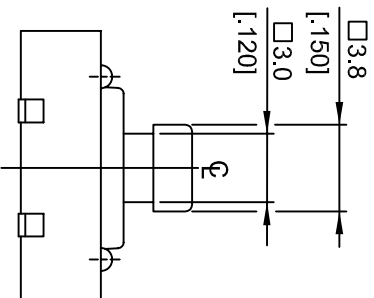
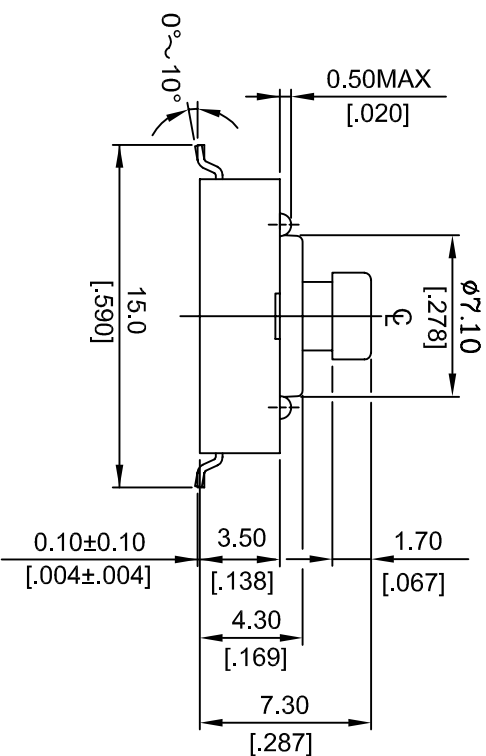
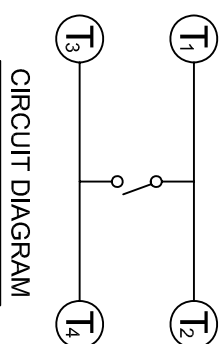
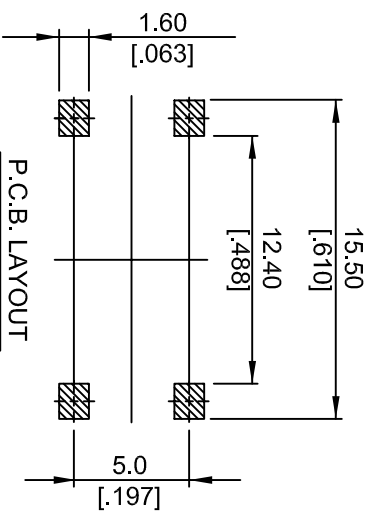
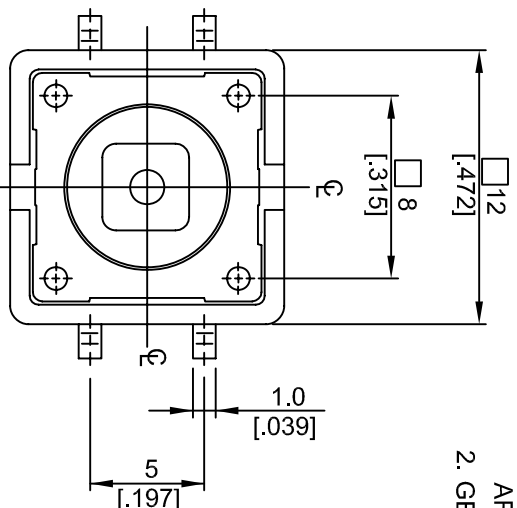


NOTE:  
 1. ALL DIMENSIONS ARE IN MILLIMETERS, BRACKETED DIMENSIONS ARE IN INCHES.  
 2. GENERAL TOLERANCES MAX.±0.20mm.



**德利威電子股份有限公司**  
**DAILYWELL ELECTRONICS CO.,LTD.**

符號	原尺寸	修改後尺寸	變更日期
1	(A)		
2	(B)		
3	(C)		
4	(D)		
5	(E)		

SCALE (比例) : 2 : 1

TOLERANCE (公差) :  
 0.00 mm ± 0.25mm  
 0.0 mm ± 0.40mm

FILE NAME : Y0576

TITLE 圖名	TACT Switch			SIZE 圖紙	A4
DWG NO. 圖號	DTSM-24-V			UNIT 單位	inch
REV. 版本	A	DATE 日期	AUG - 01 - 2007	SHEET 張數	1 of 1
CHECKED BY 審核	RICHARD		DRAWN BY 製圖	FION	

**1. Style**

This specification describes "TACTILE SWITCH", mainly used as signal switch of electric devices, with the general requirements of mechanical and electrical characteristic.

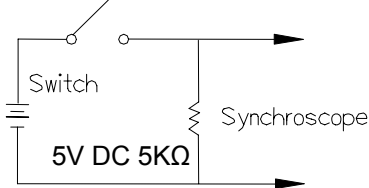
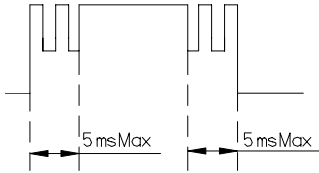
1.1 Operating Temperature Range : -25 °C ~ +70 °C

1.2 Storage Temperature Range : -30 °C ~ +80 °C

2. **Current Range:** 50mA, 12V DC

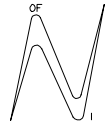
3. **Type of Actuation:** Tactile feedback

4. **Test Sequence:**

	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
<b>APPEARANCE</b>	1	Visual Examination	By visual examination check without any out pressure & testing	There shall be no defects that affect the serviceability of the product.
<b>ELECTRIC PERFORMANCE</b>	2	Contact Resistance	Applying a static load 1.5-2 times the operating force to the center of the stem, measurements shall be made with a 1 kHz small current contact resistance meter	100mΩ Max
	3	Insulation Resistance	Measurements shall be made following application of 500 V DC potential across terminals and cover for 1 minute ± 5 seconds	100MΩ min
	4	Dielectric Withstanding Voltage	250 V AC(50Hz or 60Hz) shall be applied across terminals and cover for 1 minute	There shall be no breakdown or flashover
	5	Capacitance	1 MHz ±10 kHz	5 pF max.
	6	Bounce	3 to 4 operations at a rate of 1 cycles per second 	5 m seconds max. 

# DTS□□-2 □□-V SPECIFICATION

REV. : E-V-AT02  
 Page. : B  
 REV. : 2 / 4

MECHANICAL PERFORMANCE	7	Operating Force	Applied in the direction of operation 	N	R	S	Y
				160±50g [1.568±.49N]	260±50g [2.548±.49N]	320±80g [3.136±.784N]	520±130g [5.096±1.274N]
	8	Stroke	Placing the switch such that the direction of switch operation is vertical and then gradually increasing the load applied to the stem, the stroke distance for the stem to come to a stop shall be measured	0.35±0.1mm			
	9	Stop Strength	Placing the switch such that the direction of switch operation is vertical, a static load of 3 kgf (29.4N) shall be applied in the direction of stem operation for a period of 15 seconds	1)As shown in item 4~7 2)Contact Resistance: 200mΩ Max 3)Insulation Resistance: 10MΩ min			
	10	Solder Heat Resistance	■ Through Hole Type 1)Soldering Temperature: 260±5°C 2)Duration of Solder Immersion: 5±1 seconds 3)Frequency of Soldering Process 2 times max. (PCB is 1.6mm in thickness) 4) SMT Type ~ Series(4/4)	1)Shall be free from pronounced backlash and falling-off or breakage terminals 2)As shown in item 4、5 3)Contact Resistance: 200mΩ Max 4) Insulation Resistance: 10MΩ min			
	11	Vibration	Shall be vibrated in accordance with Method 201A of MIL-STD-202F 1)Frequency: 10-55-10Hz in 1-min/cycle. 2)Direction:3 vertical directions including the directions of operation 3)Test time:2 hours each direction 4)Swing distance=1.5 mm	1)As shown in item 4~7 2)Contact Resistance: 200mΩ Max 3)Insulation Resistance: 10MΩ min			
12	Shock	Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F 1)Acceleration; 50G 2)Action time:11±1m seconds 3)Testing Direction:6 sides 4)Test Cycle:3 times in each direction	1)As shown in item 4~7 2)Contact Resistance: 200mΩ Max 3)Insulation Resistance: 10MΩ min				

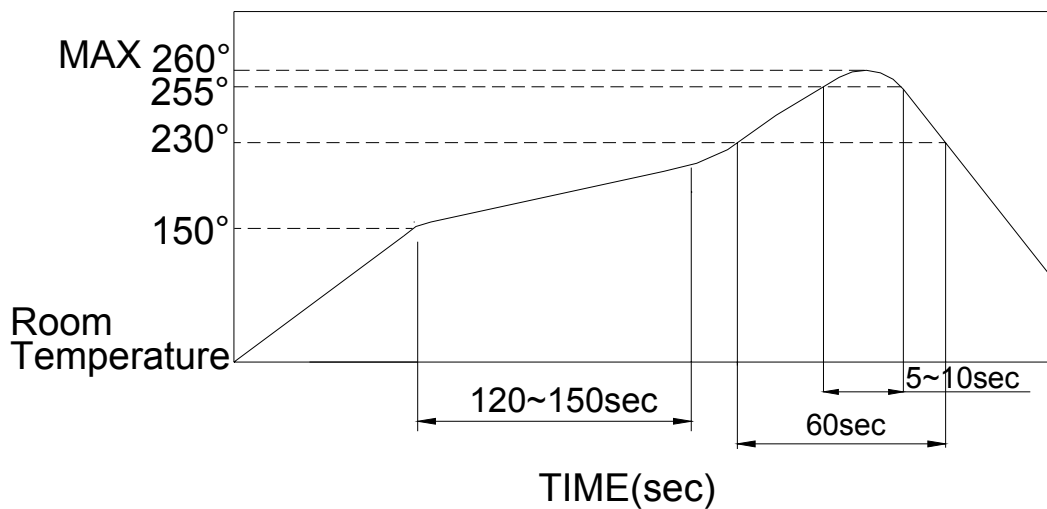
# DTS□□-2 □□-V SPECIFICATION

REV. : E-V-AT02  
 Page. : B  
 REV. : 3 / 4

<b>MECHANICAL PERFORMANCE</b>	13	Solderability	1)Through Hole Soldering Temperature : $245\pm 3^{\circ}\text{C}$ Lead-Free solder : M705E JIS Z 3282 A (Tin 96.5% , Silver 3% , Copper 0.5%) 2)Flux : 5~10 sec 3)Duration of solder Immersion : $5\pm 1$ sec	No anti-soldering and the coverage of dipping into solder must more than 66% was requested.	
	<b>DURABILITY</b>	14	Operating Life	Measurements shall be made following the test forth below: ①5 mA,5 VDC resistive load ②Applying a static load the operating force to the center of the stem in the direction of operation Static Load = OF Max. ③Cycle of Operation: 200,000 cycle's Min. For 100,160gf 100,000 cycle's Min. For 260gf 50,000 cycle's Min. For 320,520gf	①As shown in item 4、5 ②Operating force: $\pm 50\%$ ③Contact Resistance: 10 $\Omega$ Max ④Insulation Resistance: 10M $\Omega$ Min ⑤Bounce: 10 m seconds Max
<b>WEATHER-PROOF</b>		15	Resistance Low Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: 1)Temperature: $-25\pm 3^{\circ}\text{C}$ 2)Time:96 hours	1)As shown in item 4~7 2)Contact Resistance: 200m $\Omega$ Max 3)Insulation Resistance: 10M $\Omega$ min
		16	Resistance High Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: 1)Temperature: $80\pm 2^{\circ}\text{C}$ 2)Time:96 hours	1)As shown in item 4~7 2)Contact Resistance: 200m $\Omega$ Max 3)Insulation Resistance: 10M $\Omega$ min
	17	Resistance Humidity	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: 1)Temperature: $40\pm 2^{\circ}\text{C}$ 2)Relative Humidity:90~95% 3)Time:96 hours	1)As shown in item 4~7 2)Contact Resistance: 200m $\Omega$ Max 3)Insulation Resistance: 10M $\Omega$ min	

## 5. SOLDERING CONDITIONS:

## ■ Condition for Soldering –S.M.T Series



- The condition mentioned above is the temperature on the Cu foil of the PCB surface. There are cases where board's temperature greatly differs from switch's surface be used not to allow switch's surface temperature to exceed 260°C.

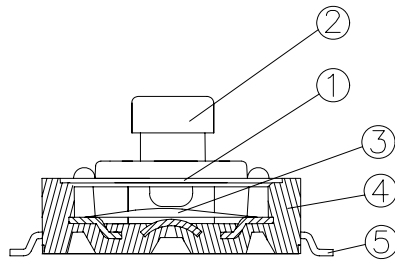
## ■ Manual Soldering

Soldering Temperature	Max.350°C
Continuous Soldering Time	Max. 5 seconds

## ■ Precautions in Handling

- 1.Care should be exercised so that flux from the upper part of the printed circuit board does not adhere to the switch.
- 2.Except for washable type do not wash the switch body.
- 3.Please make sure that there is no flux rose over the surface of the PCB

ITEM	DESC.	Q'TY	MATERIALS	TREATMENT	REMARK
1	COVER	1	STAINLESS STEEL	NONE	-
2	STEM	1	HIGH – TEMP THERMOPLASTIC NYLON UL 94V-0	→	-
3	CONTACT	1	PHOSPHOR BRONZE	WITH SILVER CLADDING	-
4	BASE	1	HIGH – TEMP THERMOPLASTIC NYLON UL 94V-0	MOLDED BROWN	-
5	TERMINAL	1	BRASS	WITH SILVER PLATING 0.5uM	-



DTSM-2

Prod. No. : DTSM-2 □ □ -V- □

Surface – Mounting Type

Package Style:  
B = Tube  
T/R = Tape & Reel

V=Lead Free

Total Height

- 1 = 4.3 mm
- 4 = 7.3 mm
- 5 = 8.5 mm

Color Of Stem For  
Operating Force :  
N = Brown ,160g  
R = Red ,260g  
S = Salmon,320g  
Y = Yellow,520g

A	DWG.REL.	
REV.	ECO. NO.	APPD.

TITLE: SMT TACT SWITCH 12X12	APPD. :
	CHKD. :
PRROD.NO. :DTSM-2□□-V-□	PR. :
FILE NO. :E-V-CT09	REV :A SHEET :1 of 1