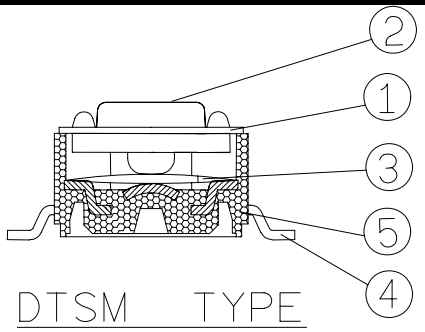
Tactile switches

Order code	Manufacturer code	Description
78-1136	DTSM-644K	SQUARE BUTTON SMD TACTILE SWITCH (RC)

Sales: 01206 751166 **Technical: 01206 835555** **Fax: 01206 751188**
Sales@rapidelec.co.uk **Tech@rapidelec.co.uk** **www.rapidonline.com**

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.	TERMINAL	1	BRASS	WITH SILVER PLATING 0.5uM	-
5.	BASE	1	HIGH – TEMP THERMOPLASTIC NYLON UL 94V-0	MOLDERD BROWN	-



DTSM TYPE

Remark :

① Prod. No. : D T S □- 6 □ □ □ - V - □

M=Surface Mounting Type

Dimension H:
1 = 4.3 ㎜
2 = 5.0 ㎜
3 = 7.0 ㎜
44(48)= 7.3 ㎜
5 = 9.5 ㎜
6 = 13 ㎜

Package Style:
B = Tube
△T/R = Tape & Reel
<△M=Except DTSM-66>

Soldering:
V=Lead Free

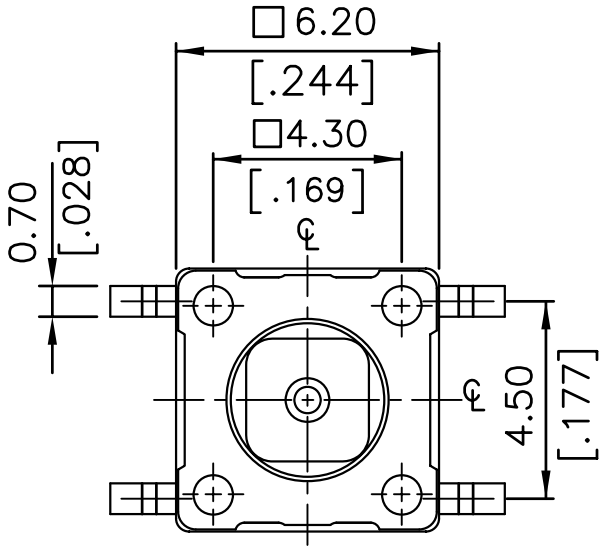
Color Of Stem For Operating Force:
K = Black ,100g
N = Brown ,160g
R = Red ,260g
S = Salmon,320g
Y = Yeelow,520g

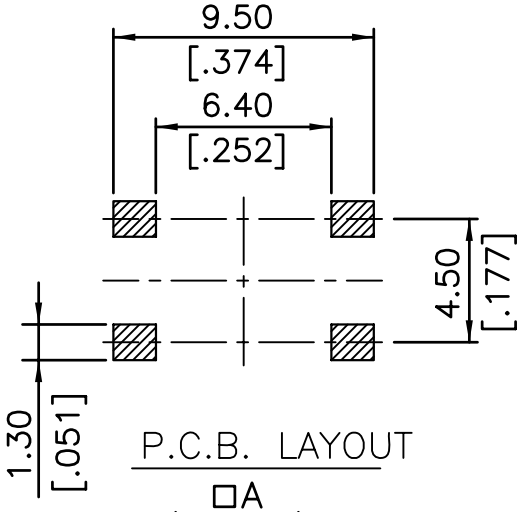
A	DWG.REL	
REV.	ECO. NO.	APPD.

TITLE: TACTILE SWITCH SMT/NON-WASHABLE TYPE	APPD. :	
	CHKD. :	
PRROD NO.:DTS□-6□□□-□-V-□	PR. : 楊佩儒	
FILE NO.: E-V-CT04	REV :A	SHEET:1 of 1

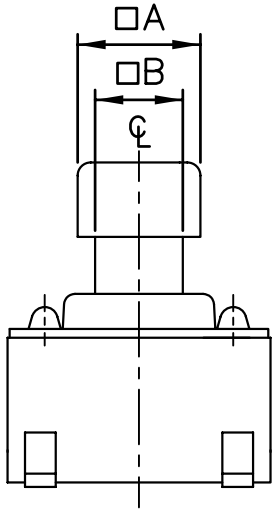
NOTE:

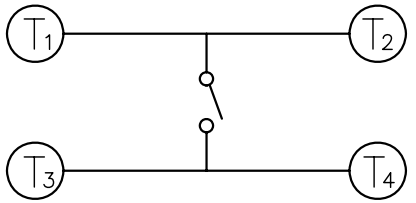
1. *ALL DIMENSIONS ARE IN MILLIMETERS, BRACKETED DIMENSIONS ARE IN INCHES.*
2. *GENERAL TOLERANCES MAX.±0.20mm.*
3. *MATERIAL & □ : SEE PAGE 3 OF 3.*



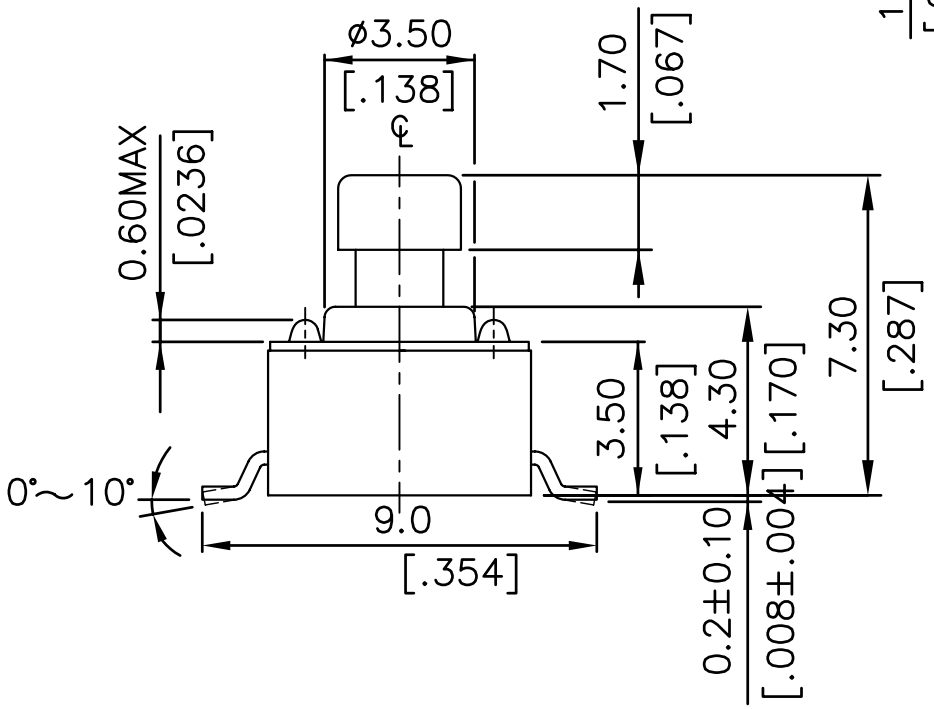


P.C.B. LAYOUT





CIRCUIT DIAGRAM



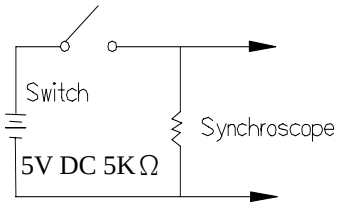
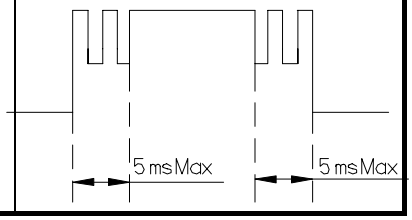
PROD. NO.	LOC.	MM.	INCH.
DTSM-644□-(G)-V	□A	2.4	[.095]
	□B	1.6	[.063]
DTSM-648□-(G)-V	□A	2.8	[.110]
	□B	2.0	[.079]

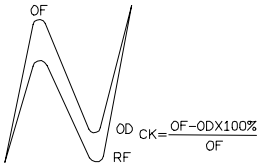
DIMENSION

ZONE	REV	DESCRIPTION	DATE	APPD.
⚠	A	DWG.REL.		

APPD:	Q'TY:	圜達實業股份有限公司 DIPTRONICS MANUFCTURING INC.	PART NAME: *TACTILE SWITCH 6X6 (MECHANICAL CONTACT TYPE)*
CHKD:	SCALE: 8 : 1		
DR:	REV: A UNITS: mm	PART NO: DTSM-64□□(-G)-V	MAT'L:
DESIGN:			FINISH:
			DWG NO: RD5P64M-V

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℃+70℃
   1.2 Storage Temperature Range : -30℃+80℃
2. Current Range: 50mA, 12 VDC
3. Type of Actuation: Tactile feedback
4. Test Sequence:

	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
APPEARANCE	1	Visual Examination	By visual examination check without any out pressure & testing.	There shall be no defects that affect the serviceability of the product.
ELECTRIC PERFORMANCE	2	Contact Resistance	Applying a static load 1.5~2 times the operating force to the center 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 ±10kHz	5 pF max.
	6.	Bounce	3 to 4 operations at a rate of 1 cycles per second 	5 m seconds max. 

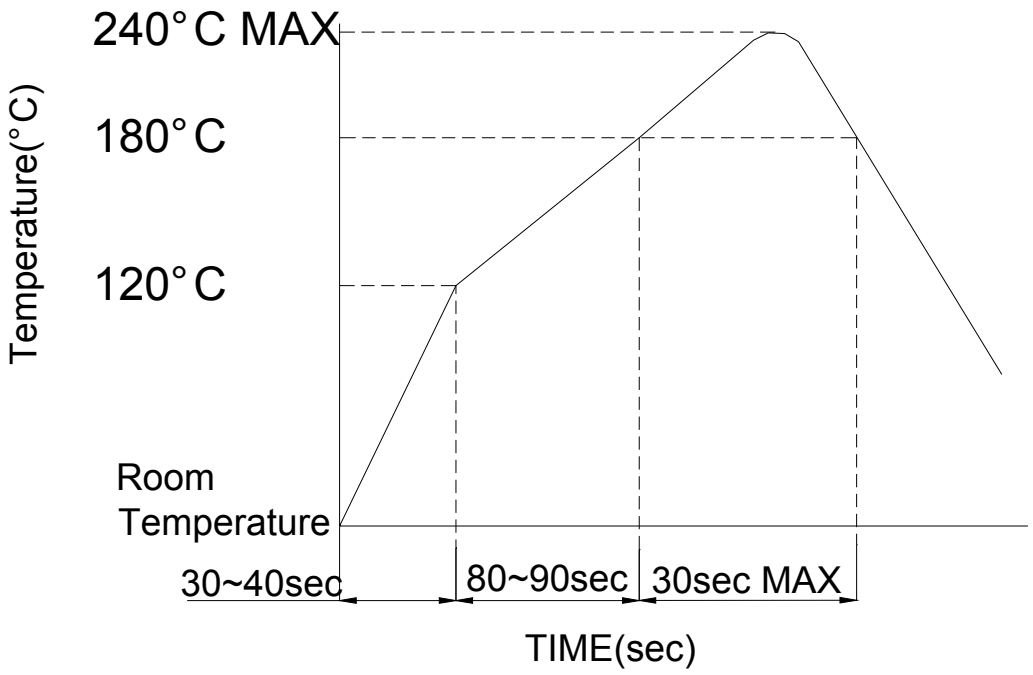
MECHANICAL PERFORMANCE	7.	Operating Force & Return Force	Applied in the direction of operation. 	OF	100±50 [.98N±.49N]	160±50 [1.568N±.49N]	260±50 [2.548N±.49N]	320±80 [3.136N±.784N]	520±130 [5.096N±.1.27N]
				RF	10g↑ [.098N↑]	20g↑ [.196N↑]	30g↑ [.294N↑]	40g↑ [.392N↑]	60g↑ [.588N↑]
	8.	Stroke	Placing 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.	6x6～0.25 +0.2/-0.1 ㎜					
	9.	Stop Strength	Placing the switch such that the direction of switch operation is vertical, a static load of 3 kgf shall be applied in the direction of stem operation for a period of 15 seconds	As shown item 2~7					
	10.	Solder Heat Resistance	■Through Hole Type ①Soldering Temperature:260 ±5℃ ②Duration of Solder Immersion: 5 ± 1 seconds. ③Frequency of Soldering Process 2 times max. (PCB is 1.6 ㎜ in thickness)	①Shall be free from pronounced backlash and falling-off or breakage terminals ②As shown in item 2~5					
	11.	Vibration	Shall be vibrated in accordance with Method 201A of MIL-STD-202F ①Frequency: 10-55-10Hz in 1-min/cycle. ②Direction: 3 vertical directions including the directions of operation ③Test time: 2 hours each direction. ④ Swing distance=1.5mm	As shown in item 2~7					

MECHANICAL PEREORMANCE	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	As shown in item 2~7
	13	Solderability	1)DTS*-6 Soldering Temperature: 230±5℃ 2)DTS*-6 Soldering Temperature: SEE PAGE 5/5 3)Flux: 5-10 sec. 4)Duration of solder Immersion: 3±0.5sec.	No anti-soldering and the coverage of dipping into solder must more than 66% was requested.
DURABILITY	14	Operating Life	Measurements shall be made following the test forth below: 1)5 mA,5 VDC resistive load 2)Applying a static load the operating force to the center of the stem in the direction of operation Static Load = OF max. 3)Rate of Operation: 1 operation 2 second 4)Cycle of Operation: 1000,000 cycle's min. For 100,160gf 500,000 cycle's min. For 260gf 300,000 cycle's min. For 320,520gf	1)As shown in item 4、5 2)Operating force:±50% of initial force and RF follow item 7. 3)Contact Resistance: 200mΩ Max 4)Insulation Resistance: 10MΩ min 5)Bounce: 10 m seconds Max

WEATHER-PROOF	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: ①Temperature:-25±3℃ ②Time:96 hours	As shown in item 2~7
WEATHER-PROOF	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: ①Temperature:80±2℃ ②Time:96 hours	As shown in item 2~7
	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: ①Temperature:40±2℃ ②Relative Humidity:90~95% ③ Time:96 hours	①As shown in item 4~7 ②Contact Resistance: 200mΩ Max ③Insulation Resistance: 10MΩ min

5. SOLDERING CONDITIONS:

■ Condition for Soldering –DTS* 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 240℃.

■ Manual Soldering

Soldering Temperature	Max.350℃
Continuous Soldering Time	Max. 3 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