

SWITCH TYPE	M ni ature push button Switches	MODEL NO.	SPA-120L-22-B
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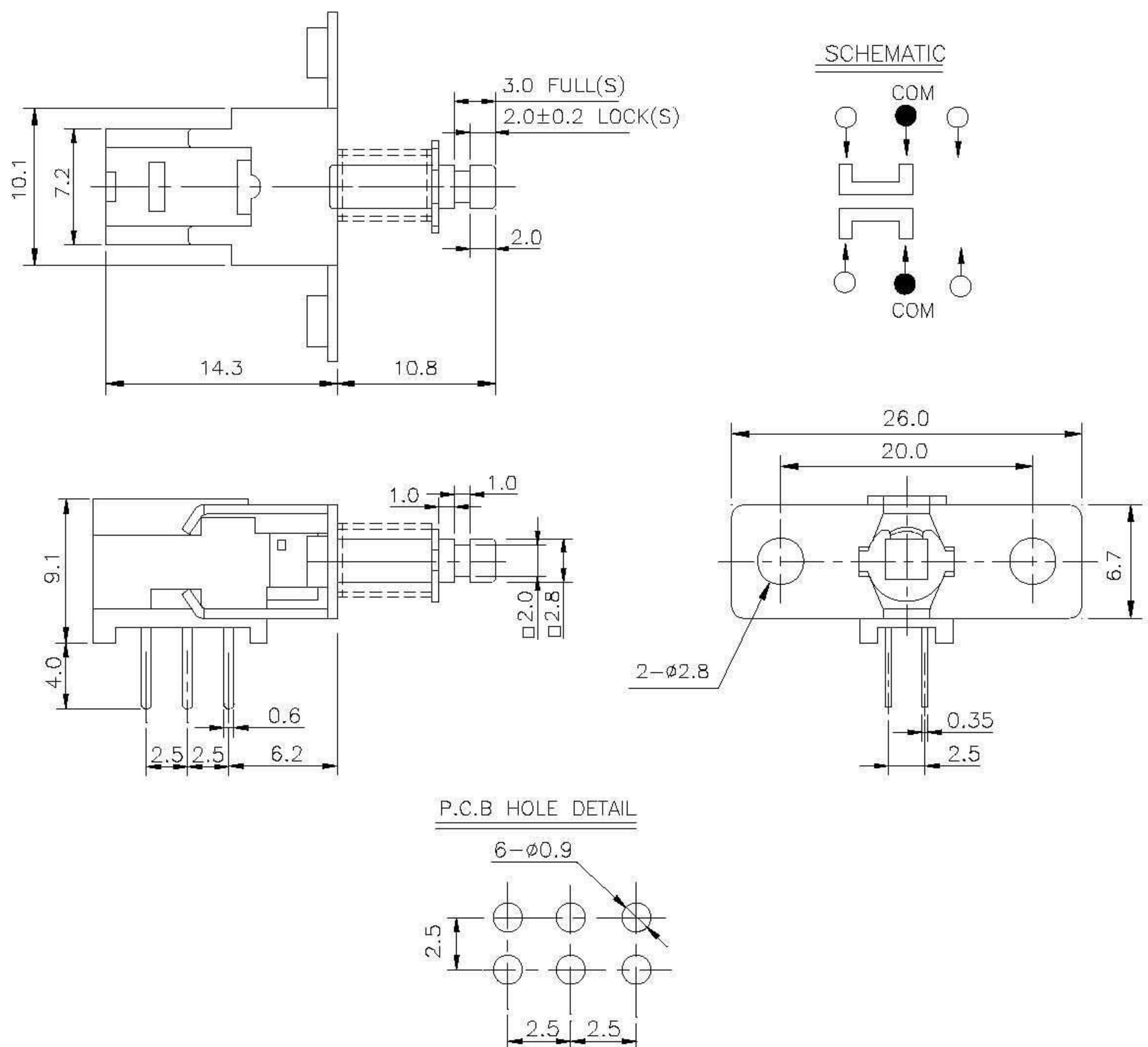
1. Functional spec.

1.1 Rated Voltage	DC30V	1.6 Free Position	
1.2 Rated Current	0.1A	1.7 Operating Position	
1.3 Contact Resistance	$\leq 50m\Omega$ (Initial value)	1.8 Position Travel	$2.0 \pm 0.2mm$
1.4 Operating Force	$230 \pm 50gf$	1.9 Return Force	
1.5 Bounce Time		1.10	

2. Reliable Rating

2.1 Mechanical Life	30,000 CYCLES	2.5 Soldering Temper	See sheet 5
2.2 Electrical Life	10,000 CYCLES	2.6 Operating Temper	$-10^{\circ}C - +60^{\circ}C$
2.3 Insulation Resistance	$\geq 100M\Omega$ DC250V(Initial value)	2.7 Shipping Temper	$<85\%RH$
2.4 Withstand Voltage	AC250V 1 minute(Initial value)	2.8 Ambient Humidity Used	

3. Dimension Drawing

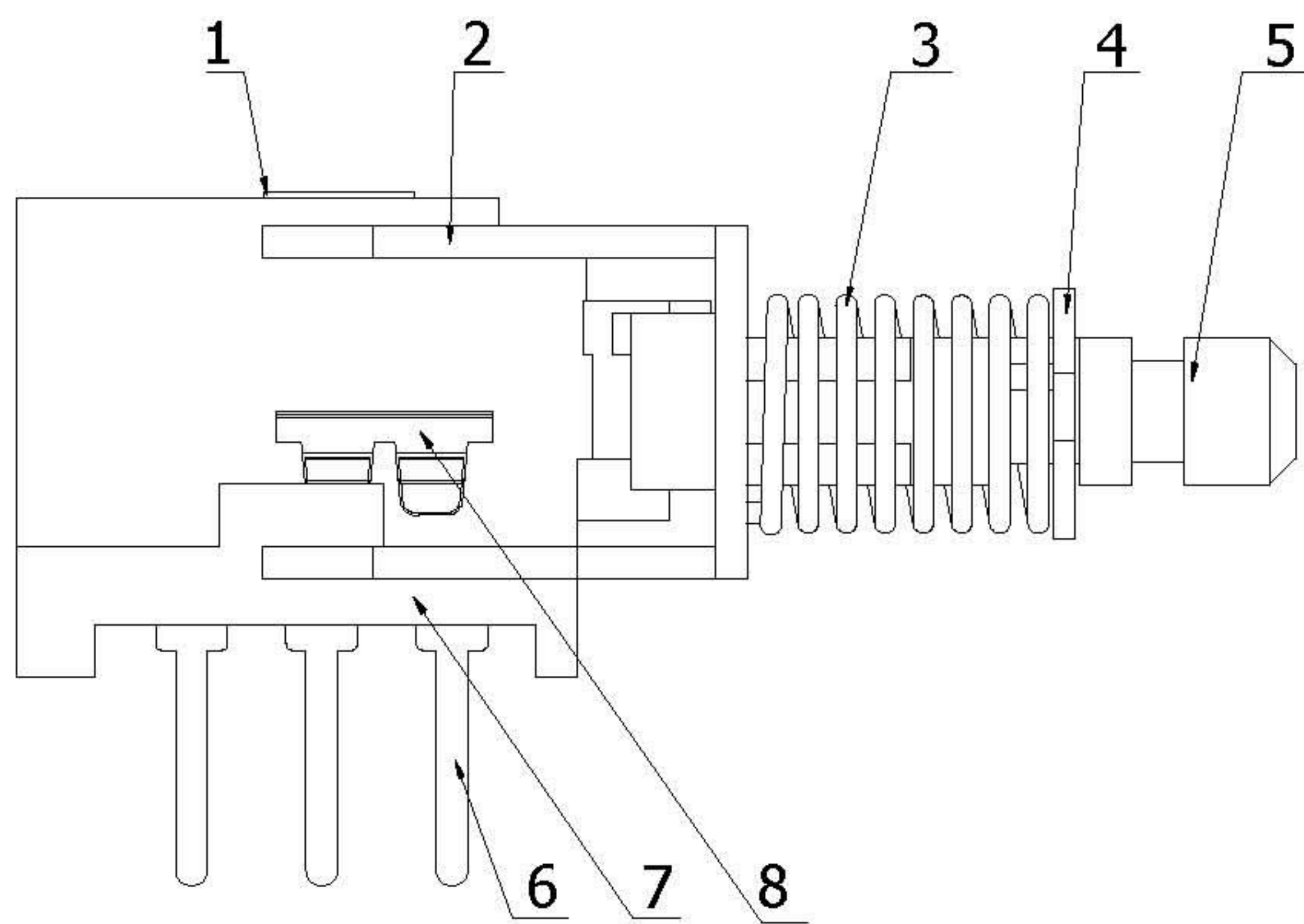


Revision	Description	Date	Revisor
Drawing No.	A/0	Tolerance	± 0.2
Drawing Model.	SPECIFICATION OF STANDARD TYPE	Unit	mm
Prepared	Reviewed	Approved	Effective date
			20060519

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NO.	Part Name		Q'TY	Generic Class		SGS report No.	
1	Case		1	PBT+GF30%(N)		GZ0601001875/CHEM	
2	Iron bracket		1	SPCC		GZSCR051186928/LP	
3	Spring		1	SUS304		GZ0603039055/CHEM	
4	Ring		1	SPCC		GZSCR051186928/LP	
5	Stem		1	POM		CE/2006/42764	
6	Terminal		6	C2680		CE/2005/B2320	
7	Base		1	PA66		CE/2005/A1917	
8	Clip		2	C5210		GZSCR050746889/LP	

Structure chart:



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1、General:							
1.1 Switch rating: DC 30V, 0.1A 1.2 Operating temperature range -10℃~60℃ 1.3 Preservative temperature range -20℃~70℃ 1.4 Appearance、Markings and dimensions Refer to individual product drawing 1.5 Standard conditions Unless otherwise specified, the test and measurements shall be carried out as follows: Ambient temperature : 5~35℃ Relative humidity : 45~85% Air pressure : 86~106kpa However, if doubt arises on the decision based on the measured values under the above mentioned conditions ,the following conditions shall be employed. Ambient temperature : 20~2℃ Relative humidity : 60±5%RH Air pressure : 86~106kpa							
2.Performance							
2.1 Electrical characteristics							
Items		Test conditions				Criteria	
2.1.1	Contact resistance	Applying a static load twice the operating force to the stem, measurements shall be made between the terminals. Measurement shall be made with a contact resistance meter for 2mΩ precision under the condition which a voltage of DC 5V and a current of 0.1A shall be applied between the terminals.				50mΩ max	
2.1.2	Insulation resistance	DC 250V voltage is applied between each pair of terminals and between the terminal and the metal frame for one minute. Measurement shall be made with a test instrument of insulation resistance under the condition which a voltage of DC 250V is applied between the terminals .				100MΩ min	
2.1.3	Dielectric withstand in voltage	AC 250V(50Hz or 60Hz) shall be applied across terminals and frame for one minute.				No damage to parts arcing or breakdown etc.	
PAGE	MARK	REVISION	DATE	DESIGN	CHECK	APPROVAL	

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Items		Test conditions					Criteria	
3.Mechanical characteristics								
3.1.1	Operation force	Placing the switch such that the direction of switch operation is side, and then gradually increasing the load applied to the stem, the maximum load for the stem to come to operating position shall be measured.					Refer to individual drawing.	
3.1.2	Terminal strength	A static load of 500gf shall be applied to the tip of the terminal for 30 sec. in any direction.					Electrical characteristics shall be satisfied without damage or excessive looseness of terminals.	
3.1.3	Displacement of actuator(Knob)	A static load of 1kgf shall be applied to the terminal for 15 Sec. In any direction.					The lever shall have no serious deformation and function is normally.	
4.Climatic characteristics								
4.1	Gold test	(1) Temperature : -30±2℃ (2) Duration of test : 96 hours (3) Take off a drop water (4) Standard condition after test : 1 hour					After test: Contact resistance: 1Ω max NO 2.1.2 to 2.1.3 and 3.1.1 to 3.1.2 shall be satisfied.	
4.2	Heat test	(1) Temperature : 80±2℃ (2) Duration of test : 96 hour (3) Standard conditions after test : 1 hour						
4.3	Humidity test	(1) Temperature :60±2℃ (2) Relative humidity : 90~95% (3) Duration of test : 96 hours Take off a drop water Standard condition after test : 1 hour						
5. soldering characteristics								
5.1	Hand soldering	Use a soldering iron of 30 watts, controlled at 380℃ approximately 3 seconds 1time while applying solder.					A new uniform coating of solder shall cover a minimum of 90% of the surface being immersed. There shall be no defects in appearance or in the mechanical functions.	

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Items		Test conditions				Criteria	
6. Durability characteristic							
6.1	Mechanical life	(1) Without loading (2) Operating speed : 60 cycles/minute (3) Push force : maximum value of operating force twice (4) Life: 30,000 cycles				After test: (1) Contact resistance: 1 ohm Max. (2) Insulation resistance: 10M ohm Min. (3) Bounce: 5m sec. Max. (4) Withstand voltage: AC250V, 1 minute (5) Operating force: 30% of initial value (6) There shall be no defects in appearance or in the mechanical functions.	
6.2	Electrical life	(1) which the load of 0.1A DC 30V (2) Operating speed : 30 cycles/minute (3) Push force : maximum value of operating force twice (4) Life: 10,000cycles					
7. Salt Mist							
7.1	Salt Mist	Test equipment : NSS Salt Solution : $5 \pm 1\%$ (Solders by mass) The PH of salt : 6.5~7.2 Test temperature : $35 \pm 2^\circ\text{C}$ Test pressure : 1 Kgf/cm ² The temperature of pressure barrel : $47 \pm 2^\circ\text{C}$ The slide switch shall be checked after following test : (1) Purge of the product (2) Duration : 8 hours (3) Purge of the product with 40°C max temperature and use wind gun drying it.				No remarkable corrosion shall be recognized in metal part. (uninclude sideline corner angle and pressing border line)	
8. Quality records of delivered goods							
8.1 Package boxes or package bags should be attached labels or identifiers of Model No., Quantity and Quality Pursuing No. 8.2 There shall be quality records of inspection and test in package boxed.							

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9.Application Notes:					
9.1 Avoid storing the products in a place at high temperature, high humidity and in corrosive gases.					
9.2 Avoid excessive force when inserting into P.C.B so as to avoid deformation of terminals.					
9.3 Influence for the characteristics by something dust or foreign articles. There is a possibility something dust or foreign articles put into click of brush plate and it should cause abnormal rotation feeling.					
10. Incoming inspection declaring:					
10.1 You must comply with the following principles in the process of the incoming inspecting and using our products, if not, we won't be liable for any damages from it.					
10.2 The requirement of the incoming inspection must meet the product's specification that have been affirmed and signed by you. If the following things appear in the process of the incoming inspection, the use is restricted, please feed back us in time; we will take back of all.					
10.3 The products that are attached or stickled by the unqualified labels;					
10.4 In the process of the incoming inspection, the following main function parameters must be checked and they must meet the specification. If the sum the badness rate is more than 1% in the process, the use is restricted, please feedback us in time, we will take back of all.					
(1) Operating Force; (2) Operating Position;					
(3) Initial Contact Resistance; (4) Soldering ability;					
(5) Soldering temperature; (6) Action of function;					
10.5 If the serious packaging disrepair of products appears in the process of the incoming inspection, please refuse accepting them and return them to us directly.					
10.6 Operating strength: the max pressing force is 3Kgf in the side direction with the up-surface of stem; the max pulling force is 3Kgf.the badness product's damage and function destroying for above all, we won't be liable for it.					
10.7 For switches is a multi-function parameters part in our company, which are assembled by many components, the max permitting badness rate is 500PPM in producing process. If the damages are for our producing process badness aim, we won't be liable for it.					
10.8 If badness rate of the main function parameters which is more than 500PPM or the sum of rate is more than 1500PPM appears in your producing process, please stop using them immediately and feed back us to do with it in time.					
10.9 If your incoming inspection is careless and it arose that the badness rate of your producing process is more than 1%, we won't be liable for the damage.					
10.10 DIGCU ELECTRONIC CO.,LTD. of DICGU ENTERPRISE CO.,LTD. should save this product without notice right when Reliable ability、 action function、 frame or designed is changed.					