

# RACON 12 S, SMT, 3.6 ± 0.7 N, 1 NO

## LBL\_NRFND



### fields of application

- Measurement-control-regulation
- Mechanical and system engineering
- Automotive
- Electro-medical

### special features

- Gold contacts, reliable switching with low currents
- Special tactile feedback
- Different operating forces
- Variable overall heights due to plunger
- Terminal technology: SMT or THT
- Traceability through product identification
- sealable (tested media see Downloads)



## description

Our top-quality RACON 12 tactile switches – in the dimensions 12 x 12 mm – feature an unmistakable click, high switching reliability, a sealed contact system and castability. That has made RACON the standard in many industries. Whether for automotive applications, systems with keycaps, or membrane keyboards, RACON impresses in the THT or SMT versions – for your application too.

RACON 12 tactile switches can be arranged individually, in rows or as key blocks. When used beneath membrane overlays, the RACON key switches should be combined with plungers. Suitable for the most important soldering techniques.

Soldering bath for THT versions

Reflow soldering for SMT versions

Vapor phase soldering for SMT versions

Manual soldering

Processing of the SMT designs with SMT automatic assembly machines

IMDS entry

## technical data

### ➤ general

|                                              |                   |
|----------------------------------------------|-------------------|
| Color                                        | blue              |
| Operating temperature, min.                  | -40 °C            |
| Operating temperature, max.                  | 90 °C             |
| Storage temperature, min.                    | -50 °C            |
| Storage temperature, max.                    | 90 °C             |
| illuminated                                  | No                |
| Soldering                                    | Reflow            |
| Solder heat resistance according to standard | DIN EN 60068-2-58 |

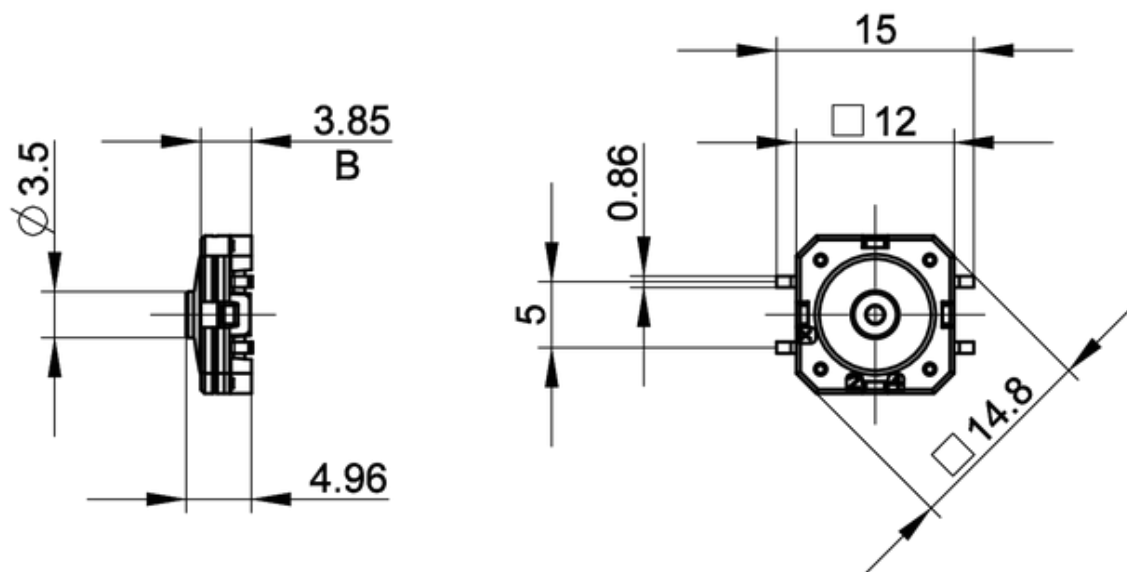
### direct links

- RAFI eCatalog

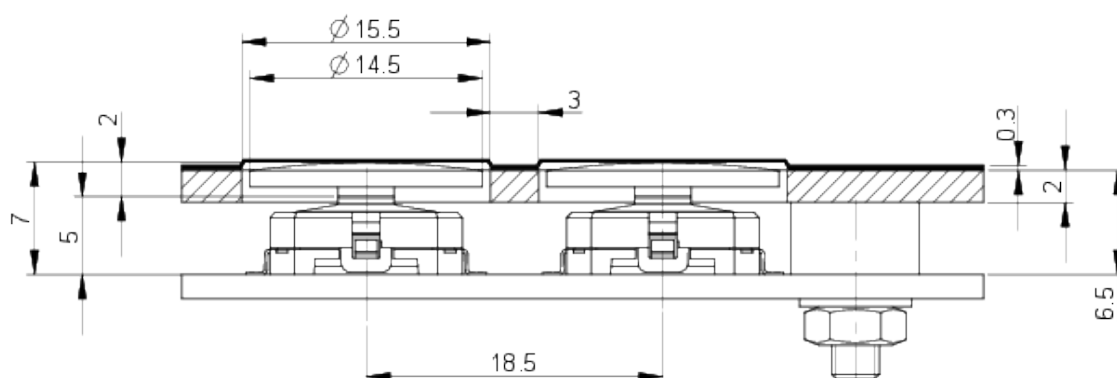
|                                                                |                                                        |
|----------------------------------------------------------------|--------------------------------------------------------|
| Packaging                                                      | Blister                                                |
| Packaging unit                                                 | 750 pcs.                                               |
| net weight                                                     | 1.5 g                                                  |
| Operating life                                                 | 1,000,000 cycles                                       |
| B10                                                            | 1,300,000 cycles                                       |
| Degree of protection, front side,<br>according to DIN EN 60529 | IP54<br>IPx7                                           |
| Degree of protection, rear side,<br>according to DIN EN 60529  | IP54<br>IPx7                                           |
| MSL Moisture Sensitivity Level                                 | 1                                                      |
| Corrosive gas testing according to<br>standard                 | Yes                                                    |
| MOQ order                                                      | 750 pcs.                                               |
| RoHS compliant                                                 | Yes                                                    |
| REACH compliant                                                | Yes                                                    |
| Component material                                             | Elastomer                                              |
| Product code                                                   | 1C                                                     |
| <b>&gt; mounting diameters</b>                                 |                                                        |
| Outside dimension, length                                      | 12 mm                                                  |
| Outside dimension, width                                       | 12 mm                                                  |
| Installation height                                            | 4.95 ± 0.1 mm                                          |
| Grid, min.                                                     | 12.50 x 15.24 mm                                       |
| <b>&gt; mechanical data</b>                                    |                                                        |
| Actuation function                                             | momentary contact function                             |
| Operating force, max.                                          | 8 N                                                    |
| Operating force, min.                                          | 3.6 ± 0.7 N                                            |
| Switching travel                                               | 0,61±0,1 mm                                            |
| Contact function                                               | 1 NO                                                   |
| Contact system                                                 | Snap-action contact<br>SPST - Single Pole Single Throw |
| Contact material                                               | Gold                                                   |
| Solderability                                                  | Yes                                                    |
| Terminal on the rear                                           | SMT                                                    |
| <b>&gt; electrical data</b>                                    |                                                        |
| Rated voltage, min.                                            | 0.02 V                                                 |
| Rated voltage, max.                                            | 35 V                                                   |
| Rated current, min.                                            | 0.00001 A                                              |
| Rated current, max.                                            | 0.1 A                                                  |
| Rated power, max.                                              | 1 W                                                    |

## drawings

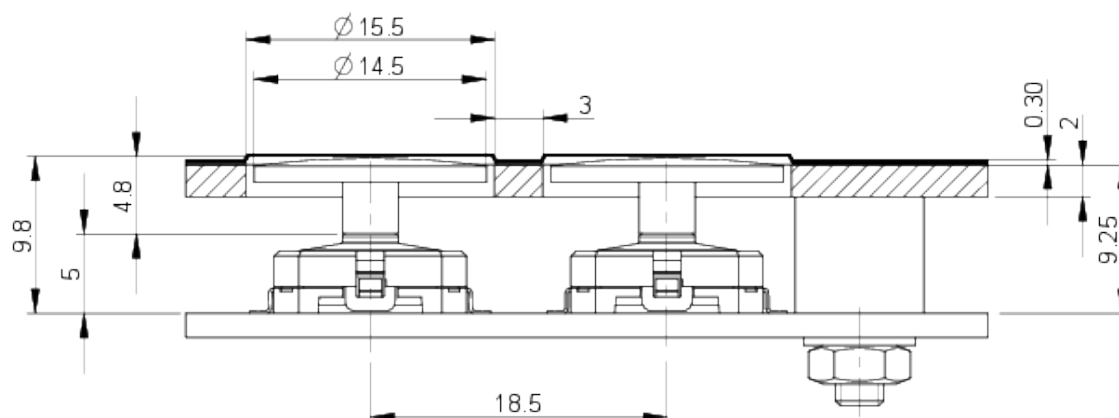
### Dimensioned drawing



### System drawing



## System drawing

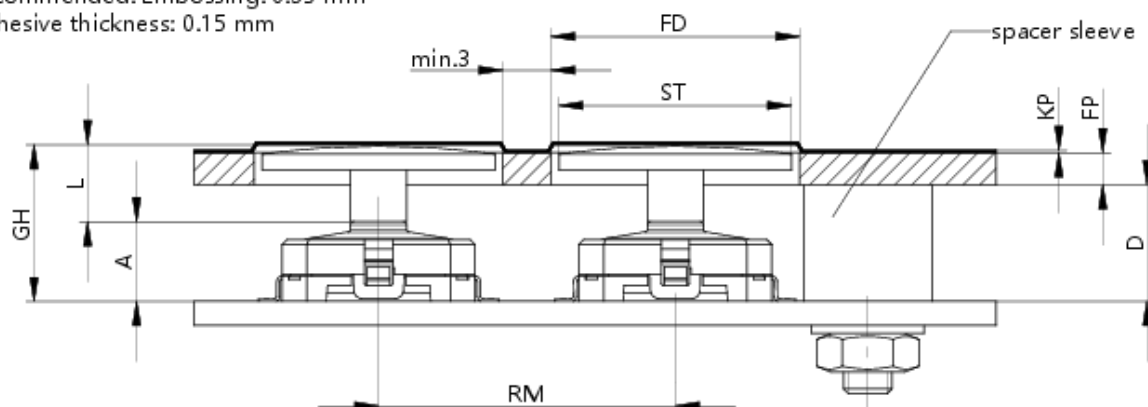


## System drawing

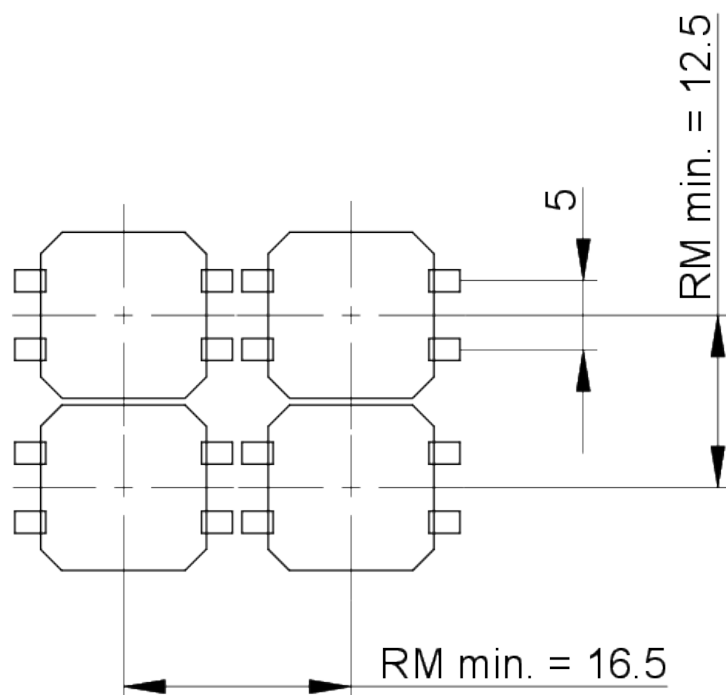
SMT gullwing connection

Recommended: Embossing: 0.35 mm

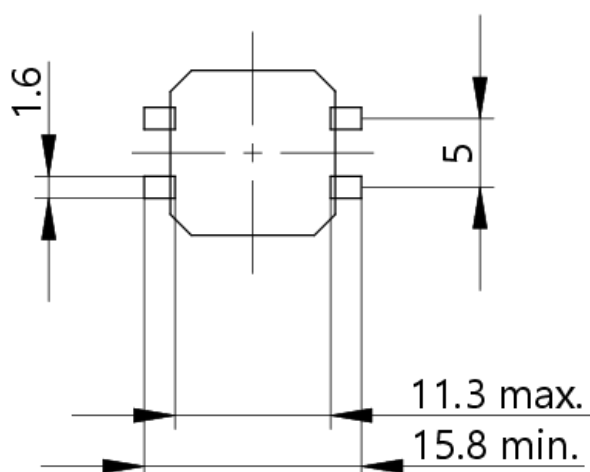
Adhesive thickness: 0.15 mm



## PCB drawing

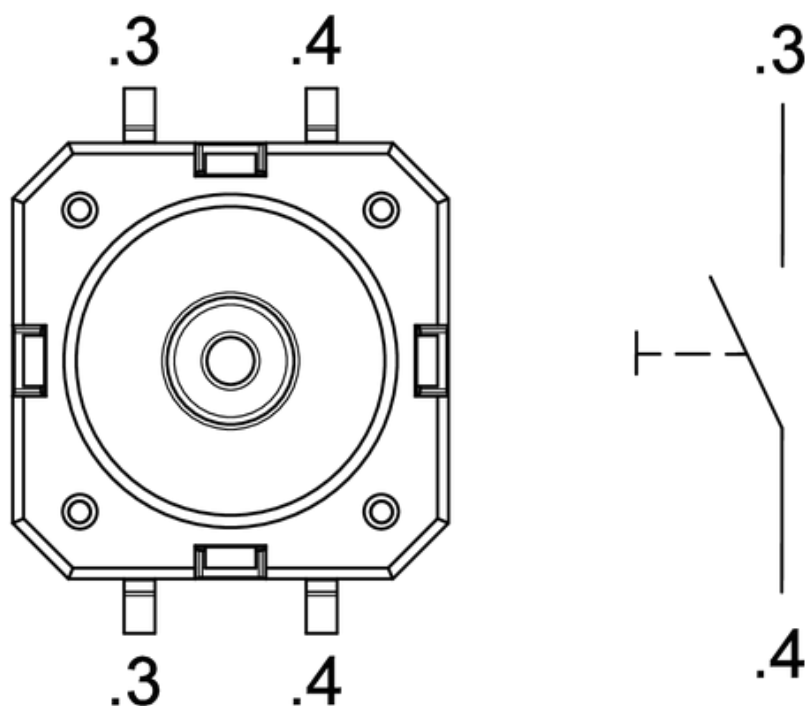


## PCB drawing

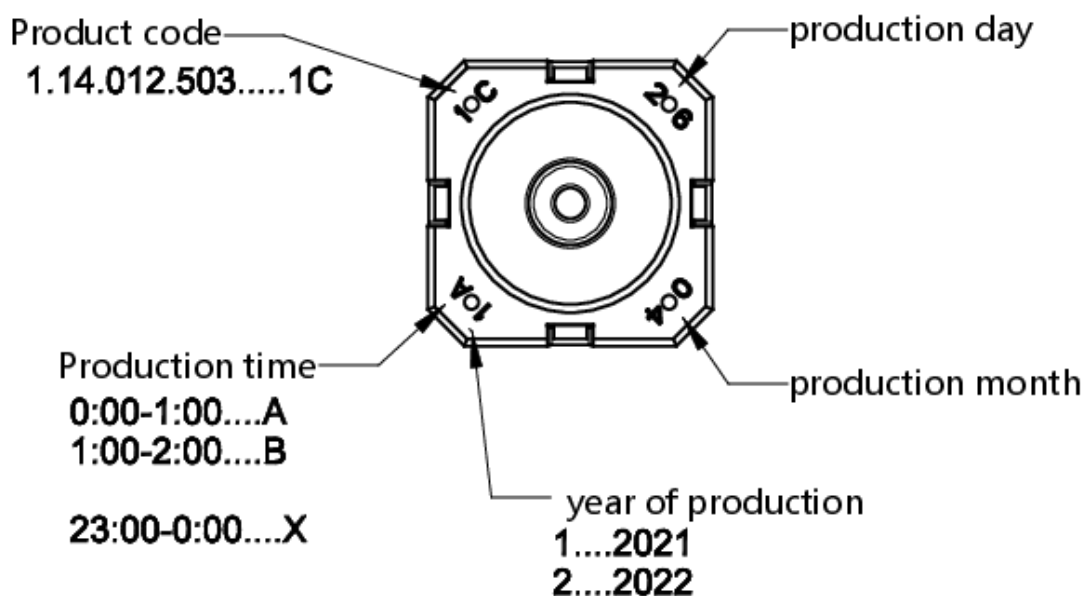


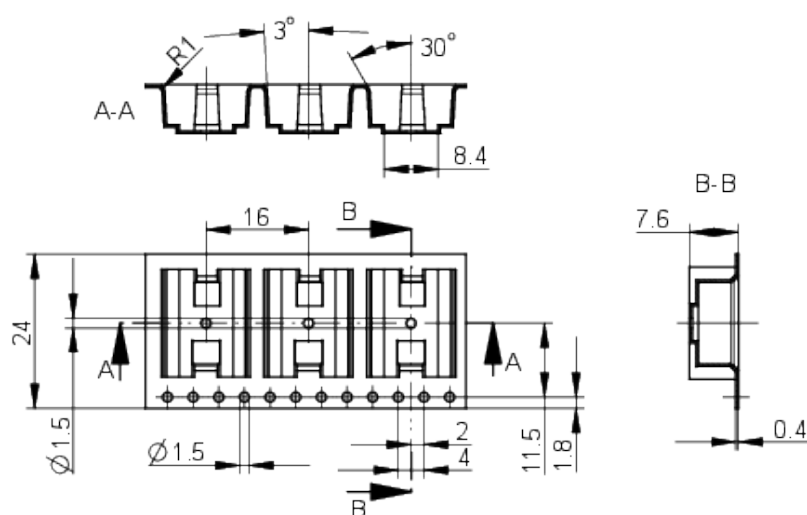
PCB-Pad  
component side

**Schematic diagram**



**Product labeling drawing**



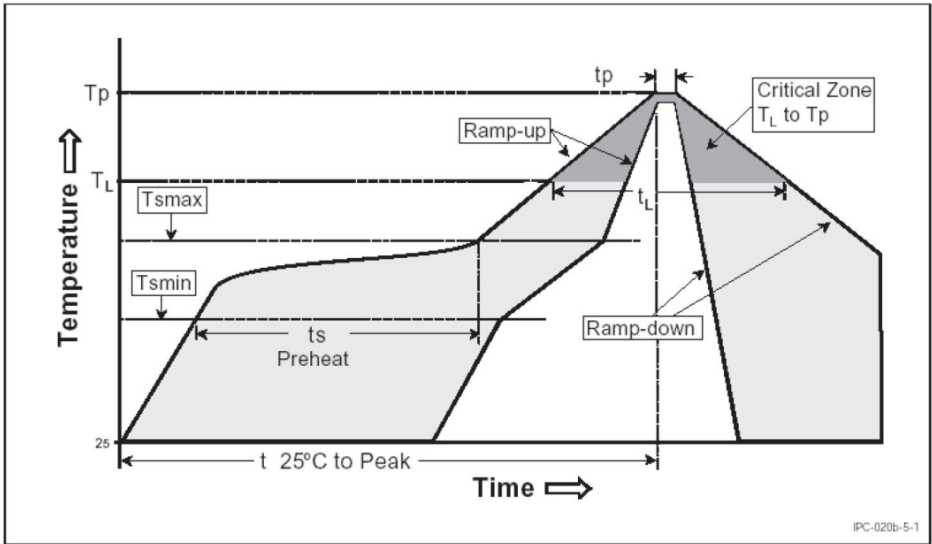
**Packaging drawing**

mounting

RAFI soldering profile for ROHS compliant  
reflow components



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| Parameter                                                              | RAFI values         |
|------------------------------------------------------------------------|---------------------|
| Gradient (T <sub>L</sub> to T <sub>P</sub> )                           | max. 3°C / s        |
| <b>Preheating zone</b>                                                 |                     |
| Minimum temperature (T <sub>smin</sub> )                               | 150°C               |
| Maximum temperature (T <sub>smax</sub> )                               | 200°C               |
| Time (from min. to max.) (ts)                                          | 60 - 120 s          |
| Gradient (T <sub>smax</sub> to T <sub>L</sub> )                        | max. 3°C / s        |
| Time over melting temperature (T <sub>L</sub> ) time (t <sub>L</sub> ) | 217°C<br>60 – 150 s |
| Peak temperature (T <sub>P</sub> )                                     | max. 260°C (+0°C)   |
| Time within peak temperature – 5°C (tp)                                | 20-40 s             |
| Gradient ramp down                                                     | max. 6°C / s        |
| Time difference from 25°C to peak temperature                          | max. 8 minutes      |

The reflow soldering profile is based on the definition of Jedec J-STD-020D.

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