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SPECIFICATION FOR APPROVAL

CUSTOMER :

MODEL NO. : INT-1102S70BP

APPLICATION :

REMARKS

1. Drawing
2. Spec
3. Part list

RECEIPT CONFIRMATION

DESCRIPTION : **TACT SWITCH**

SPECIFICATION : **250±50GF**

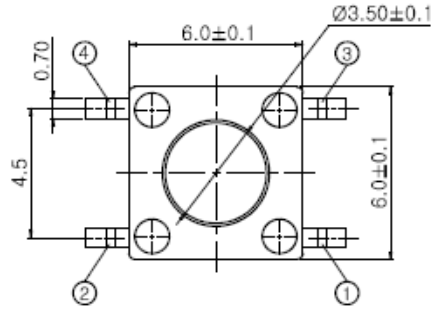
SUBMIT DATE : FEB. 21,2024

RECEIPT DATE :

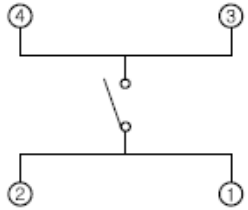
CONFIRMED BY

INNOCENT ELECTRONICS CO.,LTD.
Keum Seung Ho
SeungHo,Keum / President

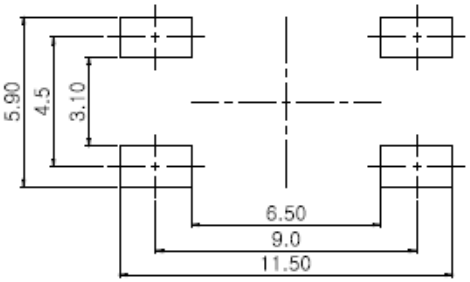
APPROVED BY

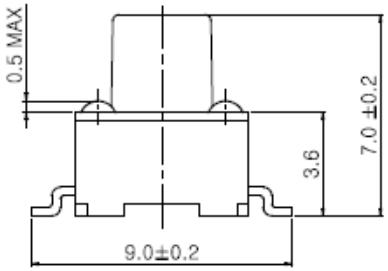


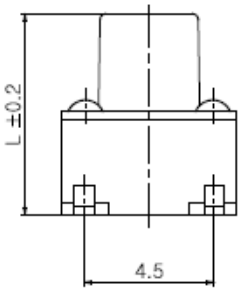
CIRCUIT DIAGRAM



PCB PATTERN DIMENSIONS

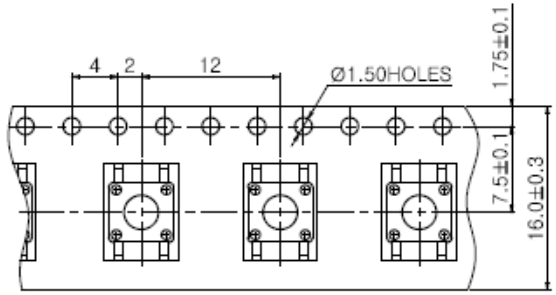


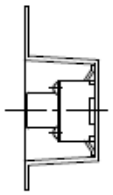




NOTE

1.OPERATING FORCE : 250±50gf
2.RATING : DC 12V 50mA
3.TRAVEL : $0.25^{+0.2}_{-0.1}$
4.CONTACT RESISTANCE : 100mΩ MAX
5.OPERATING LIFE : **100,000cycles**
6.GENERAL TOLERANCE : ±0.3
7. L : 7.0mm





PART NO	PART NAME	Q'TY	MATERIAL	STANDARD	DISPOSITION	REMARKS

5			TRIGON-OMETRY	UNIT	SCALE 1/1	SMD TACT SWITCHES
4						
3			APPD	CHKD	DSGD	
2			K S H	P Y W	yongwoon park	
1						MODEL INT-1102S70BP
NO	. .	CORRECTION	16.03.29	16.03.28	16.03.28	

INNOCENT ELECTRONICS CO.,LTD.

TACT SWITCH SPECIFICATION

1.GENERAL

1-1 Switch action : PUSH - ON type S.P.S.T

1-2 Switch rating : DC 12V, 50 mA Max.

1-3 Operation temperature range : - 20 ℃ ～ 70 ℃

1-4 Preservative temperature range : - 30 ℃ ～ 80 ℃

1-5 Appearance and dimensions : See outside drawing page

1-6 Standard conditions : Unless otherwise specified, the test and measurements shall be carried out as follows:

Ambient temperature : 5 ～ 35 ℃

Relative humidity : 45 ～ 85 % RH

Air pressure : 86 ～ 106 kPa (860 ～1060 mbar)

However, if doubt arises on the decision based on the measured values under the above- mentioned conditions, the following conditions shall be employed.

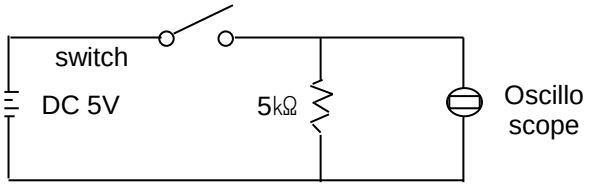
Ambient temperature : 20 ± 2℃

Relative humidity : 65 ± 5 % RH

Air pressure : 86 ～ 106 kPa (860～1060 mbar)

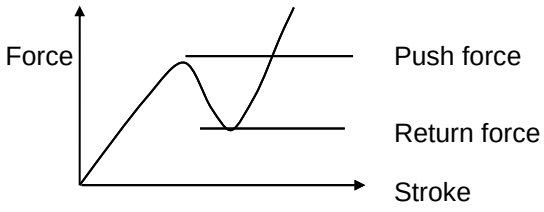
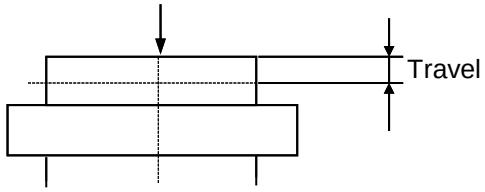
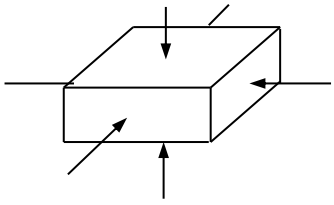
2.PERFORMANCE

2-1 Electrical characteristics

NO	ITEM	TEST CONDITIONS	PERFORMANCE
2.1.1	Contact resistance	Applying a static load twice the actuating force to the center of the stem, measurements shall be made with a 1KHz small-current contact resistance meter	100 mΩ max.
2.1.2	Insulation resistance	Measurements shall be made following application of DC 100V potential across terminals and across terminals and frame for one minute.	100 Mohm min.
2.1.3	Dielectric withstanding voltage	AC 250 V(50 Hz or 60 Hz) shall be applied across terminals and across terminals and frame for one minute.	There shall be no breakdown.
2.1.4	Bounce	Lightly striking the center of the stem at a rate encountered in normal use (3 to 4 operations per sec) bounce shall be tested at "ON" and "OFF". 	10 msec max.

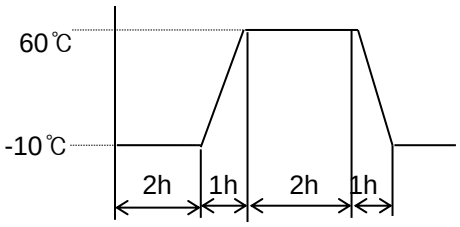
					APPROVAL	CHECK	DESIGN	TITLE	INT-1102S70BP	
								DRAWG NO.	ITS - S - 02 - 85	1 / 4
MARK	DATE	APPR.	CHECK	DESIGN						

2-2 Mechanical characteristics

NO	ITEM	TEST CONDITIONS	PERFORMANCE
2.2.1	Operation force	Push by recommended operating condition 	Push force 250± 50gf Return force : 100 gf min.
2.2.2	Travel	Push by recommended operating condition F = (Operation force) ×2 	0.25 +0.2/-0.1 mm
2.2.3	Stop strength	A static load of 3 kgf shall be applied in the direction of stem operation for a period of 60 seconds.	No damage (Electrical and mechanical)
2.2.4	Stem strength	The maximum force to withstand a pull applied opposite to the direction of stem operation shall be measured.	1 kgf min.
2.2.5	Vibration test	1)Amplitude : 1.5 mm 2)Sweep rate :10-55-10 Hz for 1 minute. 3)Sweep method : Logarithmic frequency sweep rate. 4)Vibration direction : X.Y.Z (3 directions) 5)Time : Each direction 2 hours (Total 6 hours)	No 2.1 and 2.2.1 to 2.2.2 shall be satisfied.
2.2.6	Impact shock test	1)Acceleration : 80 G 2)Cycles of test : 3 cycles each in 6 directions, for a total 18 cycles. 	No 2.1 and 2.2.1 to 2.2.2 shall be satisfied.
2.2.7	Soldering heat test	Soldering area : t/2 of P.W.B thickness (P.W.B : t = 1.6) Soldering temperature : 260 ± 5 ℃ Soldering time : 5 ± 1 sec.	No damage (Electrical and mechanical)

					APPROVAL	CHECK	DESIGN	TITLE	INT-1102S70BP	
								DRAWG NO.	ITS - S - 02 - 85	2 / 4
MARK	DATE	APPR.	CHECK	DESIGN						

2-3 Climatic characteristics

NO	ITEM	TEST CONDITIONS	PERFORMANCE
2.3.1	Cold test	1) Temperature : -30 ± 2℃ 2) Duration of test : 96 hours 3) Take off a drop water 4) Standard condition after test : 1 hour	Contact resistance : 200 mΩ max. No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.
2.3.2	Heat test	1) Temperature : 80 ± 2℃ 2) Duration of test : 96 hours 3) Standard conditions after test : 1 hour	Contact resistance : 200 mΩ max. No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.
2.3.3	Temperature cycle	1) Test cycles : 5 cycles 2) Standard conditions after test : 1 hour 3) 1 cycle : 	Contact resistance : 200 mΩ max. No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.
2.3.4	Humidity test	1) Temperature : 60 ± 2℃ 2) Relative humidity : 90 ～ 95% 3) Duration of test : 96 hours 4) Take off a drop water 5) Standard conditions after test : 1 hour	Contact resistance : 200 mΩ max. No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.
2.3.5	Operating life test	1) DC 5 V, 5 mA Resistance load 2) Operation speed : 2 ～ 3 cycles/sec 3) Push force : Maximum value of operation force 4) Cycles of operation : 100,000 cycles	Contact resistance : 200 mΩ max. Bounce : 20 msec max. Actuating force: +10 / -30% initial force No 2.1.2 to 2.1.3 and 2.2.2 shall be satisfied.

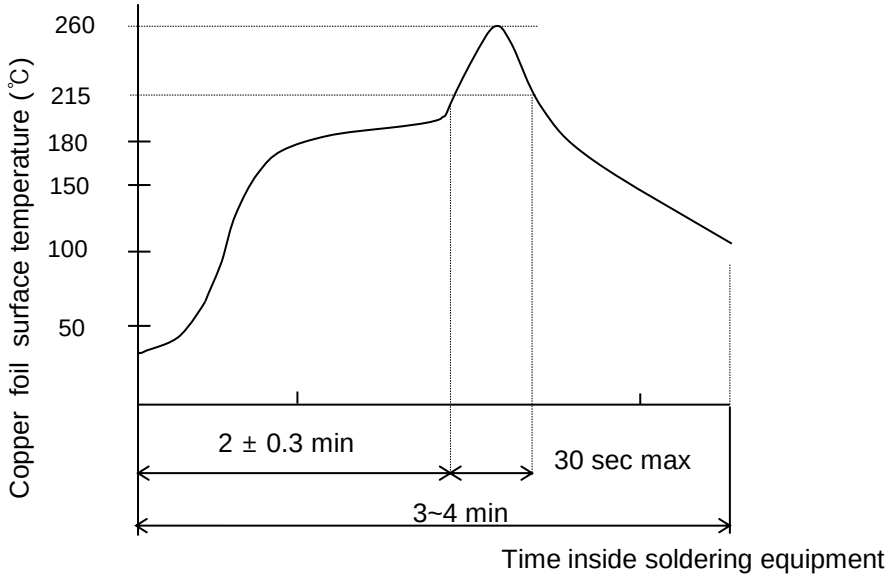
					APPROVAL	CHECK	DESIGN	TITLE	INT-1102S70BP	
								DRAWG NO.	ITS - S - 02 - 85	3 / 4
MARK	DATE	APPR.	CHECK	DESIGN						

3. SOLDERING

3-1. Reflow soldering conditions

Preheat : Temperature on the copper foil surface should reach 180℃, 2 ± 0.3minutes after the P.W.B entered into the soldering equipment.

Soldering heat : Temperature on the copper foil surface should reach the peak temperature of 260℃ within 5seconds after the P.W.B entered into soldering heat zone.



Temperature Profile

3-2. Manual soldering conditions

Soldering temperature : 350℃ Max

Continuous soldering time : 3 sec Max

4. Storage conditions

For storage and transport of the switches, avoid unpacking them, and store them at room temperature and room humidity. Use them as soon as possible, generally within 3 months, or within a maximum of 6 months after delivery.

PART LIST

DESIGN	CHECK	APPR
P O W	K J S	K S H

모델명(MODEL NO.) : INT-1102S70BP

NO.	부품명 PART NAME	원재료명 MATERIAL NAME	처리 TREATMENT	색상 COLOR	비고 REMARKS
1	TERMINAL	BRASS	NI+AG		
2	CASE	LCP	V-0 (UL 94)	BLACK	PITCH 9.0mm
3	CONTACT	Ag*1/C5210	SILVER		5Ø, 250GF
4	STEM	LCP	V-0 (UL 94)	IVORY	7.0mm
5	COVER	STAINLESS 304	NONE		