

# K12

## High Performance Key Switches

### Features/Benefits

- Excellent tactile feel
- Wide choice of LED colors, travel and actuator forces
- High reliability / long life
- Sealed version available
- Designed for low-level switching
- Double stroke version available
- Detector version available

### Typical Applications

- Automotive
- Off-road transportation
- Industrial electronics
- Computers & network equipment



### Construction:

FUNCTION: momentary  
 DISTANCE BETWEEN BUTTON CENTERS:  
 min. 11 (0.433) K12C = 13 (0.512)  
 TERMINALS: PC pins, tinned  
 MOUNTING: Locating pins; K12D, K12G and K12P additionally  
 with snap-in housing

### Mechanical

TOTAL TRAVEL: 1 mm, 1.5 mm, 2 mm  
 SWITCHING TRAVEL: 0.6 mm\*  
 OPERATING FORCE: 1.5 N OD without snap-point as detector  
 switch, 2.5 N, 3.5 N, 5 N, 3.5/7 N, 6/12 N  
 PROTECTION CLASS: K12C IP 67 (dust tight, protected against  
 the effects of immersion in water; other versions IP 50)

\* Additional switching travel (with pre-travel) available by request.

**NOTE:** Product to be offered compliant and compatible on Q1 2006.

### Electrical

SWITCHING POWER MIN./MAX.: 0.02mW/3 W  
 SWITCHING VOLTAGE MIN./MAX.: 2 V DC / 30 V DC  
 SWITCHING CURRENT MIN./MAX.: 10 µA /100 mA  
 DIELECTRIC STRENGTH (50 Hz, 1 min): ≥ 500 V  
 OPERATING LIFE with max. switching power: ≥ 10<sup>6</sup> operations  
 K12G & K12GO; operating life of second switch 5 x 10<sup>4</sup> operations  
 CONTACT RESISTANCE: Initial ≤ 50 mΩ  
 INSULATION RESISTANCE: ≥ 10<sup>10</sup> Ω  
 BOUNCE TIME: ≤ 1 ms  
 Operating speed 400 mm/s (15.75/s)

### Environmental

OPERATING TEMPERATURE: -40°C to 85°C.  
 STORAGE TEMPERATURE: -40°C to 95°C.

### Process

SOLDERABILITY:  
 Max. soldering time and temperature: 5 s at 260°C

### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



#### Series

- K12A** No snap-in pegs
- K12AL** No snap-in pegs with central LED
- K12P** With snap-in pegs
- K12PL** With central LED
- K12C** Sealed contact with rubber cap (IP 67)
- K12GO** Two-step switch without side LED holder
- K12GOL** K12GO with central LED

#### Cap Color

- NONE** version with LED
- BK** Black cap – No LED

#### LED Color

- NONE** No LED
- GN** Green
- YE** Yellow
- OG** Orange
- RD** Red
- WH** White
- BU** Blue

#### Standard LED Code

- NONE** No LED
- L306** Green
- L327** Yellow
- L315** Orange
- L352** Red
- L302** White
- L328** Blue

#### Travel\*

- 1** 1 mm (0.039)
- 1.5** 1.5 mm (0.059)
- 2** 2 mm (0.079)

#### Operating Force

- 1.5N OD** 1.5 N without snap-point
- 2.5N** 2.5 N
- 3.5N** 3.5 N
- 5N** 5 N
- 3.5/7N** 3.5/7 N\*\*
- 6/12N** 6/12 N\*\*

#### Contact Arrangement

- NONE** SPST NO (STD)
- 1R** SPST NC (Special request)

\* K12C – 1mm MAX  
 K12 with LED – 1.5 mm MAX  
 \*\* K12G & K12GO version only

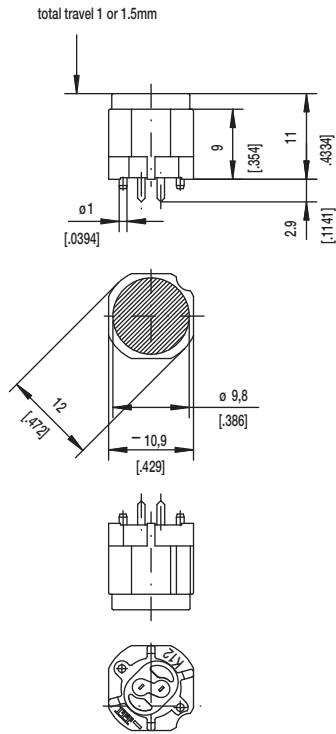


Dimensions are shown: mm (inch)  
 Specifications and dimensions subject to change

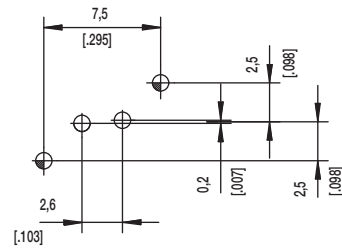
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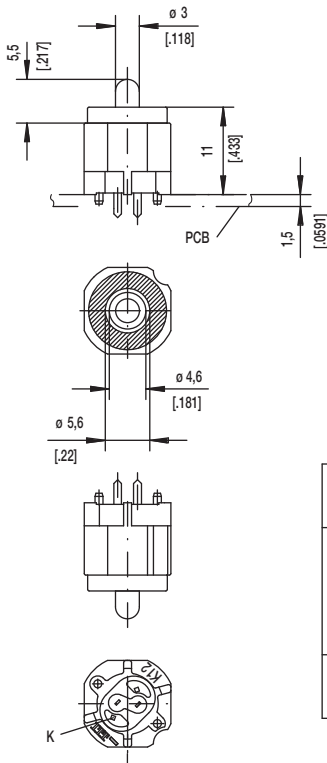
## K12A



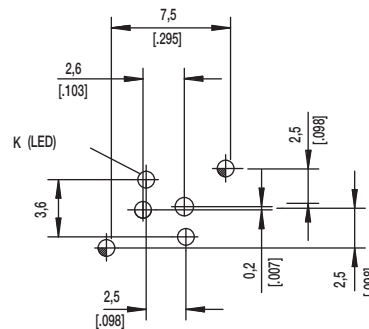
PCB LAYOUT, MOUNTING SIDE



## K12AL



PCB LAYOUT, MOUNTING SIDE

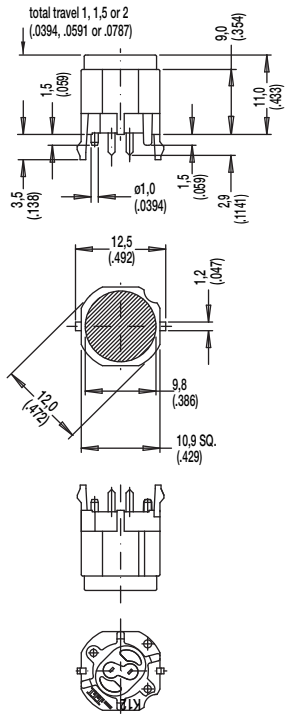


	1,1 <sup>+0,05</sup>	2x	2x	center hole		
	0,9 ±0,05		2x	LED	ø0,5 (.020)	Sn
		2x	2x	switch	0,7x0,2 (.028x.081)	Sn
Hole	ø	Without	with LED	Description	Terminal Section	Surface

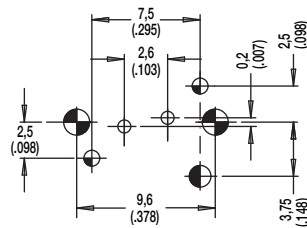
# K12 High Performance Key Switches

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## K12P



PCB LAYOUT, MOUNTING SIDE

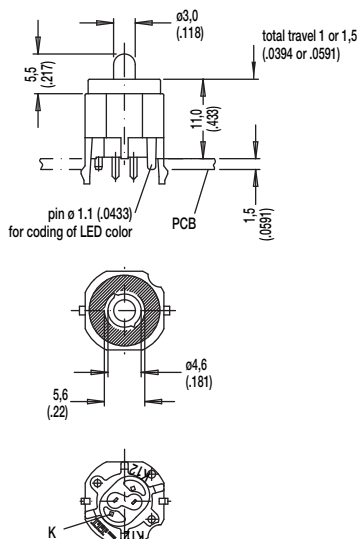


center of actuation area (notice LED)

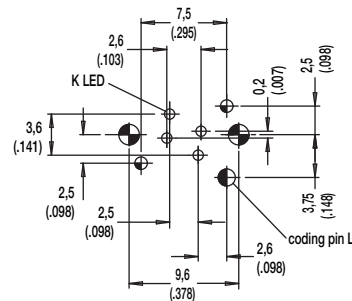


Hole	Ø	Without LED	Description	Terminal Section	Surface
	1,7 (.069)	2x	snap-in		
	1,6 (.062)	1x	coding hole (L,M,N)		
	1,1 (.043)	2x	center hole		Sn
	0,9 (.035)	2x	LED switch	m0.5 (.020) 0.7 x 0.2 (.028 x .081)	Sn

## K12PL



PCB LAYOUT, MOUNTING SIDE



center of actuation area (notice LED)



Hole	Ø	Without LED	Description	Terminal Section	Surface
	1,7 (.069)	2x	snap-in		
	1,6 (.062)	1x	coding hole (L,M,N)		
	1,1 (.043)	2x	center hole		Sn
	0,9 (.035)	2x	LED	m0.5 (.020)	Sn
		2x	switch	0.7 x 0.2 (.028 x .081)	



First Angle  
Projection

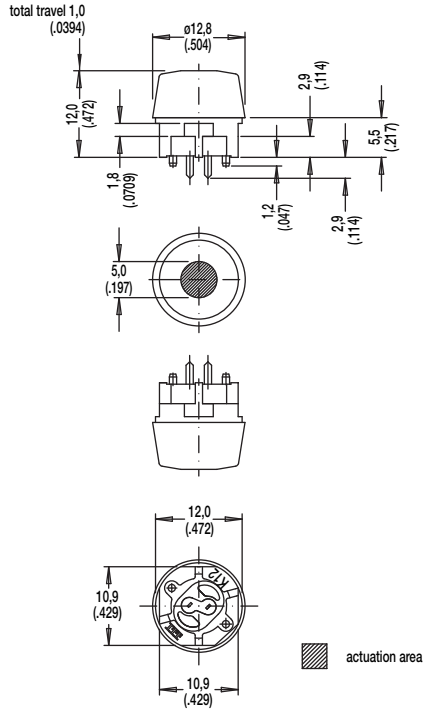
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Specifications and dimensions subject to change



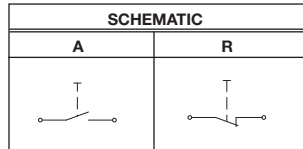
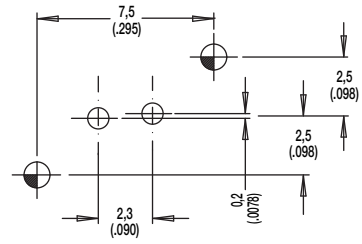
# K12 High Performance Key Switches

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## K12C SEALED CONTACT WITH RUBBER CAP (IP 67)



PCB LAYOUT, MOUNTING SIDE



Hole	Ø	Without LED	With LED	Description	Terminal Section	Surface
	1,1 (.043)	2x	2x	center hole		
	0,9 (.035)		2x	LED	m0.5 (.0204)	Sn
		2x	2x	switch	0.7 x 0.2(.0275 x .0787)	Sn

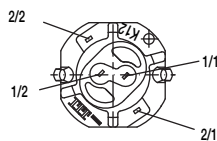
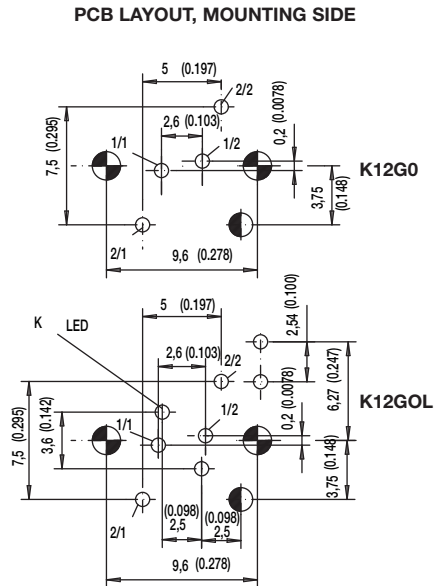
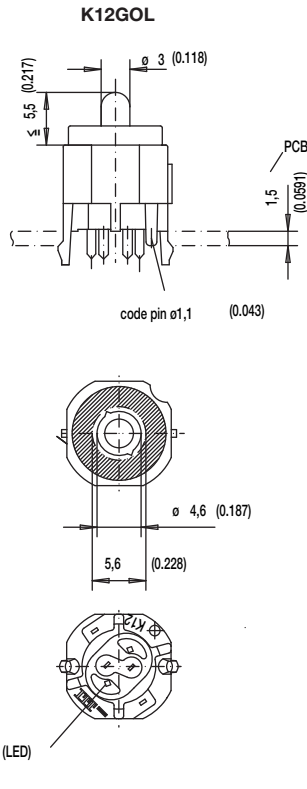
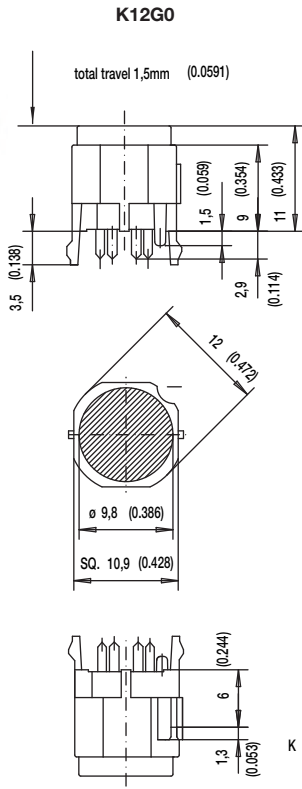


First Angle Projection  
Dimensions are shown: mm (inch)  
Specifications and dimensions subject to change

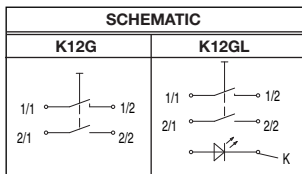
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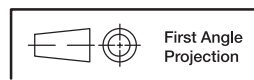
**K12GO**  
**K12GOL**



actuation area



Hole	Ø	Without LED	With LED	Description	Terminal Section	Surface
	1,7 (.069)	2x	2x	snap-in		
	1,6 (.062)	1x	1x	code		
	0,9 (.035)		2x	2 LED		Sn
			2x	LED	m0.5 (.020)	Sn
		2x	2x	switch 2	0.7 x 0.3 (.028 x .012)	Sn
		2x	2x	switch 1	0.7 x 0.2 (.028 x .081)	Sn



Dimensions are shown: mm (inch)

Specifications and dimensions subject to change

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# K12 High Performance Key Switches

## CAP COLOR

OPTION CODE	COLOR
<b>NONE</b>	Version with LED
<b>BK</b>	Black

## LED COLOR

OPTION CODE	COLOR
<b>NONE</b>	Models without LED
<b>GN</b>	Green
<b>YE</b>	Yellow
<b>OG</b>	Orange
<b>RD</b>	Red
<b>WH</b>	White
<b>BU</b>	Blue

STANDARD LED CODE	COLOR
<b>NONE</b>	Models without LED
<b>L306</b>	Green
<b>L327</b>	Yellow
<b>L315</b>	Orange
<b>L352</b>	Red
<b>L302</b>	White
<b>L328</b>	Blue

## TRAVEL

- 1** 1 mm
- 1.5** 1.5 mm
- 2** 2 mm

## OPERATING FORCE

OPTION CODE	OPERATING FORCE
<b>1.5N OD</b>	1.5 N, 150g without snap-point
<b>2.5N</b>	2.5 N, 250g
<b>3.5N</b>	3.5 N, 350g
<b>5N</b>	5 N, 500g
<b>3.5/7N</b>	3.5/7 N, 350/700g
<b>6/12N</b>	6/12 N, 600-1200g



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Key Switches