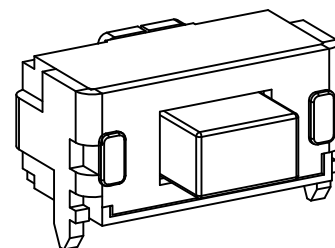
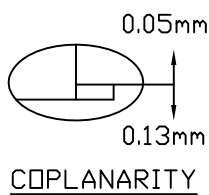
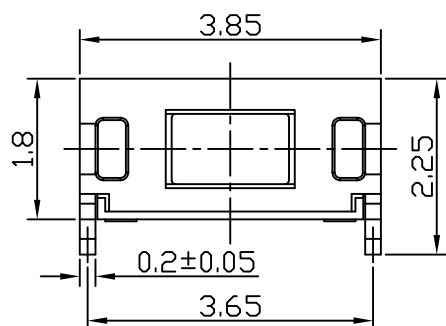


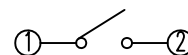
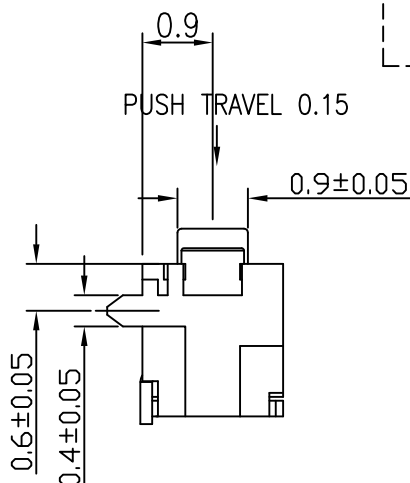
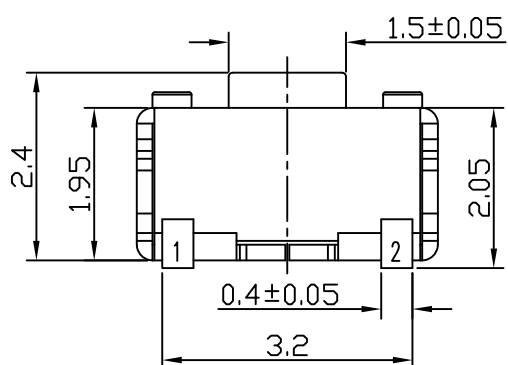
SYMB	REVISION	DATE	APVD.	SYMB	REVISION	DATE	APVD.	VERSION: 0	F2A-74-1/1
								MODE	Tactile Feedback
								TIMING	
								LINE(S)	CIRCUIT
								1	1P1T
									STROKE
									0.15

Without any banned substance! Compliance with RoHS!

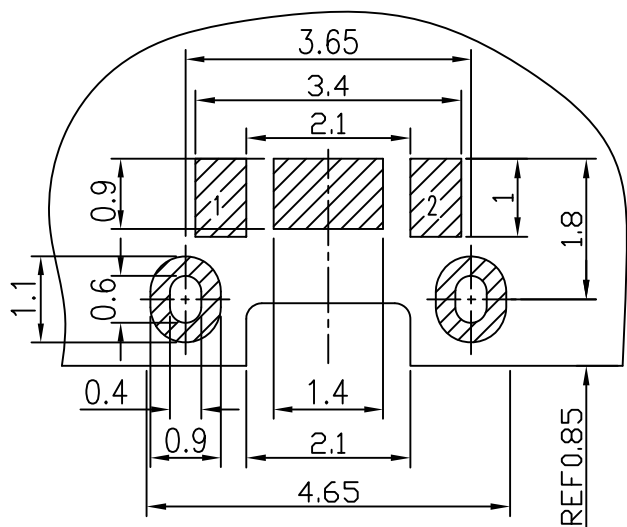


STEREOSCOPIC MODEL

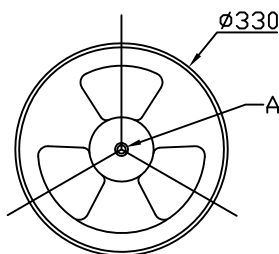
O/P FORCE
180±50gf



CIRCUIT DIAGRAM

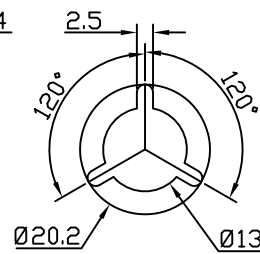


Recommended PAD Layout $\Phi \pm 0.05$
TOP VIEW

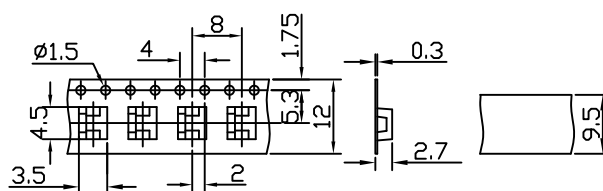


SCALE 1:10.2

REEL



"A" DETAIL



SCALE 1:2.1

CARRIER TAPE

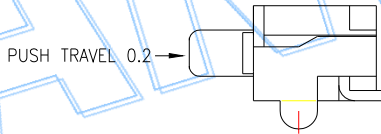
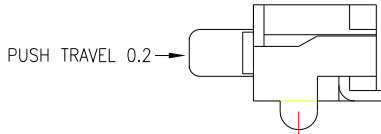
COVER TAPE

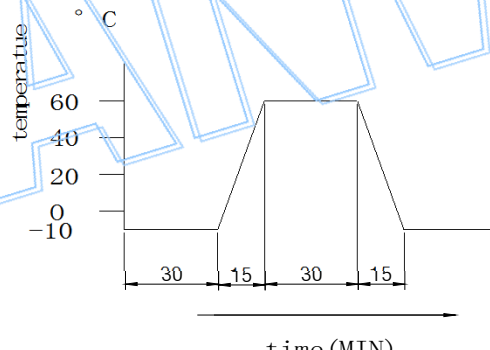
PACKING DETAIL

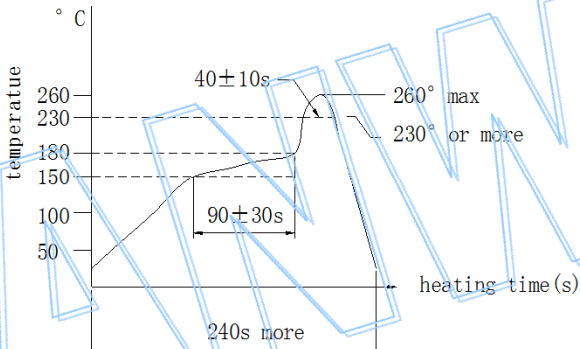
<QTY:3000PCS/REEL>

TYPE	TACT SWITCH	UNIT	mm	9					
SERIES	TSMD-382401	SCALE	10:1	8					
PART NO.	TSMD-382401-1-180	DATE	15/7/29	7					
SPEC. NO.	SETD02138	PAGE	1/6	6					
DRAWN	CHECKED	APVD.	TOLERANCE	5	TERMINAL 1,2	PHOSPHOR BRONZE	2	Ag PLATED	
李	任	梁	ANGLE	4	COVER	PHOSPHOR BRONZE	1	Ag PLATED	
晓斌	明华	成元	UP TO 1	3	STEM	PA46	1	BLACK	
			ABOVE 1 ~ 5	2	CONTACT	SUS	3	Ag CLAD	
			ABOVE 5 ~50	1	CASE	PA46	1	BLACK	
SANWIN ELECTRONIC TECHNOLOGY CO. LTD.				NO.	NAME	MATERIAL	QTY.	FINISHING	

產品規格書				檔編號No. :	頁數Page
SPECIFICATION				SETD02138	P2/6
產品類別Type:	輕觸開關Tact Switch			Prepared	Checked
產品系列Series:	TSMD-382401	版本Version:	1	李 晓斌	任 明华
產品編號Part No.:	TSMD-382401-1-180	日期Date:	2015/7/29		
1. 通則 General Characteristics:					
1.1 應用範圍 Application range: 此產品規格書適用於輕觸開關TSMD-382401。 This product specification is applied to the TSMD-382401 Tact Switch.					
1.2 使用環境條件 Acclimatization: 使用溫度範圍 Operating Temperature rang:-20℃ ~ 70℃ 保存溫度範圍 Preservative Temperature:-30 ~ 80℃					
1.3 測試條件Test Conditions: 若沒有特別說明，則試驗條件如下： Unless otherwise specified,the atmospheric for marking measurements and tests are as follows: 溫 度 Temperature:20±2℃ 相對濕度 Relative Humidity:45 ~ 85% 氣 壓 Air pressure:86 ~ 106Kpa 如對判定產生疑義，則試驗按以下條件進行： However,if the decision based on the measurements suspicion conditions, the following conditions shall be employed: 溫 度 Temperature:20±2℃ 相對濕度 Relative Humidity:65±5% 氣 壓 Air pressure:86 ~ 106Kpa					
2. 外觀和安裝尺寸 Appearance & Mounting Dimensions:					
2.1 外觀 Appearance: 產品外觀良好，無破損、銹蝕、裂紋和鍍層缺陷。 The switch shall have good finishing,and no rust,crack plating defects.					
2.2 安裝尺寸Mounting dimensions: 應符合產品設計要求，詳見成品圖。 Should comply with the design requirements of products, see the finished product drawing.					
3. 驅動方式Operate Mode:					
按鈕式：中間方向（如成品圖所示） Push Button:Center (as assembly drawing shown).					
4. 回路方式 Circuit Mode:					
如成品圖所示 (as assembly drawing).					
5. 額定負荷及壽命 Rating and Ooerating life.					
額定負荷 Rating:DC 12V,50mA Max 機械壽命 Mechanical life:50,000次					
6 電氣性能Electrical Characteristics					
專案Item	測試條件Test Method			標準Criteria	
6.1 接觸電阻 Contact Resistsnce	以10mA 5V DC 或者 1KHz±200Hz(20mV max , 50mA max) 下採用電壓降法測量。 Shall be measure at 1KHZ±200Hz (20mV max,50mA max) or DC 5V 10mA by voltage drop method.			常態 Normal 100mΩ以下 100mΩ max 氣候及壽命試以後 After climate and life test. 200mΩ以下 200mΩ max	

產品規格書				檔編號No. :	頁數Page		
SPECIFICATION				SETD02138	P3/6		
產品類別Type:	輕觸開關Tact Switch			Prepared	Checked	Approved	
產品系列Series:	TSMD-382401	版本Version:	1	李 晓斌	任 明华	梁 成元	
產品編號Part No.:	TSMD-382401-1-180	日期Date:	2015/7/29				
6.2 絕緣阻抗 Insulation Resistance	在相互絕緣的所有端子之間及各接線端子與外露 的非載流金屬零件之間加載100V DC ,持續時間60±5S. DC 100V voltage is applied between each pair of terminals andbetween the terminal and the metalframefor 60±5S.			常態 Normal 100MΩ以上 100MΩ Min 氣候及壽命試以後 After climate and life test. 10MΩ以上 10MΩmin			
6.3 抗電強度 Dielectric Strength	在相互絕緣的所有接線端子之間加載250V (50 ~ 60Hz洩漏電流10mA) 的交流電，各接線端子與外殼或非載流金屬零件之間加載250V(50 ~ 60Hz)電流 洩漏2mA交流電，持續時間60±5S。 AC 250V(50-60Hz)2mA alternate current load is applied between open terminals connected with wires or250V (50-60Hz),2mA Alternate current load for 60±5S.			無擊穿和飛弧現象 The switch without dielectric breakdown and fly arc phenomenon.			
7 機械性能 Mechanical Charateristics							
專案Item	測試條件Test Method			標準 Criteria			
7.1 操作力 Operating Force	按規定的操作方法給操作柄施加壓力 Push by recommended operating condition. 			中間方向center: 180±50gf			
7.2 行程 Travels	開關發生轉換後，操作元件末端之間與初始位置之間的距離。 Distance from the end of operating component to the start position when switch is being transformed. 			中心正按Center push: 0.2±0.1mm			

產品規格書				檔編號No. :	頁數Page	
SPECIFICATION				SETD02138	P5/6	
產品類別Type:	輕觸開關Tact Switch			Prepared	Checked	
產品系列Series:	TSMD-382401	版本Version:	1	李 晓斌	任 明华	
產品編號Part No.:	TSMD-382401-1-180	日期Date:	2015/7/29			
8.2 恒定濕熱 Moisture Resistance	試件在60±2℃,90~95%RH的溫控箱內保持48小時，然後在正常溫度和濕度下恢復1小時，並在此後的1小時內對試件進行測量，水滴應消失。 After testing at 60±2℃,90~95%RH for 48 hours,the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour and measurement shall be made with 1 hour after that, Water drops shall be eliminated.			符合第6.1、6.2、6.3第7.1條要求。 According to item 6.1、6.2、6.3 and 7.1to examine.		
8.3 低溫 Cold Proof	試件在-40±2℃的溫控箱內保持48小時，然後在正常溫度和濕度下恢復1小時，並在此後的1小時內對試件進行測量，水滴應消失。 After testing at -40±2℃ for 48 hours,the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour and measurement shall be made with 1 hour after that, water drops shall be eliminated.					
8.4 溫度轉換 Temperature Cycling	試件按下述試驗條件試驗5個迴圈，然後在正常溫度和濕度下恢復1小時，並在此後的1小時內對試件進行測量，水滴應消失。 After 5 cycles of following conditions,the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour after that,Water drops shall be eliminated. 					
9 耐久性試驗 Durability Characteristics						
專案Item	測試條件 Test method			標準Criteria		
9.1 壽命試驗 Operating Life	1)在不帶負荷的條件下，在壽命測試設備上連續轉換50,000次，頻率：60-120次/分鐘。 1)50,000 cycles of operation shall be performed continuously cycles without load at a rate of 60-120 cycles per minute.			動作力：初始值的±30% Operating force:within ±30% initialization value. 彈跳 10 ms Max Bounce 10 ms Max 其餘符合第6.1、6.2、6.3、7.1條 Etceteras according to item 6.1, 6.2、6.3 ,7.1 to examine.		

產品規格書				檔編號No. :	頁數Page	
SPECIFICATION				SETD02138	P6/6	
產品類別Type:	輕觸開關Tact Switch			Prepared	Checked	Approved
產品系列Series:	TSMD-382401	版本Version:	1	李 晓斌	任 明华	梁 成元
產品編號Part No.:	TSMD-382401-1-180	日期Date:	2015/7/29			
10.焊接Soldering						
專案Item	測試條件 Test method			標準Criteria		
101 耐焊接熱 Solder Heat Resistance	試件在下述條件下進行試驗： 1) 焊接溫度:260±5℃ ； 2) 焊接時間：5±1S; 3) 熔錫面積：PCB板厚度的一半 (PCB：t=1.6) 。 Specimen shall be checked in the following conditions test: 1)Soldering temperature:260±5℃ ； 2)Soldering time:5±1S; 3)Soldering area：1/2 of PCB board thickness(PCB:t=1.6).			無機械和電氣損傷。 The switch shall be free from mechanical and electrical damage.		
10.2 回流焊 Reflow Soldering				外觀無裂開、鬆動等異常現象，滿足於電氣性能。 Without deformation of frame or excessive looseness of terminals , Electrical performance shall be satisfied.		
10.3 可焊性 Solderbilty	焊接溫度：245±5℃ Solder temperature: 245 ±5℃. 浸漬時間：3 ±0.5S Dipping time: 3 ±0.5 second.			超過90%的浸漬覆蓋焊接。 More than 90% of the dipping covered by solder.		