Compact-sized Snap Action Switches (High capacity type)
MQS-54-H Series

Features

- Flux-resistant construction with integrally molded terminals.
- Lead wire terminal, PC board terminal are available.
- Possible high current switching. (10.1A 125V AC / 4A 30V DC)
- 2 variations with operating force 0.98N and 1.47N.

Actual size

Applications

- Home appliances with heater (Heater, Electric carpet, Electriciron)
- Cooking home appliances (Rice cooker, Hot water pot)

Products Number system

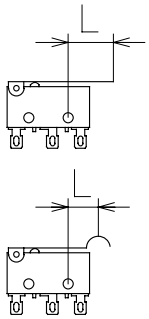
MQS-54-[ ][ ]H-[ ]

Operating force (Pin plunger type)

5:MAX0.98N(100gf)　　7:MAX1.47N(150gf)

Actuator

Blank	: Pin plunger type		
L1	: Hinge short lever	L=5mm	
L	: Hinge lever	L=7.15mm	
L2	: Hinge long lever	L=13.1mm	
L3	: Hinge long lever	L=26.1mm	
D	: Hinge R2.5 lever	L=6.3mm	
D3	: Hinge R1.3 lever	L=6.3mm	
D2	: Hinge roller lever	L=5mm	
C	: Pin plunger type		
C1	: Hinge short tever	L=5mm	
C2	: Hinge R2 lever	L=1.1mm	



Notes. C, C1, C2 is the type with inside lever hook.
Please see dimensions for details.

Terminal shape

Blank : Lead wire terminal　　P : PC board terminal

[] Typical Specifications

Item	Specifications	
Contact	Silver alloy rivet contact	
Operating force (Pin plunger type)	MAX 0.98N (100gf)	MAX 1.47N (150gf)
Ratings (Resistive load)	10.1A 125V AC / 4A 30V DC	
Mechanical life	1,000,000 cycles	
Electrical life	50,000 cycles	
Contact resistance (Initial)	MAX 30 milliohm	
Insulation Resistance	MIN 100 megohm 500V DC	
Withstanding voltage	Between open contacts : 1000V AC 1min Between each terminal and non live metal part : 1500V AC 1min Between each terminal and each : 1500V AC 1min	
Resistibility to vibration (Pin plunger type)	double amplitude : 1.5mm , frequency : 10 to 55Hz Each direction Open contact shall be less than 1 ms at the above conditions.	
Resistibility to shock (Pin plunger type)	Open contact shall be less than 1 ms at 30G.	
Allowable operating speed (at no load)	1 to 500 mm/sec.	
Max. operating cycle rate (at no load)	120 times/min.	
Operating temperature range	-20 to +70 degree Celsius	
Ambient humidity	MAX 85%RH	

[] Products line

Actuator	No	Operating force (MAX)	Solder terminal	PCB terminal
			Products No.	Products No.
Pin plunger type (Blank)	1	0.98N(100gf)	MQS-54-5H	MQS-54-5H-P
		1.47N(150gf)	MQS-54-7H	MQS-54-7H-P
Hinge short lever (L1)	2	0.39N(40gf)	MQS-54-5L1H	MQS-54-5L1H-P
		0.59N(60gf)	MQS-54-7L1H	MQS-54-7L1H-P
Hinge lever (L)	3	0.34N(35gf)	MQS-54-5LH	MQS-54-5LH-P
		0.54N(55gf)	MQS-54-7LH	MQS-54-7LH-P
Hinge long lever (L2)	4	0.25N(25gf)	MQS-54-5L2H	MQS-54-5L2H-P
		0.44N(45gf)	MQS-54-7L2H	MQS-54-7L2H-P
Hinge long lever (L3)	5	0.20N(20gf)	MQS-54-5L3H	MQS-54-5L3H-P
		0.34N(35gf)	MQS-54-7L3H	MQS-54-7L3H-P
Hinge R2.5 lever (D)	6	0.34N(35gf)	MQS-54-5DH	MQS-54-5DH-P
		0.54N(55gf)	MQS-54-7DH	MQS-54-7DH-P
Hinge R1.3 lever (D3)	7	0.34N(35gf)	MQS-54-5D3H	MQS-54-5D3H-P
		0.54N(55gf)	MQS-54-7D3H	MQS-54-7D3H-P
Hinge roller lever (D2)	8	0.39N(40gf)	MQS-54-5D2H	MQS-54-5D2H-P
		0.59N(60gf)	MQS-54-7D2H	MQS-54-7D2H-P
Pin plunger type (C)	9	0.98N(100gf)	MQS-54-5CH	MQS-54-5CH-P
		1.47N(150gf)	MQS-54-7CH	MQS-54-7CH-P
Hinge short lever (C1)	10	0.39N(40gf)	MQS-54-5C1H	MQS-54-5C1H-P
		0.59N(60gf)	MQS-54-7C1H	MQS-54-7C1H-P
Hinge R2 lever (C2)	11	0.59N(60gf)	MQS-54-5C2H	MQS-54-5C2H-P
		0.88N(90gf)	MQS-54-7C2H	MQS-54-7C2H-P

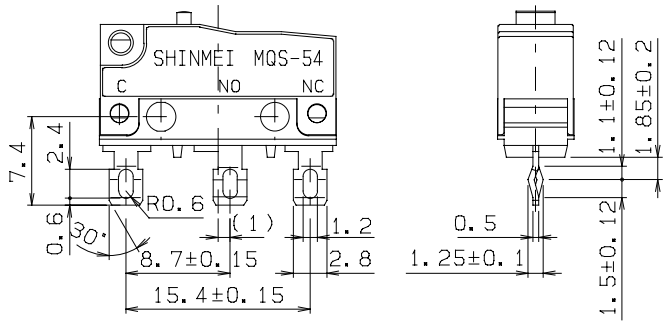
Operating characteristic

Actuator	Operating force code	O.F. MAX.	R.F. MIN	P.T. MAX	M.D. MAX	O.T. MIN	O.P.
Pin plunger type (Blank)	5	0.98N(100gf)	0.150N(15gf)	0.6mm	0.1mm	0.4mm	8.4 plus or minus 0.3mm
	7	1.47N(150gf)	0.200N(20gf)				
Hinge short lever (L1)	5	0.39N(40gf)	0.034N(3.5gf)	2.5mm	0.5mm	0.8mm	8.8 plus or minus 0.8mm
	7	0.59N(60gf)	0.039N(4gf)				
Hinge lever (L)	5	0.34N(35gf)	0.029N(3gf)	2.8mm	0.8mm	1.2mm	8.8 plus or minus 0.8mm
	7	0.54N(55gf)	0.034N(3.5gf)				
Hinge long lever (L2)	5	0.25N(25gf)	0.025N(2.5gf)	3.5mm	1.0mm	1.6mm	8.8 plus or minus 1.2mm
	7	0.44N(45gf)	0.029N(3gf)				
Hinge long lever (L3)	5	0.20N(20gf)	0.017N(1.7gf)	6.0mm	1.8mm	1.7mm	8.8 plus or minus 3.0mm
	7	0.34N(35gf)	0.029N(3gf)				
Hinge R2.5 lever (D)	5	0.34N(35gf)	0.029N(3gf)	2.8mm	0.8mm	1.2mm	11.65 plus or minus 0.8mm
	7	0.54N(55gf)	0.034N(3.5gf)				
Hinge R1.3 lever (D3)	5	0.34N(35gf)	0.029N(3gf)	2.8mm	0.8mm	1.2mm	10.7 plus or minus 0.8mm
	7	0.54N(55gf)	0.034N(3.5gf)				
Hinge roller lever (D2)	5	0.39N(40gf)	0.034N(3.5gf)	2.5mm	0.5mm	0.8mm	14.5 plus or minus 0.8mm
	7	0.59N(60gf)	0.039N(4gf)				
Pin plunger type (C)	5	0.98N(100gf)	0.150N(15gf)	0.6mm	0.1mm	0.4mm	8.4 plus or minus 0.3mm
	7	1.47N(150gf)	0.200N(20gf)				
Hinge short lever (C1)	5	0.39N(40gf)	0.034N(3.5gf)	2.5mm	0.5mm	0.8mm	8.8 plus or minus 0.8mm
	7	0.59N(60gf)	0.039N(4gf)				
Hinge R2 lever (C2)	5	0.59N(60gf)	0.039N(4gf)	3.0mm	0.8mm	0.4mm	12.0 plus or minus 1.0mm
	7	0.88N(90gf)	0.050N(5gf)				

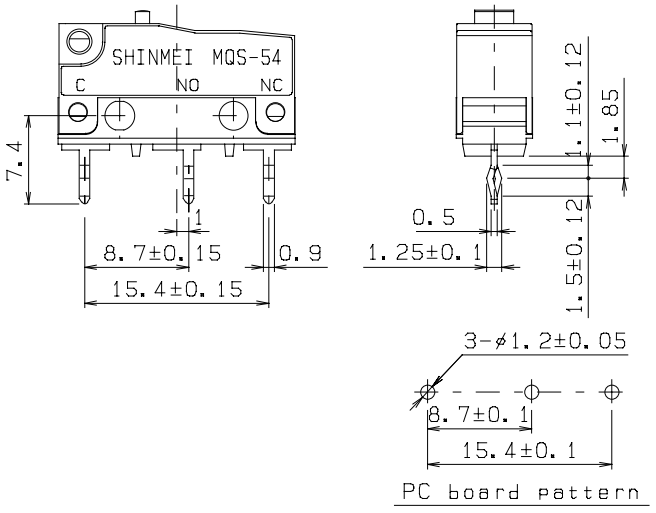
Terminal dimensions

Unit : mm

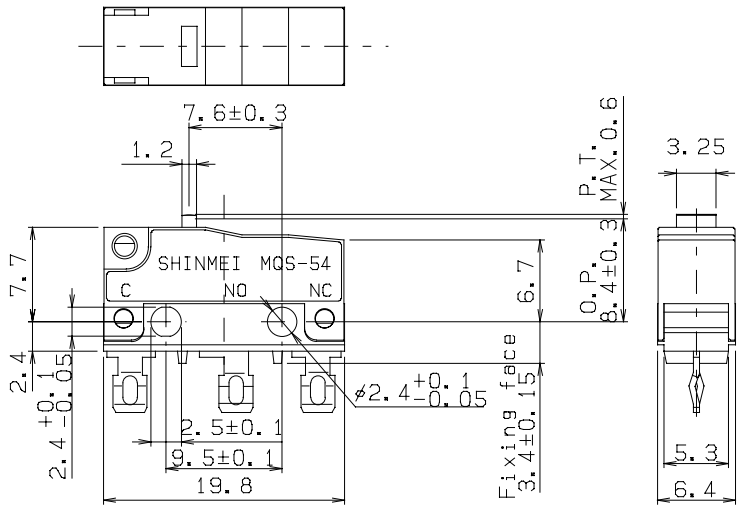
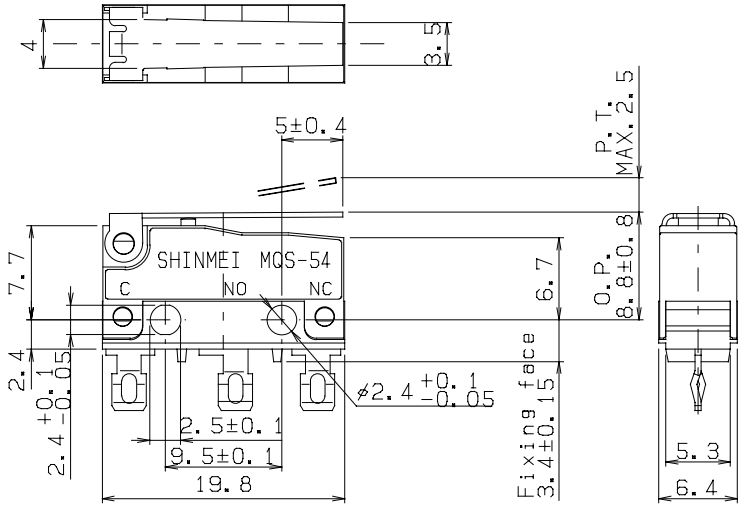
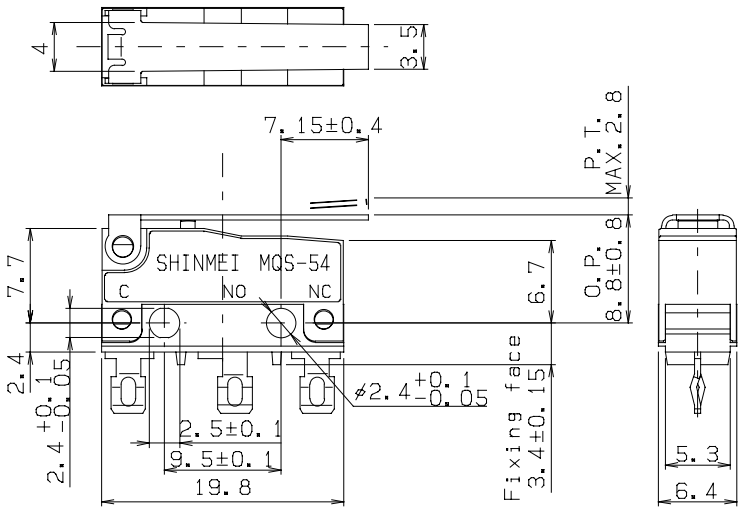
Lead wire terminal



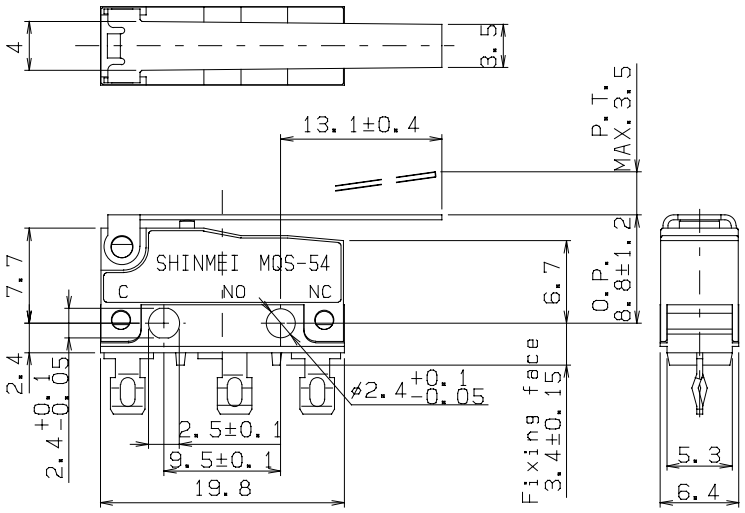
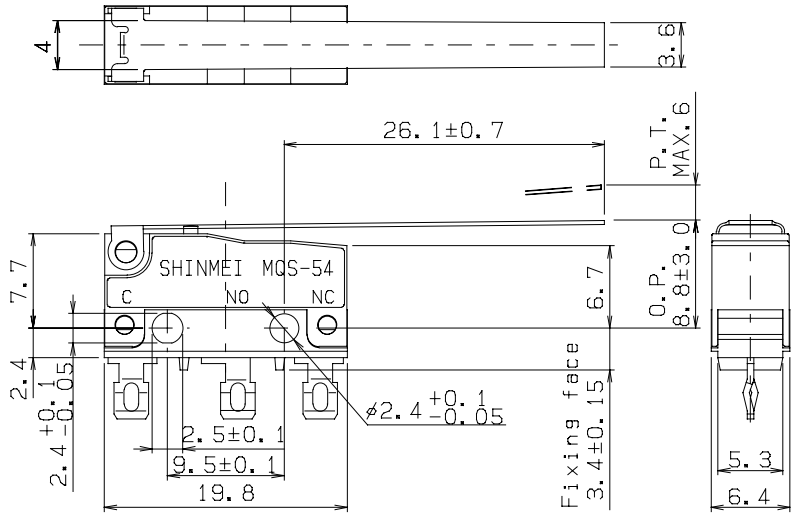
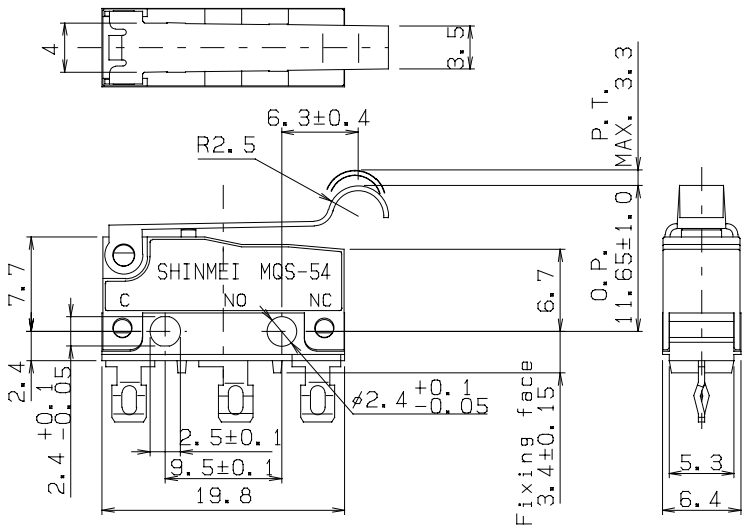
PC board terminal



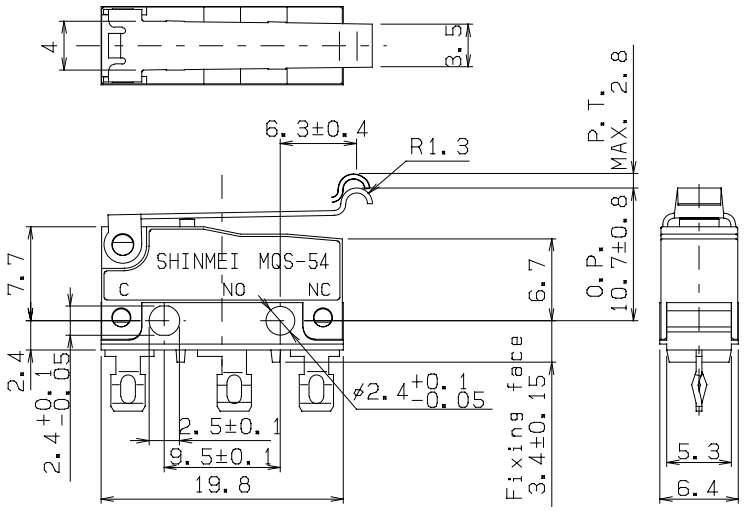
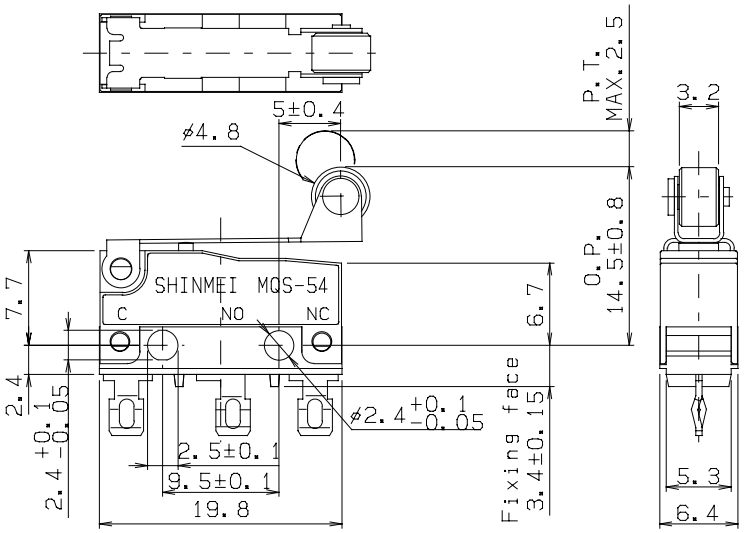
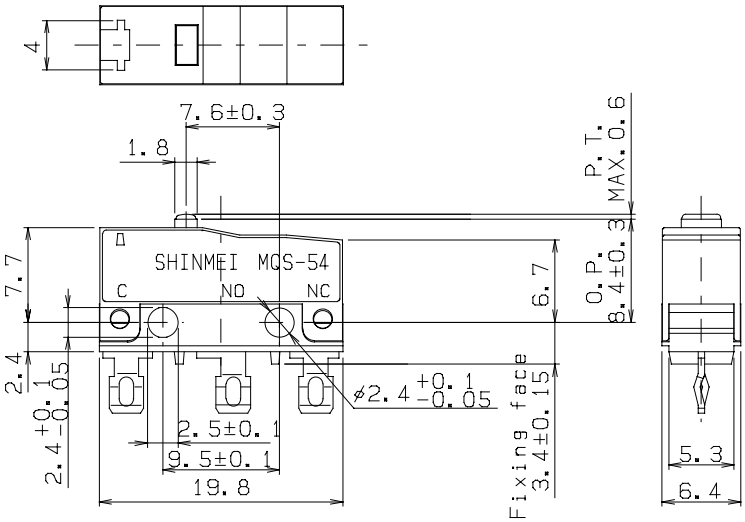
[] Dimensions Unit : mm

No	Style	Operating characterisics	
1	Pin plunger type 	P.T. MAX	0.6mm
		M.D. MAX	0.1mm
		O.T. MIN	0.4mm
		O.P. From fixing hole	8.4 plus or minus 0.3mm
		O.P. From fixing face	11.8 plus or minus 0.4mm
2	Hinge short lever L=5mm 	P.T. MAX	2.5mm
		M.D. MAX	0.5mm
		O.T. MIN	0.8mm
		O.P. From fixing hole	8.8 plus or minus 0.8mm
		O.P. From fixing face	12.2 plus or minus 0.9mm
3	Hinge lever L=7.15mm 	P.T. MAX	2.8mm
		M.D. MAX	0.8mm
		O.T. MIN	1.2mm
		O.P. From fixing hole	8.8 plus or minus 0.8mm
		O.P. From fixing face	12.2 plus or minus 0.9mm

[] Dimensions Unit : mm

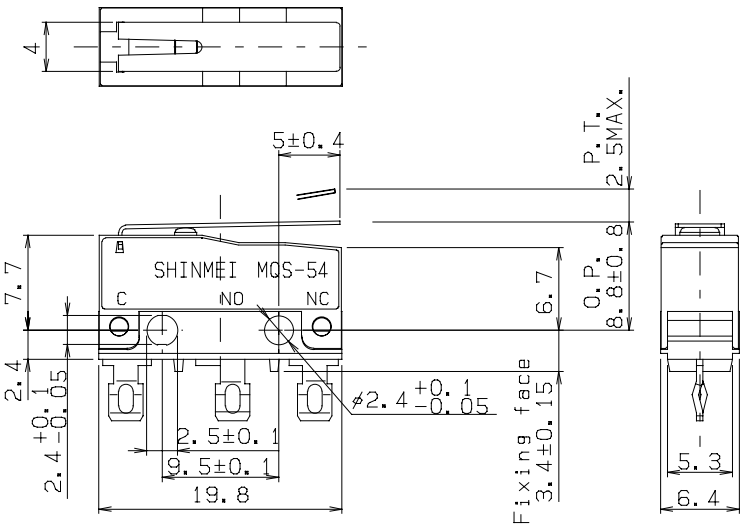
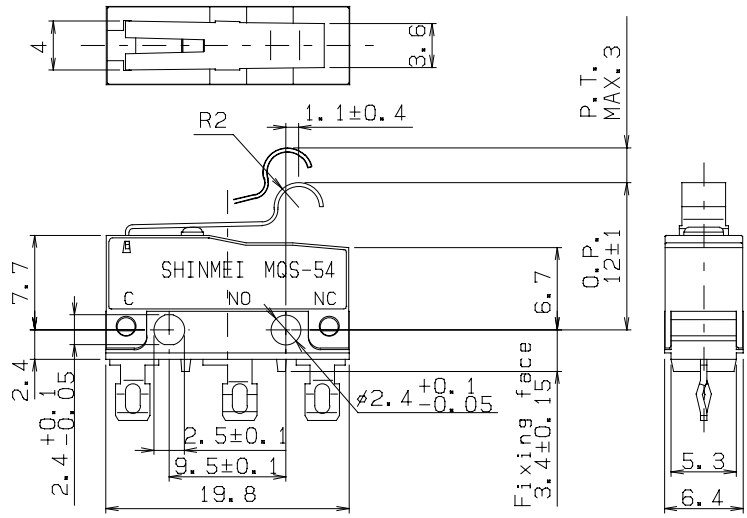
No	Style	Operating characterisics	
4	Hinge long lever L=13.1mm 	P.T. MAX	3.5mm
		M.D. MAX	1.0mm
		O.T. MIN	1.6mm
		O.P. From fixing hole	8.8 plus or minus 1.2mm
		O.P. From fixing face	12.2 plus or minus 1.3mm
5	Hinge long lever L=26.1mm 	P.T. MAX	6.0mm
		M.D. MAX	1.8mm
		O.T. MIN	1.7mm
		O.P. From fixing hole	8.8 plus or minus 3.0mm
		O.P. From fixing face	12.2 plus or minus 3.1mm
6	Hinge R2.5 lever L=6.3mm 	P.T. MAX	2.8mm
		M.D. MAX	0.8mm
		O.T. MIN	1.2mm
		O.P. From fixing hole	11.65 plus or minus 0.8mm
		O.P. From fixing face	15.05 plus or minus 0.9mm

▯ Dimensions Unit : mm

No	Style	Operating characterisics	
7	Hinge R2.5 lever L=6.3mm 	P.T. MAX	2.8mm
		M.D. MAX	0.8mm
		O.T. MIN	1.2mm
		O.P. From fixing hole	10.7 plus or minus 0.8mm
		O.P. From fixing face	14.1 plus or minus 0.9mm
8	Hinge roller lever L=5mm 	P.T. MAX	2.5mm
		M.D. MAX	0.5mm
		O.T. MIN	0.8mm
		O.P. From fixing hole	14.5 plus or minus 0.8mm
		O.P. From fixing face	17.9 plus or minus 0.9mm
9	Pin plunger type (Inside lever hook type) 	P.T. MAX	0.6mm
		M.D. MAX	0.1mm
		O.T. MIN	0.4mm
		O.P. From fixing hole	8.4 plus or minus 0.3mm
		O.P. From fixing face	11.8 plus or minus 0.4mm

Dimensions

Unit : mm

No	Style	Operating characterisics	
10	Hinge short lever L=5mm (Inside lever hook type) 	P.T. MAX	2.5mm
		M.D. MAX	0.5mm
		O.T. MIN	0.8mm
		O.P. From fixing hole	8.8 plus or minus 0.8mm
		O.P. From fixing face	12.2 plus or minus 0.9mm
11	Hinge R2 lever L=1.1mm (Inside lever hook type) 	P.T. MAX	3.0mm
		M.D. MAX	0.8mm
		O.T. MIN	0.4mm
		O.P. From fixing hole	12.0 plus or minus 1.0mm
		O.P. From fixing face	15.4 plus or minus 1.1mm

Notes

1. The appearance and specifications of the product may be modified without prior notice to improve its performance.
2. This catalog shows only outline specifications. When using the product, please obtain formal specifications.
3. Please see appendix [Cautions in Using Switches].
4. Fix the switch by M2.3 screw with torque less than 29.4 N-cm(3 kg-cm)
   Fixing with spring washers and adhesive are recommended to avoid the loose of the screw.
5. Operating force applied to push button or actuator should be zero at free position and the force shall not be applied vertically to push button during the operation.
6. O.T. (Over travel) shall be set between 80% and 100% of O.T. specifications.
7. In connecting lead wires, care should be taken not to apply tension to terminal.
8. In case of manual-soldering, soldering should be finished within 3 seconds by soldering iron of 30 W or with maximum tip temperature of 350 degree Celsius. Please do not apply pressure for 1 minute after soldering.
9. Please design usage of switch in proper operation even if any standard value of operational characteristics changes by plus or minus 20 % .
10. No dust, high humidity and organic gas should be found in the storage location.
11. Please confirm the performance on actual operation by simulation with actual environment environments for high reliability.