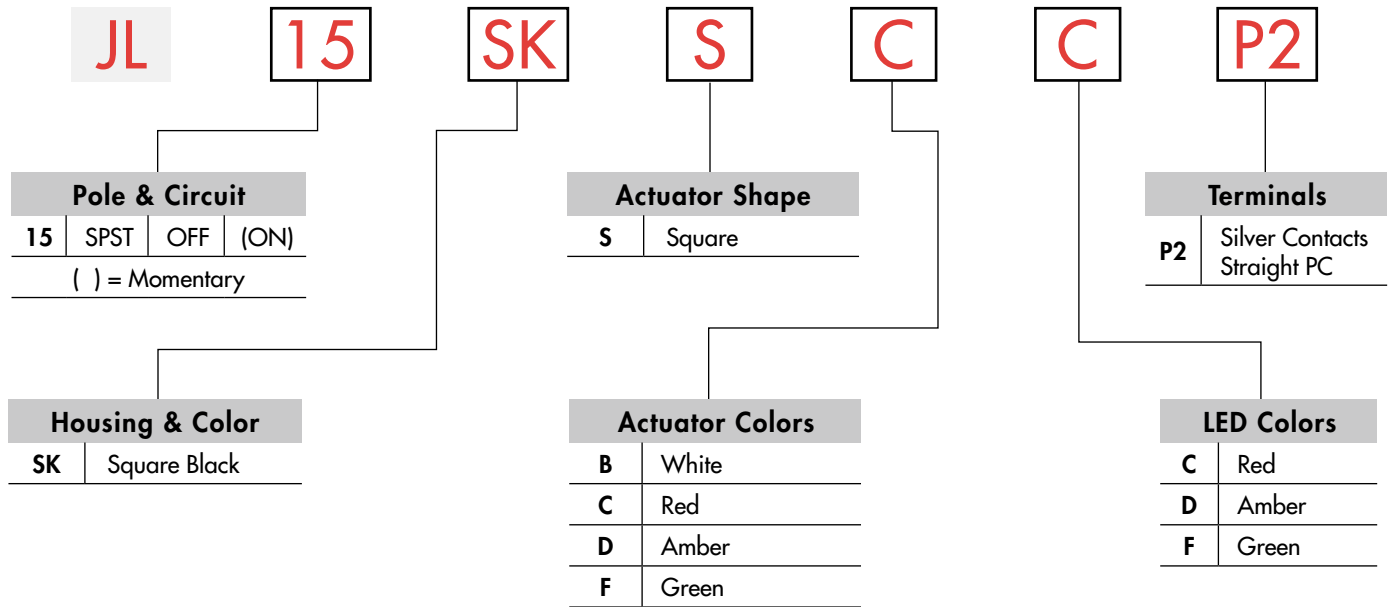


PC Terminations		1	2	3	4	5	6	7
Keys (Switches)	1		●					
2		●						
3			●					
4				●				
5					●			
6						●		
7							●	
8								●
9								●
0								●
A								●
B								●

● = ON

Red = PCB Trace    Black = Switch Circuit

## TYPICAL SWITCH ORDERING EXAMPLE



## DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

**JL15SKSCP2**

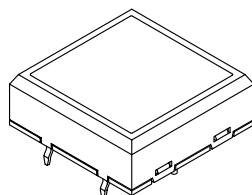


## POLE & CIRCUIT

Pole	Model	Actuator Position ( ) = Momentary		Switch Throw & Schematic	LED Schematic	Note: Terminal markings "1", "1a", "-", and "+" are shown on the switch.
		Normal	Down			
SP	JL15	OFF	(ON)	SPST		

## HOUSING & COLOR

**SK** Square Black Housing



## ACTUATOR SHAPE & COLORS

**S** .748" (19.0mm) Square Actuator

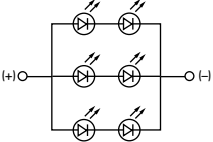
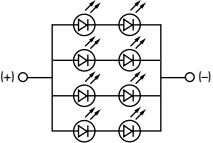
Actuator Colors Available:

**B** White   **C** Red   **D** Amber   **F** Green

Toggles  
Rockers  
Pushbuttons  
Illuminated PB  
Programmable  
Keylocks  
Rotaries  
Slides  
Tactiles  
Tilt  
Touch  
Indicators  
Accessories  
Supplement

LED COLORS & SPECIFICATIONS

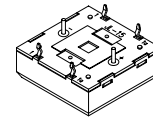
LEDs are an integral part of the switch. The electrical specifications shown are determined at a basic temperature of 25°C. If the source voltage exceeds the rated voltage, a ballast resistor is required. The resistor value can be calculated by using the formula in the Supplement.

<p><b>Red LED model has 6 LEDs.</b></p>  <p><b>Amber &amp; Green models each have 8 LEDs.</b></p> 	1-color, 1-element LEDs grouped in arrays of 6 or 8.	Color	<b>C</b> Red	<b>D</b> Amber	<b>F</b> Green
	Forward Peak Current	$I_{FM}$	75mA	100mA	100mA
	Typical Forward Current	$I_F$	60mA	80mA	80mA
	Forward Voltage	$V_F$	4.0V	4.2V	4.2V
	Reverse Peak Voltage	$V_{RM}$	8V	8V	8V
	Current Reduction Rate Above 25°C	$\Delta I_F$	0.98mA/°C	1.31mA/°C	1.31mA/°C
	Ambient Temperature Range		-25°C ~ +50°C		

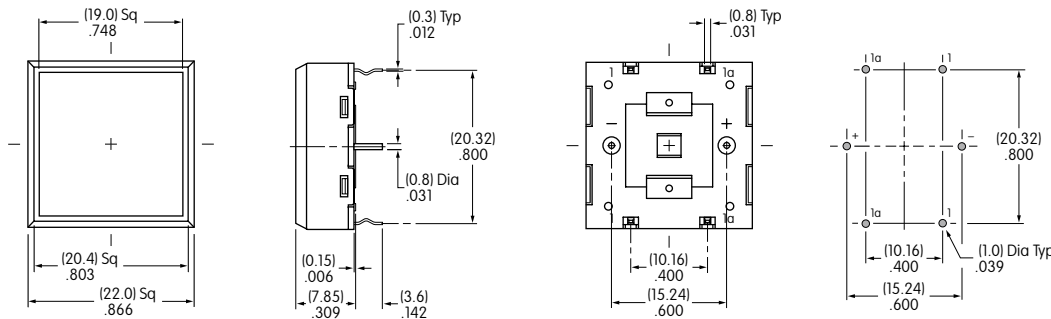
TERMINALS

**P2** Silver Contacts Straight PC

Additional details in Typical Switch Dimensions



TYPICAL SWITCH DIMENSIONS



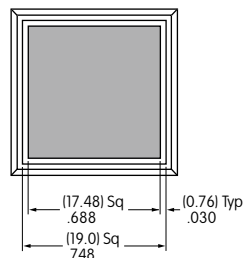
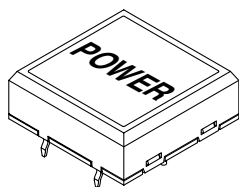
Square Actuator



JL15KSCCP2

LEGENDS

NKK Switches can provide custom legends for caps. Contact factory for more information.



Shaded area is printable area.

Recommended Print Methods:

Screen Print or Pad Print.

Epoxy based ink is recommended.

Additional Method

Engraving is not recommended as an additional method for legends.

Contact factory if engraving is required; it must be done before the actuator is assembled.

Toggles  
Rockers  
Pushbuttons  
Illuminated PB  
Programmable  
Keylocks  
Rotaries  
Slides  
Tactiles  
Tilt  
Touch  
Indicators  
Accessories  
Supplement