

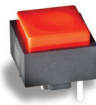
thermostatic controls

keyswitch

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



D

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 operations³⁾
 ≥ 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.

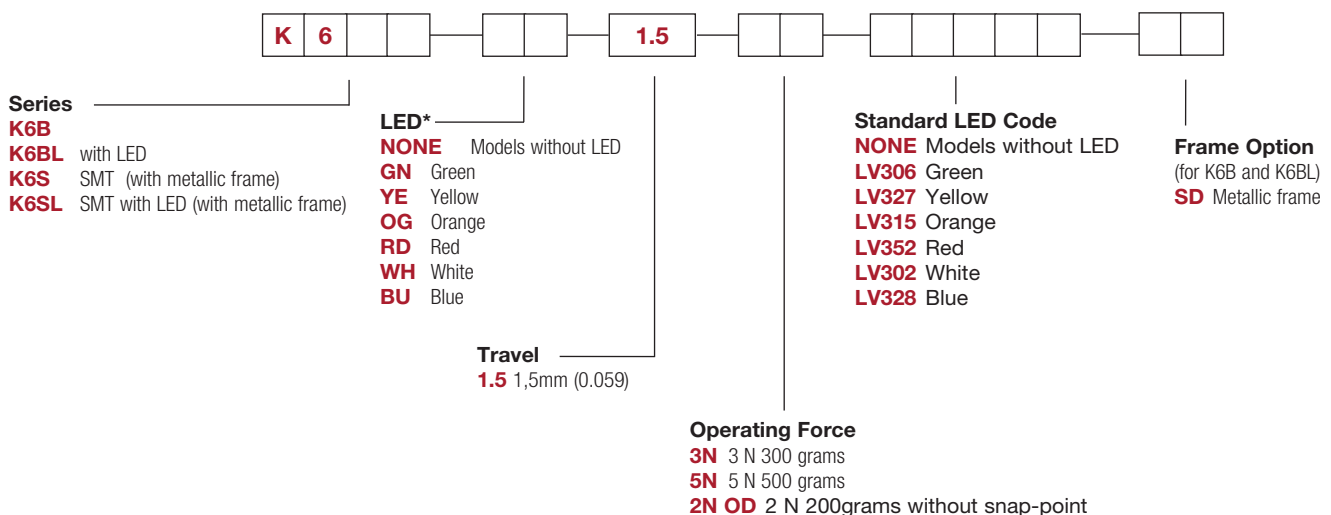
Process

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.

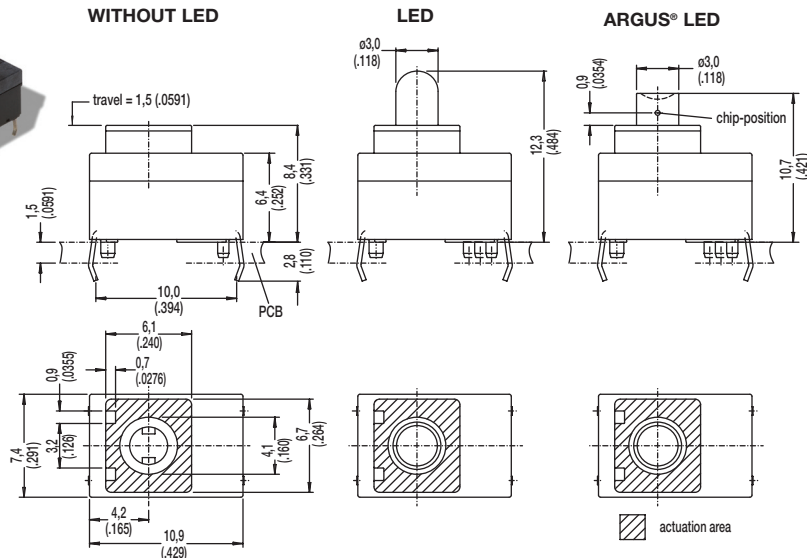
K6 Miniature Key Switches

SERIES

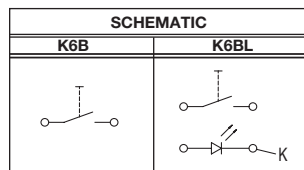
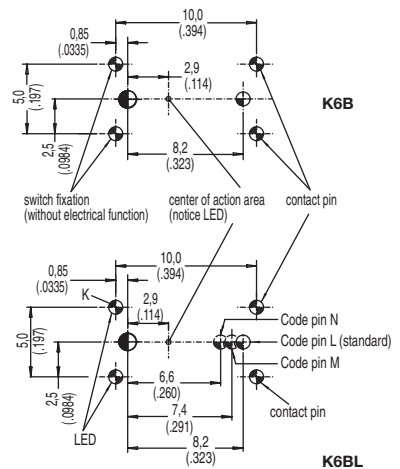


K6B WITHOUT LED

K6BL WITH LED



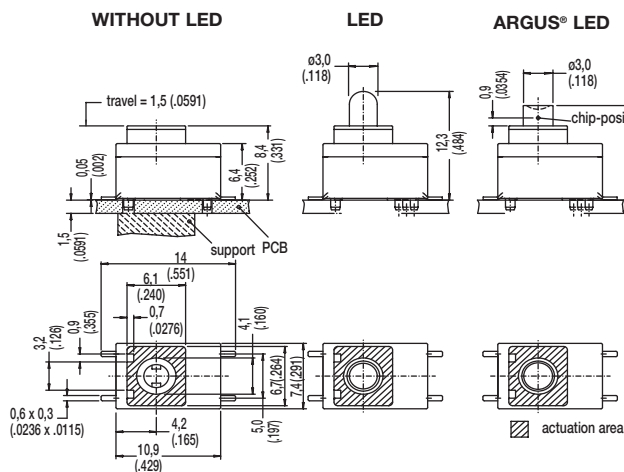
PCB LAYOUT, MOUNTING SIDE



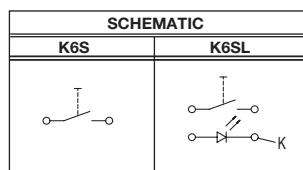
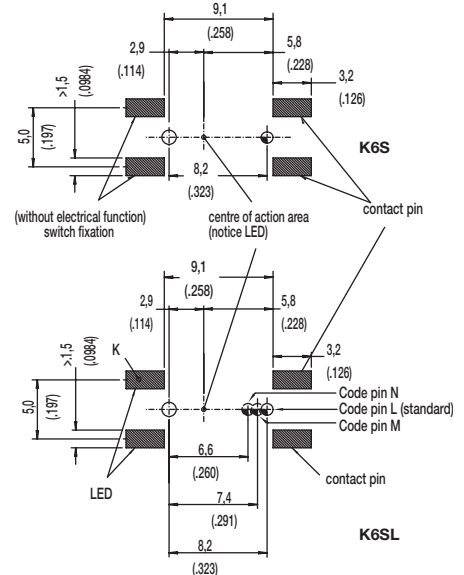
Hole	Ø	Without LED	With LED	Description	Terminal Section	Surface
	1,2+0,1 (.0471+.00349)	1x	1x	center hole		
	0,9+0,1 (.0354+.00349)	1x	1x	code (L,M,N)		
	1,0+0,1 (.0354+.00349)	4x	2x	LED switch	0,6 x 0,3 (.0236 x .0118)	SnPb

K6S WITHOUT LED

K6SL WITH LED



PCB LAYOUT, MOUNTING SIDE



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)



Dimensions are shown: mm
Specifications and dimensions subject to change

www.ckswitches.com

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)

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.

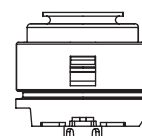
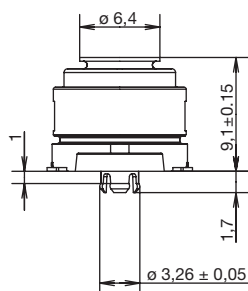
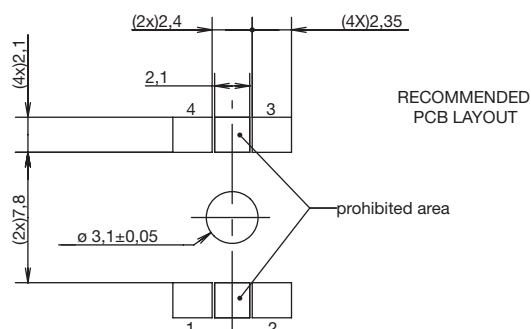
How To Order

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.

K	1	2	S				1	.	5			N			L	F	T	X	
Sub-Series A IP40 with peg B IP67 with peg C IP40 without peg D IP67 without peg				LED Color NONE No LED YE0 Yellow RD0 Red GN0 Green OR0 Orange WH0 White AM0 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)				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			
Option S SPST version L LED version (SPST) D DPST version				Travel 1.5 1.5 mm				* Please contact technical support for this configuration											

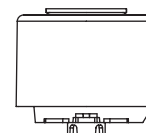
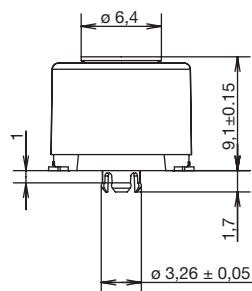
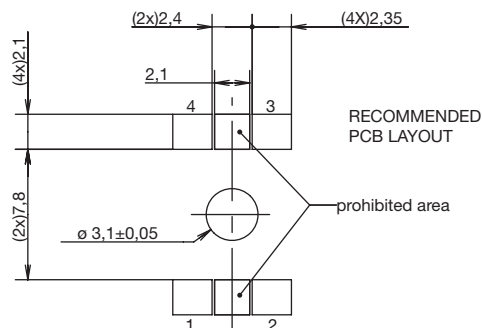
K12S

K12SA/K12SC



With Peg

K12SB / K12SD



With Peg



Dimensions are shown: mm
Specifications and dimensions subject to change

K12S

High Performance SMT Key Switches

OPTION

S SPST version

L LED version

D DPST version

Single NO

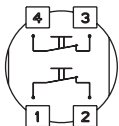
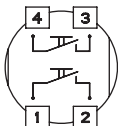
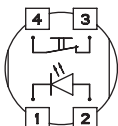
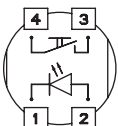
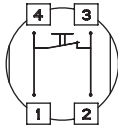
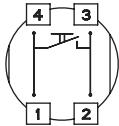
Single NC

Single NO
+ LED

Single NC
+ LED

Double NO

Double NC



LED COLOR

OPTION CODE	LED COLOR
	No LED
YE0	Yellow
RD0	Red
GN0	Green
OR0	Orange
WH0	White
AM0	Amber

TRAVEL

1.5 1.5 mm

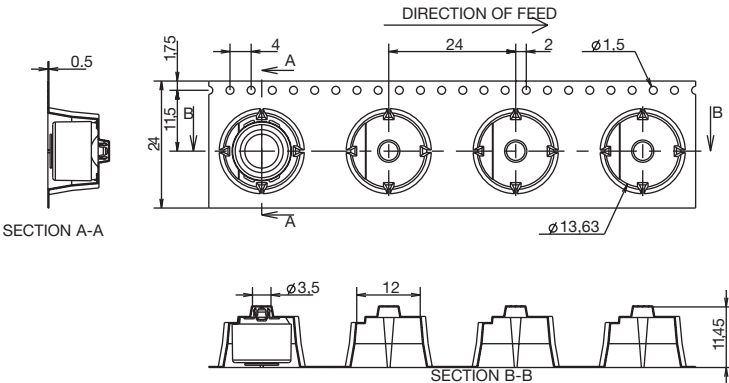
OPERATING FORCE

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



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

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: $\geq 10^6$ operations
K12G & K12GO; operating life of second switch 5×10^4 operations,
operating life K12C and version with more than 6N (7N, 9N 20N)
please consult factory.
CONTACT RESISTANCE: Initial ≤ 50 m Ω
INSULATION RESISTANCE: $\geq 10^{10}$ 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	LED Color	Standard LED Code	Cap Color	Travel*	Operating Force***	Contact Arrangement
K12A No snap-in pegs	NONE No LED	NONE No LED	NONE version with LED, version C	1 1 mm (0.039)	1.5N OD 1.5 N without snap-point	NONE SPST NO (STD)
K12AL No snap-in pegs with central LED	GN Green	LV306 Green	BK Black cap – No LED	1.5 1.5 mm (0.059)	2.5N 2.5 N	1R SPST NC (Special request)
K12P With snap-in pegs	YE Yellow	LV327 Yellow	YE Yellow cap - No LED	2 2 mm (0.079)	3.5N 3.5 N	
K12PL With central LED	OG Orange	LV315 Orange	RD Red cap – No LED		5N 5 N	
K12C Sealed contact with rubber cap (IP 67)	RD Red	LV352 Red	GY Gray cap – No LED		3.5/7N 3.5/7 N**	
K12GO Two-step switch	WH White	LV302 White			6/12N 6/12 N**	
	BU Blue	LV328 Blue				

* 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

C&K

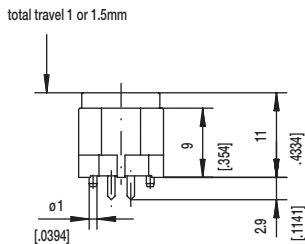


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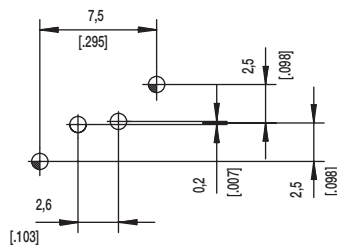
Key Switches

K12

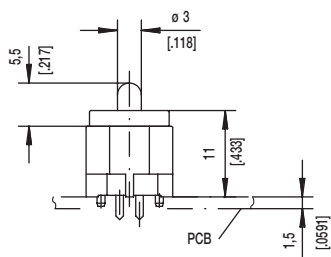
K12A



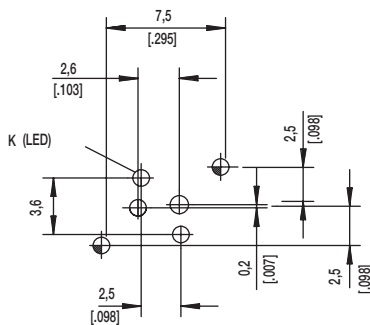
PCB LAYOUT, MOUNTING SIDE



K12AL



PCB LAYOUT, MOUNTING SIDE



	1,1 ^{+0,05}	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	Discription	Terminal Section	Surface



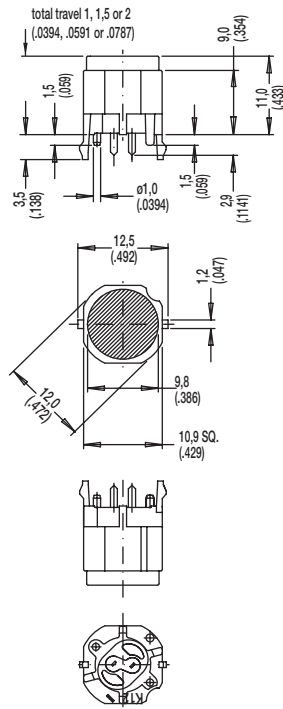
Dimensions are shown: mm
Specifications and dimensions subject to change

K12

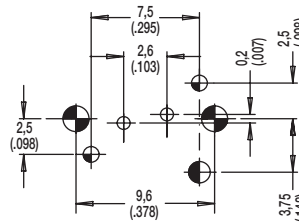
High Performance Key Switches

SERIES

K12P with snap in



PCB LAYOUT, MOUNTING SIDE

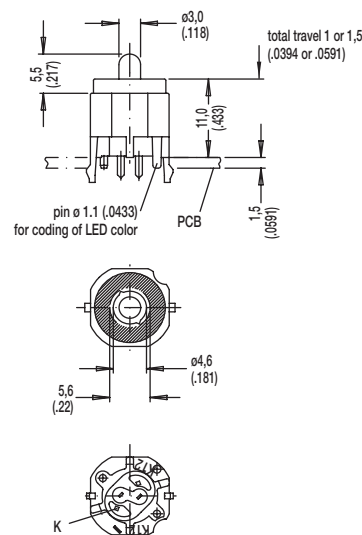


center of actuation area (notice LED)

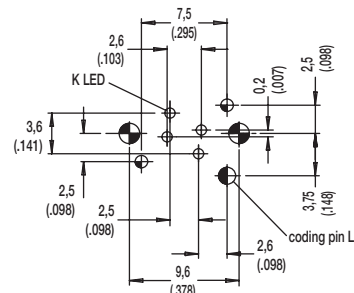


Hole	Ø	Without LED	Description	Terminal Section	Surface
	1,7 (.069)	2x	snap-in		
	1,6 (.062)	1x	coding hole (L,M,N)		
	1,1 (.043)	2x	center hole		Sn
	0,9 (.035)	2x	switch	0.7 x 0.2 (.028 x .081)	Sn

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
		2x	switch	0.7 x 0.2 (.028 x .081)	Sn



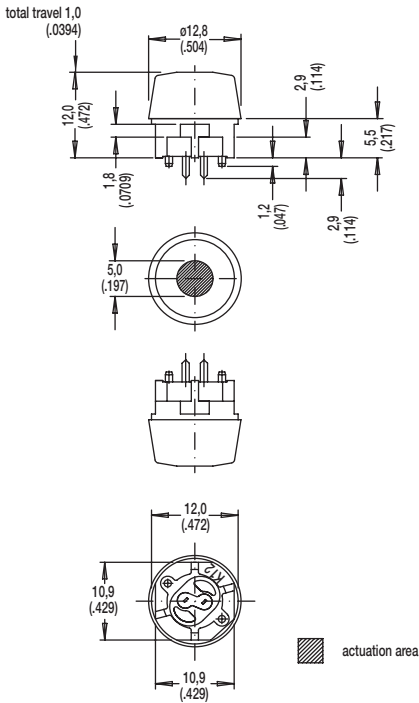
First Angle
Projection

K12

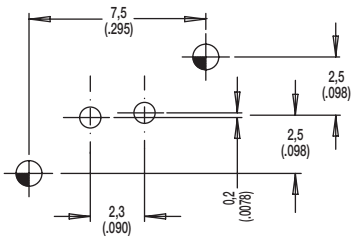
High Performance Key Switches

SERIES

K12C SEALED CONTACT WITH RUBBER CAP (IP 67)



PCB LAYOUT, MOUNTING SIDE



SCHEMATIC	
A	R

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

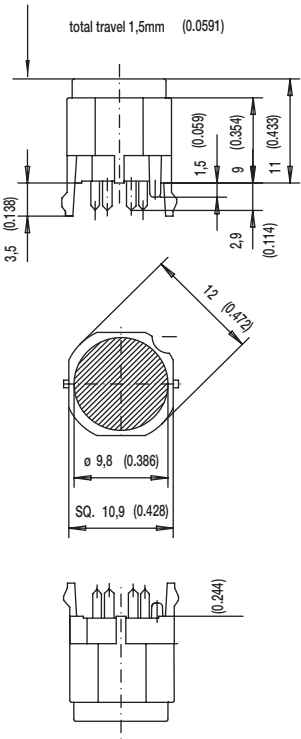


K12

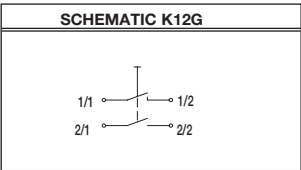
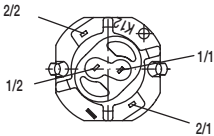
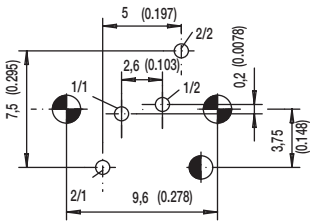
High Performance Key Switches

SERIES

K12GO



PCB LAYOUT, MOUNTING SIDE



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

[illegible]

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

A diagram of a linked list with 6 nodes. The first three nodes are black, and the last three are white. The fourth node is highlighted with a red border.

1 1 mm
1.5 1.5 mm
2 2 mm



Key Switches

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)



Dimensions are shown: mm
Specifications and dimensions subject to change

PVA

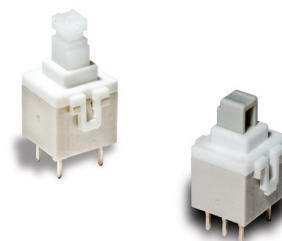
Short Stroke Key Switches

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.[✓]

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

P V A V 2	
Series	
PVA1	2 make-contacts (DPST)
PVA2	2 changeover contacts (DPDT)
Mechanical Function	
OA	Momentary
EE	Push-push
Total Height	
H1	17,5 mm
H2	23 mm
H3	20,5 mm
H4	15 mm
H5	13 mm (momentary & PVA2 only)
Operating Force	
1.2N	PVA1 only
1.7N	PVA2 only
3.5N	
Termination	
NONE	Standard terminals
SNA	Snap-in terminals

Button

Buttons must be ordered separately.
Shipped in bulk.

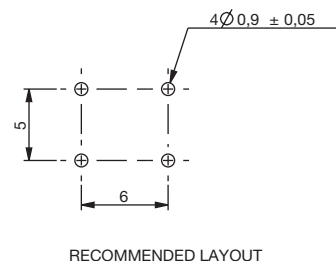
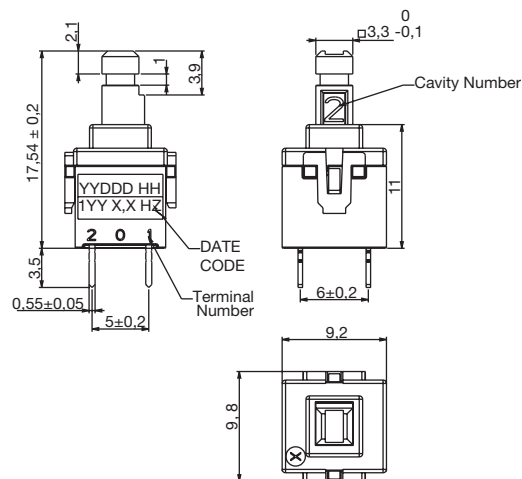
Button	
PE*	
PV*	
Button Color	
RD	Red
GR	Green
BK	Black
WH	White

*Compatible with H1 and H3 actuator models only.

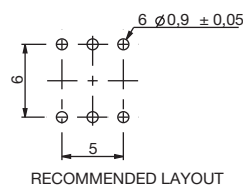
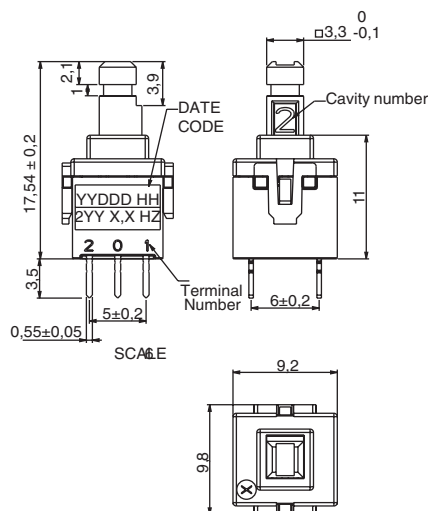
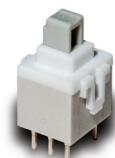
PVA Short Stroke Key Switches

SERIES

PVA1 (DPST)



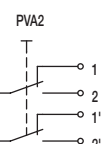
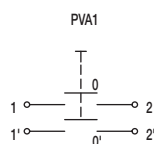
PVA2 (DPDT)



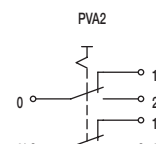
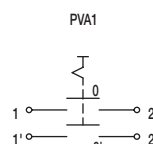
MECHANICAL FUNCTION

OPTION CODE	FUNCTION
OA	Momentary
EE	Push-Push

OA



EE

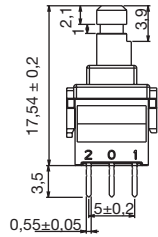


Dimensions are shown: mm
Specifications and dimensions subject to change

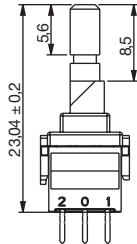
PVA Short Stroke Key Switches

TOTAL HEIGHT

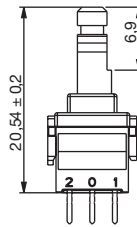
H1 17,5 MM



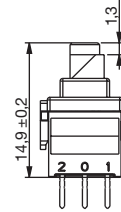
H2 23 MM



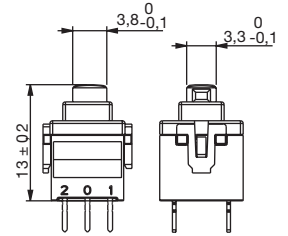
H3 20,5 MM



H4 15 MM



H5 13 MM
(MOMENTARY ONLY)

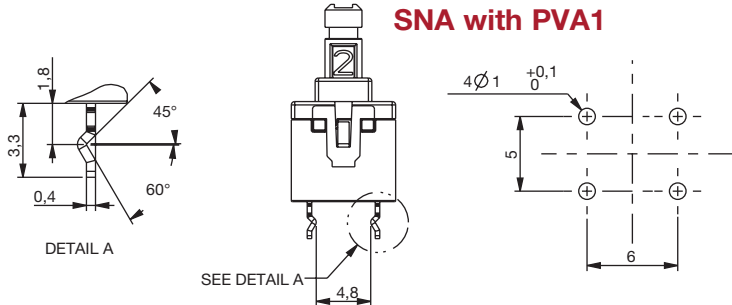


OPERATING FORCE

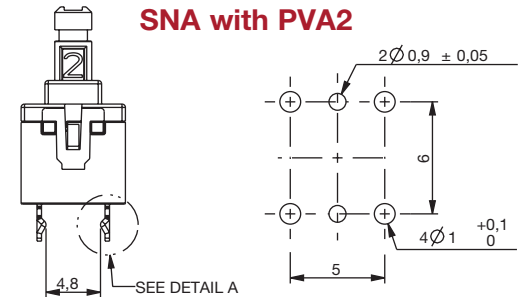
1.2N PVA1 ONLY
1.7N PVA2 ONLY
3.5N

TERMINATION

SNA with PVA1



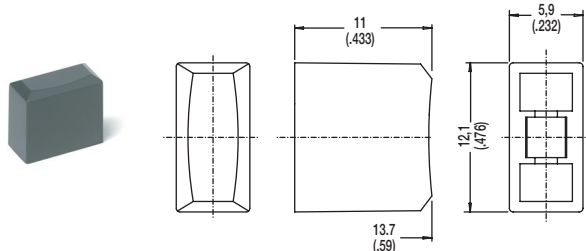
SNA with PVA2



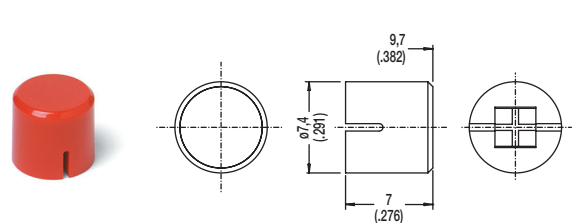
BUTTONS

BUTTONS MUST BE ORDERED SEPARATELY. SHIPPED IN BULK.

PE



PV



OPTION CODE	COLOR
RD	Red
GY	Gray
BK	Black
WH	White



First Angle
Projection



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

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

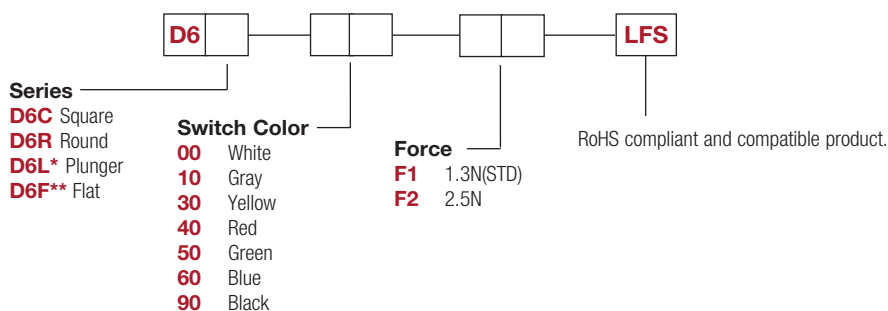
Packaging

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.

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



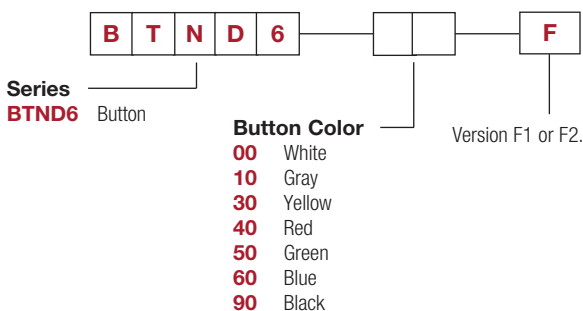
*Available only in color 90 (black).

** Available only in color 90 (black) and 00 (white).

Button

Buttons can be ordered separately.
Shipped in bulk.

D6 button for use with D6C only.

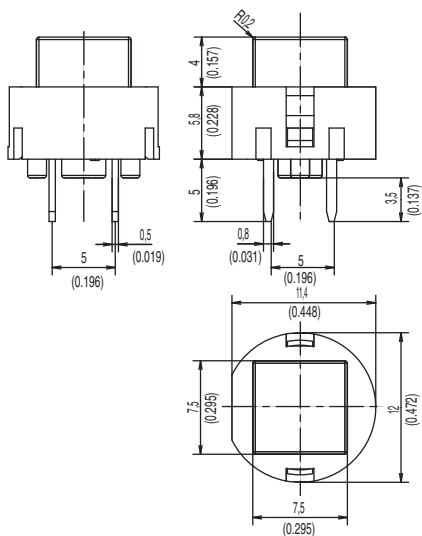


Dimensions are shown: mm
Specifications and dimensions subject to change

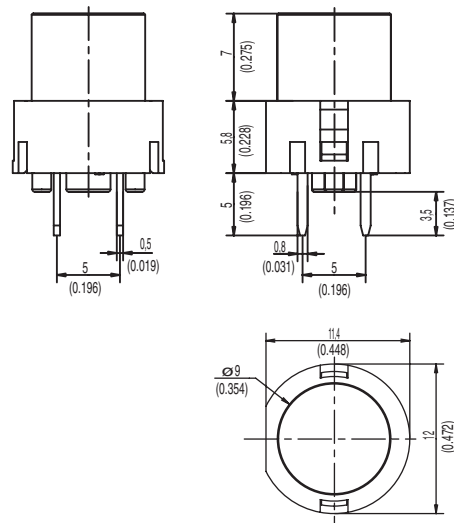
D6 SPST Momentary Key Switches

SERIES 

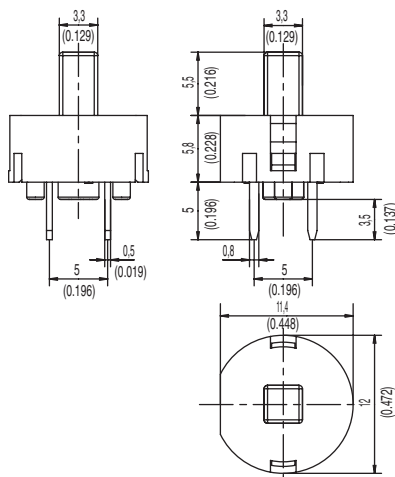
D6C



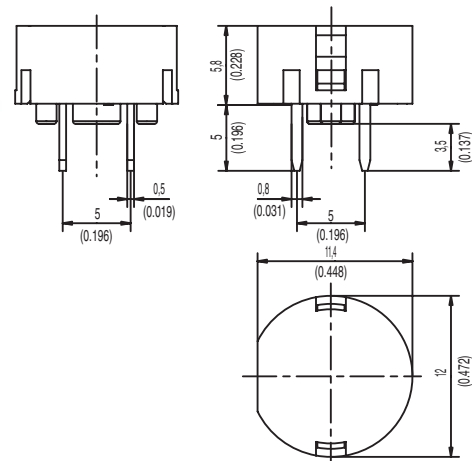
D6R



D6L ONLY AVAILABLE IN BLACK



D6F



D

Key Switches



Dimensions are shown: mm
Specifications and dimensions subject to change

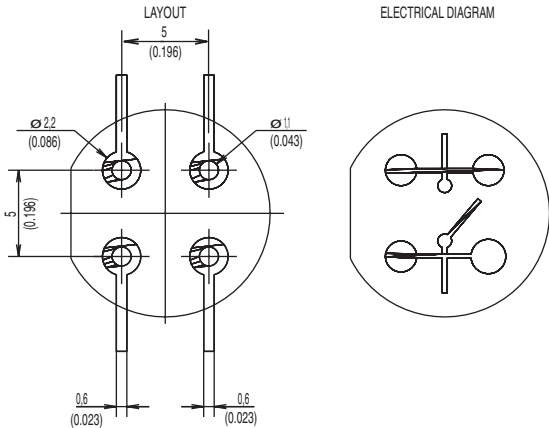
D6

SPST Momentary Key Switches

SWITCH COLORS

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

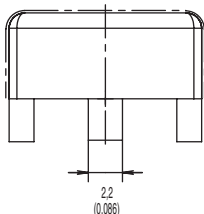
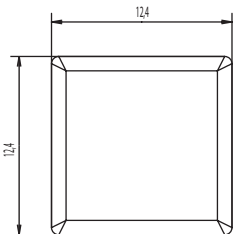
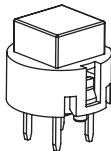
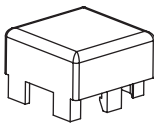
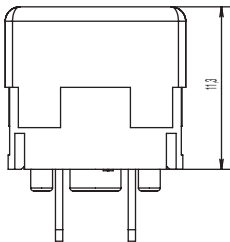
PCB LAYOUT



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



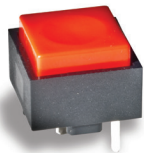
First Angle
Projection

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: 10⁹ Ω 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).

Materials

CASE: Glass filled nylon (UL 94V-0).

ACTUATOR: ABS, matte finish, black standard.

MOVABLE CONTACT: Q contact material: Stainless steel, silver plated.

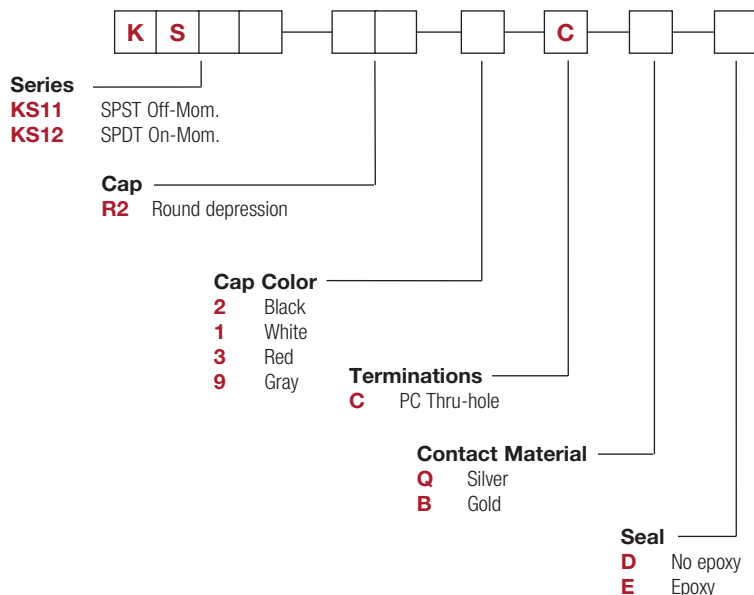
STATIONARY CONTACTS AND TERMINALS: Q contact material: copper alloy, silver plated.

TERMINAL SEAL: Epoxy

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

How To Order

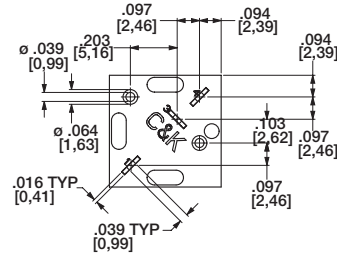
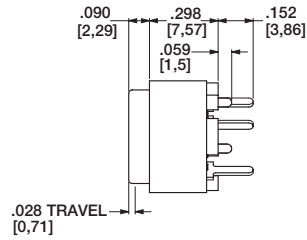
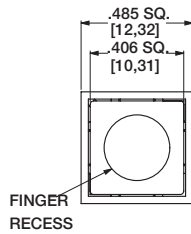
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



KS Single Pole Key Switches

SERIES

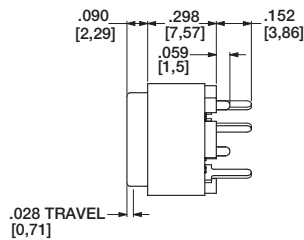
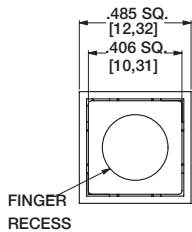
KS11 / KS12



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

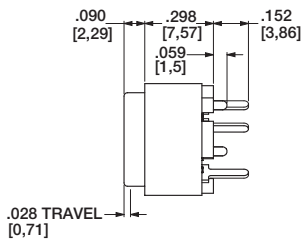


OPTION CODE	CAP COLOR
2	BLACK
1	WHITE
3	RED
9	GRAY

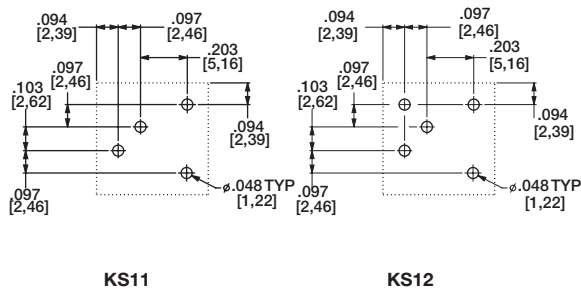
KS Single Pole Key Switches

TERMINATION

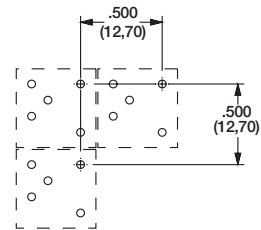
C PC THRU-HOLE



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.

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

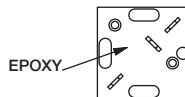
NOTE: Any models supplied with Q or B contact material are RoHS compliant.

SEAL

D

D NO EPOXY SEAL

E EPOXY SEAL

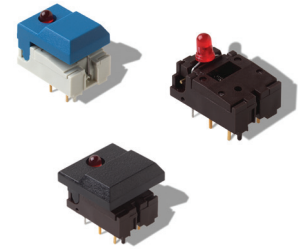


Dimensions are shown: mm
Specifications and dimensions subject to change

DIGITAST

Typical Applications

- **Medical**
- **Instrumentation**
- **Industrial electronics**
- **Audio electronics**



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: $\geq 5 \times 10^5$ operations
 Push-push: $\geq 5 \times 10^5$ operations
CONTACT RESISTANCE: Initial $\leq 50 \text{ m}\Omega$
 After 5×10^6 operations: $\leq 100 \text{ m}\Omega$
INSULATION RESISTANCE: $\geq 10^{10} \Omega$
CAPACITANCE at $f = 10 \text{ kHz}$: $\leq 0.8 \text{ pF}$
BOUNCE TIME: $\leq 2.5 \text{ ms}$
 Operating speed 400 mm/s (15.75/s)

Environmental

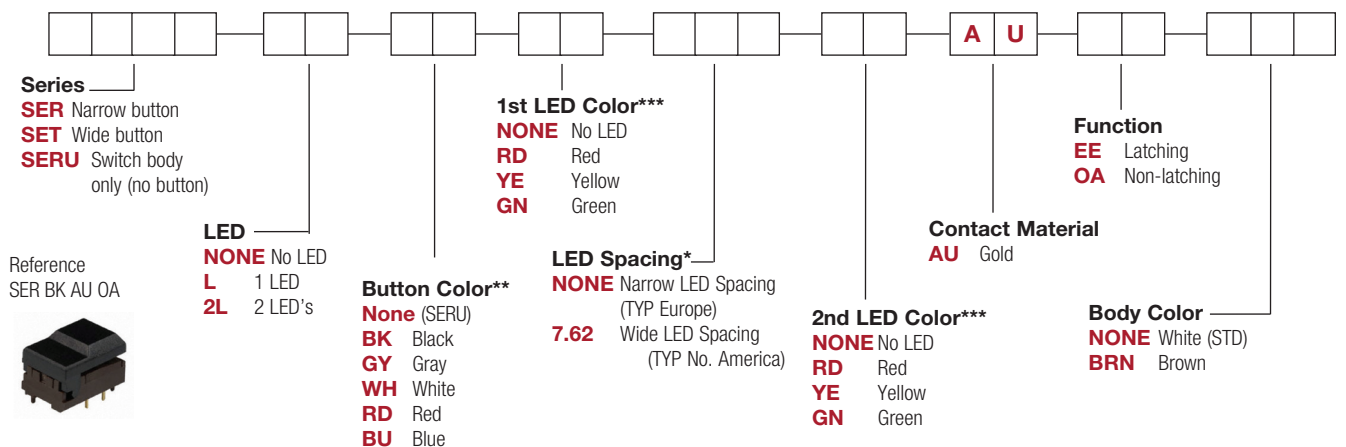
OPERATING TEMPERATURE: -25°C to 85°C.

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

Environmental

OPERATING TEMPERATURE: -25°C to 85°C.

Switch

Reference
SRK BK

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

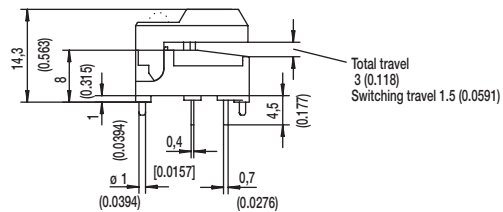
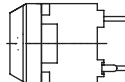
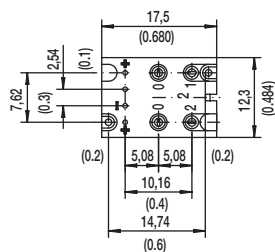
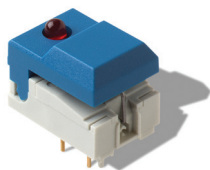
DIGITAST

Microminiature SPDT, Key Switches

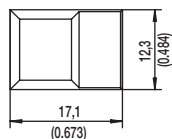
DESIGNATION



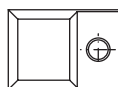
SER NARROW BUTTON



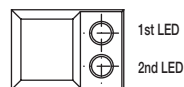
SER



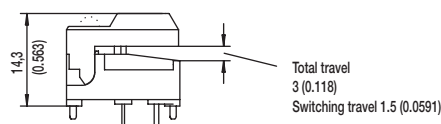
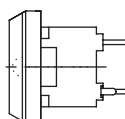
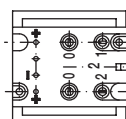
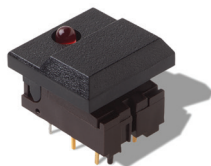
SERL



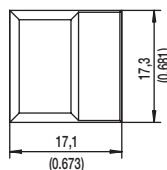
SER2L



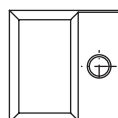
SET WIDE BUTTON



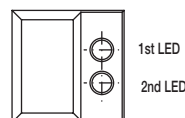
SET



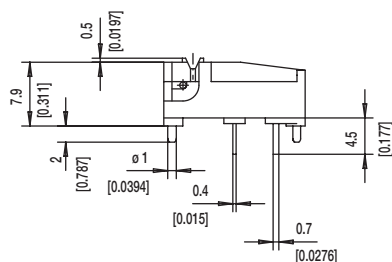
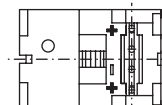
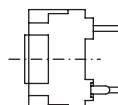
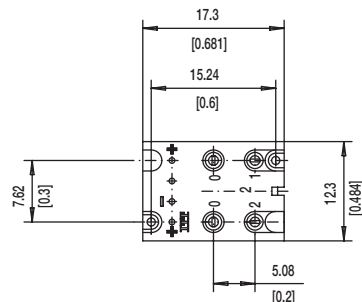
SETL



SET2L



SERU NO BUTTON



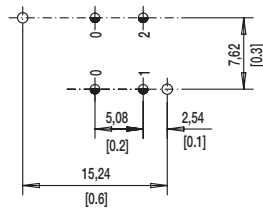
D

Key Switches

DIGITAST Microminiature SPDT, Key Switches

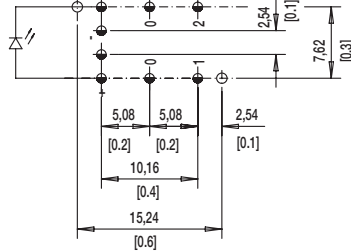
LED

NONE NO LED

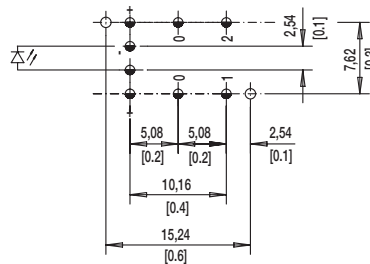


L 1 LEDS

7.62 mm Spacing (TYP No. America)

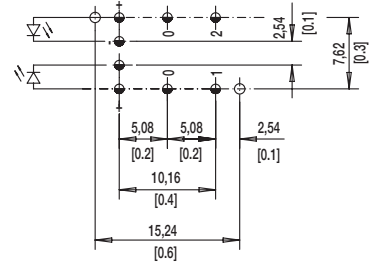


NARROW SPACING (TYP EUROPE)



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

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

Packaging

Trays 50 pieces.

Mechanical

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	

Environmental

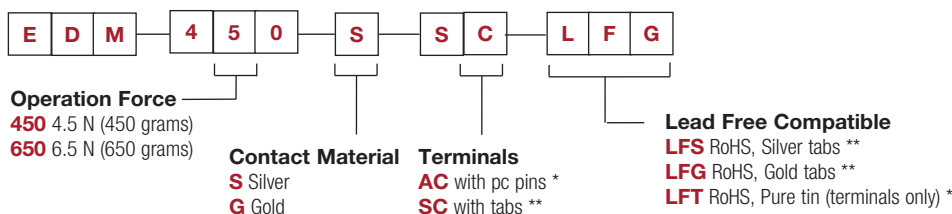
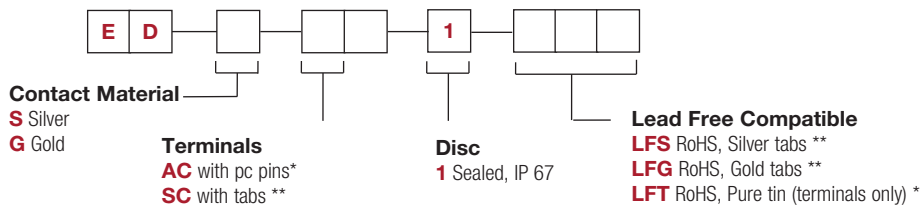
	Silver	Gold
OPERATING TEMPERATURE:	-25°C to 70°C	-55°C to 85°C

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

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

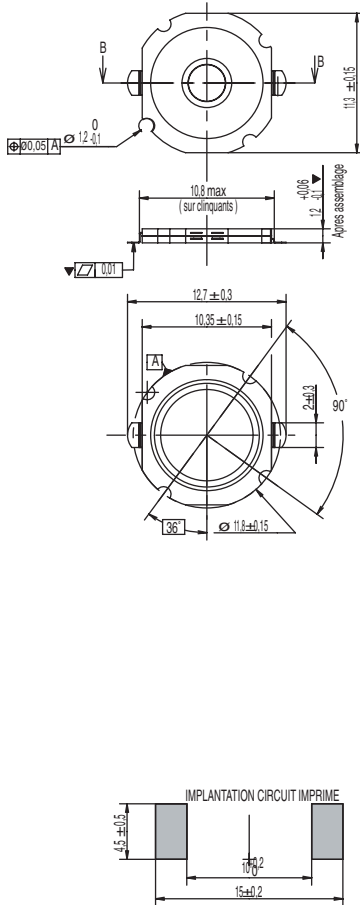
** SC terminals only available with LFS or LFG



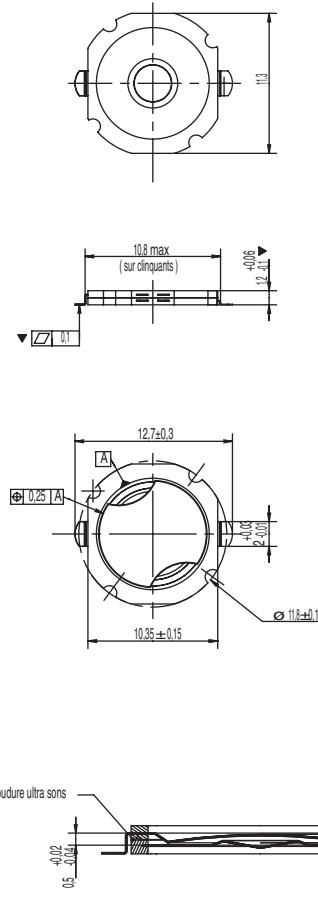
First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

ED



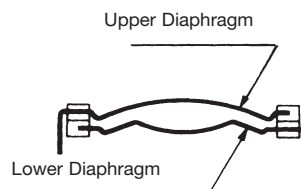
EDM



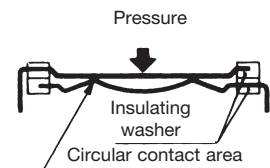
Switch Action Principal

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

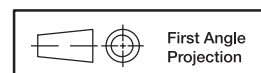
The upper diaphragm is shaped so that under pressure it collapses suddenly and establishes contact with the lower diaphragm.



Switch in resting position



Switch in active position

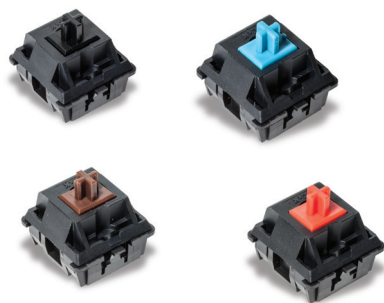


First Angle Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

KBD

Keyboard Switches



Features

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

Typical Applications

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

Specifications

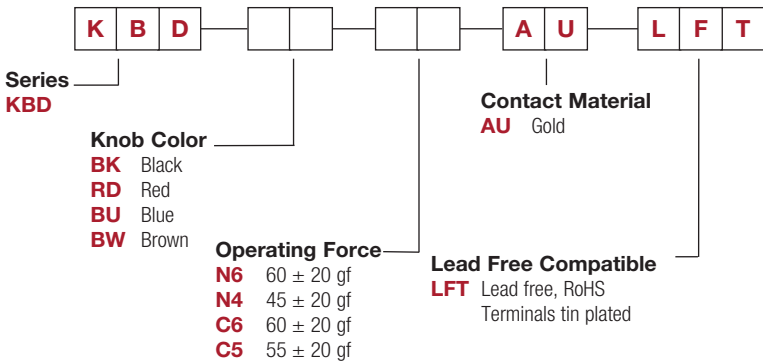
CONTACT ARRANGEMENT: SPST
CONTACT RATING: 10mA @ 12 VDC
INITIAL CONTACT RESISTANCE: 200 m Ω max. (25m Ω typically)
INSULATION RESISTANCE: 100M Ω min. @ 100 VDC
DIELECTRIC STRENGTH: 250 VAC (50-60 Hz) 60 sec.
ELECTRICAL LIFE: 50,000,000 cycles
PRE-TRAVEL: 1.5 ~ 2 mm
OVERTRAVEL: 4 mm
OPERATING TEMPERATURE: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

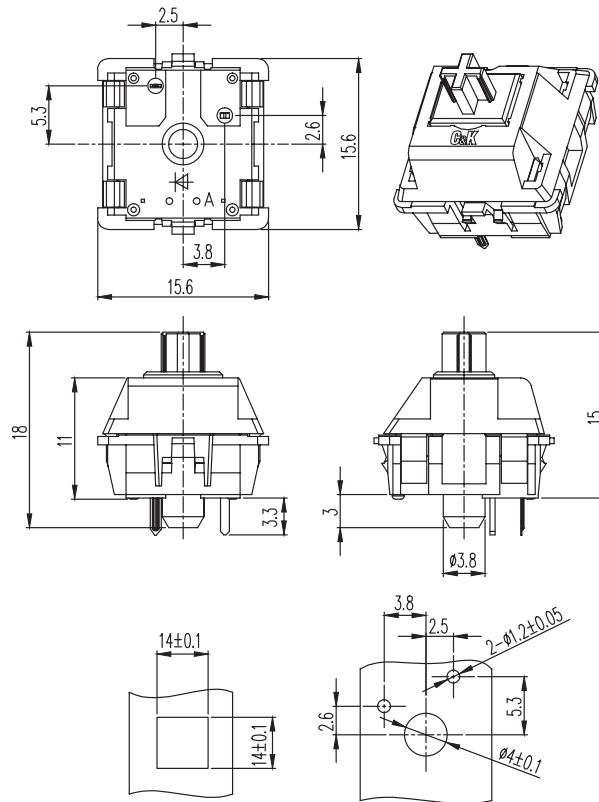
Materials

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

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.





Panel Cut
Panel Thickness 1.2mm

PCB Diagram

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



D

Key Switches