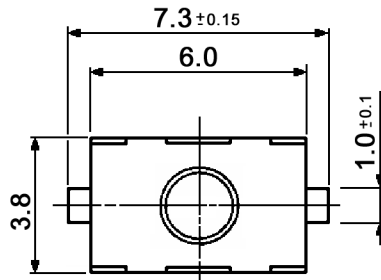
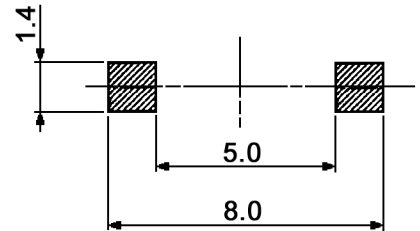
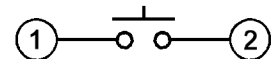


P.C.B. LAYOUT



CIRCUIT DIAGRAM



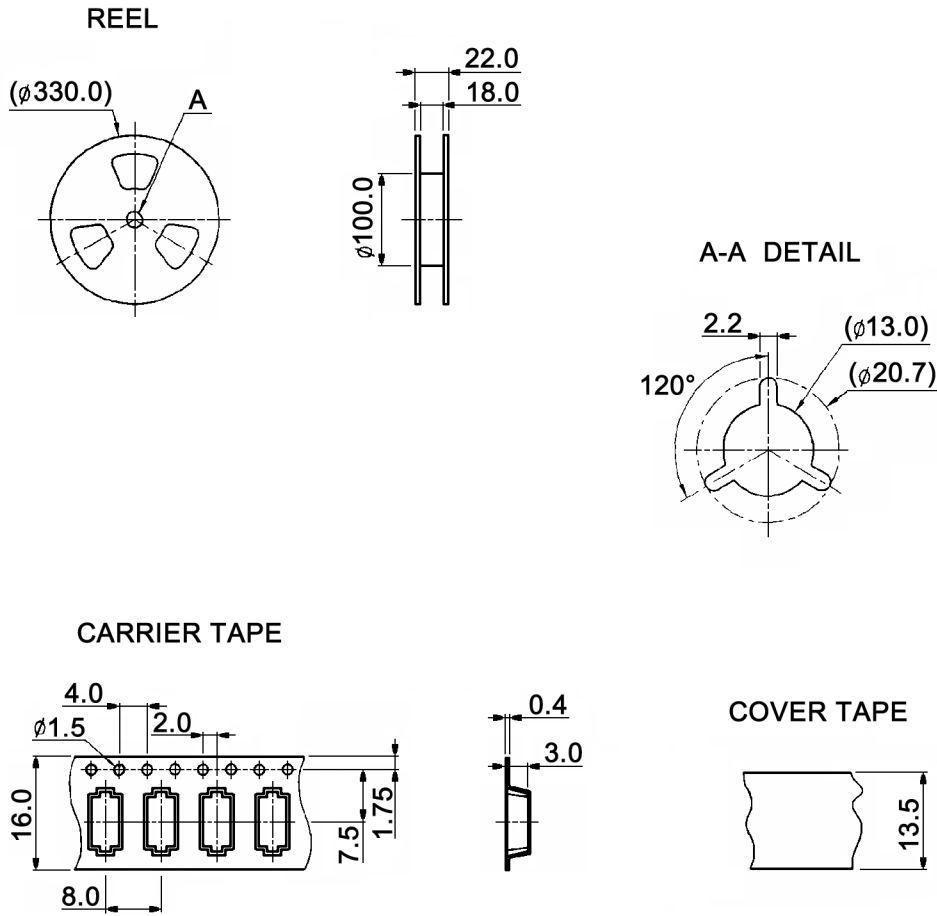
Specifications:

Contact rating:	min. 20mV, max. 32V DC
Switching current:	min. 1mA, max. 50mA
Switching power:	max. 1VA
Contact resistance:	100mOhm max.
Insulation resistance:	100MOhm min. at 100V DC for 1 minute
Dielectric strength:	100V AC for 1 minute (50/60Hz, 2mA)
Operating temperature:	-20°C to +70°C
Operating force:	1.8 +/-0.5N
Actuator strength:	30N for 1 minute
Mechanical life:	1 000 000 cycles
Soldering heat resistance:	reflow soldering: 240°C +/-5°C, 5sec. max.
Packaging:	2500 pcs./reel
Material:	Terminal: C5191R-EH, Ag Case: PA46, black Contact plate: SUS, Ag Cover: SUS, washing Stem: PA46, blue

Compliance: RohS II (2011/65/EU)

Tolerances: ±0.2mm		Date	Name	<h1>TSS 309 N</h1>	
		04/06	dr		
Specifications	10/14	dr			
Specifications	09/09	dr			
Actuator strength	05/08	dr	<h2>30 08 46</h2>	Page	
Operating temperature	04/08	dr		<b>knitter-switch</b>	1/4
Mechanical life	01/07	dr			
Modifications	Date	Name			

Packaging:



Packaging unit: 2 500 pcs. / reel  
 Compliance: RohS II (2011/65/EU)

Tolerances: ±0.2mm	Date	Name	<h1>TSS 309 N</h1>
	09/09	dr	
			<h2>30 08 46</h2>
Modifications	Date	Name	Page 2/4

**knitter-switch**

1. General test conditions:

- Unless otherwise stated test and measurement shall be done under following conditions.
  - Test & measure temperature: 20+/-2°C
  - Relative humidity: 65+/-5%
  - Atmospheric pressure: 860-1060mBar
- Component has to approve on mechanical and electrical properties before and after following tests.  
 Components will be tested on a proof board, soldered with described reflow and wave process.  
 After treatment (for reflow board only): coating (see appendix 2).
- Operating test: A switch shall subject to 1 000 000 cycles at a speed of 60 to 90 cycles per minute  
 Without load (Test direction see appendix 1).
  - Contact resistance: Less than 500mOhm
  - Insulation resistance: More than 10MOhm after 100V DC is applied for 1 minute
  - Withstand voltage: Withstand 100V AC for 1 minute
  - Operating force: Relative to the previously specified value +/-25%
- Resonance and shock test (components mounted on PCB) acc. To GTSS 8.18.2
- Thermal tests:
  - Operating temp. range: -40°C to +90°C test acc. To GTSS 6.4.6.5
  - Store temp. range: -55°C to +90°C test acc. To GTSS 6.1.6.3
- Environmental humidity test:
  - Test acc. To GTSS 6.1 (EC 68-2-30), 6.2
  - Vapour exposure acc. GTSS 9.1

2. Electrical properties:

- Maximum power: 1VA
- Maximum voltage: 32V DC
- Minimum voltage: 20mV
- Maximum current DC: 50mA
- Minimum current DC: 1mA
  
- Contact resistance: 100mOhm less
- Insulation resistance (100V): 10<sup>9</sup>Ohm
- Bounce time equal or less than: 1ms

3. Mechanical properties:

- Total height of component: 2.5 +/-0.15mm
- Switch components have to be full filled (acc. to drawing) to protect inside of switch from flux and coating
- During stroke of knob: no rotation of knob permitted
- Actuating force: 1.8 +/-0.5N
- Stroke: 0.25 +/-0.15mm
- Reposition force: 1.2N
- Static push-force: 30N during 1 minute. No mechanical damage in mechanism shall occur

Compliance: RohS II (2011/65/EU)

Tolerances: ±0.2mm	Date	Name	<b>TSS 309 N</b>	<b>30 08 46</b>	Page
	09/09	dr			
			<b>knitter-switch</b>	<b>30 08 46</b>	3/4
Modifications	Date	Name			

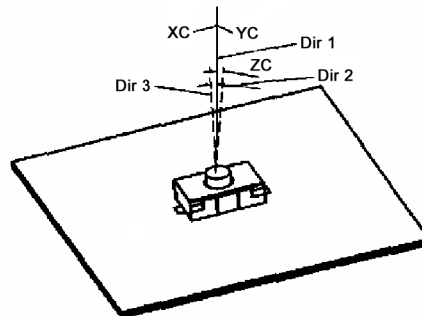
#### 4. Process properties:

- Packaging: continuous tape & reels, 330mm diameter in reels of 2 500 pieces
- More than ¾ of immersed part of terminal shall be covered with solder
- Compatible with pick & place machines (vacuum nozzle)
- Resistant against from fluxing (flux type: RF800 alpha metals)
- Proof against wave soldering max. 265°C during 5sec. (solder type: SnAgCu 405)
- Proof against reflow soldering: peak temp. 280°C
- Proof against coating ( see appendix 2):
  - Manufacturer: Emerson and Cuming
  - Type: Eccocoat U7510
  - Viscosity: 2.0-3.5 Pa-sec (at 25°C)

#### 5. Environmental issues:

- Component:
  - Must be free from cadmium
  - Maximum content of lead in component:
    - Pb-content of solder materials used inside the component < 1 000 ppm (weight)
    - Pb-content of solder plating on terminals < 1 000 ppm (weight)
    - Exempted:
      - Pb as alloy element in steel: up to 3 500 ppm
      - Pb as alloy element in aluminum: up to 4 000 ppm
      - Pb as alloy element in copper: up to 40 000 ppm
- Packaging:
  - Must be free from PVC

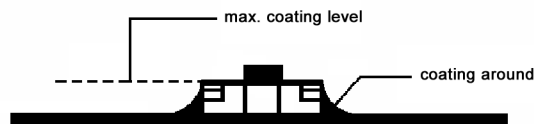
#### Appendix 1



Lifetime test direction:

1. Normal direction
2. Deviation of 5° in Y direction from Z
3. Deviation of 5° in X direction from Z

#### Appendix 2



Compliance: RohS II (2011/65/EU)

Tolerances: ±0.2mm	Date	Name	<h1>TSS 309 N</h1>	<h2>30 08 46</h2>	Page		
	09/09	dr			4/4		
					<b>knitter-switch</b>	<b>30 08 46</b>	
Modifications	Date	Name					