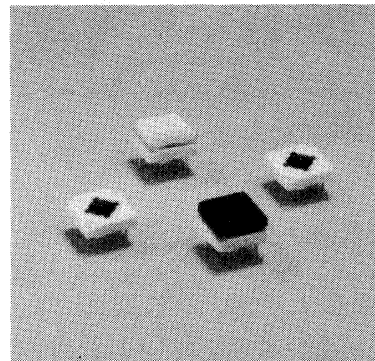
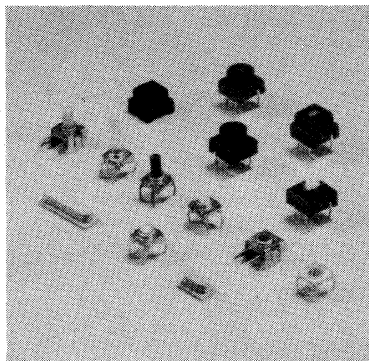


Keypswitches

ITT Shadow



Description

Especially designed for keyboards, ITT keyswitches present a large choice of dimensions, travel, buttons, colours etc.

KSA/KSD

KSA miniature keyswitch with low travel, washable, automatic insertable good tactile feed back. KSD same family as KSA but with red, green or yellow led 2 light pipe form : round or rectangular, 2 button form : round or square.

MD/MDP

MD module is an impulse keyswitch with rubber dome, MDP with additional button can be used directly in a keyboard with low travel and good tactile feed back.

Mechanical data	KSA	KSD	MD	MDP
Operating force	1.3 N \pm 25% standard	1.6 N \pm 25% standard	2.6 N	2.4 N
Nominal travel	0.3mm ^{+0.4}	0.2mm ^{+0.1}	0.6 mm	0.3mm
Maxi travel	0.8 mm	0.3 mm	1.5 mm	0.5 mm
Electrical data				
Contact type	NO	NO	NO	NO
Contact material	S (G or request)	S	S	S
Voltage max/min	50 V/20 mV	50 V/5 V	100 V	100 V
Switching power	1 VA	1 VA	6 VA	3 VA
Switching current max/min	50 mA/1 mA	50 mA/10 mA	100 mA	50 mA
Contact resistance	50 m Ω	50 m Ω	< 10 m Ω	< 15 m Ω
Insulation resistance	> 10 ⁵ M Ω	> 10 ⁵ M Ω	> 10 ⁵ M Ω	> 10 ⁵ M Ω
Bounce	\leq 1 ms	\leq 5 ms	< 100 μ s	< 100 μ s
Operating life	10 ⁵	10 ⁵	10 ⁶	5.10 ⁶
Climatic data				
Operating temperature	-40°C + 90°C	-20°C + 125°C	-25°C + 70°C	
Soldering	250°C \pm 5°C/2 sec	260°C/2 sec	235°C/5 sec	
Washing	Sealed for solvent immersion		Cleaning by immersion at normal temperature in alcohol or freon TF or TE	

Note : N.O.: Normally Open

S: Silver plated

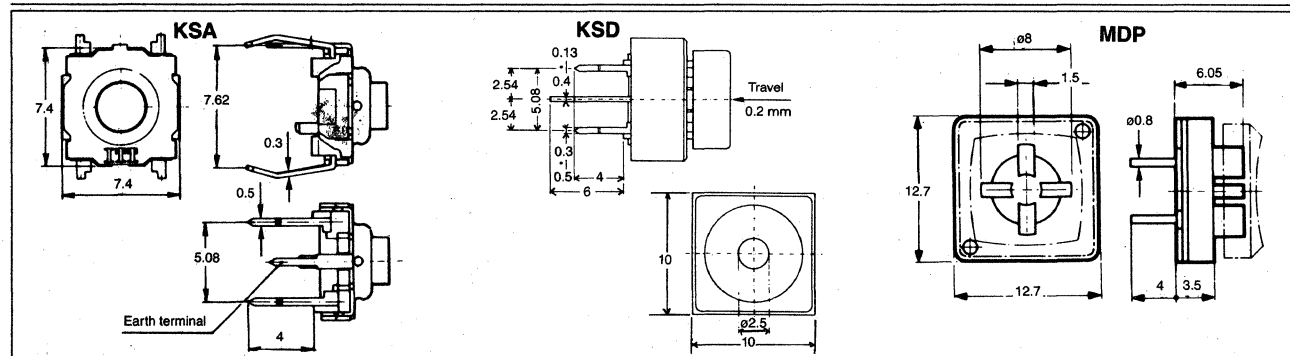
G: Gold plated

Options

- KSB: W/O actuator
 - KSL: long actuator (6.6 mm)
 - KSA: standard version
 - KSAV: vertical version
 - Different buttons available
 - Special: 3N operating force
- Note: illuminated button KSD are compatible with non illuminated KSA

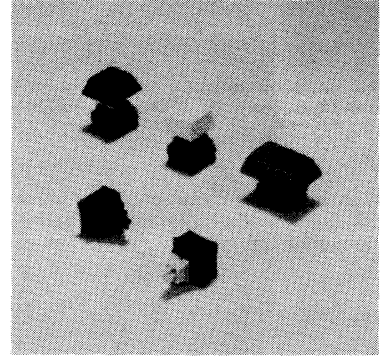
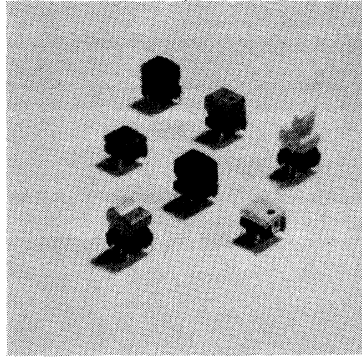
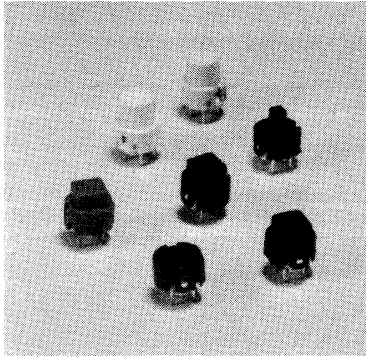
Options

MD 40 for -40 + 70°C



Keyswitches

ITT Shadow



D6

Keyswitch with impulse contact, D6 is suitable for keyboard with XY matrix. 4 versions of integrated button, good tactile feed-back.

MSL

Momentary keyswitch sealed too EIA-448-2. Multiple kecap options and one or two LED's available. Gold or Silver contacts.

DC 60

Momentary keyswitch for alphanumerical key-boards. Low profile (16.7 mm). Push-push option and spacebar available.

1.3 N \pm 30%

0.8

0.8 mm

2.2 N

1.5 mm

1.8 mm

0.7N

1.5 mm

3.2 mm

NO

Single Pole Throw NO

Single Pole Single Throw NO

S

Ag

Au

Au

100 V

12 V

12 V

30 V

6 VA

360 mW

180 mW

1.5W

100 mA

30 mA

15 mA

50 mA

$\leq 100 \text{ m}\Omega$

$\leq 50 \text{ m}\Omega$

$\leq 75 \text{ m}\Omega$

$\leq 150 \text{ m}\Omega$

$10^5 \text{ M}\Omega$

$\geq 9 \cdot 10^5 \text{ M}\Omega$

$\geq 9 \cdot 10^5 \text{ M}\Omega$

$\geq 100 \text{ M}\Omega$

$< 3 \text{ ms}$

$< 15 \text{ ms}$

$< 5 \text{ ms}$

0.5 ms Nom. 5.0 ms Max.

$2.5 \cdot 10^5$

$\geq 250,000 \text{ (at Max. Power)}$

10,000,000 (at 250 mV amp Power)

$-20^\circ\text{C} + 85^\circ\text{C}$

$-25^\circ\text{C} + 70^\circ\text{C}$

$0^\circ\text{C} \text{ to } 50^\circ\text{C}$

235°C/5 sec

Flow soldering 250°C 2 to 4 sec

Hand solder 260°C 2 sec. Flow solderable

Board side only

Washable

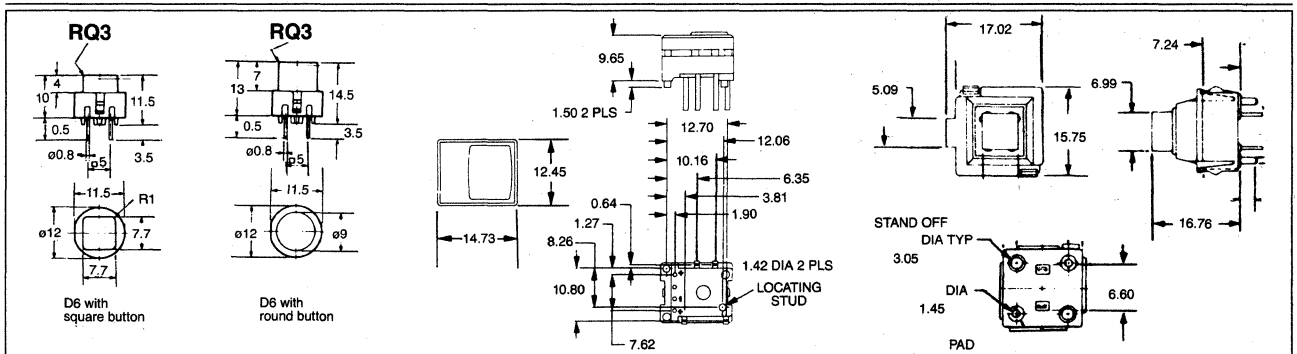
Hand clean freon TF

Options

- D6 with shaft 3.3×3.3
- D6 with flat surface
- D6 with square button 7.7×7.7
- D6 with round button $\varnothing 9$
- Snap-on button $\varnothing 12.4$

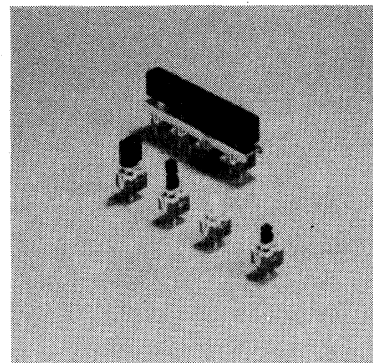
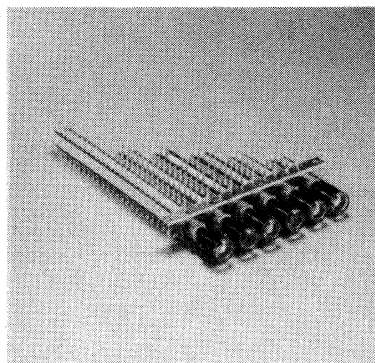
*Prevent flux from top side of PCB.

Restrict top surface of board to 83°C Max



Push button switches

ITT Shadow



Description

Push button switches family ITT offering large possibilities due to

- button style
- assembly system
- contact type
- travel et..

F Series

These switches offer wide possibilities:

- up to 10 change overs per module
- frame up to 23 positions with 5 different pitches
- patented mechanical indicator buttons.

PVA

Rear terminated modular push buttons for PCB mounting parallel to the front panel.

PVA presents low operating force, short travel and small sizes.

Mechanical data

Number of modules	1 to 23	1 to 16
Pitch between modules	10 - 12.5 - 15 - 17.5 - 20 mm	10 - 12.5 - 15 mm
Maxi travel	4.7 mm	2.2 mm
Operating force	6 N for C/O, 11 N 10 C/O	PVA1 : 120 cN PVA2 : 170 cN

Mechanical function

Interlocking, interdependent
Release key, push-push

PVA1 : Momentary - PVA2 : Push-push
PVA1, PVA2 : Interlocking, release

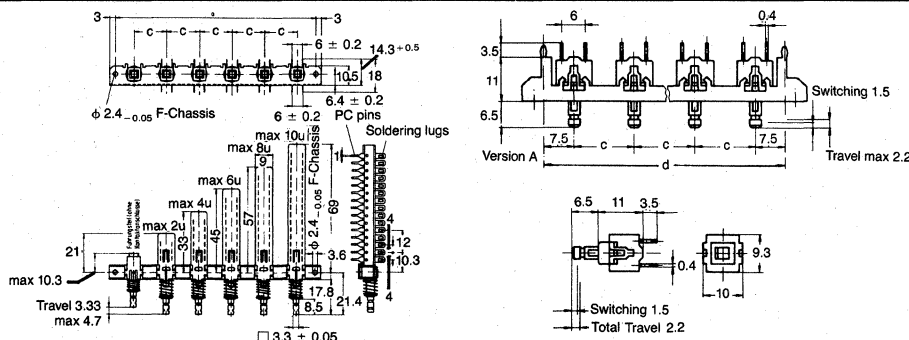
Electrical data

Number of change over	2 to 10	2
Contact material	Ag Au	Ag
Max voltage	30 V ~ 30 V ~	50 V ~
Switching current	0.5 A 0.04 A	0.1 A
Switching power	15 W 300 mW	3 W
Contact resistance	≤ 10 mΩ ≤ 20 mΩ	< 50 mΩ
Voltage between contacts and stability	1500 V 1500 V	250 V ~ 500 V ~
Insulation resistance between	≥ 10 ³ MΩ	> 100 MΩ
Operating life	10 ⁵	50,000

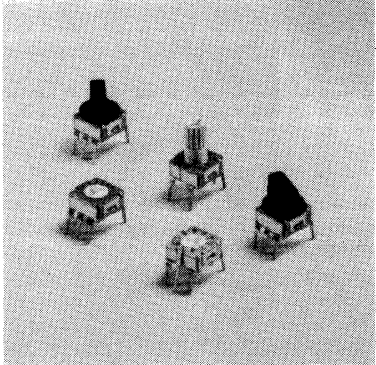
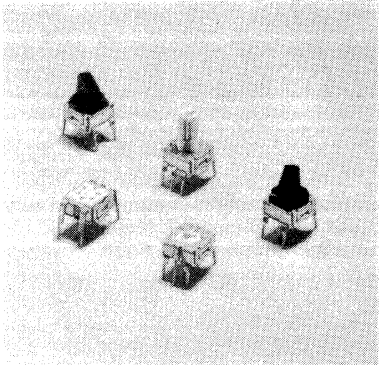
Climatic data

Operating temperature	-20°C + 70°C	-25°C + 85°C
Soldering	260°C/5 sec max.	260°C/5 sec.
Washing	Sealed contacts	Sealed contacts

Note: Changer-Over : C/O
Silver plated : Ag
Gold plated : Au



Rotary switches



Description

ITT, one of the world of products leaders in rotary switches present a wide range, easy to use and adapt to customer specific requirements.

RTE 02/03

Micro-miniature rotary switch with 2 or 3 positions:
• operation by screw slot or by shaft, or by button
• Main applications in telephone set, computer or electronic controls.

RTE 10/16

Microminiature rotary switch for PS board with coding function 10 to 16 position operating by slot, shaft or button.

Mechanical data	RTE 02	RTE 03	RTE 10	RTE 16
Number of wafer	1	1	1	1
Number of pole/wafer	1	1	1	1
Number of positions	2	3	10	16
Coding	—	—	BCD	HEX
Angle between position	120°	60°	36°	22.5°
Shaft diameter	Ø 4 mm (in shaft version)		Ø 4 mm (in shaft version)	
End stop	Yes	Yes	W/O	W/O
Wafer material	Thermoplast.	Thermoplast.	Thermoplast.	Thermoplast.
Electrical data				
Contact type	—	—	—	—
Contact material	S	S G	G	G
Max switching power	0.5 W	0.5 W 0.3 W	0.3 W	0.3 W
Switching current max/min	100/1 mA	100/1 mA	100/1 mA	100/1 mA
Carrying current	—	—	—	—
Voltage max/min	50/2 V	50/2 V 30/0.05 V	30/2 V	30/2 V
Contact resistance	50 mΩ	50 mΩ	100 mΩ	100 mΩ
Voltage stability between contacts and contacts and earth	500 V RMS	500 V RMS	300 V RMS	300 V RMS
Insulation resistance between contacts and between contacts to earth (500 V CC)	10 ⁴ MΩ	10 ⁴ MΩ	10 ⁴ MΩ	10 ⁴ MΩ
Number of operations max.	1500 index.	1500 index.	20,000 index.	20,000 index.
Climatic data				
Climatical category	25/85/21		25/85/21	
Operating temperature	- 40°C + 85°C		- 40°C + 85°C	
Soldering	Wave		Wave	
Washing	W/O thermal shock		W/O thermal shock	

*MBB shorting - BBM : non shorting. Note : S = Silver - G = Gold

