



# INNOCENT SWITCHES



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## INNOCENT ELECTRONICS CO., LTD.



## GREETING

About INNOCENT Electronics Co., Ltd. ....

Welcome to INNOCENT Electronics Co., Ltd. INNOCENT Electronics Co., Ltd. is making standard paradigm of successful enterprises.

Our company is like family enterprises, we make desperate efforts to grant valuable for small, precision, up to date technology goods.

Since established in 1994, we have been doing our best in R&D investment, so now INNOCENT Electronics Co., Ltd. is being one of the leading companies in switch field. We have succeeded in developing new products with high quality by an excellent know-how."

Our company acquired 'ISO9001' & 'ISO14001' certificate through our high quality goods & environmentally sustainable development. In addition, our company is growing constantly and being noticed as the most technological switch manufacturer..

We are directly exporting to all over the world such as Asia, America, Europe and so on.

Now our future all depends on your decision.

We make steady progress in order to be a bright venture enterprise through originally developed brand goods in the world.

Hope to be your partner in coming future.

## HISTORY OF MAIN PROJECT

### 1999.

- SMD TACT SWITCH : INT-1181series, INT-1187series

### 2000.

- MINI SLIDE SWITCH : INS-1290, INS-1300
- SMD TACT SWITCH : INT-1127

### 2001.

- MINI SLIDE SWITCH : INP-2216, INP-2212, INP-2213
- LED TACT SWITCH : INT-1193, INT-1194

### 2002.

- MOUSE TACT SWITCH : INT-1135
- SMD TACT SWITCH : INT-1197, INT-1400series
- MULTI DIRECTIONAL TACT SWITCH : INT-1500series

### 2003.

- RUBBER TACT SWITCH : INT-1131U, INT-1131P
- DETECTOR SWITCH : IND-1120series
- WATER PROOF SWITCH : INT-1149series

### 2004.

- RUBBER TACT SWITCH : INT-1162series
- WATER PROOF SWITCH : INT-1139
- MULTI DIRECTIONAL TACT SWITCH : INT-1600series
- SMD TACT SWITCH : INT-1410/1420series, INT-1110

### 2005.

- MINI SIDE TACT SWITCH : INT-1111, INT-1125/V
- MOISTURE PROOF SWITCH : INT-1108series
- ON-OFF SWITCH : INT-1105series
- MULTI DIRECTIONAL SWITCH : INT-1610

### 2006.

- PUSH SWITCH : INP-2214
- DOUBLE ACTION SWITCH : INT-1104F, INT-1106F
- MOISTURE PROOF SWITCH : INT-1158
- RUBBER TACT SWITCH : INT-1132U, INT-1430
- MULTI DIRECTIONAL SWITCH : INT-1700

### 2007.

- SMD TACT SWITCH : INT-1440series, INT-1188
- JOG LEVER SWITCH : INL-1140, INL-1150series



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<b>MULTI DIRECTIONAL</b>	INT-1500 INT-1500D INT-1500S INT-1600 INT-1610E INT-1700B INT-1700BM		P. 12
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## PRODUCTS CONTENTS

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## PRODUCTS CONTENTS

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	EMI Sheet Type		
	Basic Roll Type		
	EMI Roll Type		
	Keypad Type		
	Side Key (with FPCB)		

## MOUSE / WATER PROOF SWITCHES

### INT-1135/1149/1139 series



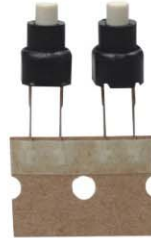
1135 a



1149A b



1149B c



1139 d

#### Applications

- Mouse, joystick, play station
- Bidet, water purifier, shaver, remote control, All washable equipments.

#### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1135	DC 12V 50mA	0.5±0.1mm	60/120±20gf	100mΩ Max.	1,000,000 Cycles Min.
INT-1139 series	DC 12V 50mA	0.3±0.1mm	200/250±50gf	500mΩ Max.	100,000 Cycles Min.
INT-1149 series	DC 12V 50mA	0.3±0.1mm	200/250±50gf	100mΩ Max.	100,000 Cycles Min.

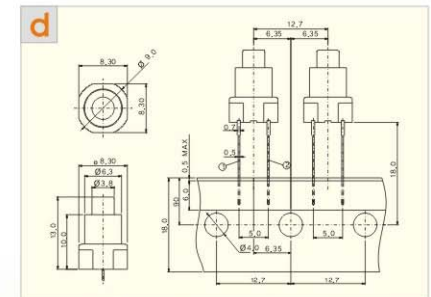
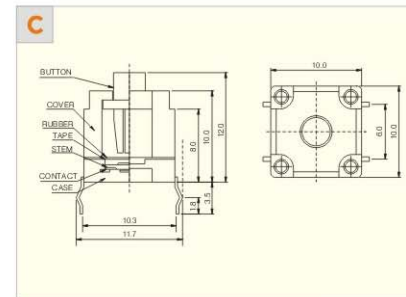
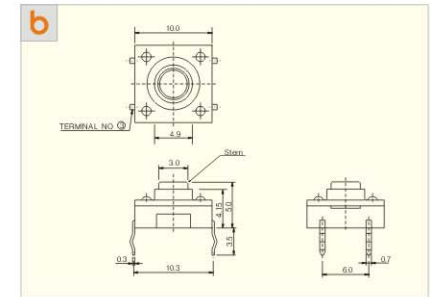
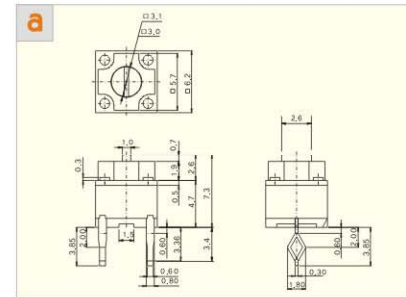
#### Water Resisting Performance

Temperature of water	60°C
Depth of water	10cm
Soaking time	240h

#### How to Order

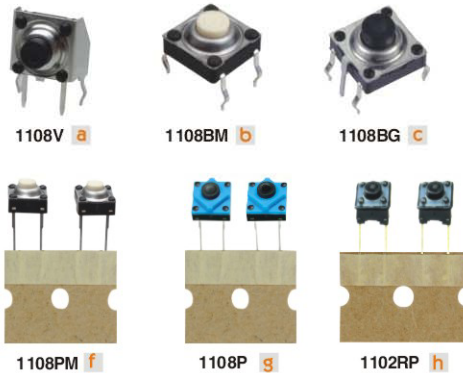
Part number	Operating force	
INT-1135	A	60+20gf
	B	120+20gf
INT-1139	A	200±50gf
	B	250±50gf
INT-1149 SERIES	B	250±50gf

#### Dimensions



# MOISTURE PROOF SWITCHES

## INT-1108 series 1102RP



1108B d

1108S e

1108V a

1108BM b

1108BG c

1108PM f

1108P g

1102RP h

### Applications

- All equipments that require a moisture proof design. Bidet.

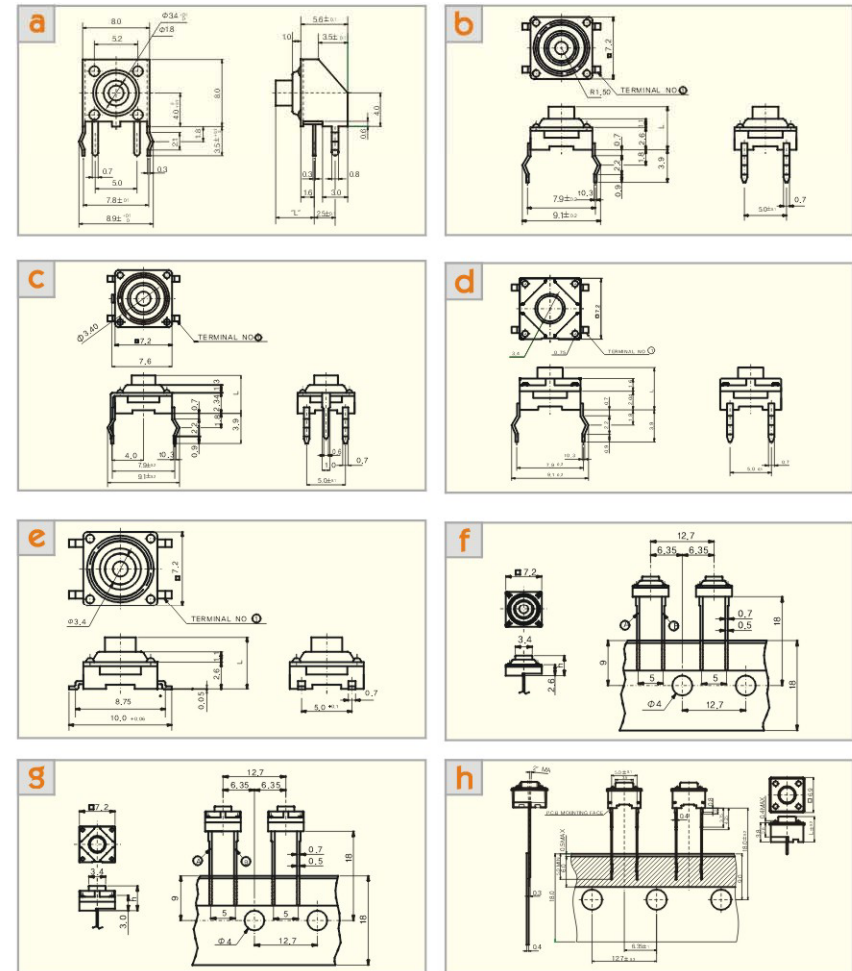
### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1108 series	DC 12V 50mA	0,35±0,1mm	200/250±50gf	100mΩ Max.	100,000 Cycles Min.
INT-1102RP	DC 12V 50mA	0,35 +0,2mm -0,1mm	130/160/250±50gf	100mΩ Max.	100,000 Cycles Min.

### How to Order

Part number	Knob(L)		Operating force			
	Knob(L)	Travel	Operating force	Contact Resistance		
1108B/BM/BG/P/PM/S	43	4,3mm	A	200 ± 50gf		
	50	5,0mm				
	70	7,0mm				
	90	9,0mm				
	13	13,0mm				
INT-1108V SERIES	43	3,65mm	B	250 ± 50gf		
	50	4,35mm				
	70	6,35mm				
	90	8,35mm				
INT-1102RP	13	12,35mm	A	160 ± 50gf		
	50	5,0mm			B	250 ± 50gf
	70	7,0mm			C	130 ± 50gf

### Dimensions



## MULTI DIRECTIONAL SWITCHES

### INT-1500/1600/1610 1700 series



#### Applications

- Remote controller, LCD TV controller,
- MP3 player, Digital camera, PDA, etc.
- For navigation map control, For control of various kinds of office automation equipment and audio-visual equipment.

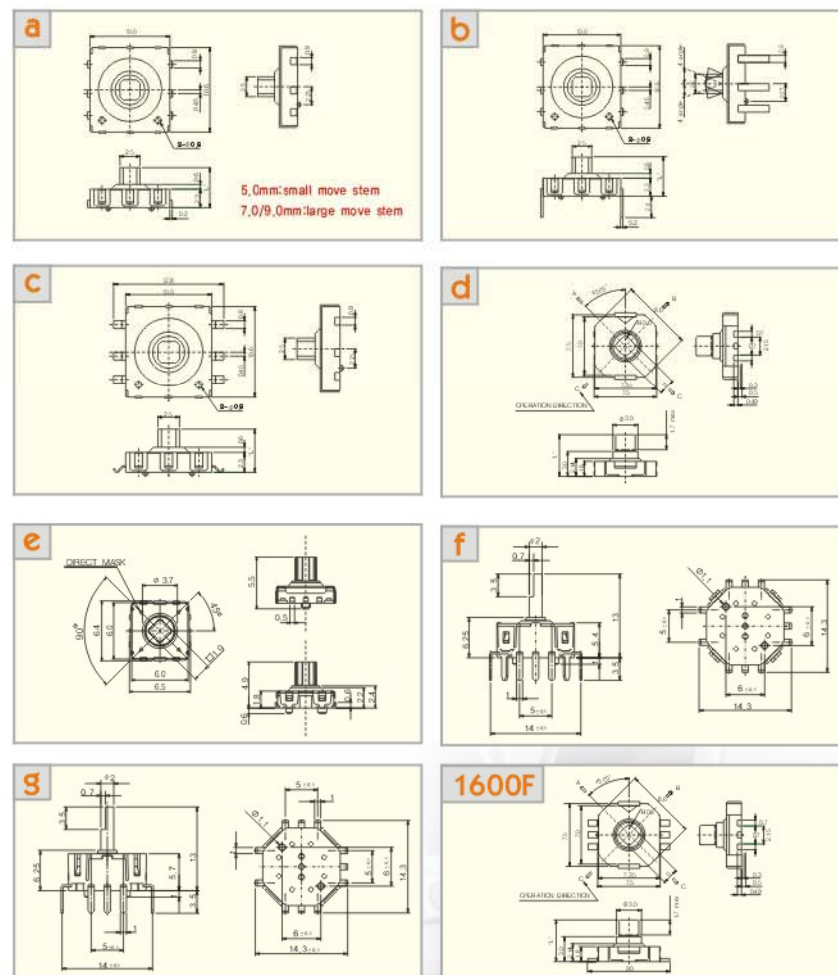
#### Specifications

Model No.	Rating	Stroke	Operating Force	Contact Resistance	Life
INT-1500 series	DC 12V 50mA	4-Direction : 0,25mm Center : 0,15mm	4-Direction : 160±50gf Center : 320±70gf	500mΩ Max.	100,000 Cycles Min.
INT-1600 series			4-Direction : 160±50gf Center : 240±50gf		
INT-1610 series			4-Direction : 130±50gf Center : 250±50gf		
INT-1700 series	DC 5V 1mA	8-Direction : 1,65±0,5mm Center : 0,2±0,1mm	8-Direction : 120±50gf Center : 400±150gf	1Ω Max.	30,000 Cycles Min.

#### How to Order

Part number	Knob size □		Guide boss	Height(L)	Operating Direction Q'ty	
	I	N			5-directional	4-directional
INT-1500 SERIES	-	-	-	50	-	5-directional
				70	-	4-directional
				90	1504 1502	2-directional
INT-1600 SERIES	I	1.88	-	50	-	-
				70		
	N	1.95	E	49		
				70		
INT-1610/1700 SERIES	-	-	-	-	-	-

#### Dimensions



## LED SWITCHES

### INT-1193/1194 series / INP-2213L



1193 a



1193CAP b



1194 c



2213L d

#### Applications

- Remote controller, Audio, Camera, Monitor, office equipment, TV set, VCRS.
- Measuring instruments, communications apparatus.

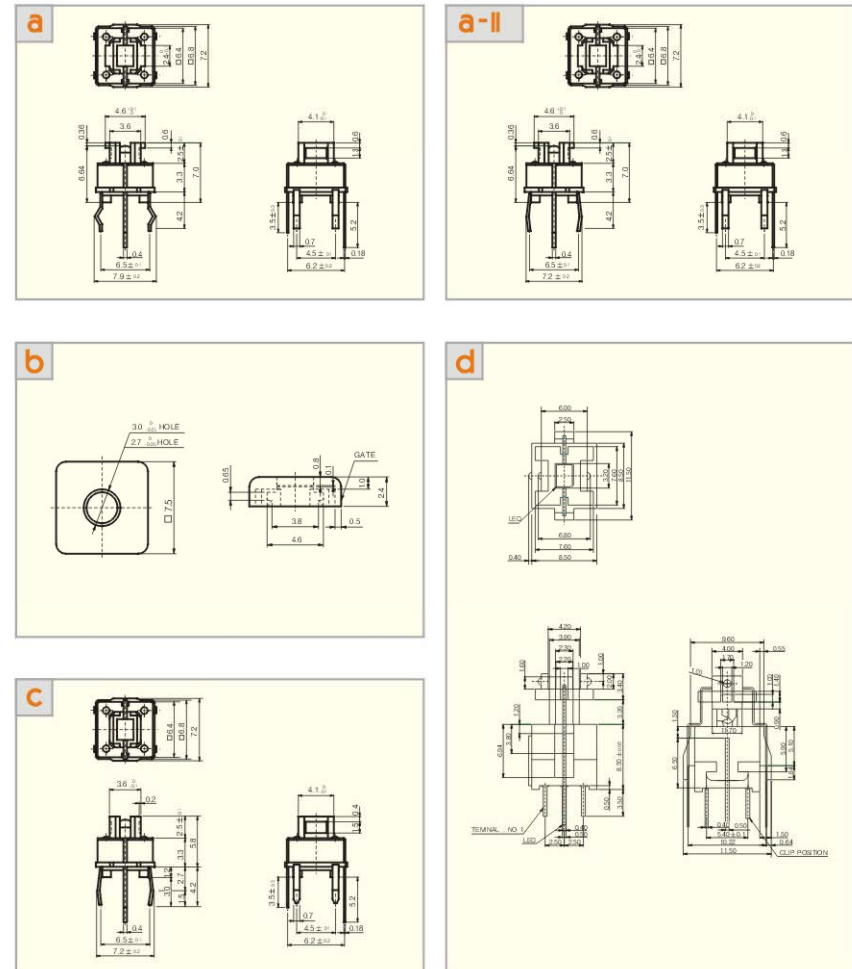
#### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1193	DC 12V 50mA	0,25 $\pm 0,2$ mm -0,1mm	130/160/250 $\pm 50$ gf	100m $\Omega$ Max.	100,000 Cycles Min.
INT-1194			130 $\pm 50$ gf	30m $\Omega$ Max.	10,000 Cycles Min.
INP-2213L	DC 30V 0,1A	0,3 $\pm 0,1$ mm	200 $\pm 80$ gf	30m $\Omega$ Max.	10,000 Cycles Min.

#### How to Order

Part number	Operating Mode	LED COLOR		Operating Force		CAP		NOTE
		R	RED	A	160 $\pm 50$ gf	C	with	
INT-1193	-	G	GREEN	B	250 $\pm 50$ gf	-	without	-
		Y	YELLOW	C	130 $\pm 50$ gf	-	-	
INT-2213L	S	B	BLUE	-	-	-	-	Pitch 5,4mm
	N	W	WHITE	-	-	-	-	
	M	-	-	-	-	-	-	

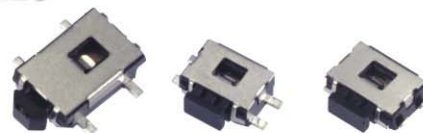
#### Dimensions





## SIDE TACT SWITCHES

INT-1200/1400/1410  
1420/1110 series



1200FE a

1400F b

1400U c



1410F d



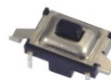
1410U e



1420F f



1420U g



1110 h

### Applications

- Mobile phone, PDA, MP3 Player, Video-phone equipments.

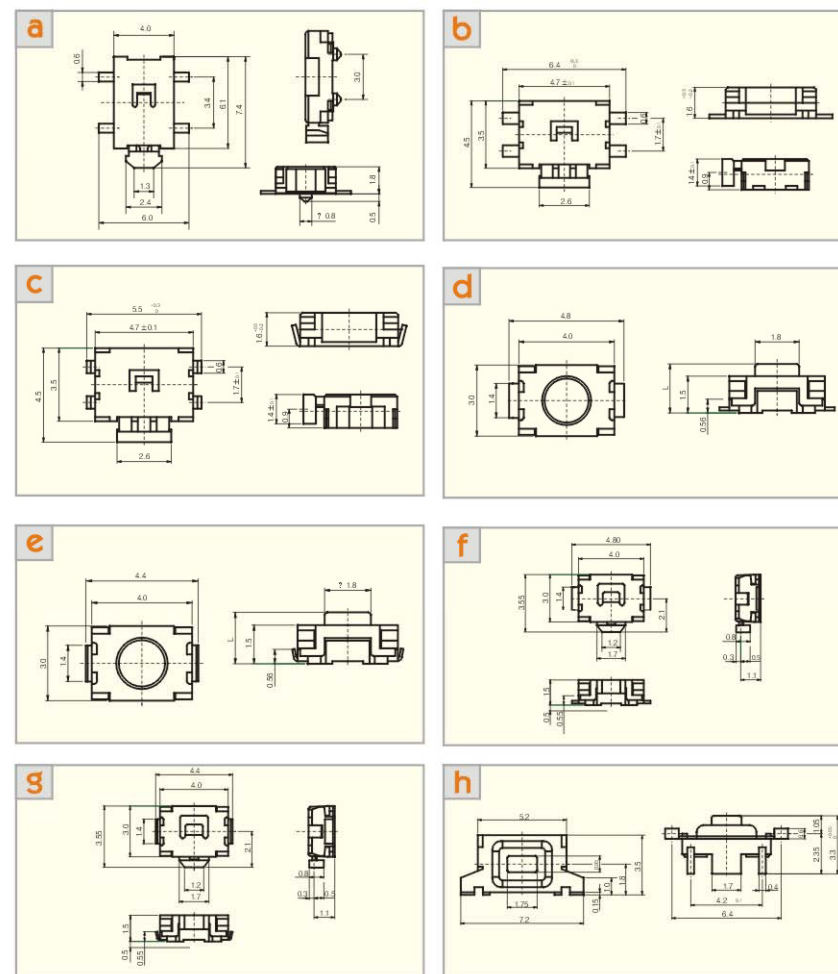
### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1200	DC 12V 50mA	0,3±0,1mm	220±50gf	100mΩ Max.	50,000 Cycles Min.
INT-1400			220±50gf		
INT-1410		0,15±0,1mm	160/250±50gf		100,000 Cycles Min.
INT-1420		0,25±0,1mm	220±50gf		50,000 Cycles Min.
INT-1110		0,15±0,1mm	160/250±50gf		

### How to Order

Part number	Terminal Type		Guide boss		Knob(L)		Operating Force	
INT-1200	F	Flat	-	Without	-		-	
INT-1420					-		-	
INT-1400	U	U-bending	E	With	20	2,0mm	A	160±50gf
INT-1410					25	2,5mm		
INT-1110	-	-	-	-	-		B	250±50gf

### Dimensions



## SIDE TACT SWITCHES

INT-1100/1125/1111  
1440 series



1100 a

1100E b



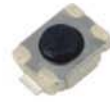
1125 c



1125V d



1111 e



1440F f



1440U g

### Applications

- Mobile phone, PDA, MP3 Player, Video-phone equipments.

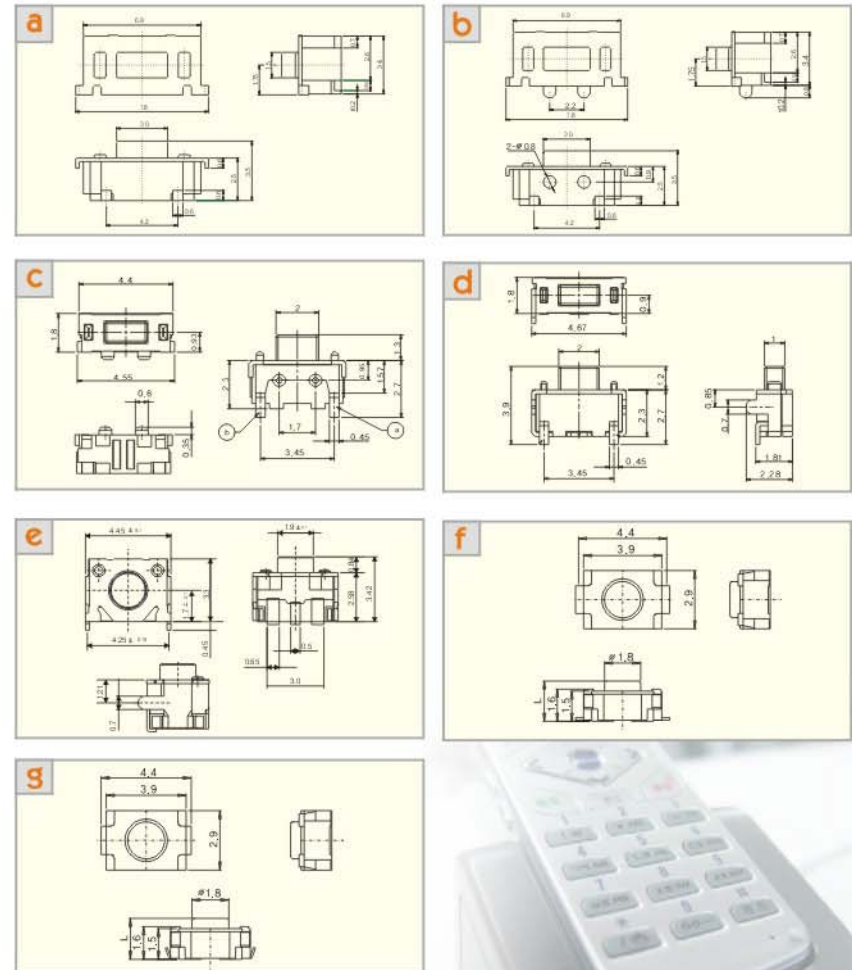
### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1100/E	DC 12V 50mA	0.25±0.1mm	130/180/250±50gf	100mΩ Max.	50,000 Cycles Min.
INT-1125/V		0.15±0.1mm	160±50gf		100,000 Cycles Min.
INT-1111		160±50gf	50,000 Cycles Min.		
INT-1440		0.15±0.1mm	160/200/250±50gf		50,000 Cycles Min.

### How to Order

Part number	Terminal Type		Guide boss		Knob(L)		Operating Force	
INT-1100	-	-	-	Without	-	A	180±50gf	
						B	250±50gf	
						C	130±50gf	
INT-1440	F	Flat	E	With	20	2.0mm	A	160±50gf
	U	U-bending					B	250±50gf
							C	130±50gf
							D	200±50gf

### Dimensions



## RUBBER SWITCHES

INT-1162/1430  
1132/1131 series



### Applications

- Remote controller, Audio, Camera, wireless receiving set.

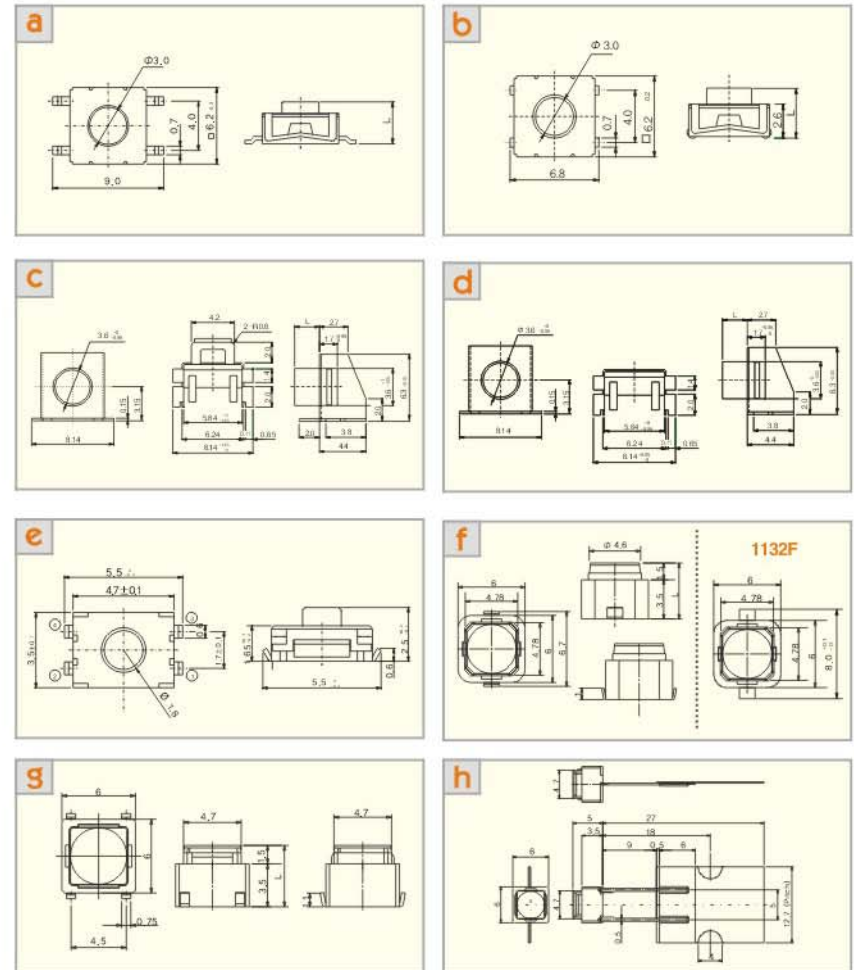
### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1162S,1162J	DC 12V 50mA	0.25 <sup>+0.2mm</sup> <sub>-0.1mm</sub>	200/250±50gf	100mΩ Max.	100,000 Cycles Min.
INT-1162V,1162V2	DC 12V 50mA	0.4 <sup>+0.2mm</sup> <sub>-0.1mm</sub>	200/250±50gf	100mΩ Max.	100,000 Cycles Min.
INT-1430	DC 12V 50mA	0.7±0.15mm	160/250±50gf	100mΩ Max.	100,000 Cycles Min.
INT-1132	DC 12V 50mA	1.3 <sup>+0.2mm</sup> <sub>-0.3mm</sub>	160/250±50gf	100mΩ Max.	100,000 Cycles Min.
INT-1131 series	DC 12V 50mA	1.3 <sup>+0.2mm</sup> <sub>-0.3mm</sub>	160/250±50gf	100mΩ Max.	100,000 Cycles Min.

### How to Order

Part number	Knob(L)		Operating force	
INT-1162S	26	2.6mm	A	200±50gf
	34	3.4mm		
	43	4.3mm		
	45	4.5mm		
INT-1162J	49	4.9mm	A	200±50gf
	51	5.1mm		
	50	5.0mm		
INT-1162V	26	2.6mm	B	250±50gf
	47	4.76mm		
	69	6.96mm		
INT-1162V2	50	5.0mm	A	180±50gf
	70	7.0mm		
INT-1131 Series	43	4.3mm	A	180±50gf
	50	5.0mm		
INT-1132U	43	4.3mm	A	180±50gf
	50	5.0mm		
INT-1430	-	-	A	160gf
	-	-	B	250gf

### Dimensions



## SMD TACT SWITCHES

### INT-1157/1158 series



1157A a



1157AG b



1157S c



1157SG d



1157U e



1157UG f



1158S g

\*Moisture proof



1158SG h

\*Moisture proof

### Applications

- For use of operating electronic equipment like that audio, office equipment, communications apparatus, measuring instruments, TV sets, VCRs, etc.

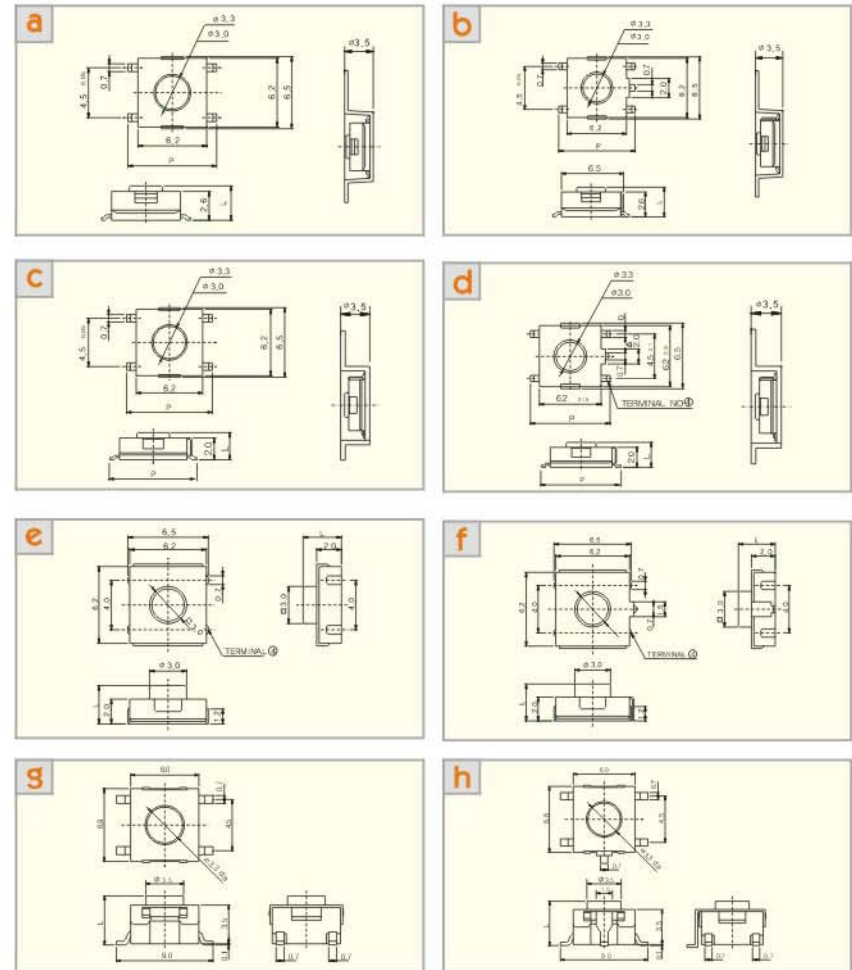
### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1157 series	DC 12V 50mA	0,25±0,1mm	130/160/250±50gf	100mΩ Max.	100,000 Cycles Min.
INT-1158 series	DC 12V 50mA	0,25±0,1mm	200/250±50gf	100mΩ Max.	100,000 Cycles Min.

### How to Order

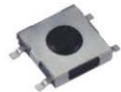
Part number	Knob(L)		Operating force		Pitch	
INT-1157A SERIES	29	2,9mm	A	160±50gf	O	8mm
	31	3,1mm	B	250±50gf	Q	10mm
	34	3,4mm				
	43	4,3mm				
INT-1157 SERIES	25	2,5mm	C	130±30gf	O	8mm
	31	3,1mm	D	200±50gf	P	9mm
	37	3,7mm				
INT-1158 SERIES	43	4,3mm	A	200±50gf	-	-
	50	5,0mm	B	250±50gf	-	-

### Dimensions

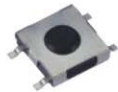


## SMD TACT SWITCHES

INT-1109/1127/1197  
1198 series



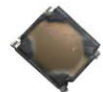
1127S c



1127SE d



1197 e



1198 f



1109B a



1109S b

### Applications

- Car Audio, TV sets, VCRs, LCD Monitor.
- Operating Switches in all types of electronic equipments.
- For use of operating electronic equipment like that audio, office equipment, communications apparatus, measuring instruments.

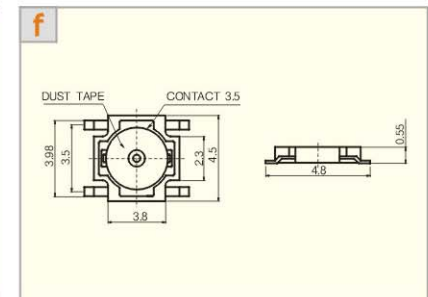
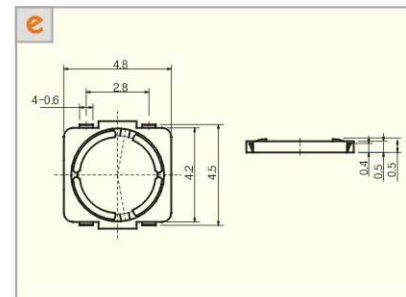
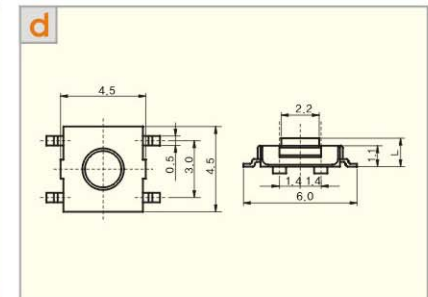
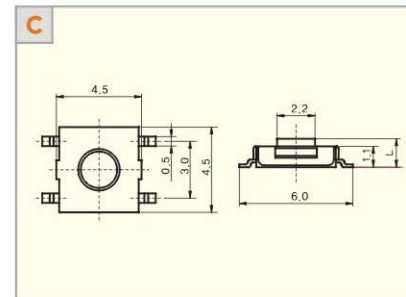
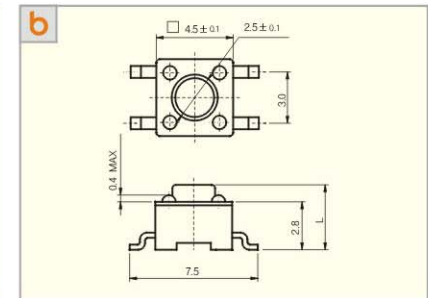
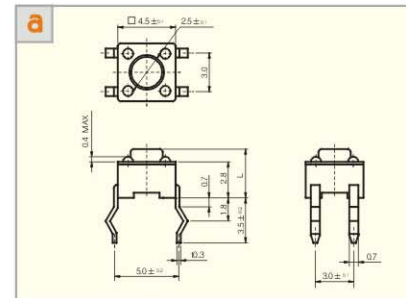
### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1109 series	DC 12V 50mA	0,25±0,1mm	160±50gf, 250±50gf	100mΩ Max.	100,000 Cycles Min.
INT-1127 series	DC 12V 50mA	0,2±0,1mm	160±50gf, 250±50gf	100mΩ Max.	100,000 Cycles Min.
INT-1197,1198 series	DC 12V 50mA	0,2±0,1mm	160±50gf, 250±50gf	100mΩ Max.	100,000 Cycles Min.

### How to Order

Part number	Guide Boss		Knob(L)		Operating force	
	-	With	15	1,5mm	A	160±50gf
INT-1127 SERIES	-	Without	27	2,7mm		
	E	With	43	4,3mm		
INT-1109 SERIES	-	-	38	3,8mm	B	250±50gf
			70	7,0mm		
INT-1197/1198	-	-	-	-	B	250±50gf

### Dimensions



## SMD TACT SWITCHES

### INT-1181/1107 series



#### Applications

- Mp3 Player, Audio, Hand-free sets, PDAs
- Operating Switches in all types of electronic equipments

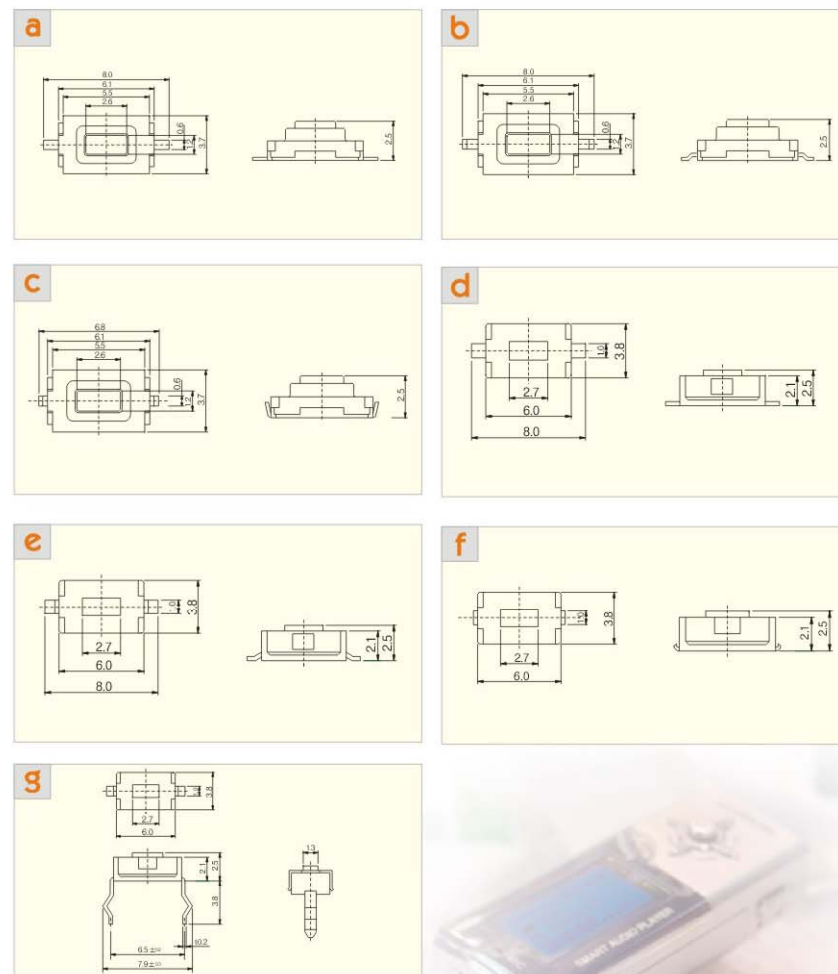
#### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1181 series	DC 12V 50mA	0,25 ± 0,1mm	130/180/250 ± 50gf	100mΩ Max.	50,000 Cycles Min.
INT-1107 series	DC 12V 50mA	0,25 ± 0,1mm	130/180/250 ± 50gf	100mΩ Max.	50,000 Cycles Min.

#### How to Order

Part number	Operating mode		Operating Force	
INT-1181 SERIES	S	SMD	A	180 ± 50gf
	U	U-Bending	B	250 ± 50gf
INT-1107 SERIES	F	Flat SMD	C	130 ± 50gf

#### Dimensions



## SMD TACT SWITCHES

### INT-1187 series 1188



#### Applications

- Mp3 Player, Audio, Hand-free sets, PDAs, Home electronics, car electronics, etc.
- Operating Switches in all types of electronic equipments.

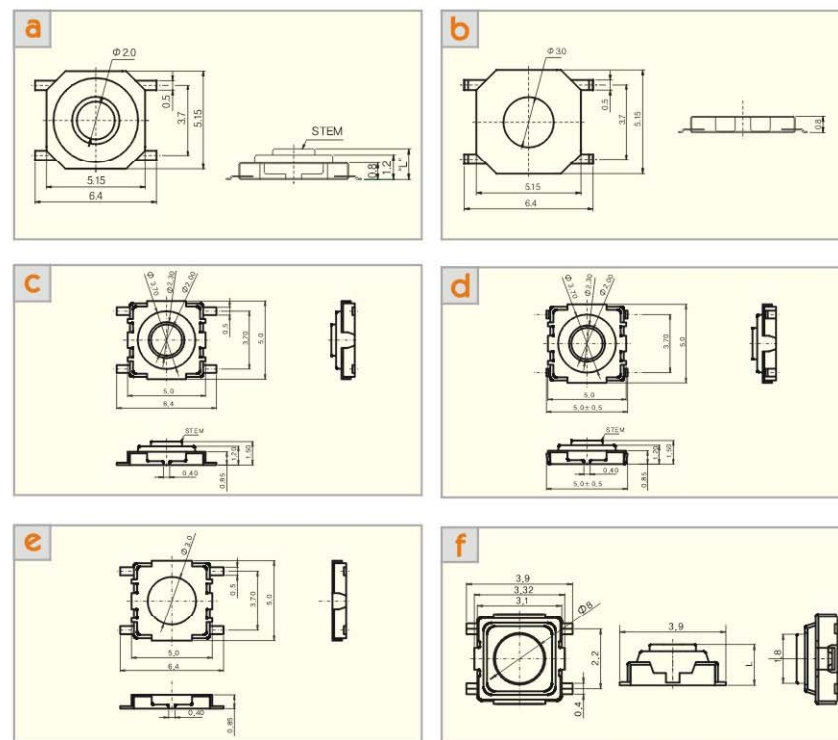
#### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1187 series 1188	DC 12V 50mA	0,25±0,1mm	160/200/250±50gf	100mΩ Max.	100,000 Cycles Min.

#### How to Order

Part number	Stem material		Knob(L)		Operating force	
	INT-1187, 1187F, 1187FU	P	Plastic	15	1,5mm	A
16				1,65mm		
B		Brass	15	1,5mm	B	250±50gf
			16	1,65mm		
			31	3,1mm		
43	4,3mm					
INT-1187FN, 1187N	-	-	-	-	D	200±50gf
INT-1188	-	-	15	1,5mm	A	160±50gf
			20	2,0mm		

#### Dimensions



## TACT SWITCHES

### INT-1101(1) series



1101B a



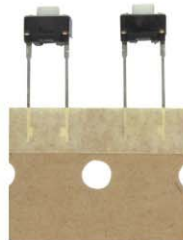
1101S b



1101VS c



1101U d



1101P e

### Applications

- Audio, TV, VCRs
- Operating Switches in all types of electronic equipments

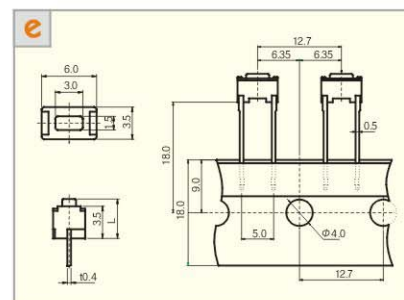
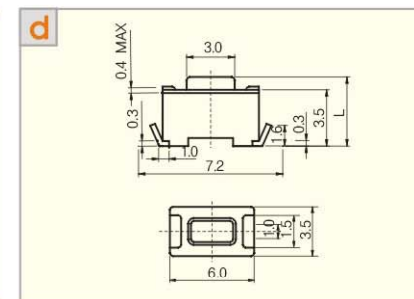
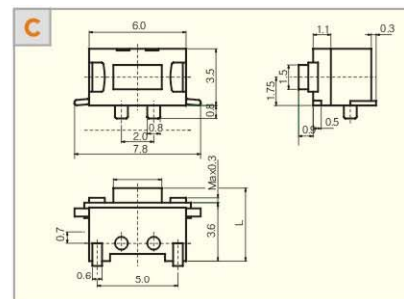
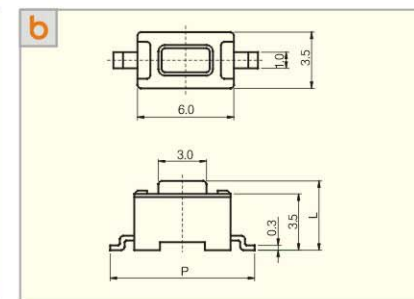
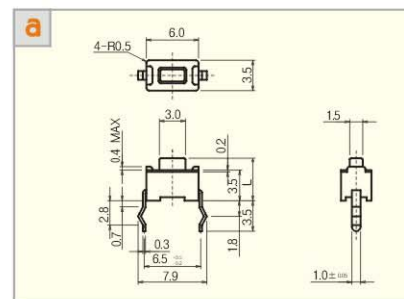
### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1101 series	DC 12V 50mA	0,25±0,1mm	130/180/250±50gf	100mΩ Max.	50,000 Cycles Min.

### How to Order

Part number	Guide boss		Knob(L)		Operating force		Pitch	
	-	With	43	50	A	B	P	Q
INT-1101 SERIES	-	Without	43	4,3mm	A	180 ± 50gf	-	-
			50	5,0mm	B	250 ± 50gf		
INT-1101S	E	With	65	6,5mm	C	130 ± 50gf	P	9,0mm
							Q	10,2mm

### Dimensions





## TACT SWITCHES

### INT-1101(2) series



1101V a

1101VW b

1101W c

1101M d

1101VP e

### Applications

- Audio, TV, VCRs
- Operating Switches in all types of electronic equipments

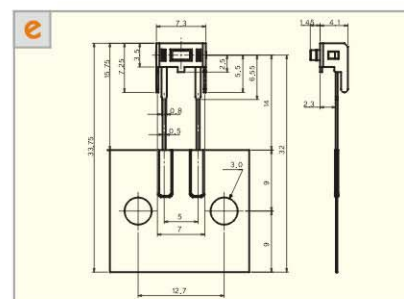
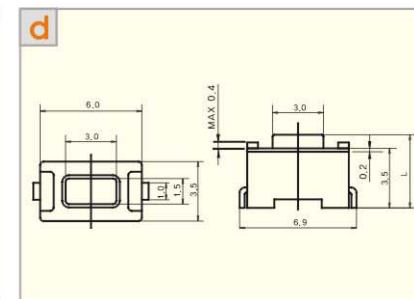
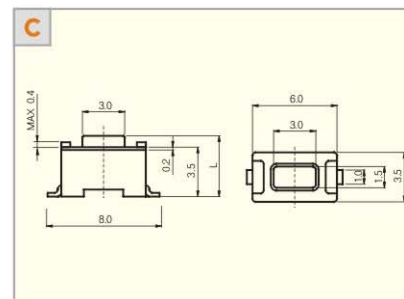
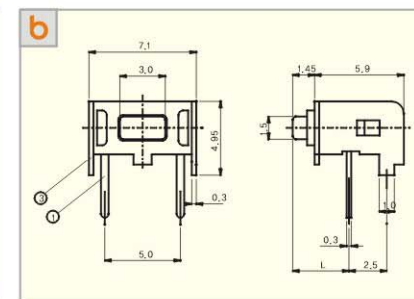
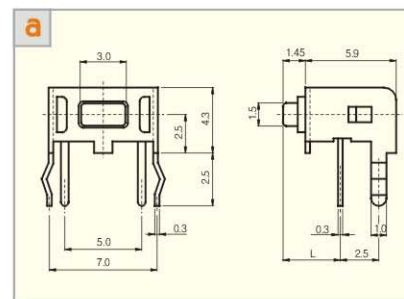
### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1101 series	DC 12V 50mA	0.25±0.1mm	130/180/250±50gf	100mΩ Max.	50,000 Cycles Min.

### How to Order

Part number	Guide boss		Knob(L)		Operating force	
INT-1101V/VP/VW	-	Without	43	3.02mm	A	180±50gf
			50	3.72mm		
			65	5.22mm		
INT-1101 Series	E	With	43	4.3mm	B	250±50gf
			50	5.0mm		
			65	6.5mm		

### Dimensions



## TACT SWITCHES

### INT-1102 series(1)



#### Applications

- Audio, TV, VCRs
- Operating Switches in all types of electronic equipments

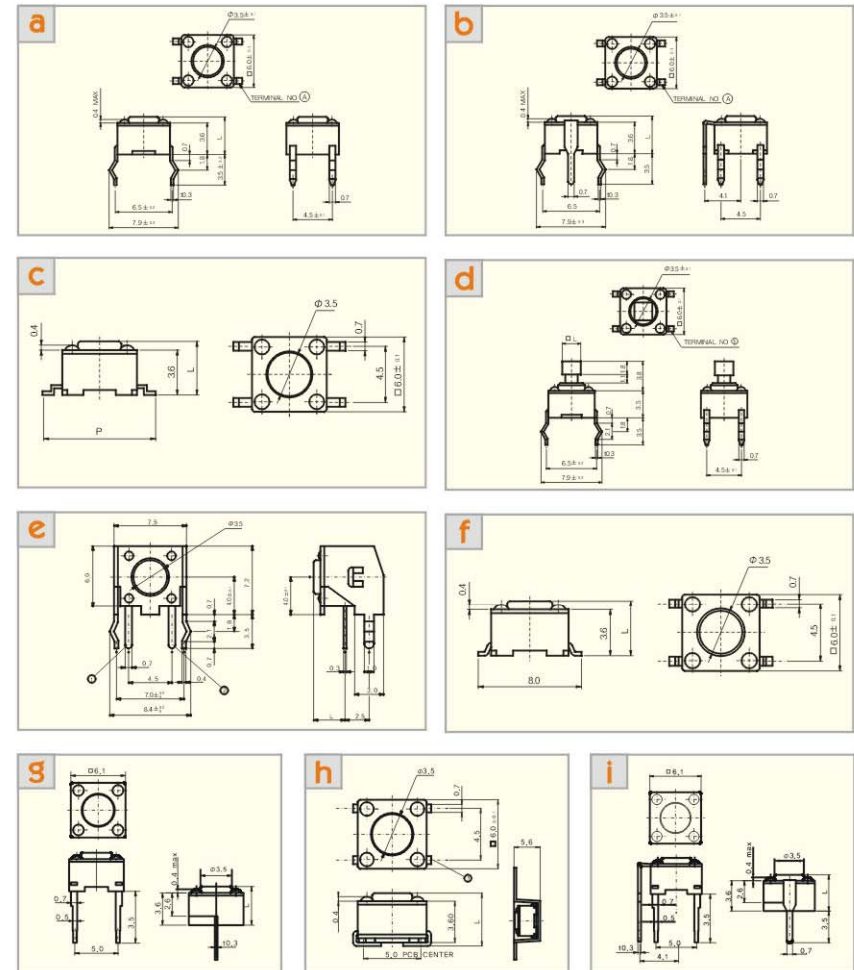
#### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1102 series	DC 12V 50mA	0.25 <sup>+0.2mm</sup> / <sub>-0.1mm</sub>	130/160/250±50gf	100mΩ Max.	100,000 Cycles Min.

#### How to Order

Part number	Knob(L)						Operating force		Pitch
	43	50	60	70	73	80			
INT-1102B/BG/W	43	4.3mm	3.15mm	9.5	9.5mm	8.35mm	A	160 ± 50gf	-
	50	5.0mm	3.85mm	12	12.0mm	10.85mm			
INT-1102S	60	6.0mm	4.85mm	12.5	12.5mm	11.35mm	B	250 ± 50gf	P 9.0mm
	70	7.0mm	5.85mm	13	13.0mm	11.85mm			Q 10.2mm
	73	7.3mm	6.15mm	13.5	13.5mm	12.35mm			
INT-1102VW	80	8.0mm	6.85mm	16.2	16.2mm	15.05mm	C	130 ± 50gf	-
	85	8.5mm	7.35mm	17	17.0mm	15.85mm			
INT-1102BT	24	2.4x2.4mm		28	2.8x2.8mm				

#### Dimensions



## TACT SWITCHES

### INT-1102 series(2)



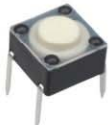
1102P a



1102SR b



1102BR c



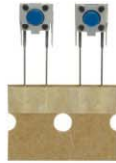
1102BD d



1102V e

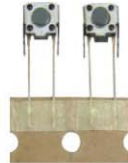


1102VPB f



1102VPN g

\*Dust proof



1102VP h

### Applications

- Audio, TV, VCRs
- Operating Switches in all types of electronic equipments

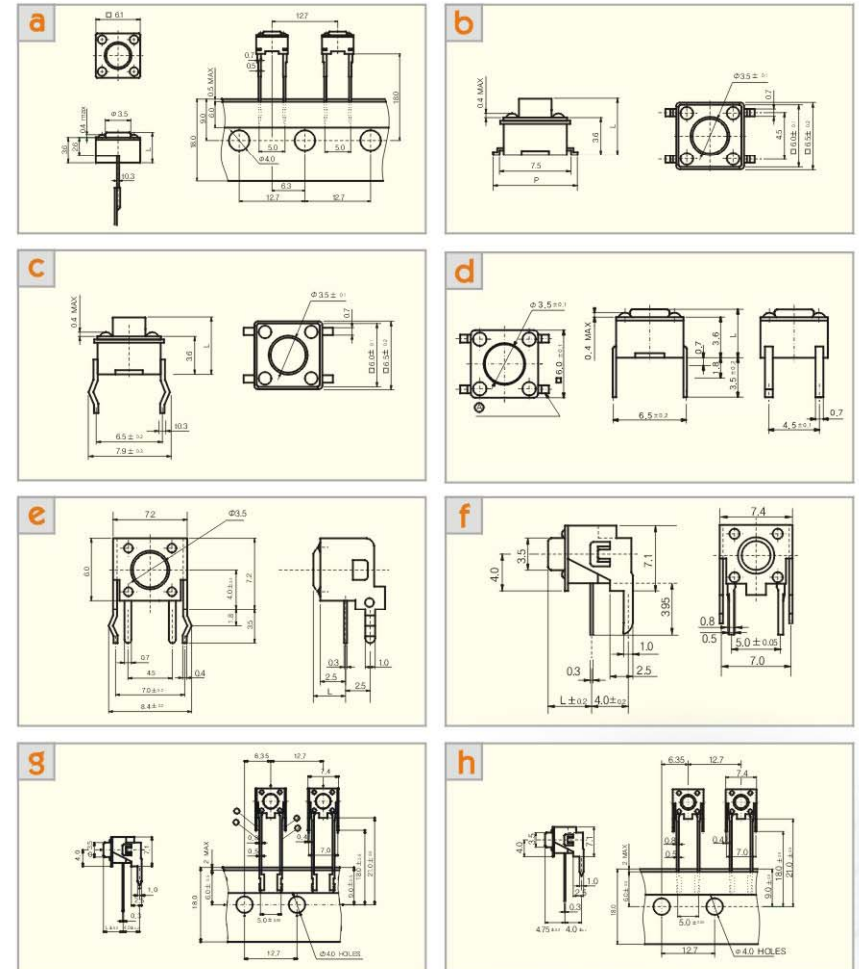
### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life	Note
INT-1102 series	DC 12V 50mA	0,25 <sup>+0,2mm</sup> <sub>-0,1mm</sub>	130/160/250±50gf	100mΩ Max.	100,000 Cycles Min.	-
INT-1102SR/BR	DC 12V 50mA	0,25 <sup>+0,2mm</sup> <sub>-0,1mm</sub>	130/160/250±50gf	100mΩ Max.	100,000 Cycles Min.	Rubber tact type

### How to Order

Part number	Knob(L)						Operating force	Pitch		
	43	50	60	70	73	80				
INT-1102P/BR/BD	43	4,3mm	3,05mm	9,5	9,5mm	8,25mm	A	160 ± 50gf	-	
	50	5,0mm	3,75mm	12	12,0mm	10,75mm				
INT-1102SR	60	6,0mm	4,75mm	12,5	12,5mm	11,25mm	B	250 ± 50gf	P	9,0mm
	70	7,0mm	5,75mm	13	13,0mm	11,75mm			Q	10,2mm
	73	7,3mm	6,05mm	13,5	13,5mm	12,25mm				
INT-1102V/VP/VPN	80	8,0mm	6,75mm	16,2	16,2mm	14,95mm	C	130 ± 50gf	-	
	85	8,5mm	7,25mm	17	17,0mm	15,75mm				

### Dimensions



## TACT SWITCHES

### INT-1103 series



#### Applications

- Audio, TV, VCRs
- Operating Switches in all types of electronic equipments.

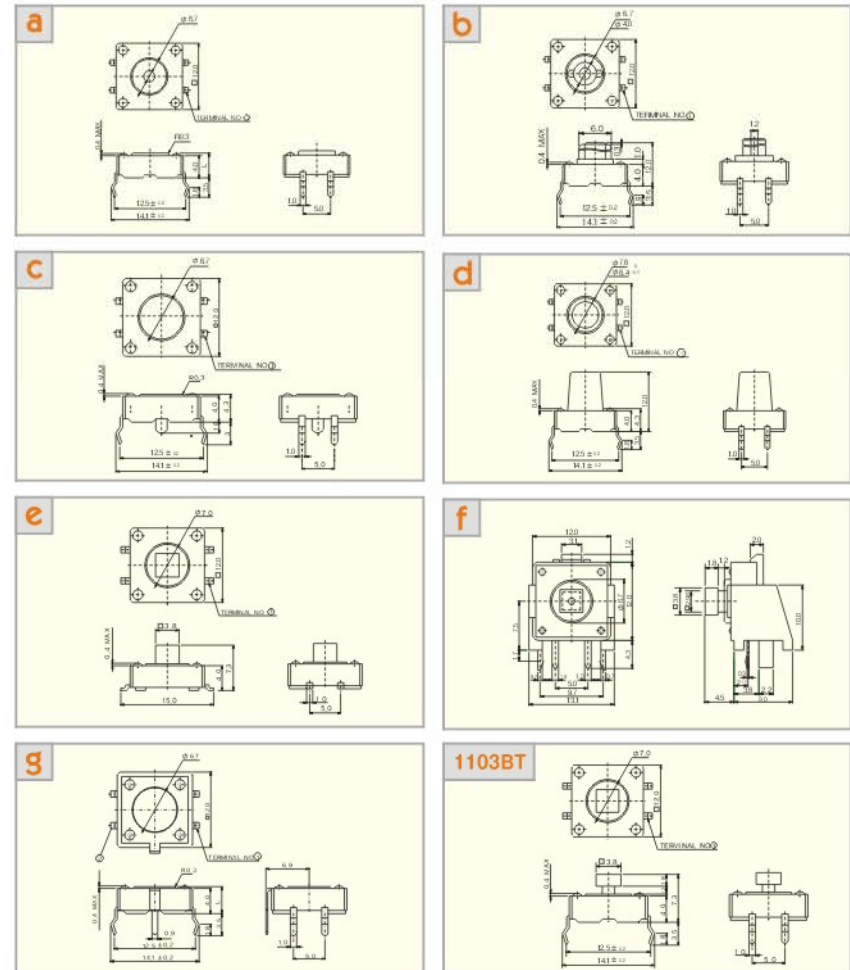
#### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1103 series	DC 12V 50mA	0.3±0.15mm	180±50gf, 250±50gf	100mΩ Max.	50,000 Cycles Min.
INT-1103 series	DC 12V 50mA	0.3±0.15mm	180±50gf	100mΩ Max.	1,000,000 Cycles Min.

#### How to Order

Part number	Knob Shape		Guide boss		Knob(L)		Operating Force	
	-	ROUND	-	Without	43	4.3mm	A	180±50gf
INT-1103 SERIES	A		E	With	75	7.5mm		
	F				85	8.5mm		
	T				95	9.5mm		
	W				-	-		

#### Dimensions



## SLIDE SWITCHES

INS-1235/1290/1300  
2250/1270V/2260 series



### Applications

- Function and band selector switches for headphone stereo sets, MP3 player, camera, memory cards, Toy, PDA.

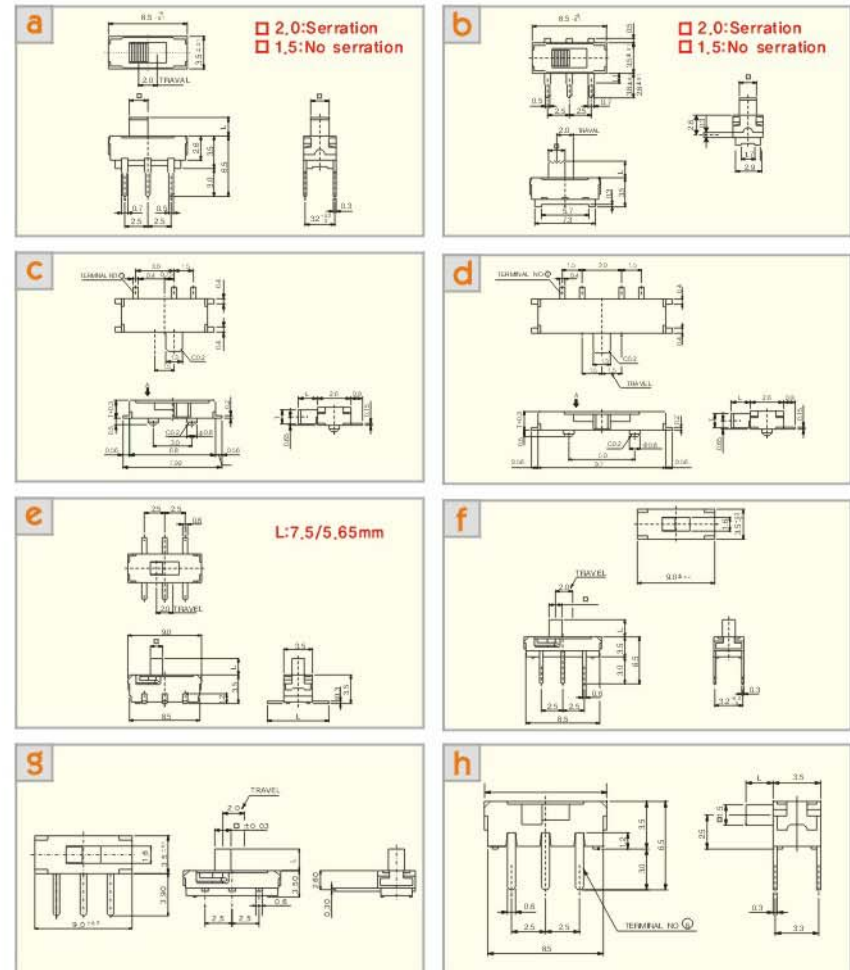
### Specifications

Model No.	Circuit	Rating	Travel	Operating Force	Timing	Contact Resistance	Life
INS-1235/1270	1C-2P	DC 6V 0.3A	2mm	200±100gf	Non-Shorting	130mΩ Max.	10,000 Cycles Min.
INS-2250/2260	2C-2P	DC 6V 0.3A	2mm	200±100gf	Non-Shorting		
INS-1290/1300	1C-2P	DC 4V 0.3A	1.5mm	150±100gf	-		

### How to Order

Part number	Knob(L) & □		Thickness		Length	
	2015	2.0mm & 1.5	No serration			
INS-1235 SERIES	20	2.0mm & 2.0	Serration			
	30	3.0mm & 2.0				
	44	4.4mm & 2.0				
	40	4.0mm & 1.5		-		
INS-2250 SERIES	20	2.0mm & 2.0				
	30	3.0mm & 1.5				
	44	4.4mm & 2.0	-			
INS-1270V	60	6.0mm & 2.0				
	20	2.0mm & 1.5				
INS-2260 SERIES	40	4.0mm & 1.5				
	INS-1290			11	1.1mm	15
23				2.3	2.3	2.3
INS-1300			08	0.8mm	-	
			04	0.4mm		

### Dimensions



## PUSH SWITCHES

INP-2212/2213/2215  
2216/4283/2214  
series



2215B d



2216B e



2212B a



2212BA b



2213B c



2216BA f



2216S g



4283B h



2214 i

### Applications

- Car, boiler, toy.
- All electronic equipments.

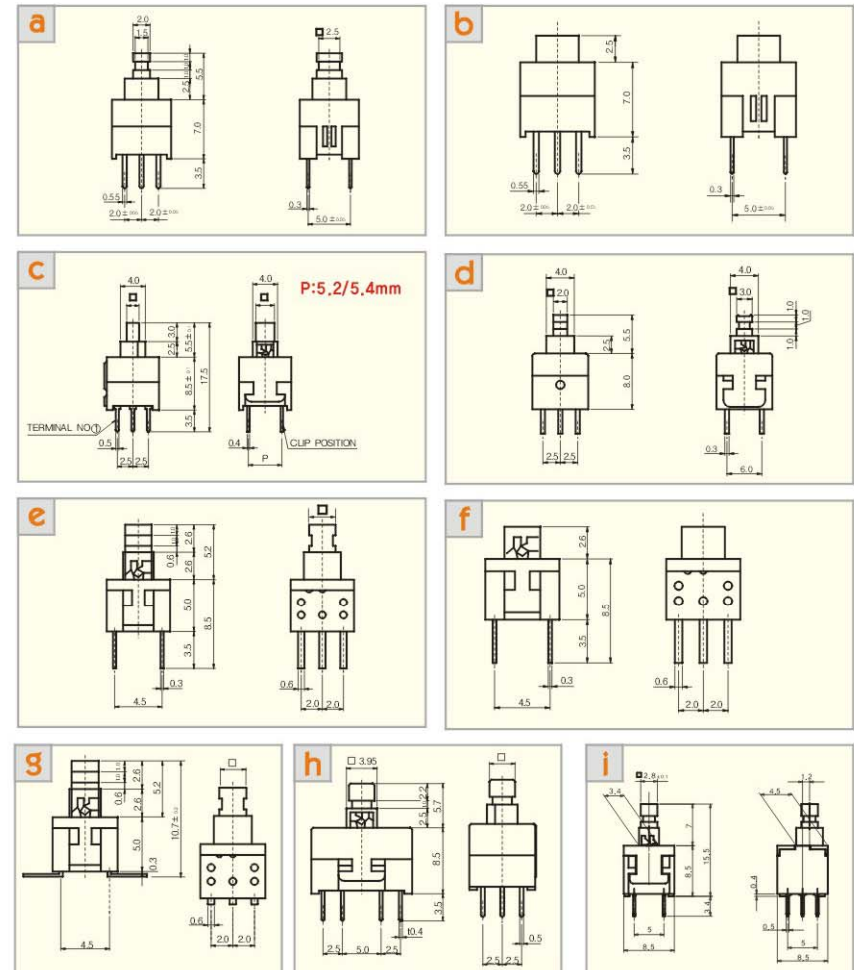
### Specifications

Model No.	Rating	Circuit	Operating Force	Stroke
INP-2212 series	DC 30V 0.1A	2C-2P	200±80gf	Full:2,5mm / Lock:1,5mm
INP-2213 series	DC 30V 0.1A	2C-2P	200/300±80gf	Full:2,5mm / Lock:1,5mm
INP-2214 series	DC 30V 0.1A	2C-2P	300±80gf	Full:2,5mm / Lock:1,5mm
INP-2216 series	DC 30V 0.1A	2C-2P	180gf±80gf	Full:1,9mm / Lock:1,0mm
INP-4283 series	DC 30V 0.1A	4C-2P	200/300±80gf	Full:2,5mm / Lock:1,5mm

### How to Order

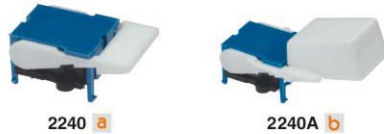
Part number	Operating mode		Pitch		Knob size □	
			A	B	33	23
INP-2213B	S	Self Lock	5,2mm	-	3,3 x 3,3mm	2,0 x 3,0mm
					2,8 x 2,8mm	3,0 x 3,0mm
INP-2215B	N	Non Lock	5,4mm	-	3,3 x 3,3mm	3,0 x 3,0mm
					2,8 x 2,8mm	2,8 x 2,8mm
INP-4283B	M	Momentary	-	-	3,3 x 3,3mm	2,8 x 2,8mm
INP-2212B/BA INP-2214B	S	Self Lock(Latching)	-	-	-	-
INP-2216 SERIES	N	Non Lock(Lock release)	-	-	2,0 x 2,5mm	2,5 x 2,5mm
					2,5 x 2,5mm	-

### Dimensions



## HOOK SWITCHES

### INH-2240 series



#### Applications

- All telephone.
- Video-phone equipments.

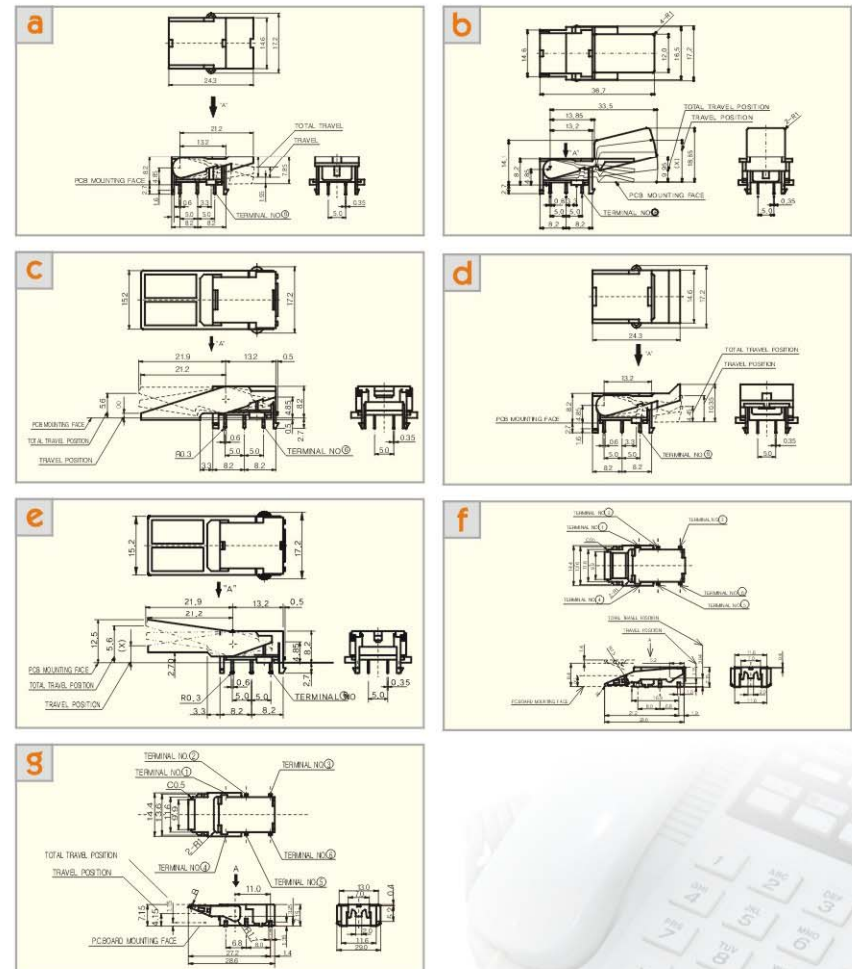
#### Specifications

Model No.	Rating	Circuit	Operating Force	Contact Resistance
INH-2240 series	DC 48V 0,2A	2C-2P	30, 40, 50, 60, 70gf	50mΩ Max.

#### How to Order

Part number	Operating force	
INH-2240 SERIES	30	30 ± 5gf
	40	40 ± 5gf
	50	50 ± 5gf
	60	60 ± 5gf
	70	70 ± 5gf

#### Dimensions



**DETECTOR // NEW SWITCHES**

**IND-1120 series  
INT-1505B**



**1120** a



**1120A** b



**1120B** c



**1120VS** d



**1120S** e



**1505B** f

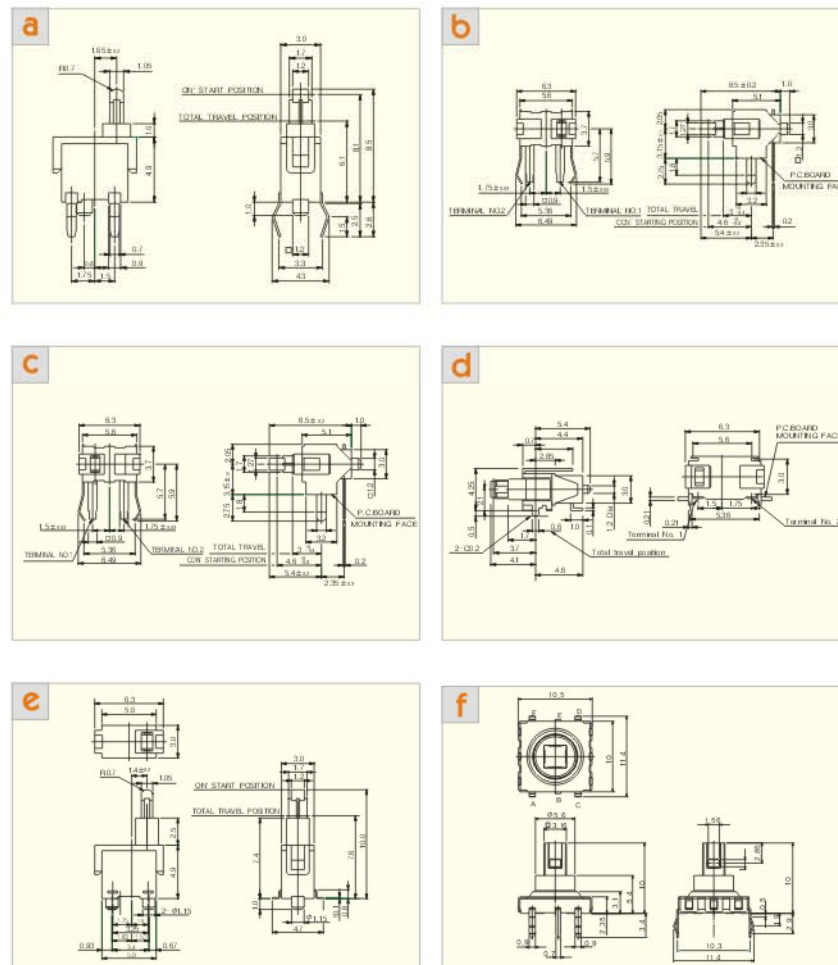
**Applications**

- Computer, Notebook, Cassette.
- Detection of audio, car audio and CD-ROM mechanism, etc.
- Detecting of insertion of various media.

**Specifications**

Model No.	Rating	Circuit	Operating Force	Contact Resistance	Life
IND-1120 series	DC 30V 0.1A	1C-1P	40gf	1Ω Max.	50,000 Cycles Min.
INT-1505B	DC 12V 50mA	-	4-Direction : 160±50gf Center : 320±70gf	500mΩ Max.	100,000 Cycles Min.

**Dimensions**





## DOUBLE ACTION / ON-OFF SWITCHES

### INT-1104F/1106F/1105 series



### Applications

- Audio, Digital Camera, mobile phone, All electronic equipments.

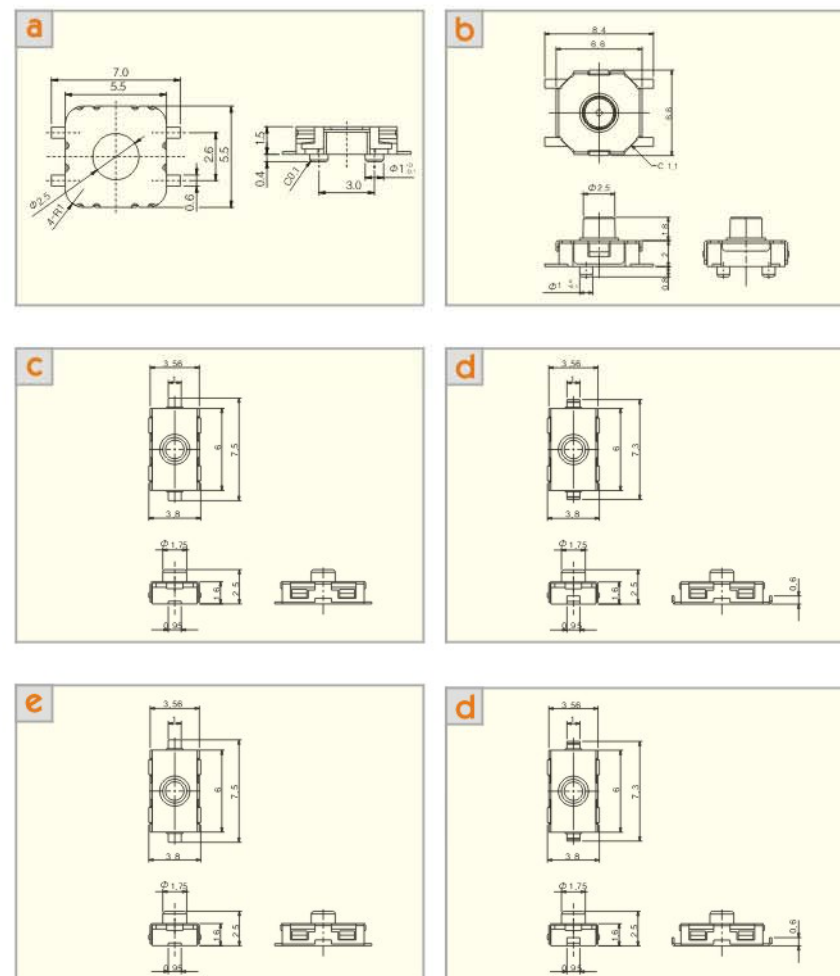
### Specifications

Model No.	Rating	Travel	Operating Force	Contact Resistance	Life
INT-1104F/1106F	DC 12V 50mA	1st All	60-250±50gf	100mΩ Max.	30,000 Cycles Min.
INT-1105 Series	DC 32V 50mA	0.3±0.15mm	130/180/250±50gf		100,000 Cycles Min.

### How to Order

Part number	Operating force	
	INT-1105 SERIES	A
B		250 ± 50gf
C		130 ± 50gf
F		300 ± 50gf

### Dimensions





## LEVER SWITCHES

### INL-1140/1150/1120D/1130D series



1140A a

1150B b

1120D c

1130D d

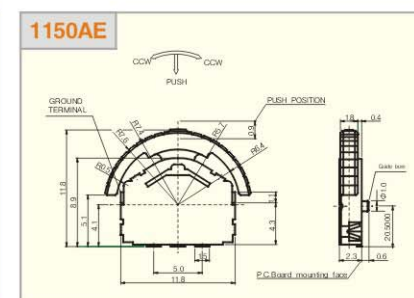
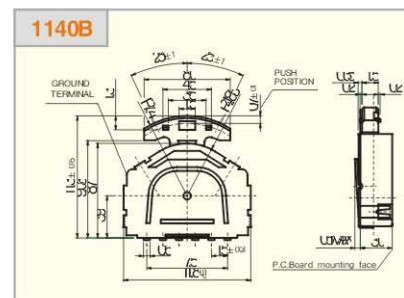
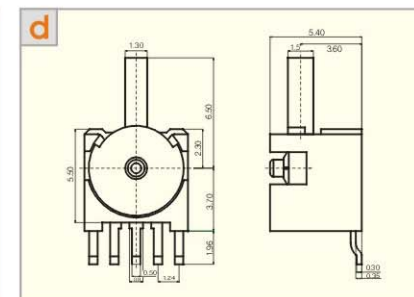
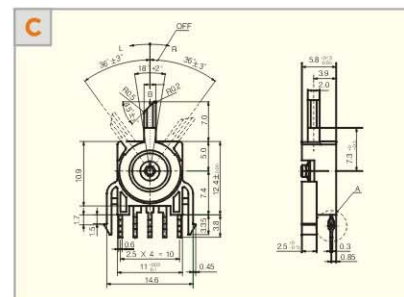
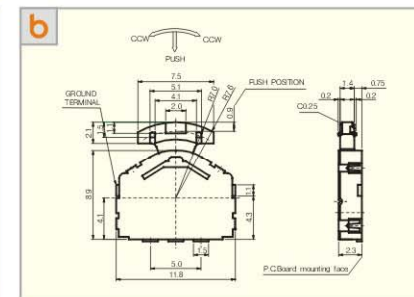
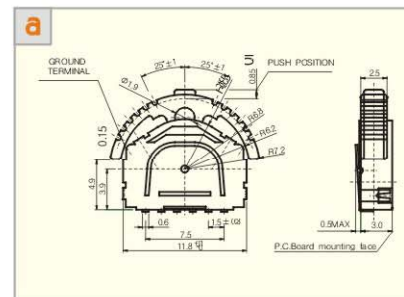
#### Applications

- Mobile phone, PDA, DSC, DVD and portable audio equipment etc.

#### Specifications

Model No.	Rating	Circuit/Travel	Operating Force	Contact Resistance	Life
INL-1140 series	DC 5V 10mA	0.85±0.1mm	70±50gf(Lever portion)	100mΩ Max.	100,000 Cycles Min.
INL-1150 series		0.9±0.1mm	200±100gf(Push portion)		
INL-1120D	DC 12V 100mA	1C-1P	70±30gf	100mΩ Max.	50,000 Cycles Min.
INL-1130D	DC 12V 100mA	1C-2P			

#### Dimensions



# METAL DOME SWITCHES

1. Basic Sheet Type



4. EMI Roll Type



2. EMI Sheet Type



5. KeyPad Type



3. Basic Roll Type



6. Side Key(with FPCB)

