

TPA - Navigation Tact Switch for SMT

NEW



TPA

The TPA is a sub-miniature navigation tact switch featuring up to five single pole normally open contacts.

Actuating the shaft in the up, down, right or left direction individually closes four momentary contacts, which provide the scanning function.

The fifth contact is a push-to-select contact, which can be actuated in any position of the shaft.

The metal dome contacts provide a positive tactile effect in any direction.

Main Applications

The TPA is designed for electronic devices requiring scanning function on LCD display through scrolling menu or icon-based user interface such as: Cellular phones, PDA, hand-held computers, digital cameras, GPS navigation systems, data acquisition terminals, automotive electronics, home entertainment systems.

Other applications: Multidirectional joystick for motorized systems such as instrumentation, medical equipment and remote video systems.

Main Features

- Normally open momentary contacts :
- Scanning:
 - single pole 4 throws (4 directions)
 - single pole 2 throws (2 directions)
- Select: single pole, single throw
- Sub-miniature overall dimensions
- Push down to select possible in any position.
- Distinctive tactile feel for scanning and select functions (force and travel values are taken at 4.5mm above PCB).
- Scanning in diagonal closes two contacts simultaneously (8 scanning positions).
- Same electrical characteristics as KSR /KSS Series
- Silver or gold plated terminals
- SMT Component-IR reflow soldering process
- Non washable – Sealed IP 50 Contacts protected against flux migration

Construction

| | |
|-----------------|------------------------------------|
| Function | Multi-directional momentary action |
| Type of contact | Make contact - Single pole - N.O. |
| Terminals | G-type for SMT |

Electrical data

| | Silver contacts | Gold contacts |
|---------------------------------|-------------------|-------------------|
| Maximum power | 1 VA | 0,2 VA |
| Maximum voltage | 24 V | 24 V |
| Min./max. current | 1mA/50mA | 1mA/10mA |
| Dielectric strength | 250 VDC | 250 VDC |
| Contact resistance, initial | $\leq 200m\Omega$ | $\leq 200m\Omega$ |
| Insulation resistance (100 VDC) | $10^9\Omega$ | $10^9\Omega$ |
| Bounce time | <10 ms | <10ms |

Mechanical data

| | | | |
|------------------------|----------------|------------------------|-----------------------------------|
| Shaft displacement: | | Orthogonal at 45° | 4 horizontal directions |
| | | Vertical | 4 horizontal directions |
| | | | Push down |
| Travel to make: | Scanning: | Orthogonal at 45° ± 5° | 0.35mm ± 0.15mm |
| | Push to select | | 0.6mm ± 0.15mm |
| Operating force: | Scanning: | Orthogonal | 1.85N ± 0.5N |
| | | Combined (at 45° ± 5°) | 3.0N ± 1.5N |
| Maximum applied force: | Push to select | Vertical | 4.0N ± 0.8N |
| | | Horizontal | 10N |
| Life expectancy: | Scanning | | 200K operations in each direction |
| | Push to select | | 200K operations |

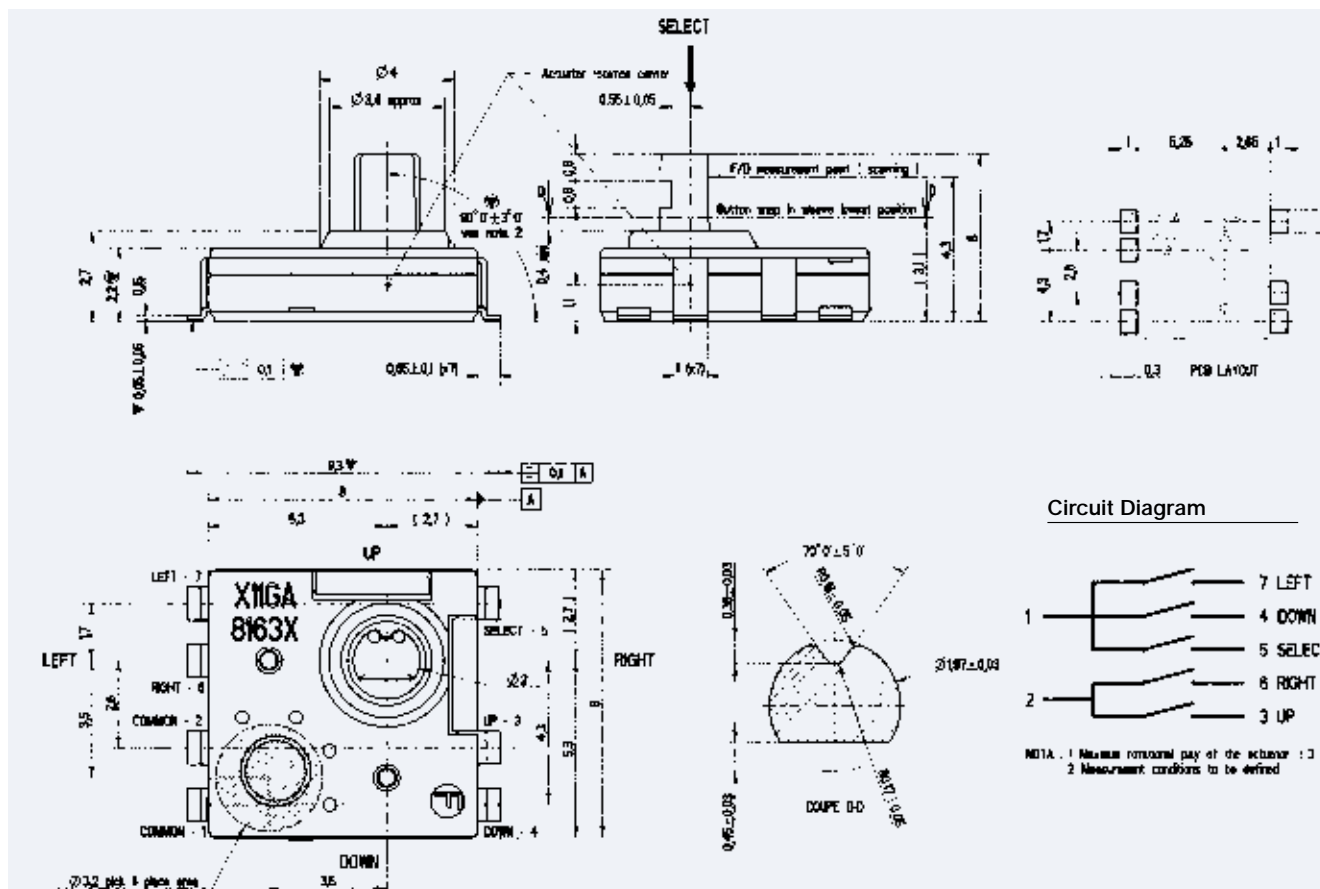
Additional data

| | Silver contacts | Gold contacts |
|-----------------------|------------------------------------------|-------------------|
| Operating temperature | - 40°C to + 85°C | - 40°C to + 110°C |
| Storage temperature | - 40°C to + 85°C | - 40°C to + 125°C |
| Plating terminals | Silver | Gold |
| Soldering process | Infrared reflow according to CECC 0802 | |
| | No washing | |
| | Hand soldering max 350° 3S (CEI 68-2-20) | |

| Ordering code | | 1 | 2 | 3 | 4 | 5 | 6 |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---|---|---|---|---|
| | | TP | A | 4 | 1 | 3 | G |
| 1 | Designation: TP | → | → | → | → | → | → |
| 2 | Type: A | → | → | → | → | → | → |
| 3 | Contact arrangement: 2 = scanning 2 directions without selection 3 = scanning 2 directions with selection 4 = scanning 4 directions without selection 5 = scanning 4 directions with selection | → | → | → | → | → | → |
| 4 | Actuation force: 1 = 1.8 N scanning / 4N selection | → | → | → | → | → | → |
| 5 | Contact material: 1 = silver 3 = gold | → | → | → | → | → | → |
| 6 | Terminals: G = Gullwing type | → | → | → | → | → | → |

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Dimensional Drawings



Packaging The TPA is delivered on continuous tape in reels of 1000 pieces, 16 mm width, 330mm external diameter. Other dimensions according to EIA-RS-481 Standard

