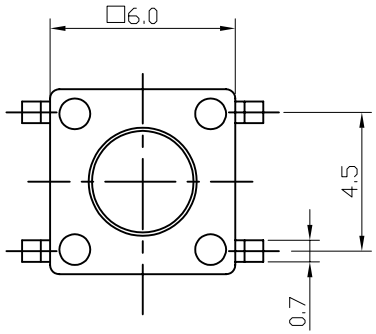
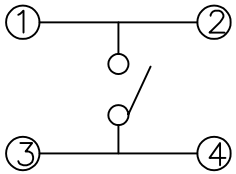
DWG. NO. SW-2573-F REV. "B"

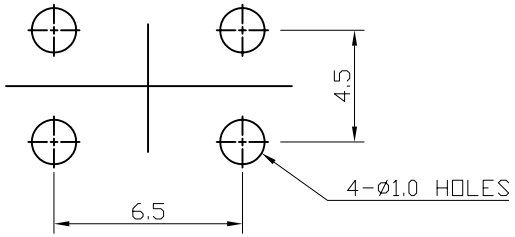
PART NO. RTS-1214X-YYY-NL

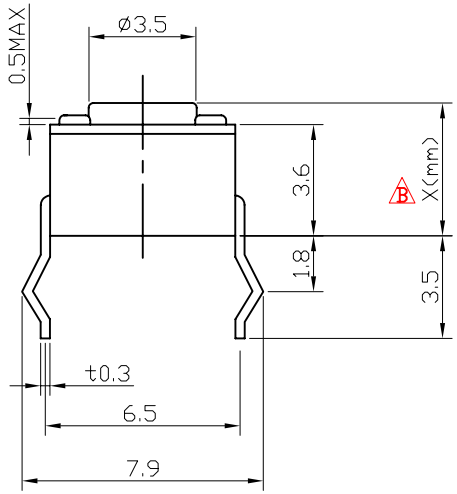


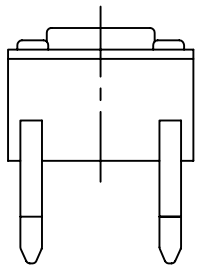
CIRCUIT DIAGRAM



P.C.B LAND PATTERN







X	L(mm)
	4.3
A	5.0
B	7.0
C	8.0
D	9.5
E	7.3
F	12.5
G	13.5
H	9.7
I	17.0
J	16.3
k	13.0
M	8.5

SPECIFICATION:

1. RATING: DC12V max.,50mA
2. PART NUMBER: RTS-1214X-YYY-NL
   X=ACTUATOR HEIGHT [-A-K]
   YYY=ACTUATOR FORCE [100,130,160±30gf
   OR 250,350±50gf]
   NL=RoHS COMPLIANT
3. TRAVEL: 0.25±0.1mm
4. CONTACT RESISTANCE: 100mOHM MAX
5. LIFE: 100000 CYCLES Min.
   50000 CYCLES Min. FOR 350±50gf
6. ALL DIMS ARE IN mm.

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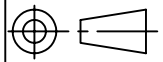
PROJECTION



SCALE N/A

TOLERANCE EXCEPT AS NOTED

DEC. MILLIMETERS N/A

DEC. INCHES ±0.3

ANG. N/A

RDI Research Develop Innovate

RDI, Inc. 400 Columbus Avenue Valhalla, NY 10595

TITLE: TACT SWITCH-THRU HOLE-RoHS COMPLIANT

DR.	DATE	REF.	SHEET
Jin	09/27/05	P/N: RTS-1214X-YYY-NL	1 OF 4

CK.	PRE-	DRAWING NO.	SIZE	REV.
JY	SW	2573	F	B

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DWG. NO. SW-2573-F REV. "B"

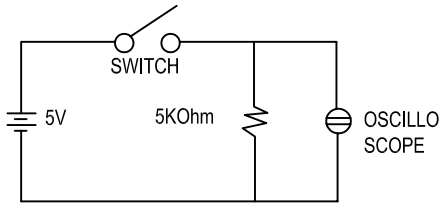
PART NO. RTS-1214X-YYY-NL

1. GENERAL

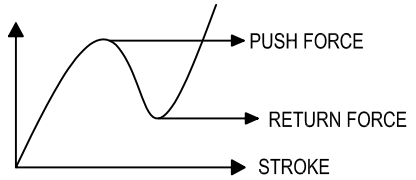
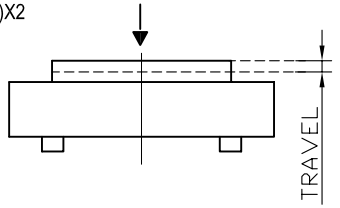
1.1 SWITCH ACTION: PUSH-ON TYPE S.P.S.T
1.2 SWITCH RATINGS: DC 12V,50mA MAX.
1.3 OPERATION TEMPERATURE RANGE: -20℃~70℃
1.4 PRESERVATIVE TEMPERATURE RANGE: -30℃~80℃
1.5 APPEARANCE AND DIMENSIONS: SEE OUTSIDE DRAWING PAGE
1.6 STANDARD CONDITIONS: UNLESS OTHERWISE SPECIFIED,THE TEST AND MEASUREMENTS SHALL BE CARRIED OUT AS FOLLOWS:
1-6-1 AMBIENT TEMPERATURE: 5~35℃
1-6-2 RELATIVE HUMIDITY: 45~85% RH
1-6-3 AIR PRESSURE: 86~106KPa(860~1060mbar)
HOWEVER,IF DOUBT ARISED ON THE DECISION BASED ON THE MEASURED VALUES UNDER THE ABOVE-MENTIONED CONDITIONS,THE FOLLOWING CONDITIONS SHALL BE EMPLOYED.
1-6-4 AMBIENT TEMPERATURE: 20±2℃
1-6-5 RELATIVE HUMIDITY: 65±5% RH
1-6-6 AIR PRESSURE: 86~106KPa(860~1060mbar)

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.	100mOhm 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.	100MOhm MIN
2.1.3	DIELECTRIC WITHSTAND VOLTAGE	AC 250V(50Hz OR 60Hz) SHALL BE APPLIED 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' 	5mSEC MAX

2-2 MECHANICAL CHARACTERISTICS

No	ITEM	TEST CONDITIONS	PERFORMANCE
2.2.1	OPERATING FORCE	PUSH BY RECOMMENDED OPERATING CONDITION. 	
2.2.2	TRAVEL	PUSH BY RECOMMENDED OPERATING CONDITION. F=(OPERATION FORCE)X2 	0.2±0.1mm
2.2.3	STOP STRENGTH	ASTATIC LOAD OF 3Kgf 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.	3 Kgf MIN
2.2.5	VIBRATION TEST	1) AMPLITUDE: 1.5mm 2) SWEEP RATE: 10-55-10Hz 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.

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PROJECTION

SCALE N/A

TOLERANCE EXCEPT AS NOTED
DEC. MILLIMETERS N/A
DEC. INCHES N/A
ANG. N/A

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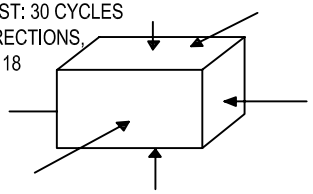
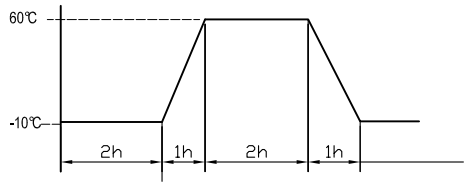
No	ITEM	TEST CONDITIONS	PERFORMANCE
2.2.6	IMPACT SHOCK TEST	1) ACCELERATION: 80g 2) CYCLE OF TEST: 30 CYCLES EACH IN 6 DIRECTIONS, FOR A TOTAL 18 CYCLES 	No. 2.1 AND 2.2.1 TO 2.2.2 SHALL BE SATISFIED.
2.2.7	SOLDERING HEAT TEST	1) SOLDERING AREA: t/2 OF P.W.B THICKNESS(P.W.B t=1.6) 2) SOLDERING TEMPERATURE: 260±5℃ 3) SOLDERING TIME: 5±1 SEC	NO DAMAGE (ELECTRICAL AND MECHANICAL)

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: 200mOhm 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 CONDITION AFTER TEST: 1 HOUR	
2.3.3	TEMPERATURE CYCLE	1) TEST CYCLES: 5 CYCLES 2) STANDARD CONDITION AFTER TEST: 1 HOUR 3) 1 CYCLES 	
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 CONDITION AFTER TEST: 1 HOUR	
2.3.5	OPERATING LIFE TEST	1) DC 5V,5mA RESISTANCE LOAD 2) OPERATION SPEED: 2-3 CYCLES/SEC 3) PUSH FORCE: MAXIMUM VALUE OF OPERATION FORCE 4) CYCLE OF OPERATION: 50000 CYCLES	CONTACT RESISTANCE: 200mOhm MAX. BOUNCE: 10m SEC MAX ACTUATING FORCE: ±30% INITIAL FORCE No 2.1.2 TO 2.1.3 AND 2.2.2 SHALL BE SATISFIED.

No	ITEM	TEST CONDITIONS	PERFORMANCE
2.3.6	WITHSTAND H_2S	1) DENSITY: 3±1 ppm 2) TEMPERATURE: 40±2℃ 3) RELATIVE HUMIDITY: 90-95% 4) DURATION OF TEST: 24 HOURS 5) STANDARD CONDITIONS AFTER TEST: 1 HOUR	CONTACT RESISTANCE: 200mOhm MAX. No 2.1.2 TO 2.1.4 AND 2.2.1 TO 2.2.2 SHALL BE SATISFIED.
2.3.7	WITHSTAND SO_2	1) DENSITY: 10±2 ppm 2) TEMPERATURE: 40±2℃ 3) RELATIVE HUMIDITY: 90-95% 4) DURATION OF TEST: 24 HOURS 5) STANDARD CONDITIONS AFTER TEST: 1 HOUR	

3. SOLDERING

3.1 AUTO SOLDERING CONDITIONS

ITEM	CONDITION
PREHEAT TEMPERATURE	110℃ MAX(ENVIRONMENTAL TEMPERATURE OF SOLDERING SURFACE OF P.W.B)
PREHEAT TIME	60 SEC MAX
AREA OF FLUX	1/2 MAX OF P.W.B THICKNESS
TEMPERATURE OF SOLDER	255℃ MAX
TIME OF IMMERSION	WITHIN 5 SEC
SOLDERING NUMBER	WITHIN 2 TIMES(BUT SHOULD BRING DOWN HEAT OF THE FIRST SOLDERING)
PRINTED WIRING BOARD	SINGLE SIDED COPPER-CLAD LAMINATES

1) AFTER SWITCHES ARE SOLDERED,PLEASE BE CAREFUL NOT TO CLEAN SWITCHES WITH SOLVENT.
2) IN THE CASE OF USING SOLDERING IRON,SOLDERING CONDITIONS SHALL BE 280℃ MAX AND 3 SEC MAX.
3) AFTER SWITCHES ARE SOLDERED,PLEASE BE CAREFUL NOT TO LOAD THE KNOBS OF SWITCHES.

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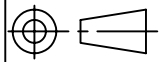
PROJECTION 

SCALE N/A

TOLERANCE EXCEPT AS NOTED

DEC. MILLIMETERS N/A

DEC. INCHES N/A

ANG. N/A

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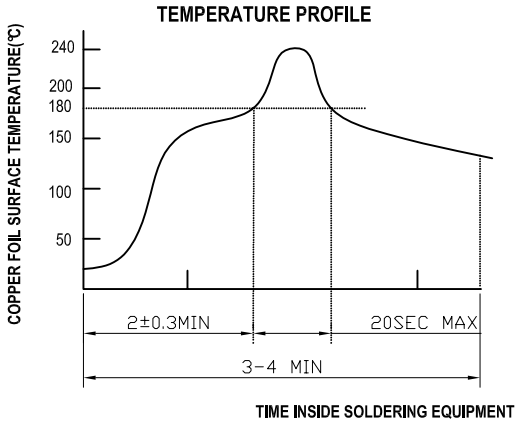
3.2 MANUAL SOLDERING CONDITIONS
TEMPERATURE: 260±5℃
TIME: 3 SEC MAX

3.3 REFLOW SOLDERING CONDITIONS
PREHEAT: TEMPERATURE ON THE COPPER FOIL SURFACE SHOULD REACH 180℃,2±0.3 MINUTES AFTER THE P.W.B ENTERED INTO THE SOLDERING EQUIPMENT
SOLDERING HEAT: TEMPERATURE ON THE COPPER FOIL SURFACE SHOULD REACH THE PEAK TEMPERATURE OF 240℃ WITHIN 30 SECONDS AFTER THE P.W.B ENTERED INTO SOLDERING HEAT ZONE.



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