




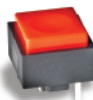





Key Switches

Product Selection Guide

Key Switches				
Series	K6	K12S	K12	PVA
Size (mm) L x W x H	7,4 x 10,9 x 8,4	12 x 11,6 x 9,1	12 x 12 x 11	9,2 x 10 x 13,5
Poles/Throws	SPST momentary	SPST / DPST 2x SPST momentary	SPST 2 x SPST momentary	DPST / DPDT momentary or push-on/push off
Maximum Load	30 V / 100 mA	30 V / 100 mA	30 V / 100 mA	32 V / 100 mA
Operating Force	2 N; 3 N; 5 N	3 N; 3,5N; 5 N; 6 N 9 N; 4/8 N; 6/12 N	1,5 N; 2,5 N; 3,5 N; 5 N 3,5/7 N; 6/12 N	1,2 N; 1,7 N; 3,5 N
Travel (standard)	1,5 mm	1,5 mm	1 mm, 1,5 mm, 2 mm	Mom. 2,4 mm Push-push 2,4/1,5mm
Life Cycle	200,000	1,000,000	1,000,000	100,000
Sealed		IP40/IP67	K12C only	
Illumination	•	•	•	
Termination	SMT/ Thru-hole	SMT	Thru-hole	Thru-hole
Page Number	D-3	D-6	D-9	D-15

Key Switches					
Series	D6	KS	Digitast	ED / EDM	KBD
Size (mm) L x W x H	12 x 11,4 x 14,5	12,4 x 12,4 x 9,9	17,1x12,3 x 14,3	12,7 x 11,3 x 1,2	15,6 x 15,6 x 15
Poles/Throws	SPST momentary	SPST SPDT	SPDT momentary or push-on/push off	SPST momentary	SPST momentary
Maximum Load	32 V/100 mA*	50 V/25 mA	24 V / 10 mA	100 V/100 mA	12 VDC /10 mA
Operating Force	1,3 N 2,75 N		1,5 N	2,4 N to 6,5N	45gf / 55gf / 60gf 0,4N / 0,5N / 0,6N
Travel (standard)	1 mm 1.10 mm	0,71 mm	3 mm	0,3 mm	1,5 ~ 2 mm
Life Cycle	250,000	100,000	5,000,000	1,000,000	50,000,000
Sealed				•	•
Illumination			•		
Termination	Thru-hole	Thru-hole	Thru-hole	Thru-hole/SMT	Thru-hole
Page Number	D-19	D-22	D-25	D-28	D-30

* Maximum value are for voltage and current separately

Dimensions are shown: mm
Specifications and dimensions subject to change



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K6 Miniature Key Switches

Features/Benefits

- Excellent tactile feel
- Wide variety of LED's, travel and actuation forces
- Designed for low-level switching
- Detector version available
- RoHS compliant

Typical Applications

- Automotive
- Industrial electronics
- Computers and network equipment



Construction

FUNCTION: momentary action
 CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.
 DISTANCE BETWEEN BUTTON CENTERS:
 min. 7,5 and 11,8 (0.295 and 0.465)
 TERMINALS: Snap-in pins, tinned
 MOUNTING: Soldered by PC pins, locating pins
 PC board thickness: 1,5 (0.0591)

Mechanical

TOTAL TRAVEL/SWITCHING TRAVEL: 1,5/0,9 (0.059/0.035)
 PROTECTION CLASS: IP 40 according to DIN/IEC 529

- 1) Voltage rise: 300 V/s
 2) According to DIN 41640; IEC 512-2
 3) Higher values upon request

Packaging

THT: bulk in boxes of 500 pieces
 SMT: bulk in boxes of 500 pieces
 reels of 500 pieces (with LED) or 750 pieces (without LED)

Electrical

SWITCHING POWER MIN./MAX.: 0.02 mW / 3 W DC
 SWITCHING VOLTAGE MIN./MAX.: 2 V DC / 30 V DC
 SWITCHING CURRENT MIN./MAX.: 10 mA / 100 mA DC
 DIELECTRIC STRENGTH (50 Hz)¹⁾²⁾: ≥ 300 V
 OPERATING LIFE: ≥ 2 x 10⁵ operations ³⁾
 ≥ 1 X 10⁵ operations for SMT version
 CONTACT RESISTANCE: Initial ≤ 50 mΩ
 INSULATION RESISTANCE: ≥ 10¹⁰ Ω
 BOUNCE TIME: ≤ 1 ms
 Operating speed 100 mm/s (3.94/s)

Environmental

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

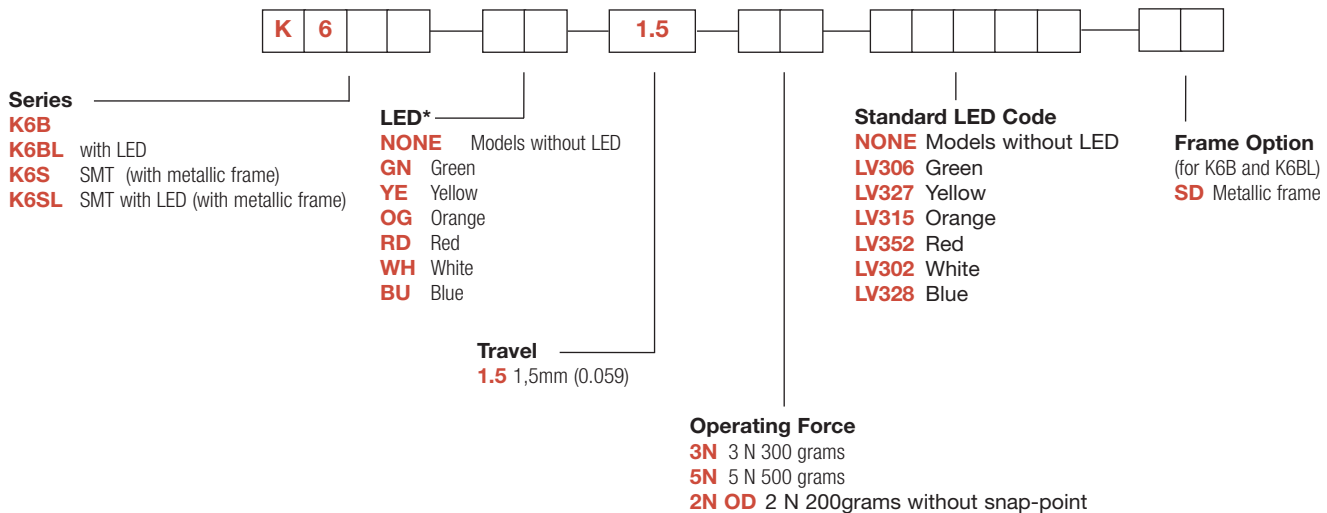
Process

SOLDERABILITY:
 THT: wave soldering, compatible with lead free soldering profile
 Hand soldering, 350°C for 3s
 SMT: not compatible with lead free reflow profile
 245°C for 5s

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.

Note: Some of the configurations may not be available or could require some development.



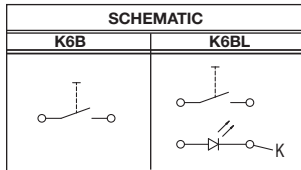
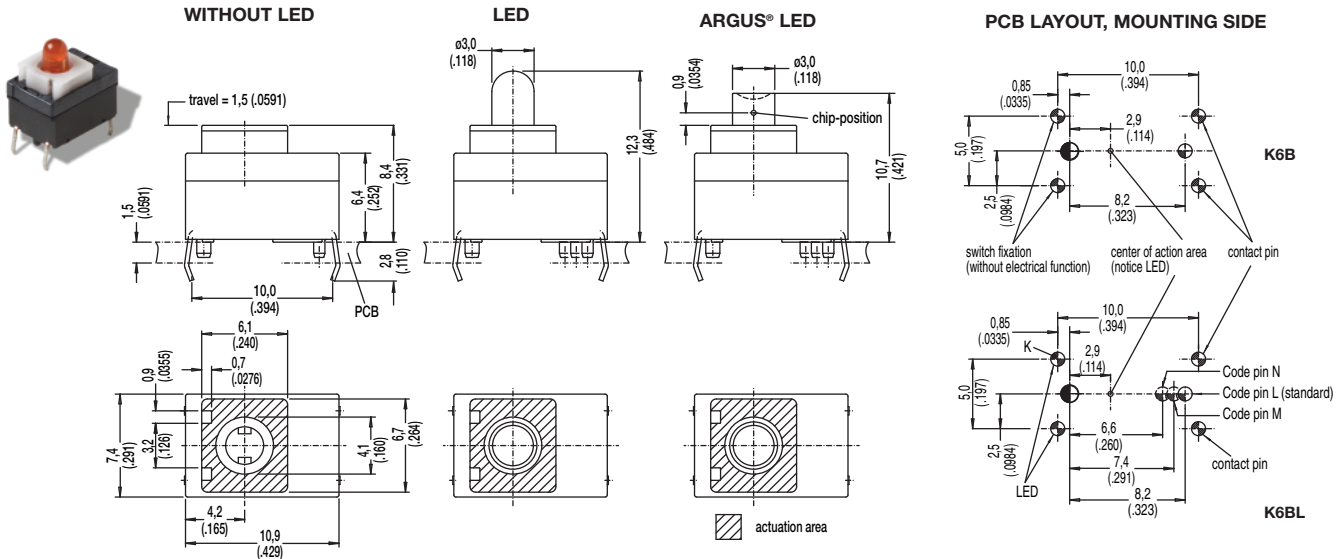
* Additional LED colors available by request.

K6 Miniature Key Switches

SERIES

K6B WITHOUT LED

K6BL WITH LED



Hole	Ø	Without LED	With LED	Description	Terminal Section	Surface
	1,2+0,1 (.0471+.00349)	1x	1x	center hole		
	0,9+0,1 (.0354+.00349)	1x	1x	code (L,M,N)		
	1,0+0,1 (.0354+.00349)		2x	LED switch	0,6 x 0,3 (.0236 x .0118)	SnPb
		4x	2x			

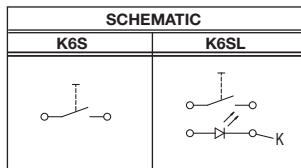
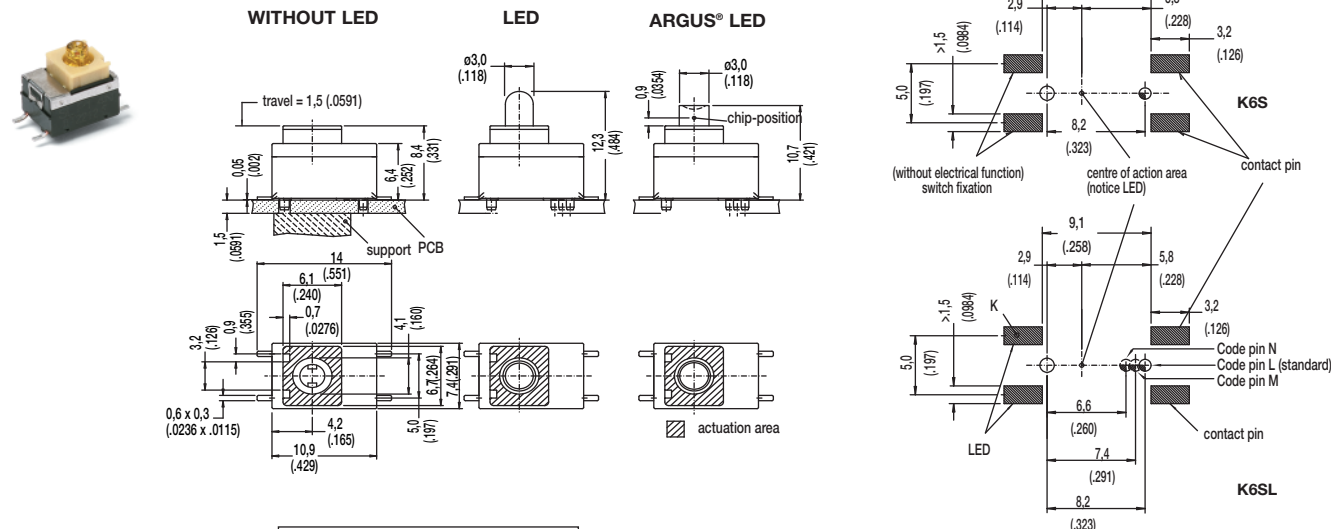
K6S WITHOUT LED

K6SL WITH LED



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Key Switches



Hole	Ø	Without LED	With LED	Description
	1,2+0,1 (.0471+.00349)	1x	1x	center hole
	0,9+0,1 (.0354+.00349)	1x	1x	code (L,M,N)



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change



K6 Miniature Key Switches

LED

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

STANDARD LED CODE	COLOR
NONE	Models without LED
LV306	Green
LV327	Yellow
LV315	Orange
LV352	Red
LV302	White
LV328	Blue

Additional LED colors available by request

TRAVEL

1.5 1.5 MM

OPERATING FORCE

OPTION CODE	OPERATING FORCE
3N	3 N, 300 g
5N	5 N, 500 g
2N OD	2 N, 200g without snap-point

FRAME OPTION

SD METALLIC FRAME (OPTION FOR K6B AND K6BL)

NOTE: K6S and K6SL are equipped with metallic frame (SD not specified)



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Key Switches

K12S

High Performance SMT Key Switches



Features/Benefits

- Harsh environment applications - IP67
- Compatible with SMT lead free soldering process
- Illuminated
- Excellent tactile feel
- High reliability / long life
- DPST and detect versions available
- RoHS compliant

Typical Applications

- Automotive
- Joysticks
- Off-road transportation
- Motorcycles
- Industrial
- Medical

Construction:

FUNCTION: Momentary
 CONTACT ARRANGEMENT: SPST or DPST
 CONTACT TYPE: NO or NC
 TERMINALS: SMT

Mechanical

TOTAL TRAVEL: 1,5 mm
 OPERATING FORCE: 3N; 3,5N; 5N; 6N; 9N 4/8 N; 6/12 N
 SEALING: IP40 or IP67

Packaging

Reels of 900 pieces

Electrical

SWITCHING POWER MIN./MAX.: 0.02mW/3 W DC
 SWITCHING VOLTAGE MIN./MAX.: 2 V / 30 V DC
 SWITCHING CURRENT MIN./MAX.: 10 mA /100 mA DC
 DIELECTRIC STRENGTH: > 300 V RMS
 OPERATING LIFE: > 10⁶ operations (detect version) / 2x10⁶ operations (versions with tactile effect)
 CONTACT RESISTANCE: Initial < 100mΩ - After test < 250mΩ
 INSULATION RESISTANCE: >10⁹ Ω
 BOUNCE TIME: < 10 ms

Environmental

OPERATING TEMPERATURE: -40°C to 85°C.
 STORAGE TEMPERATURE: -40°C to 95°C.
 RoHS compliant and Halogen free.

Process

SOLDERABILITY: Lead free soldering compatible.

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.



D

Key Switches



Sub-Series

- A** IP40 with peg
- B** IP67 with peg
- C** IP40 without peg
- D** IP67 without peg

Option

- S** SPST version
- L** LED version (SPST)
- D** DPST version

LED Color

- NONE** No LED
- YE0** Yellow
- RD0** Red
- GN0** Green
- OR0** Orange
- WHO** White
- AMO** Amber

Operating Force

- 3N** 3 N (detect - no tactile)
- 3.5N** 3.5 N
- 5N** 5 N
- 6N** 6 N
- 9N** 9 N
- 4/8N** 4/8 N DPST (double step actuation)
- 6/12N** 6/12 N DPST (double step actuation)

Travel

1.5 1.5 mm

Contact Arrangement

- O** Normally open (SPST)
- C** Normally closed (SPST)
- OO** 2 Normally open (DPST)
- CC*** 2 Normally closed (DPST)
- OC*** 1 Normally open
- 1 Normally closed (DPST)

LFTX

Lead free, RoHS terminals tin plated Translucent button

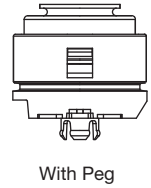
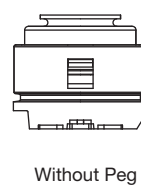
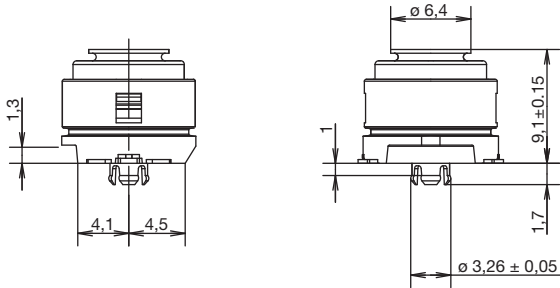
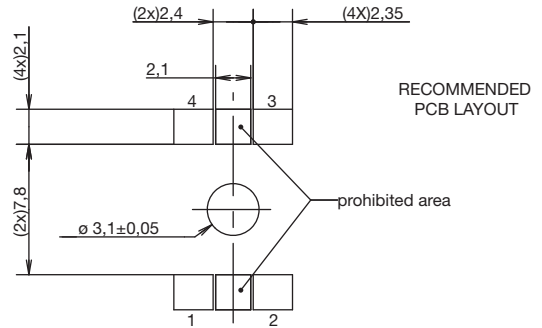
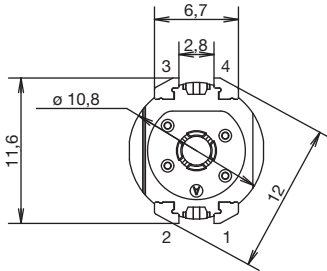
* Please contact technical support for this configuration



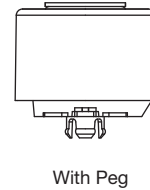
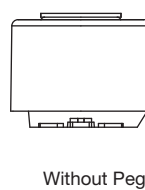
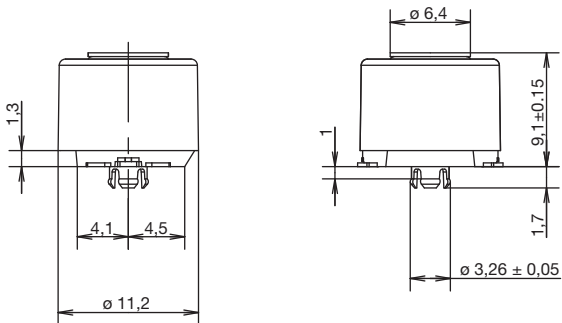
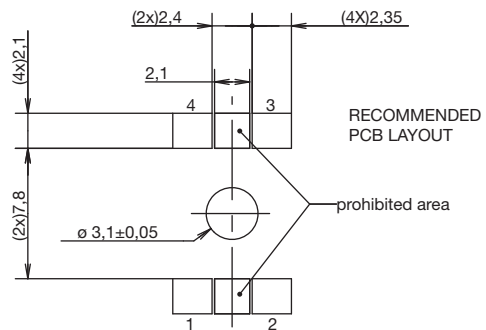
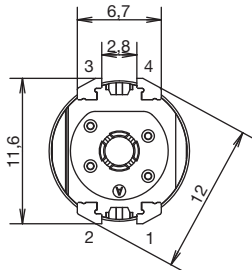
Dimensions are shown: mm
 Specifications and dimensions subject to change

K12S High Performance SMT Key Switches

K12SA/K12SC IP40 with peg / IP40 without peg



K12SB / K12SD IP67 with peg / IP67 without peg



Dimensions are shown: mm
Specifications and dimensions subject to change

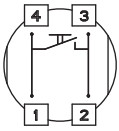
K12S

High Performance SMT Key Switches

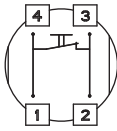
OPTION

S SPST version

Single NO

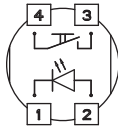


Single NC

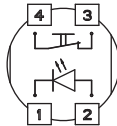


L LED version

Single NO + LED

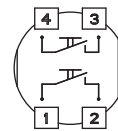


Single NC + LED

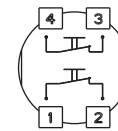


D DPST version

Double NO



Double NC



LED COLOR

OPTION CODE	LED COLOR
	No LED
YE0	Yellow
RD0	Red
GN0	Green
OR0	Orange
WHO	White
AM0	Amber

TRAVEL

1.5 1.5 mm

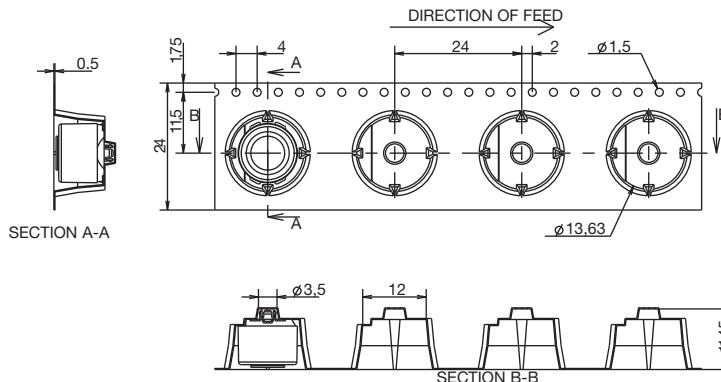
OPERATING FORCE

OPTION CODE	OPERATING FORCE
3N	3N (detect - no tactile)
3.5N	3.5N
5N	5N
6N	6N
9N	9N
4/8N	4/8N (double step actuation)
6/12N	6/12N (double step actuation)

CONTACT ARRANGEMENT

- O** Normally open (SPST and LED versions)
 - C** Normally closed (SPST and LED versions)
 - OO** 2 Normally open (DPST version)
 - CC*** 2 Normally closed (DPST version)
 - OC*** 1 Normally open/ 1 Normally closed (DPST)
- * Please contact technical support for this configuration

TAPE AND REEL



Dimensions are shown: mm
Specifications and dimensions subject to change



D

Key Switches

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**
- **Joysticks**



Construction:

FUNCTION: momentary
 DISTANCE BETWEEN BUTTON CENTERS:
 min. 11 (0.433) K12C = 13 (0.512)
 TERMINALS: PC pins, tinned
 MOUNTING: Locating pins; 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. Additional
 operating force 7N, 9N and 20N, available on request.
 PROTECTION CLASS: K12C IP 67 (dust tight, protected against
 the effects of immersion in water; other versions IP 40)

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

Packaging

Bulk in boxes of 250 pieces (version C or GO) or
 300 pieces (version A, AL, P or PL)

Electrical

SWITCHING POWER MIN./MAX.: 0.02mW/3 W
 SWITCHING VOLTAGE MIN./MAX.: 2 V DC / 30 V DC
 SWITCHING CURRENT MIN./MAX.: 10 mA /100 mA
 DIELECTRIC STRENGTH (50 Hz, 1 min): ≥ 500 V
 OPERATING LIFE with max. switching power: ≥ 10⁶ operations
 K12G & K12GO; operating life of second switch 5 x 10⁶ operations,
 operating life K12C and version with more than 6N (7N, 9N 20N)
 please consult factory.
 CONTACT RESISTANCE: Initial ≤ 50 mΩ
 INSULATION RESISTANCE: ≥ 10¹⁰ Ω
 BOUNCE TIME: ≤ 1 ms
 Operating speed 100 mm/s (3.94/s)

Environmental

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

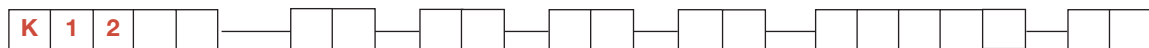
Process

SOLDERABILITY:
 Wave soldering, compatible with lead free soldering profile
 Hand soldering, 350°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.

Note: Some of the configurations may not be available or could require some development.



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

Cap Color

- NONE** version with LED, version C
- BK** Black cap - No LED
- YE** Yellow cap - No LED
- RD** Red cap - No LED
- GY** Gray cap - No LED

LED Color

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

Standard LED Code

- NONE** No LED
- LV306** Green
- LV327** Yellow
- LV315** Orange
- LV352** Red
- LV302** White
- LV328** Blue

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
 *** Additional operating force: 7N, 9N available on request



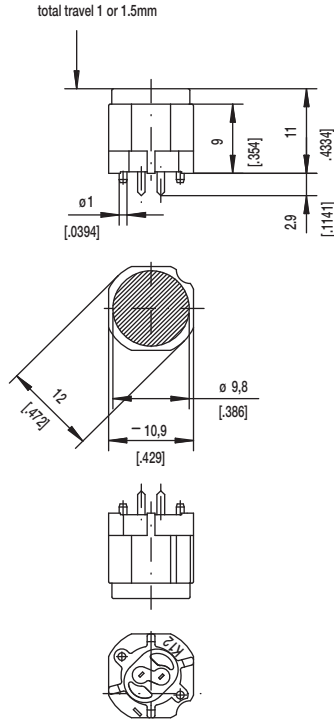
Dimensions are shown: mm
 Specifications and dimensions subject to change



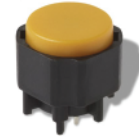
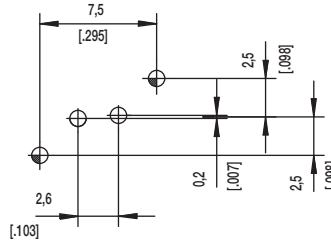
K12 High Performance Key Switches

SERIES

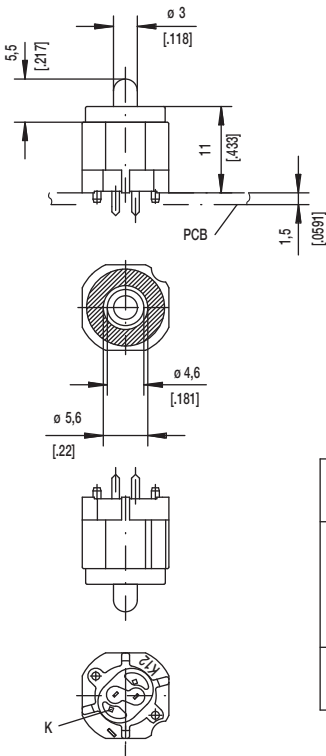
K12A without snap in



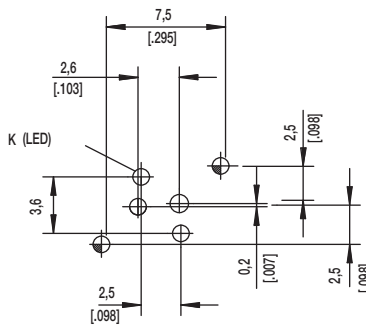
PCB LAYOUT, MOUNTING SIDE



K12AL



PCB LAYOUT, MOUNTING SIDE



	$1,1^{+0,05}$	2x	2x	center hole		
	$0,9 \pm 0,05$		2x	LED	$\varnothing 0,5 (.020)$	Sn
			2x	2x	switch	$0,7 \times 0,2 (.028 \times .081)$
Hole	\varnothing	Without	with LED	Description	Terminal Section	Surface



Key Switches



First Angle
Projection

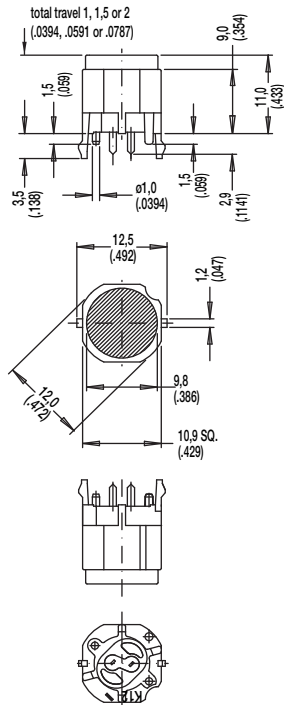
Dimensions are shown: mm
Specifications and dimensions subject to change

C&K

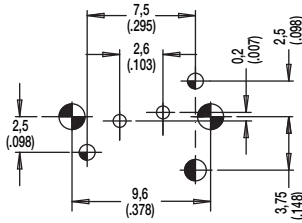
K12 High Performance Key Switches

SERIES 

K12P with snap in



PCB LAYOUT, MOUNTING SIDE

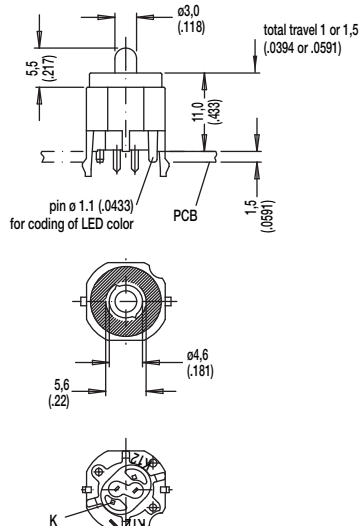


center of actuation area (notice LED)

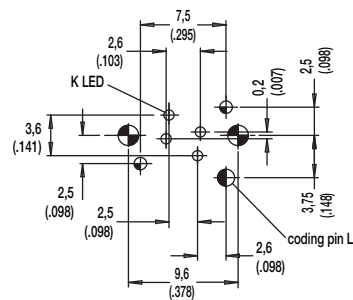


Hole	Ø	Without LED	Description	Terminal Section	Surface
	1,7 (.069)	2x	snap-in		
	1,6 (.062)	1x	coding hole (L,M,N)		
	1,1 (.043)	2x	center hole		Sn
	0,9 (.035)	2x	switch	0.7 x 0.2 (.028 x .081)	Sn

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
	0,9 (.035)	2x	switch	0.7 x 0.2 (.028 x .081)	Sn

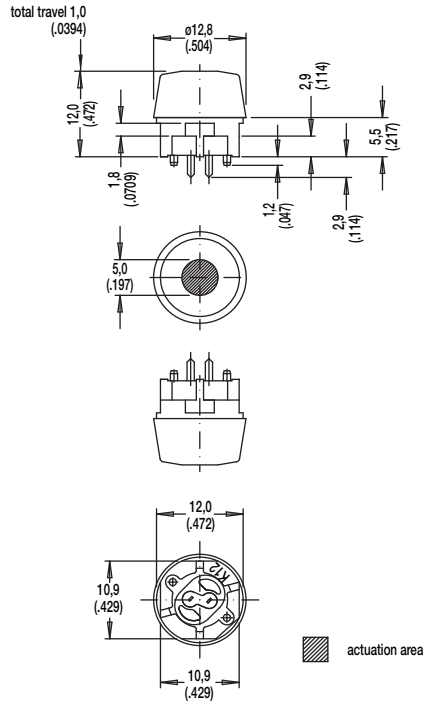


Dimensions are shown: mm
Specifications and dimensions subject to change

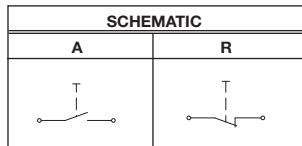
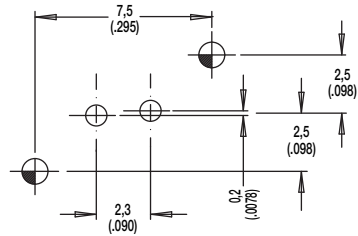
K12 High Performance Key Switches



SERIES 

K12C SEALED CONTACT WITH RUBBER CAP (IP 67)



PCB LAYOUT, MOUNTING SIDE



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



Key Switches



First Angle
Projection

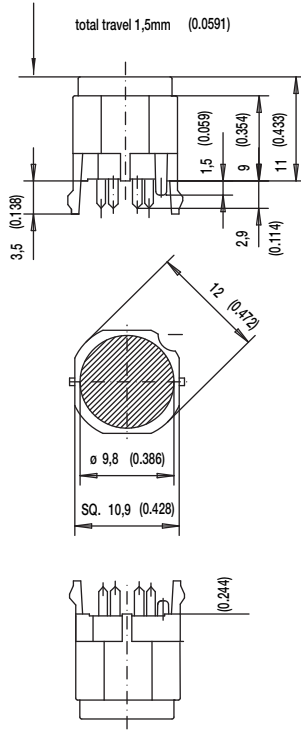
Dimensions are shown: mm
Specifications and dimensions subject to change



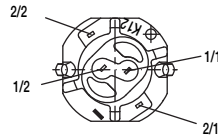
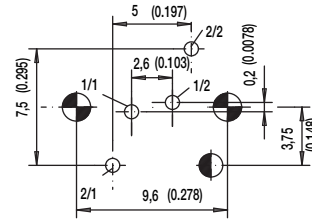
K12 High Performance Key Switches

SERIES

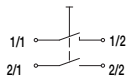
K12GO



PCB LAYOUT, MOUNTING SIDE



SCHEMATIC K12G



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



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change



K12

High Performance Key Switches

CAP COLOR

OPTION CODE	COLOR
NONE	Version with LED
BK	Black - no LED
YE	Yellow - no LED
RD	Red - no LED
GY	Gray - no LED

LED COLOR

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

STANDARD LED CODE	COLOR
NONE	Models without LED
LV306	Green
LV327	Yellow
LV315	Orange
LV352	Red
LV302	White
LV328	Blue

TRAVEL

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

OPERATING FORCE

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

CONTACT ARRANGEMENT OPTION

1R SPST NC (SPECIAL REQUEST FOR NORMALLY CLOSED OPTION)



D

Key Switches



First Angle Projection

Dimensions are shown: mm
Specifications and dimensions subject to change



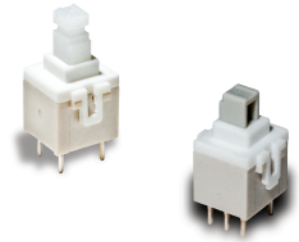
PVA Short Stroke Key Switches

Features/Benefits

- **Compact design**
- **Short stroke to latch**
- **Wide variety of actuator heights**
- **Adapted for medium power applications**
- **RoHS compliant and compatible**

Typical Applications

- **Automotive (air conditioning, lighting)**
- **Industrial**
- **Control panel**



Construction

FUNCTION: Momentary, Push-Push
 CONTACT ARRANGEMENT:
 PVA1: 2 make contacts (DPST)
 PVA2: 2 change over contacts (DPDT)
 SWITCHING MODE: Non-shorting
 TERMINALS: PC pins¹

Mechanical

TOTAL TRAVEL / LATCHING TRAVEL:
 OA: 2,4 mm
 EE: 2,4 / 1,5 mm
 ELECTRICAL TRAVEL: 0.8 mm (1.1 for PVA2 OA H5)
 OPERATING FORCE: 1,2N; 1,7N; 3,5N

Process

SOLDERABILITY:
 Wave soldering, compatible with lead free soldering profile
 Hand soldering, 350°C for 3 seconds

Note: Specifications listed above are for switches with standard options.
 For information on specific and custom switches, please contact technical support using the "Ask a Specialist" option on the PVA product web page.^v

Electrical

SWITCHING POWER MAX.: 3 W DC
 SWITCHING VOLTAGE MAX.: 32 V DC
 SWITCHING CURRENT MAX.: 100 mA DC*
 DIELECTRIC STRENGTH (50 Hz / 1 min):
 1000 V between open contacts, PVA2: 750 V
 OPERATING LIFE:
 OA (momentary): $\geq 1 \times 10^5$ operations
 EE (push-push): $\geq 1 \times 10^5$ operations
 CONTACT RESISTANCE: Initial $\leq 100 \text{ m}\Omega$
 INSULATION RESISTANCE: $\geq 10^{10} \Omega$
 BOUNCE TIME: $\leq 3 \text{ ms}$

Environmental

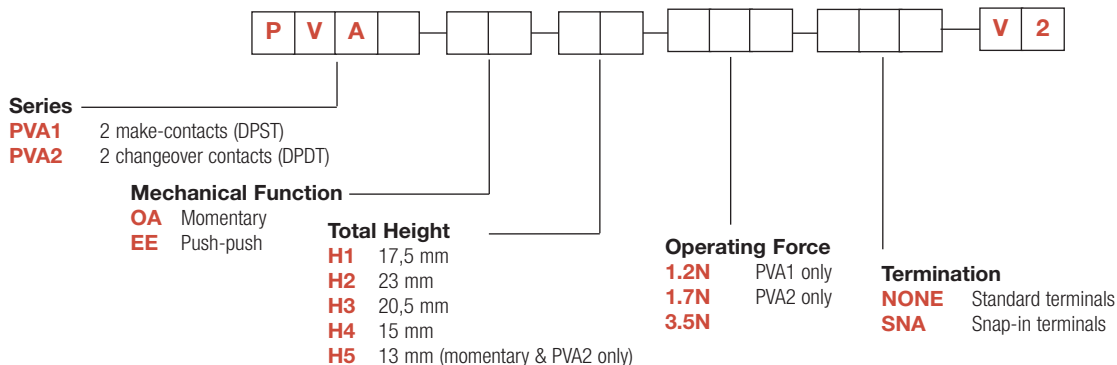
OPERATING TEMPERATURE: -40°C to 85°C.²

- 1) "Snap-in" contacts on request, Version SNA with pins bent inside (standard)
 2) With button +70°C

How To Order

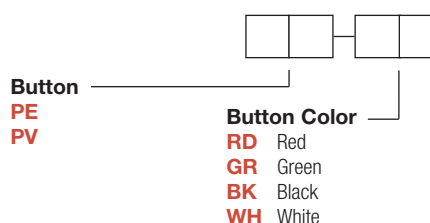
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box. **Some of the configurations may not be available or could require some development.**

Switch



Button

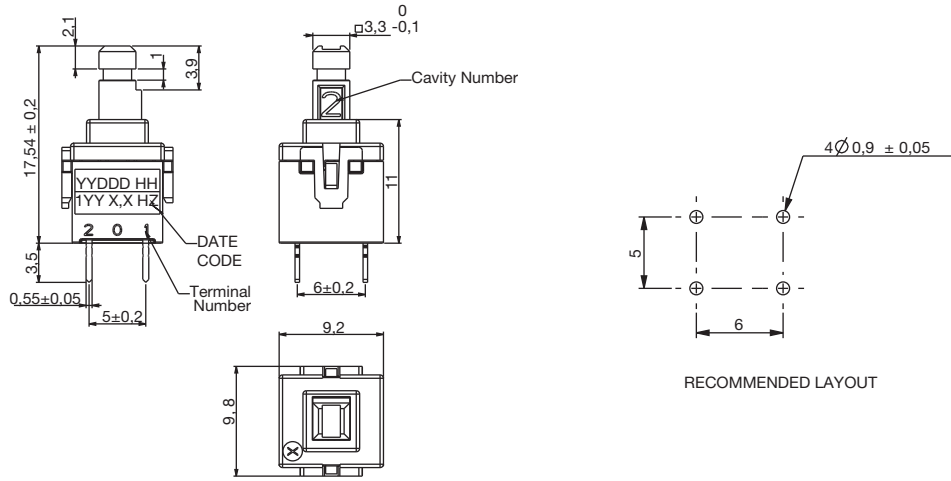
Buttons must be ordered separately.
 Shipped in bulk.



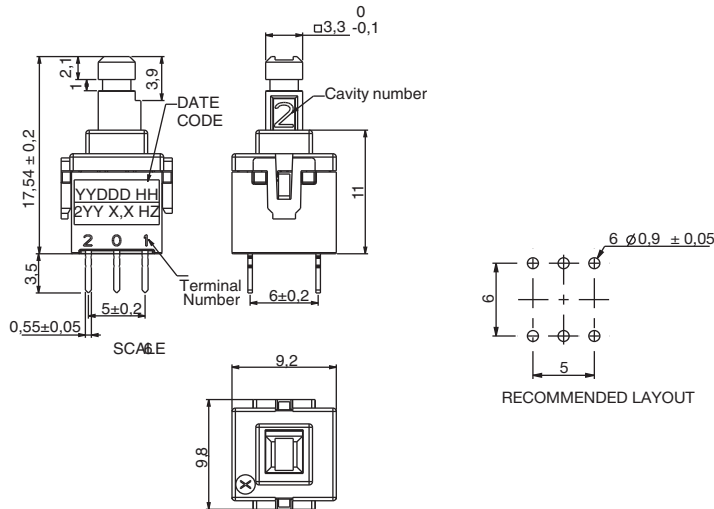
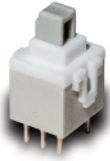
PVA Short Stroke Key Switches

SERIES

PVA1 (DPST)



PVA2 (DPDT)



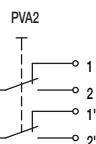
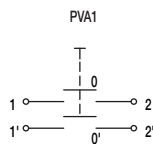
D

Key Switches

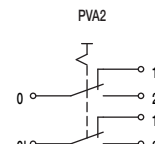
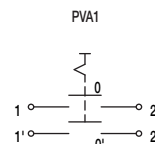
MECHANICAL FUNCTION

OPTION CODE	FUNCTION
OA	Momentary
EE	Push-Push

OA



EE



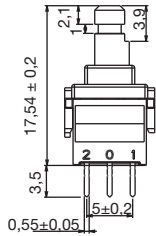
Dimensions are shown: mm
Specifications and dimensions subject to change



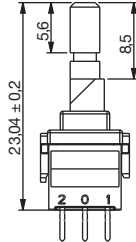
PVA Short Stroke Key Switches

TOTAL HEIGHT

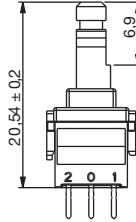
H1 17,5 MM



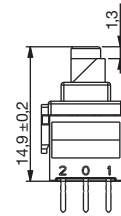
H2 23 MM



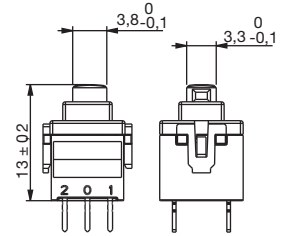
H3 20,5 MM



H4 15 MM



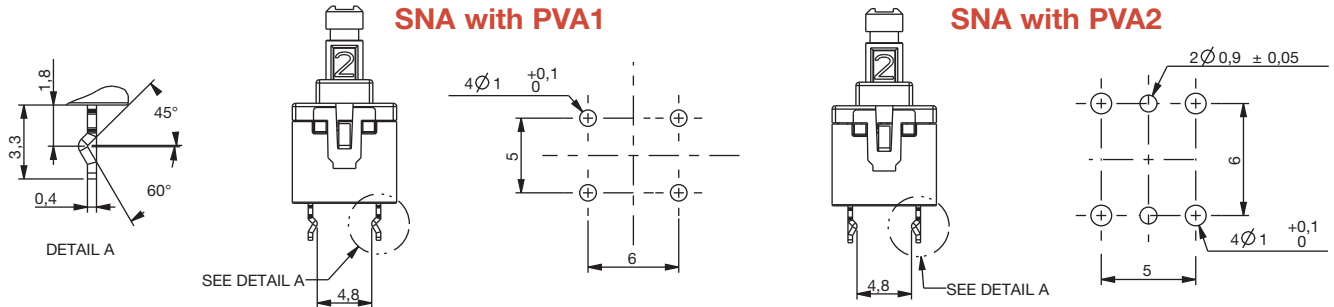
H5 13 MM
(MOMENTARY ONLY)



OPERATING FORCE

1.2N PVA1 ONLY
1.7N PVA2 ONLY
3.5N

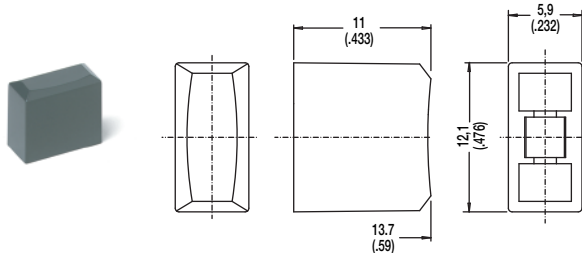
TERMINATION



BUTTONS

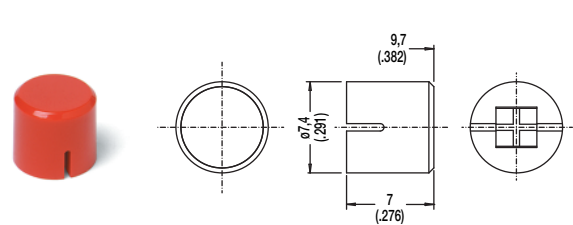
BUTTONS MUST BE ORDERED SEPARATELY. SHIPPED IN BULK.

PE



OPTION CODE	COLOR
RD	Red
GY	Gray
BK	Black
WH	White

PV



First Angle Projection

Dimensions are shown: mm
Specifications and dimensions subject to change



Key Switches



*Dimensions are shown: mm
Specifications and dimensions subject to change*

D6 SPST Momentary Key Switches

Features/Benefits

- Easy X, Y coding on single side PCB
- Positive tactile feedback
- High temperature
- Wide variety of colors & styles
- RoHS compliant and compatible

Typical Applications

- Video
- Electronic games
- Appliances



Construction

FUNCTION: momentary
CONTACT ARRANGEMENT: 1 make contact (SPST), NO
DISTANCE BETWEEN BUTTON CENTERS, MIN.: 12,7 (0.500)
TERMINALS: PC pins

Electrical

SWITCHING POWER MAX.: 3 VA
SWITCHING VOLTAGE MAX.: 32 V DC
SWITCHING CURRENT MAX.: 100 mA DC
DIELECTRIC STRENGTH (50 Hz / 1 min): 250 V
OPERATING LIFE with max. switching power: (2,5x10⁵ operations)
CONTACT RESISTANCE: ≤100 mΩ
INSULATION RESISTANCE: ≥10⁸ Ω
BOUNCE TIME: ≤10 ms

Packaging

The D6 switches are delivered in boxes containing 10 trays with 250 pieces each: Total 2,500 pieces per box.
The D6 buttons are delivered in bulk with 2500 pieces per box.

Mechanical

SWITCHING TRAVEL:
Version F1: 0.2mm ≤ Te ≤ 1.0 mm
Version F2: 0.3mm ≤ Te ≤ 1.1 mm
OPERATING FORCE:
Version F1: 0.8N ≤ Fa ≤ 1.8N
Version F2: 2.0N ≤ Fa ≤ 3.5N

Environmental

OPERATING TEMPERATURE: -20°C to 85°C.

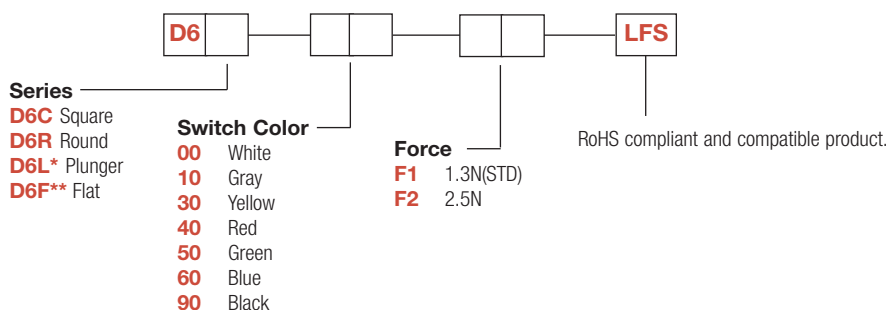
Process

SOLDERABILITY:
Wave soldering, compatible with lead free soldering profile
Hand soldering, 350°C for 3 seconds

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.

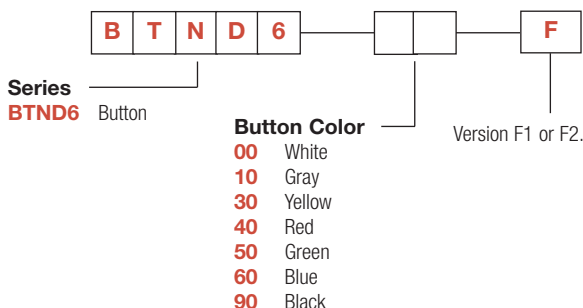
Switch



Button

Buttons can be ordered separately.
Shipped in bulk.

D6 button for use with D6C only.

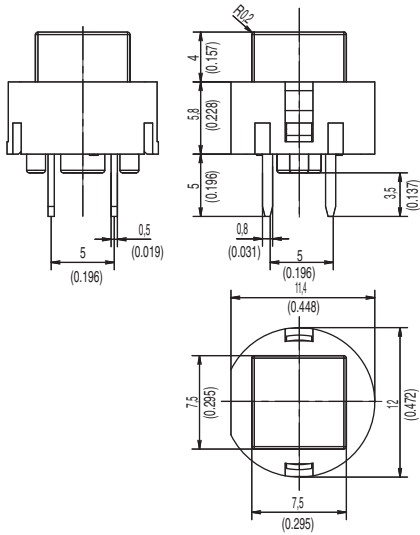
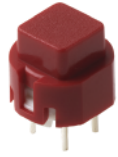


Dimensions are shown: mm
Specifications and dimensions subject to change

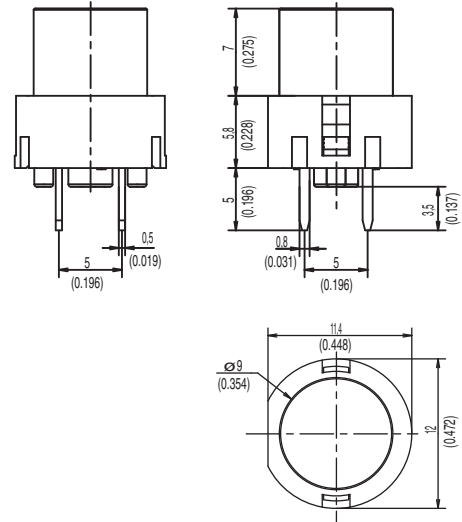
D6 SPST Momentary Key Switches

SERIES

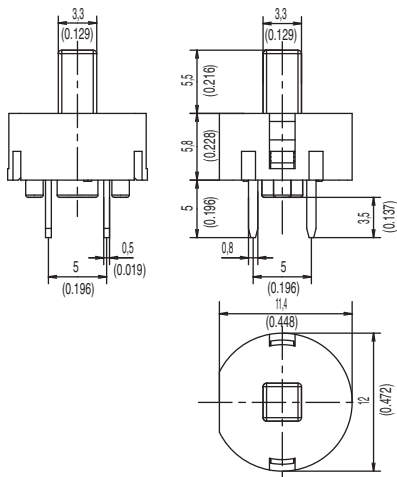
D6C



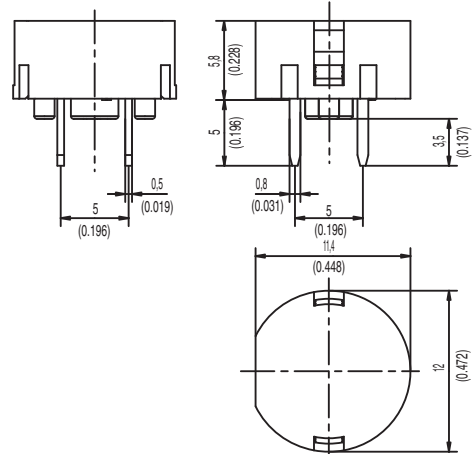
D6R



D6L ONLY AVAILABLE IN BLACK

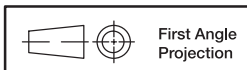


D6F



D

Key Switches



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

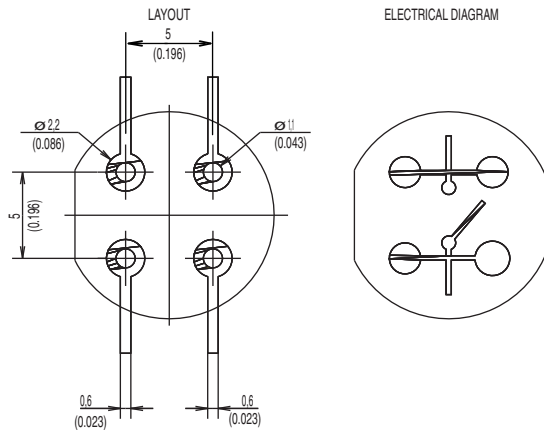


D6 SPST Momentary Key Switches

SWITCH COLORS

OPTION CODE	SWITCH COLOR
00	WHITE
10	GRAY
30	YELLOW
40	RED
50	GREEN
60	BLUE
90	BLACK

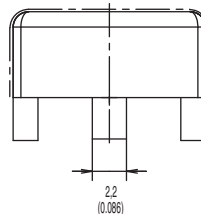
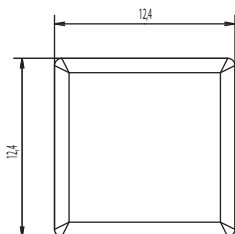
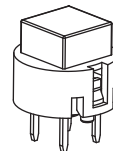
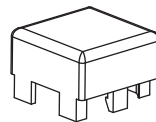
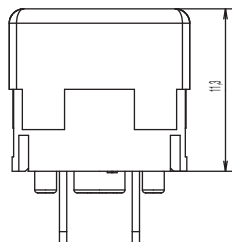
PCB LAYOUT



BUTTON AVAILABLE

BTND6 Buttons must be ordered separately. Shipped in bulk.

NOTE: Only compatible with D6C.

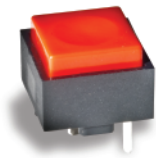


OPTION CODE	BUTTON COLOR
00	WHITE
10	GRAY
30	YELLOW
40	RED
50	GREEN
60	BLUE
90	BLACK



Dimensions are shown: mm
Specifications and dimensions subject to change

KS Single Pole Key Switches



Features/Benefits

- Positive tactile feel
- Variety of cap colors
- SPST and SPDT configurations
- RoHS compliant

Typical Applications

- Telecommunications
- Industrial
- Instrumentation

Specifications

CONTACT RATING: Q contact material: 25mA @ 50V AC .or DC max.
 ELECTRICAL LIFE: 100,000 actuations.
 CONTACT RESISTANCE: Below 100 mΩ initial @ 2-4 V DC, 100 mA
 INSULATION RESISTANCE: 10⁹Ω min.
 DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.
 OPERATING TEMPERATURE: -30°C to 65°C.
 SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

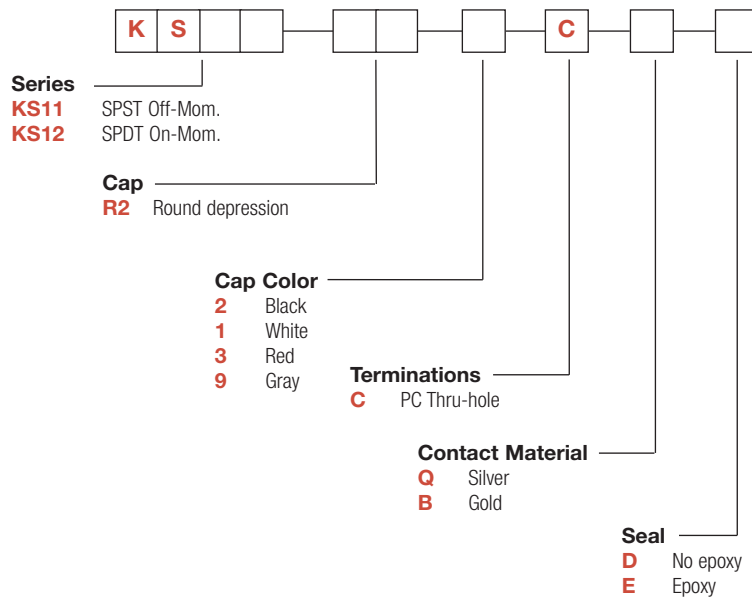
Note: Specifications and materials listed above are for switches with standard options.
 For information on specific and custom switches, consult Customer Service Center.

Materials

CASE: Glass filled nylon (UL 94V-0).
 ACTUATOR: ABS, matte finish, black standard.
 MOVABLE CONTACT: Q contact material: Stainless steel, silver plated.
 STATIONARY CONTACTS AND TERMINALS: Q contact material: copper alloy, silver plated.
 TERMINAL SEAL: Epoxy

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.



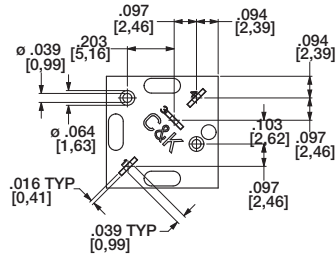
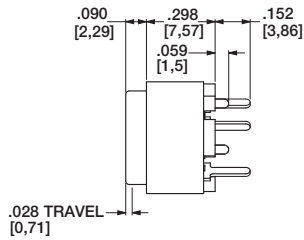
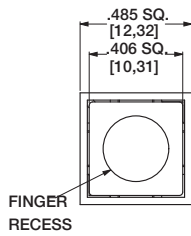
D

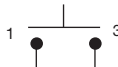

Key Switches

KS Single Pole Key Switches

SERIES 

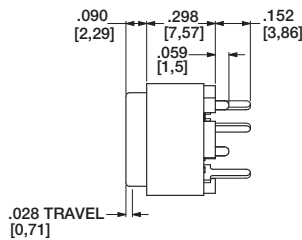
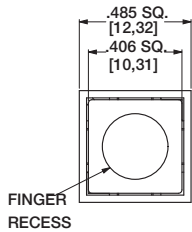
KS11 / KS12



NO. POLES	MODEL NO.	SWITCH FUNCTION		CONNECTED TERMINALS		SCHEMATIC
		POS. 1	POS. 2	POS. 1	POS. 2	
SP	KS11	OFF	MOM.	OPEN	1-3	SPST 
	KS12	ON	MOM.	1-4	1-3	SPDT 

CAP 

R2 CAP WITH ROUND DEPRESSION



OPTION CODE	CAP COLOR
2	BLACK
1	WHITE
3	RED
9	GRAY



Third Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change



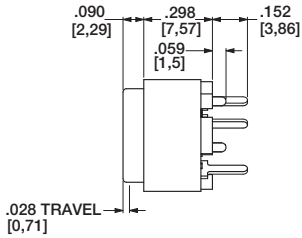
D

Key Switches

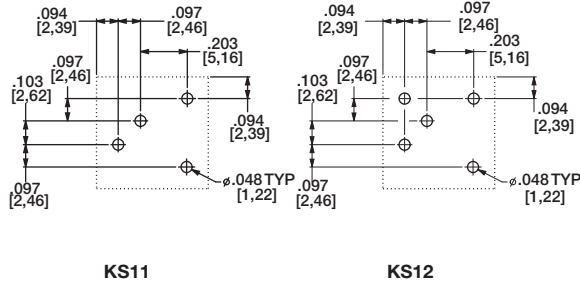
KS Single Pole Key Switches

TERMINATION

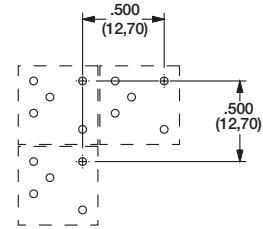
C PC THRU-HOLE



PC MOUNTING



MULTIPLE SWITCH SPACING



CONTACT MATERIAL

OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
Q	SILVER ²	SILVER ²	POWER	25 mA MAX. @ 50 V AC OR DC MAX.
B	GOLD ¹	GOLD ¹	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.

- MOVABLE CONTACT: Stainless steel, with gold plate over nickel plate.
STATIONARY CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.
- MOVABLE CONTACT: Stainless steel, silver plated.
STATIONARY CONTACTS & ALL TERMINALS: Copper alloy, silver plated.

NOTE: Any models supplied with Q or B contact material are RoHS compliant.

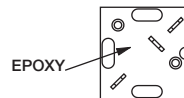


D

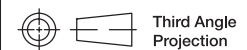
D NO EPOXY SEAL

SEAL

E EPOXY SEAL



Key Switches



Third Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

C&K

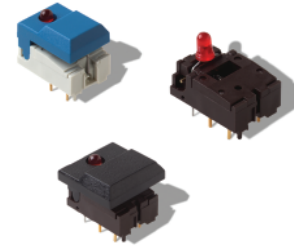
DIGITAST Microminiature SPDT, Key Switches

Features/Benefits

- High reliability/long life
- Designed for low level switching
- Ready to implement on PCB
- Latching function available
- Several button options
- RoHS compliant and compatible

Typical Applications

- Medical
- Instrumentation
- Industrial electronics
- Audio electronics



Construction

FUNCTION: momentary or push-push
 CONTACT ARRANGEMENT: 1 change over contact SPDT, NO
 MODE OF SWITCHING: Non-shorting
 DISTANCE BETWEEN BUTTON CENTERS:
 HORIZONTAL MINIMUM: 12,7 (0.500) or 17,78 (0.700)
 VERTICAL MINIMUM: 17,78 (0.700)
 TERMINALS: PC pins
 MOUNTING: Soldering, centering pins

Mechanical

TOTAL TRAVEL: ≤ 3 (.0018)
 SWITCHING TRAVEL: 1,5 (0.0591)
 LATCHING TRAVEL: 1,8 (0.0709)
 OPERATING FORCE: 1.5 +/- 0.5 N (150 +/- 50 grams)

Process

SOLDERABILITY:
 Wave soldering, compatible with lead free soldering profile
 Hand soldering, 350°C for 3 seconds

Electrical

SWITCHING POWER MAX.: 240 mW DC
 SWITCHING VOLTAGE MAX.: 24 V DC
 SWITCHING CURRENT MAX.: 10 mA DC
 CARRYING CURRENT AT 20°C (push-push version): 100 mA
 DIELECTRIC STRENGTH (50 Hz, 1 min): 500 V
 OPERATING LIFE with or without max. switching power
 Momentary: $\geq 5 \times 10^6$ operations
 Push-push: $\geq 5 \times 10^5$ operations
 CONTACT RESISTANCE: Initial ≤ 50 m Ω
 After 5×10^6 operations: ≤ 100 m Ω
 INSULATION RESISTANCE: $\geq 10^{10}$ Ω
 CAPACITANCE at f= 10 kHz: ≤ 0.8 pF
 BOUNCE TIME: ≤ 2.5 ms
 Operating speed 400 mm/s (15.75/s)

Environmental

OPERATING TEMPERATURE: -25°C to 85°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. **Some of the configurations may not be available or could require some development.**

Switch

Reference
SER BK AU OA

Series
SER Narrow button
SET Wide button
SERU Switch body only (no button)

LED
NONE No LED
L 1 LED
2L 2 LED's

Button Color**
None (SERU)
BK Black
GY Gray
WH White
RD Red
BU Blue

LED Spacing*
NONE Narrow LED Spacing (TYP Europe)
7.62 Wide LED Spacing (TYP No. America)

1st LED Color***
NONE No LED
RD Red
YE Yellow
GN Green

2nd LED Color***
NONE No LED
RD Red
YE Yellow
GN Green

Contact Material
AU Gold

Function
EE Latching
OA Non-latching

Body Color
NONE White (STD)
BRN Brown

Button

Reference
SRK BK

Button Style
SR Narrow
ST Wide

LED Holes
NONE No LED holes
L 1 LED hole
2L 2 LED holes

Button Color**
BK Black
GY Gray
WH White
RD Red
BU Blue

Latching
None For use with momentary switch
EE With "EE" staple for latching

* LED spacing only applies when 1 LED requested
 ** Additional button colors available by request
 *** Additional LED colors available by request including Bi color configurations



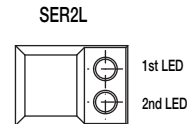
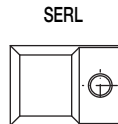
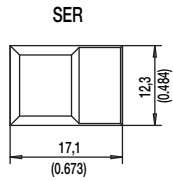
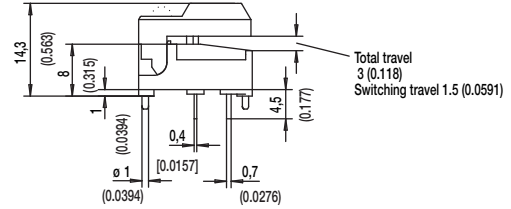
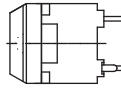
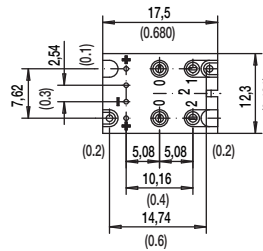
Dimensions are shown: mm
 Specifications and dimensions subject to change



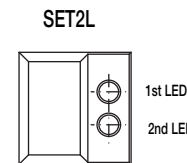
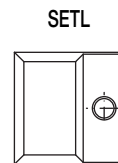
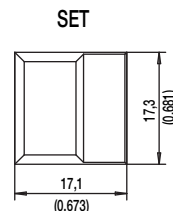
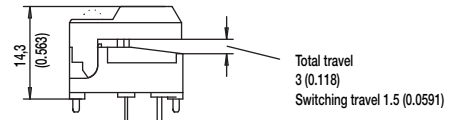
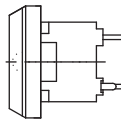
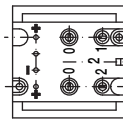
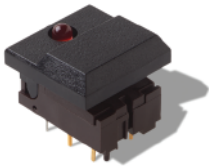
DIGITAST Microminiature SPDT, Key Switches

DESIGNATION

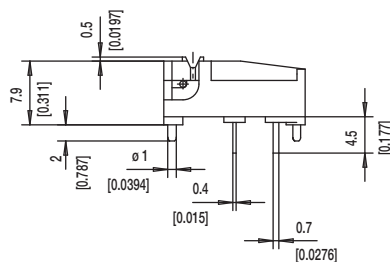
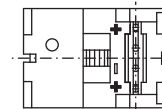
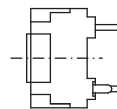
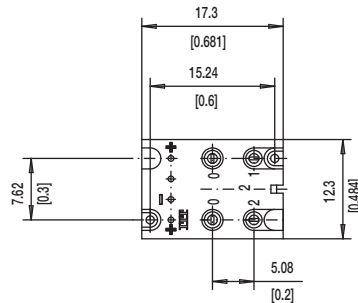
SER NARROW BUTTON



SET WIDE BUTTON



SERU NO BUTTON



Key Switches

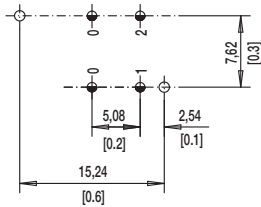


Dimensions are shown: mm
Specifications and dimensions subject to change



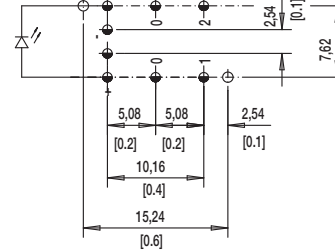
DIGITAST Microminiature SPDT, Key Switches

NONE NO LED

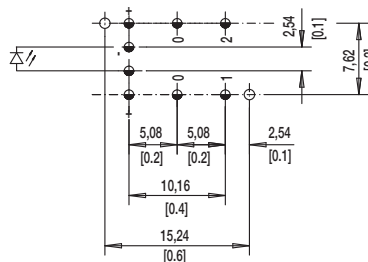


L 1 LEDs

7.62 mm Spacing (TYP No. America)

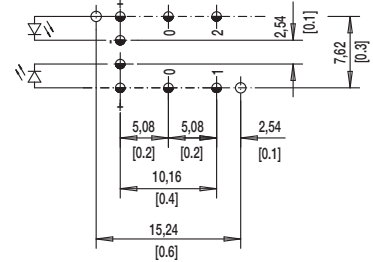


NARROW SPACING (TYP EUROPE)



TOP VIEW OF PCB

2L 2 LEDs



⌀ 1.0±0.1 (0.0394±0.00349)

⌀ 1.1±0.05 (0.0433±0.00197)

BUTTON COLOR

BK BLACK

GY GRAY

Other button colors available by request [red (RD), green (GN), white (WH), yellow (YE), blue (BU), orange (OG)].

LED COLOR

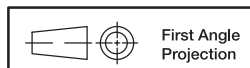
OPTION CODE	COLOR
NONE	Models without LED
RD	Red
GN	Green
YE	Yellow

CONTACT MATERIAL

OPTION CODE	MATERIAL
AU	Gold

FUNCTION

OPTION CODE	COLOR	SCHEMATIC
OA	Momentary	
EE	Push-Push	



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change



D

Key Switches

ED & EDM Domes



Features

- Short travel
- Good tactile feedback
- Self cleaning
- 3 actuation forces
- RoHS

Typical Applications

- Aircraft
- Instrument
- Panels
- Radio equipment

Specification

ED: Disc element
 EDM: Disc element and double dome
 FUNCTION: Momentary action
 CONTACT TYPE: Normally open - SPST
 TERMINALS: Through hole PCB terminations or Tabs
 OPERATING LIFE: 1,000,000

Electrical

	Silver	Gold
MAXIMUM POWER:	1.0 VA	0.2 VA
MAXIMUM VOLTAGE:	100 VDC	100 VDC
MINIMUM VOLTAGE:	20m VDC	20m VDC
MIN/MAX CURRENT:	1.0 mA - 100 mA	50µA - 50 mA
DIELECTRIC STRENGTH:	≥ 250 Vrms	
CONTACT RESISTANCE:	≤ 100 mΩ	
INSULATION RESISTANCE:	Initial measurement: ≥ 1 GΩ	
(between terminals)	After damp heat: ≥ 10 MΩ	
BOUNCE TIME:	≤ 3 ms	

Packaging

Trays 50 pieces.

Mechanical

Environmental

	Silver	Gold
OPERATING TEMPERATURE:	-25°C to 70°C	-55°C to 85°C

Type	Operating force Newtons (grams)	Tactile Feeling (Δ%)	Return Force N	Travel (mm)
EDSAC LFS	2.4 (240) ± 25%	≥ 30%	≥ 0.4 N	0.3mm ± 0.15
EDSSC LFS	2.4 (240) ± 25%	≥ 30%	≥ 0.4 N	0.3mm ± 0.15
EDM450SAC LFS	4.5 (450) ± 25%	≥ 25%	≥ 1.0 N	0.5mm ± 0.25
EDM650SSC LFS	6.5 (650) ± 25%	≥ 25%	≥ 1.6 N	0.6mm ± 0.25

SIMULTANEITY: ≤ 0.05 mm

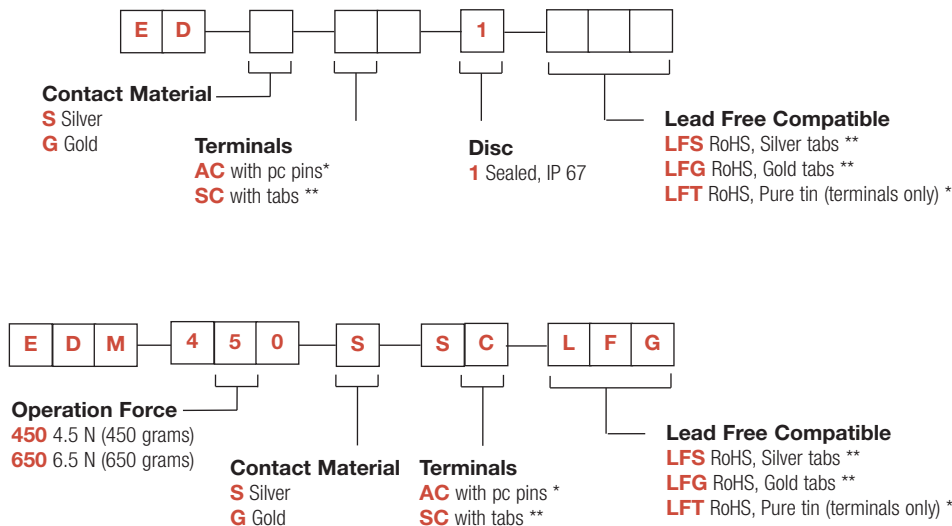


D

Key Switches

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.



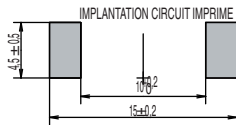
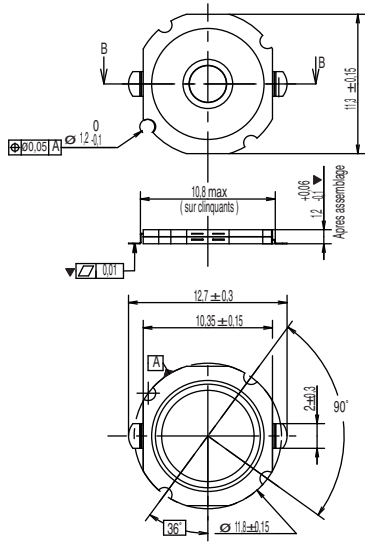
Note
 * AC terminals only available with LFT
 ** SC terminals only available with LFS or LFG



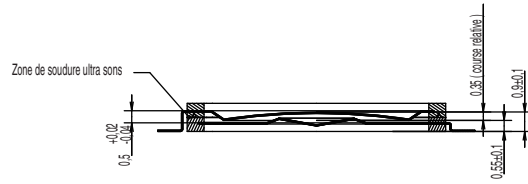
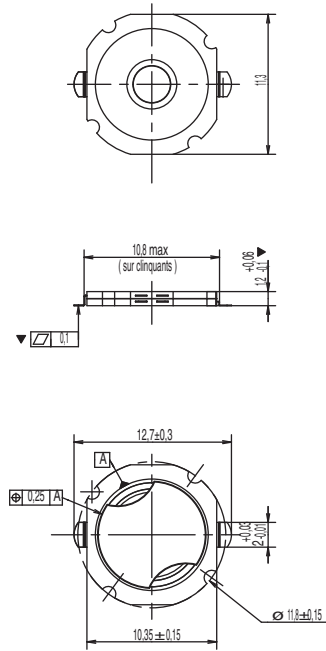
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ED



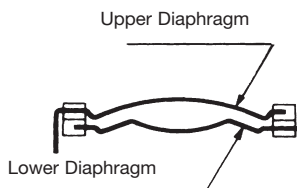
EDM



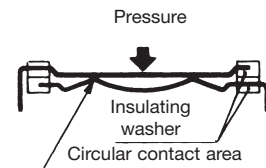
Switch Action Principal

The disc contact is essentially made of two separate conductive dome diaphragms separated by an insulated material.

The upper diaphragm is shaped so that under pressure it collapses suddenly and establishes contact with the lower diaphragm.



Switch in resting position

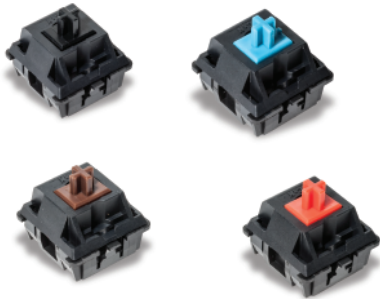


Switch in active position



First Angle Projection

KBD Keyboard Switches



Features

- Long operating life
- High reliability
- Excellent ergonomics
- RoHS compliant

Typical Applications

- Gaming keyboard
- Professional keyboard
- Industrial keyboard
- Workstation keyboard

Specifications

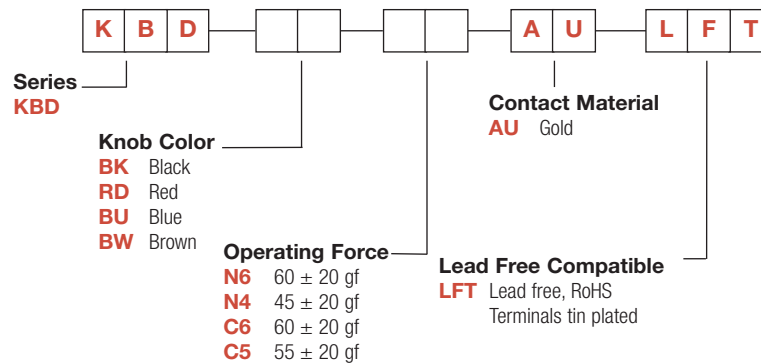
CONTACT ARRANGEMENT: SPST
 CONTACT RATING: 10mA @ 12 VDC
 INITIAL CONTACT RESISTANCE: 200 m Ω max. (25m Ω typically)
 INSULATION RESISTANCE: 100M Ω min. @ 100 VDC
 DIELECTRIC STRENGTH: 250 VAC (50-60 Hz) 60 sec.
 ELECTRICAL LIFE: 50,000,000 cycles
 PRE-TRAVEL: 1.5 ~ 2 mm
 OVERTRAVEL: 4 mm
 OPERATING TEMPERATURE: -10°C to +70°C

Materials

COVER: Nylon (UL94V-0)
 HOUSING: Nylon (UL94V-0)
 KNOB: POM (UL94HB)
 TERMINALS: Copper alloy, gold plated in contact area,
 Tin plated in soldering area
 SPRING: Stainless steel

How To Order

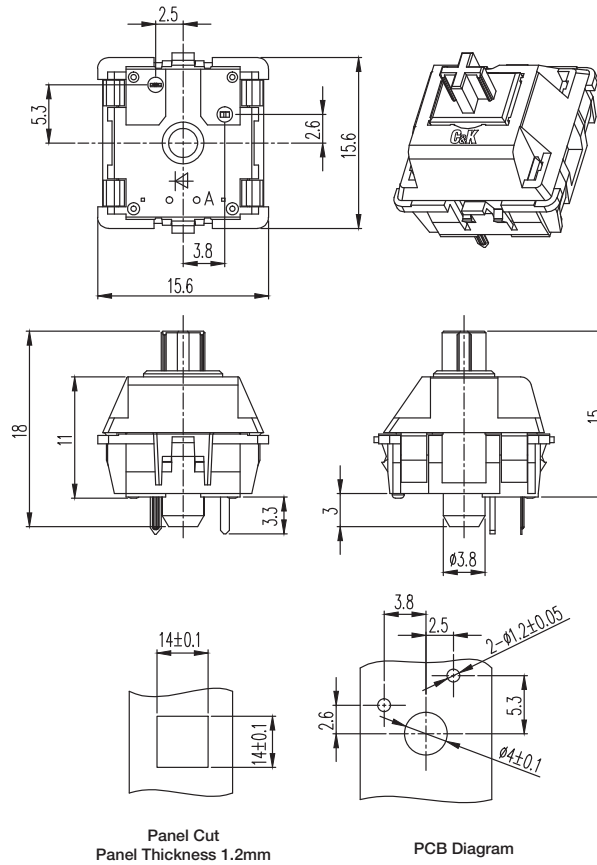
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D

Key Switches

KBD Keyboard Switches



PART NUMBER	FEELING	KNOB COLOR	OPERATING FORCE	OPERATING LIFE
KBDBKN6AULFT	Linear actuation	BLACK	60±20gf	50,000,000
KBDRDN4AULFT	Linear actuation	RED	45±20gf	50,000,000
KBDBUC6AULFT	Click pressure point	BLUE	60±20gf	50,000,000
KBDBWC5AULFT	Click pressure point	BROWN	55±20gf	50,000,000



Key Switches