

General Specifications

Electrical Capacity (Resistive Load)

Low/Logic Level: 50mA @ 24V DC

Other Ratings

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

Materials & Finishes

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

Environmental Data

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

PCB Processing

Soldering:	Wave Soldering: 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

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.

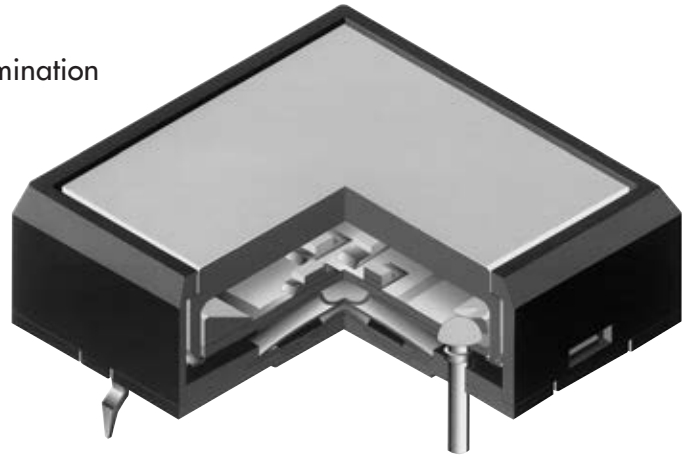
Distinctive design allows full face illumination in extra low profile of 0.31" (7.85mm) from PCB to top of switch.

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

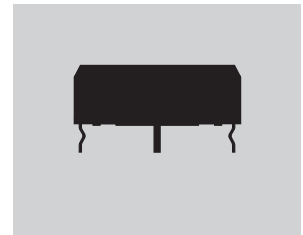
Crimped terminals provide a spring type action to ensure secure mounting and prevent dislodging during the soldering process.

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

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

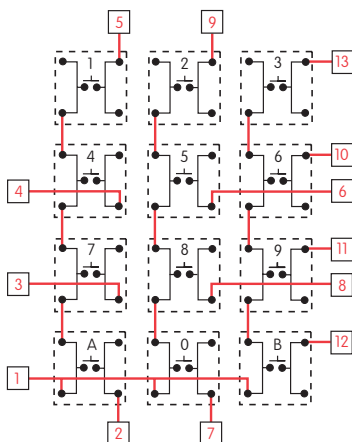


Actual Size



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.

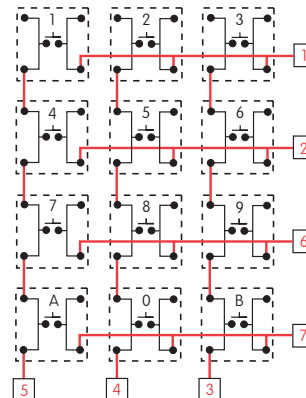


PC Terminations		1	2	3	4	5	6	7	8	9	10	11	12	13
Keys (Switches)	1					●								
	2										●			
	3													●
	4				●									
	5						●							
	6											●		
	7													●
	8													
	9													
	0													
	A													
	B													

● = 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.

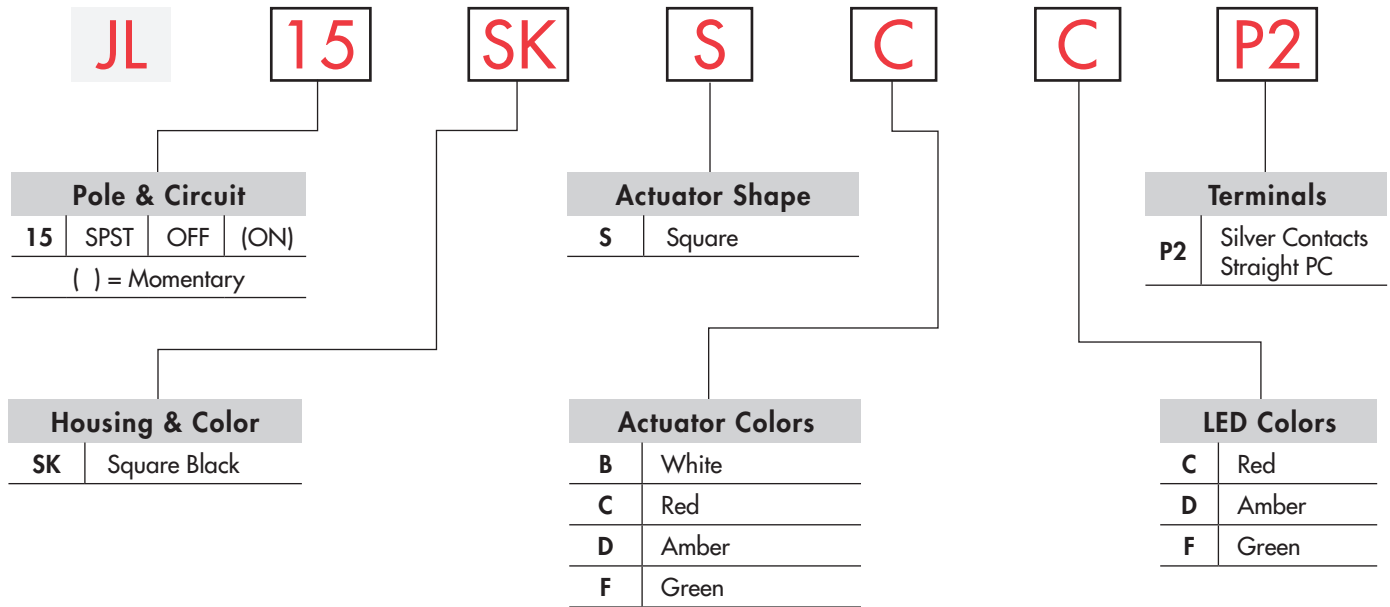


PC Terminations		1	2	3	4	5	6	7
Keys (Switches)	1							
	2		●					
	3			●				
	4				●			
	5					●		
	6						●	
	7							●
	8							
	9							
	0							
	A							
	B							

● = ON

Red = PCB Trace Black = Switch Circuit

TYPICAL SWITCH ORDERING EXAMPLE



DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

JL15SKSCP2

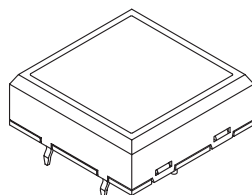


POLE & CIRCUIT

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

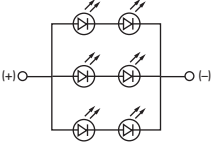
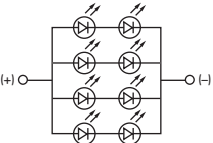
S .748" (19.0mm) Square Actuator

Actuator Colors Available:

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

LED COLORS & SPECIFICATIONS

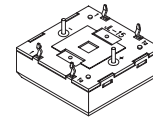
LEDs are an integral part of the switch. The electrical specifications shown are determined at a basic temperature of 25°C. If the source voltage exceeds the rated voltage, a ballast resistor is required. The resistor value can be calculated by using the formula in the Supplement.

<p>Red LED model has 6 LEDs.</p>  <p>Amber & Green models each have 8 LEDs.</p> 	1-color, 1-element LEDs grouped in arrays of 6 or 8.	Color	C Red	D Amber	F Green
	Maximum Forward Current	I_{FM}	90mA	120mA	120mA
	Typical Forward Current	I_F	60mA	80mA	80mA
	Forward Voltage	V_F	3.9V	4.0V	4.2V
	Maximum Reverse Voltage	V_{RM}	10V	10V	10V
	Current Reduction Rate Above 25°C	ΔI_F	1.2mA/°C	1.6mA/°C	1.6mA/°C
	Ambient Temperature Range		-25°C ~ +50°C		

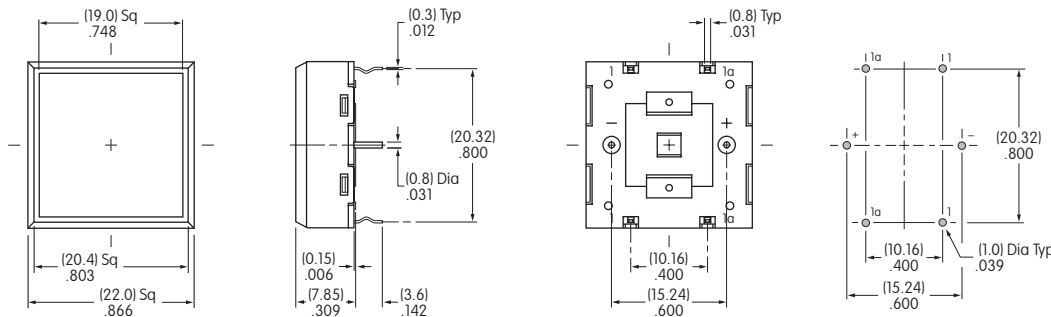
TERMINALS

P2 Silver Contacts Straight PC

Additional details in Typical Switch Dimensions



TYPICAL SWITCH DIMENSIONS



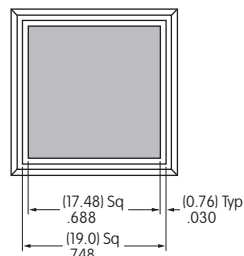
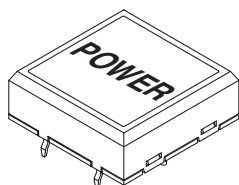
Square Actuator



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