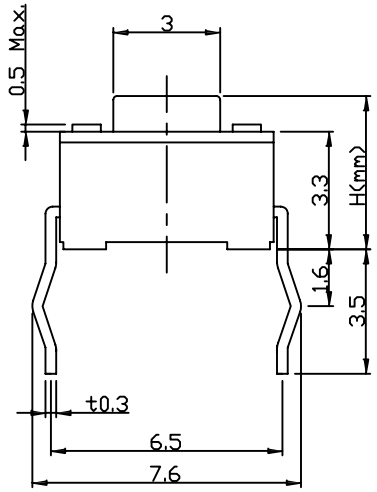
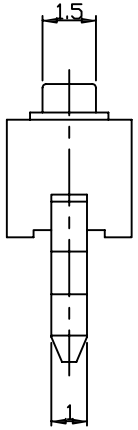
DWG. NO. SW-1580-F REV "A"

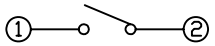
PART NO. RTS-1114X-XXX-NL

DIMENSIONS





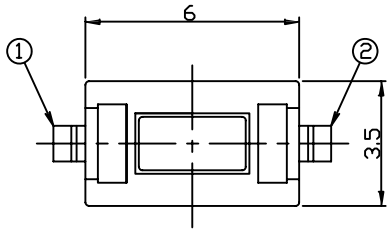
CIRCUIT DIAGRAM

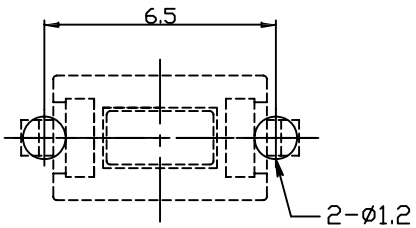


PRODUCT IMAGE

P.C.B MOUNTING PATTERN DIMENSION

The following soldering patterns are recommended for reflow soldering

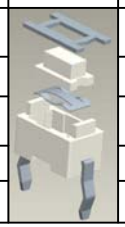




ELECTRO-MECHANICAL CHARACTERISTICS

Refer to additional specifications

Rating	DC 12V 50mA	
Contact Resistance	100mΩ Max.	
Travel	0.25 ± 0.1mm	
Operating Force	160±30gf	250±50gf
Operating Life(cycles)	50,000	30,000
General Tolerance	±0.3	

No	Part Image	Part Name	QT'Y	Material	Specification
1		Cover	1	Brass (Sn plate 1-3 μ)	C2680R-EH t0.3
2		Stem1	1	PolyAmide	PA6T
3		Contact	1	Stainless (Ag clad 0.3 μ)	SUS304-EH t0.1
4		Case	1	PolyAmide	PA6T
5		Terminal	1	Brass(Ni 0.3μ Ag plate 0.5 μ)	C2680R-EH t0.3

RTS – 1114 X – XXX-NL
1 2 3 4 5

1-Series Reference Number
2-Model Number
3-Total Height:
X= A – 4.3mm
B – 5.0mm
4-OPERATING FORCE:
XXX= 160gf or 250gf
5-ROHS COMPLIANT

ECN#	DATE	SYM	REVISION RECORD	AUTH	BY
12-013	02/10/12	A	CHANGE THE VIEW AND ADD SPECIFICATIONS	MD	TL

PROJECTION

SCALE 3:2

TOLERANCE EXCEPT AS NOTED
DEC. MILLIMETERS
0.00±0.25mm
0.0±0.40mm
0±1.00mm
ANG. N/A

RDI Research Develop Innovate

RDI, Inc. 333 North Bedford Road, Suite 135, Mount Kisco, NY 10549

TITLE: Rohs Compliant Tact Switch

DR.	DATE	REF.	SHEET
RDIC	11/21/03	P/N: RTS-1114X-XXX-NL	1 OF 3

CK.	PRE-	DRAWING NO.	SIZE	REV.
SL	SW	1580	F	A

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DWG. NO. SW-1580-F REV "A"

PART NO. RTS-1114X-XXX-NL

1. General

1.1 Application This specification is applied to TACT switches which have no keytop.

1.2 Operating temperature range

: -20 ~ 70 ℃ (normal humidity,normal air pressure)

1.3 Storage temperature range

: -30 ~ 80 ℃ (normal humidity,normal air pressure)

1.4 Test conditions Unless otherwise specified, the atmospheric conditions for marking measurements and tests are as follows

Normal temperature : (Temperature 5 ~ 35 ℃)
Normal humidity : (Relative humidity 25 ~ 85%)
Normal air pressure : (Air pressure 86 ~ 106kPa)

If any doubt arise from judgement, tests shall be conducted at the following conditions.

Ambient temperature : 20 ±2 ℃
Relative humidity : 60 ~ 70%
Air pressure : 86 ~ 106kPa

2. Appearance,style and dimensions

2.1 Appearance There shall be no defects that affect the serviceability of the product.

2.2 Style & dimensions Refer to the assembly drawings.

3. Type of actuating Tactile feedback

4. Contact arrangement 1 pole 1 throw

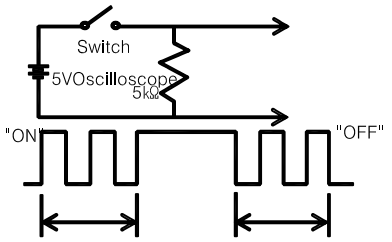
(Details of contact arrangement are given in the assembly drawings)

5. Rating

5.1 Maximum ratings 12 V DC 50 mA

5.2 Minimum ratings 1 V DC 10 μA

6. Electrical specification

	ITEMS	TEST CONDITIONS	CRITERIA
6.1	Contact resistance	Applying a blow static load to the center of the stem, measurements shall be made. (1) Depression : 520 gf (5.096 N) (2) Measuring method : 1 kHz small-current contact resistance meter or voltage drop method at 5V DC 10mA.	100 mΩ Max.
6.2	Insulation resistance	Measurements shall be made following the test set forth below : (1)Test voltage : 100 V DC for 1 min (2)Applied position : Between all terminals.And if there is a metal frame,between terminals and ground(frame)	100 MΩ Min.
6.3	Voltage proof	Measurements shall be made following the test set forth below : (1)Test voltage : 100 V AC (50 ~ 60Hz) (2)Duration : 1 min (3)Applied position : Between all terminals.And if there is a metal frame,betweenterminals and ground(frame)	There shall be no breakdown.
6.4	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". 	ON bounce : 10 ms Max. OFF bounce : 10 ms Max.

7. Mechanical specification

	ITEMS	TEST CONDITIONS	CRITERIA
7.1	Operating Force	Placing the switch such that the direction of switch operation is vertical and then gradually increasing the load applied to the center of the stem,the maximum load required for the switch to come to a stop shall be measured.	160 ± 30 gf 250 ± 50 gf 520 ± 70 gf
7.2	Travel	Placing the switch such that the direction of switch] operation is vertical and then applying static load to the center of the stem,the travel distance for the switch to come to a maske "ON" shall be measured.	0.25 ±0.1 mm
7.3	Return force	The sample switch is installed such that the direction of switch operation is vertical and,upon depression of the stem in its center the travel distance,the force of the stem to return tot its free position shall be measured.	40 gf Min. (0.39 N Min.)
7.4	Stop strength	Placing the switch such that the direction of switch operation is vertical and then a below static load shall be applied in the direction of stem operation. (1) Depression : 3 Kgf (29.4 N) (2) Duration : 3 s	There shall be no sign of damage mechanically and electrically.

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PROJECTION

SCALE 3:2

TOLERANCE EXCEPT AS NOTED
DEC. MILLIMETERS
0.00±0.25mm
0.0±0.40mm
0±1.00mm
ANG. N/A

RDI Research Develop Innovate

RDI, Inc. 333 North Bedford Road, Suite 135, Mount Kisco, NY 10549

TITLE: Rohs Compliant Tact Switch

DR.	DATE	REF.	SHEET
RDIC	11/21/03	P/N: RTS-1114X-XXX-NL	2 OF 3

CK.	PRE-	DRAWING NO.	SIZE	REV.
SL	SW	1580	F	A

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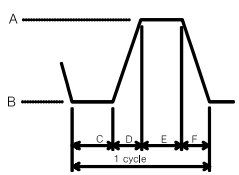
DWG. NO. SW-1580-F REV "A"

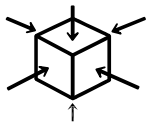
PART NO. RTS-1114X-XXX-NL

8. Environmental specification

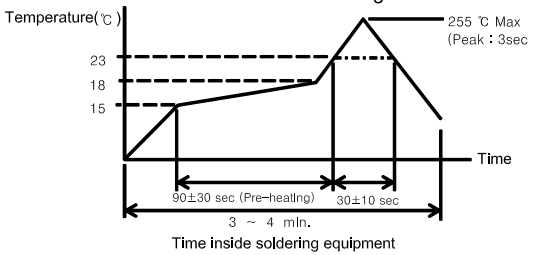
	ITEMS	TEST CONDITIONS	CRITERIA
8.1	Resistance to low temperatures	Following the test set forth below the sample shall be left in normal temp' and humidity conditions for 1 hour before measurements are made: (1) Temperature : -30 ± 2°C (2) Time : 96 h (3) Waterdrops shall be removed.	Item 6. Item 7.1 Item 7.2
8.2	Heat resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before measurements are made: (1) Temperature : 80 ± 2 °C (2) Time : 96 h	Item 6. Item 7.1 Item 7.2
8.3	Moisture resistance	Following the test set forth below the sample shall be left in normal temperature and humidity condition for 1 hour before measurements are made: (1) Temperature : 60 ± 2°C (2) Time : 96 h (3) Relative humidity : 90 ~ 95 % (4) Waterdrops shall be removed.	Contact resistance (Item 6.1):200 mΩ Max. Insulation resistance (item 6.2) :10 MΩ Min. Bounce (Item 6.4) :ON bounce 20 ms Max. :OFF bounce 20 ms Max. Item 6.3,7.2,7.1
8.4	Change of temperature	After the test by following conditions, the switch shall be allowed to stand under normal room temperature and humidity conditions for 1 hour, and measurement shall be made. Water drops shall be removed. (1) Times of cycles : 5 times  A = 60°C B = −10°C C = 2 h D = 1 h E = 2 h F = 1 h	Item 6. Item 7.1 Item 7.2

9. Endurance specification

	ITEMS	TEST CONDITIONS	CRITERIA
9.1	Operating life	Measurements shall be made following the test set forth below : (1) 5 V DC 5 mA resistive load (2) Rate of operation : 2 to 3 operations per sec. (3) Depression : The maximum load of a specification of the operating force. (4) Cycles of operation : 50,000 cycles / 160gf : 30,000 cycles / 250gf : 10,000 cycles / 520gf	Contact resistance (Item 6.1): 200 mΩ Max. Insulation resistance (item 6.2) :10 MΩ Min. Bounce (Item 6.4) :ON bounce 20 ms Max. :OFF bounce 20 ms Max. Operating force(Item 7.1) : ±30% of initial force Item 6.3,7.2

	ITEMS	TEST CONDITIONS	CRITERIA
9.2	Vibration resistance	Measurements shall be made following the test set forth below: (1) Vibration frequency range : 10 ~ 55 Hz (2) Total amplitude : 1.5 mm (3) Sweep ration : 10-55-10 Hz Approx. 1 min (4) Method of changing the sweep vibration frequency : Logarithmic or uniform (5) Duration : 2 h each	Item 6. Item 7.1 Item 7.2
9.3	Shock	Measurements shall be made following the test set forth below: (1) Acceleration : 784 m/s² (2) Test direction : 6 directions (3) Number of shocks : 3 times per direction (18 times in total) 	Item 6. Item 7.1 Item 7.2

10. Soldering conditions

	ITEMS	RECOMMENDED CONDITIONS
10.1	Hand soldering	Please practice according to below conditions. (1) Soldering temperature : 350 ℃ Max. (2) Continuos soldering time : 3 seconds Max. (3) Excessive pressure shall not be applied to the terminal.
10.2	Reflow soldering	Please practice according to below conditions. (1) Preheat : Temperature on the copper foil surface should reach 180℃, 2 ± 0.3 minutes after the PCB entered into the soldering equipment (2) Soldering heat : Temperature on the copper foil surface should reach the peak temperature of 255 ℃ within 30 seconds after the PCB entered into soldering heat zone.  Time inside soldering equipment

ECN#	DATE	SYM	REVISION RECORD	AUTH	BY
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PROJECTION

SCALE 3:2

TOLERANCE EXCEPT AS NOTED
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0.00±0.25mm
0.0±0.40mm
0±1.00mm
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