

## TP\_ES Series, Tiny, Process Sealed

### Features

- Process and non-process sealed
- Compact design
- Vertical or right angle versions



### Typical performance characteristics

Contact configuration ..... SPST, SPDT, DPDT  
 Contact timing ..... Break-Before-Make  
 Contact rating max. .... gold: 0.4VA @20VDC or peak AC  
 .... silver: 1A @ 125VAC or 28 VDC resistive  
 Electrical life ..... 1 pole2 ..2 pole  
 .... gold ..... 100,000 ..80,000 cycles  
 .... silver ..... 60,000 ..50,000 cycles  
 Contact resistance, initial. .... max.20 mOhms'  
 Insulation resistance ..... 1,000 MOhms @ 500VDC  
 Dielectric strength ..... 1,000 Volts rms @ sea level  
 Actuation force ..... 0.5 to 4N (50-400gf)  
 Actuator travel ..... momentary .030" (.762)

### Environmental specification

Operating temperature ..... -30°C to +65°C  
 Storage temperature ..... -30°C to +65°C  
 Solder heat resistance ..... wave solder capable to 265° C  
 Seal ..... versions with process seal, with disposable cap

### Material specifications

Contacts ..... copper or brass, gold over nickel finish or silver  
 ..... clad with silver over nickel finish  
 Actuator ..... thermoplastic  
 Terminals ..... brass with gold over nickel or silver over nickel  
 Case ..... thermoplastic  
 Frame and support bracket ..... steel with tin over copper finish  
 RoHS Directive 2002/95/EC ..... compliant

| Product key     |                                                          | Typical product key |  |  |   | TP  | B |  | 1 | 1 | C    | G                                                                 | RA | ES | 0 | 04 |  |
|-----------------|----------------------------------------------------------|---------------------|--|--|---|-----|---|--|---|---|------|-------------------------------------------------------------------|----|----|---|----|--|
| Type            |                                                          |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| TP              | Tiny pushbutton series                                   |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| Bushing         |                                                          |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| B               | round .188 (4.78) dia. bushing not threaded              |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| F               | round 1/4-40 UNS 2B thread                               |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| Actuator        |                                                          |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| blank           | standard                                                 |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| F               | flush (available with B bushings only)                   |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| Number of Poles |                                                          |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| 1               | single pole                                              |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| Contact rating  |                                                          |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| 1               | 0.4VA Gold                                               |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| Function        |                                                          |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| C               | single throw, momentary                                  |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| F               | double throw, momentary                                  |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| Plating         |                                                          |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| G               | Gold                                                     |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| Terminals       |                                                          |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| PC              | printed circuit board                                    |                     |  |  |   |     |   |  |   |   | RA   | right angle (right angle, ES available with B and C bushing only) |    |    |   |    |  |
| Process Seal    |                                                          |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| ES              | process sealed with disposable boot, epoxied double case |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| Button Color    |                                                          |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| 0               | black                                                    |                     |  |  | 2 | red |   |  |   | 6 | blue |                                                                   |    |    |   |    |  |
| Material        |                                                          |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |
| 04              | RoHS compliant                                           |                     |  |  |   |     |   |  |   |   |      |                                                                   |    |    |   |    |  |

**TP\_ES Series, Tiny, Process Sealed (Continued)**

**Bushing**

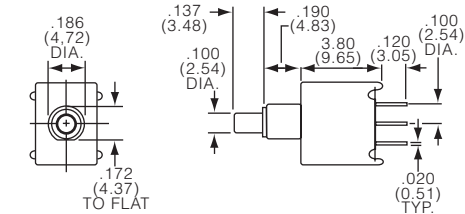


**B, Round .188 (4.78) dia. bushing not threaded**

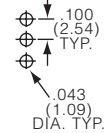
**printed circuit board**



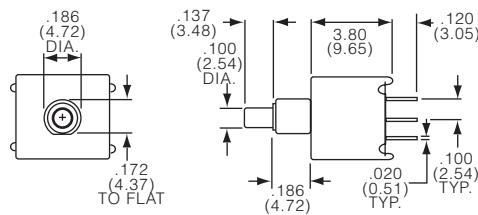
TPB11CGPCES



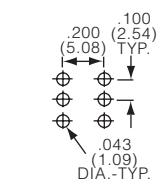
Note: no center terminal on 'C' function switch



TPB21RGPCES



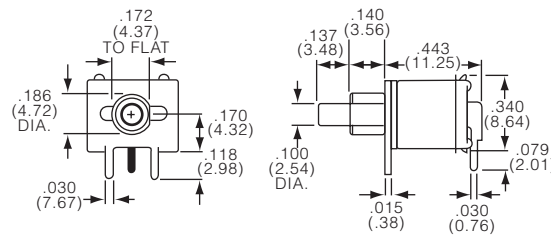
Note: no center terminals on 'M' function switch



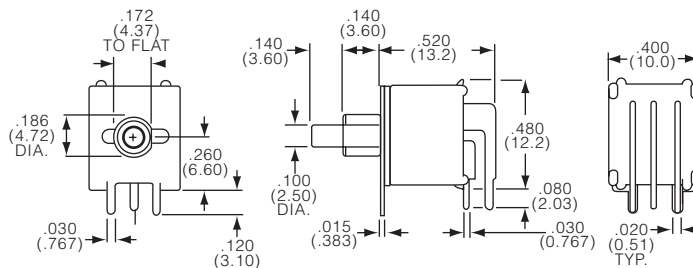
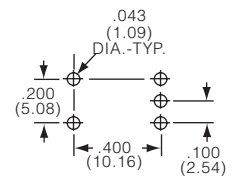
**right angle**



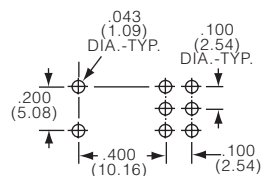
TPB11CGRAES



Note: no center terminal on 'C' function switch



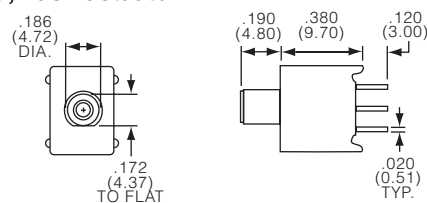
Note: no center terminals on 'M' function switch



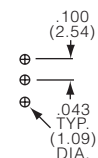
**printed circuit board, flush actuator**



TPBF11CGPCES

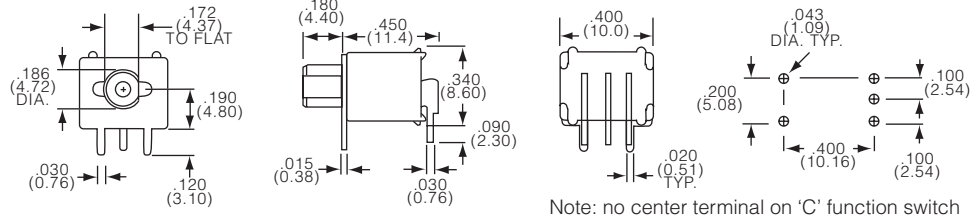


Note: no center terminal on 'C' function switch



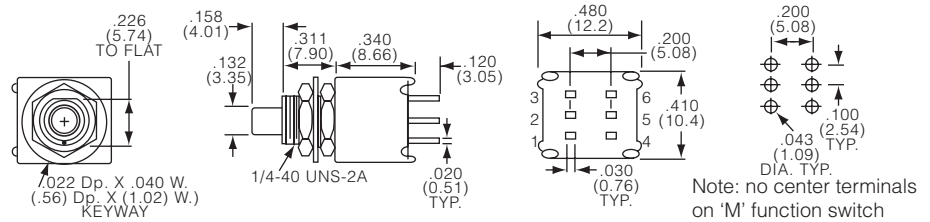
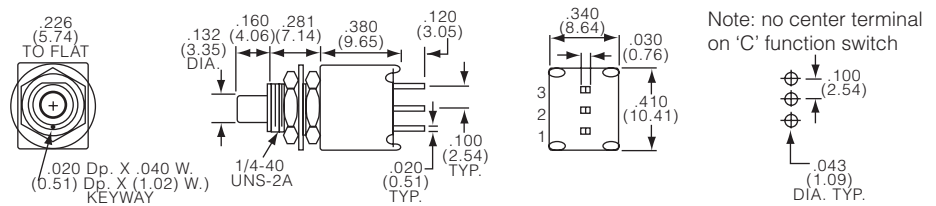
**TP\_ES Series, Tiny, Process Sealed (Continued)**

**right angle, flush actuator**



**F, Round 1/4-40 UNS 2B thread**

**printed circuit board**



| Product key     | Bushing               | Act.  | Poles | Rating | Function |     |     | Plating | Terminals   | Btn.  | Material       | Part Number |
|-----------------|-----------------------|-------|-------|--------|----------|-----|-----|---------|-------------|-------|----------------|-------------|
| TPB11CGPCES004  | round                 | std   | 1     | 0.4VA  | Off-(On) | Off | 1-3 | Gold    | pcb         | black | RoHS compliant | 1825097-3   |
| TPB11CGRAES004  | .188 (4.78)           |       |       |        |          |     |     |         | right angle |       |                | 1825097-5   |
| TPB11CGRAES204  | dia                   |       |       |        |          |     |     |         |             | red   |                | 1825097-7   |
| TPB11FGPCES204  | bushing, not threaded |       |       |        | On-(On)  | 1-2 | 2-3 |         | pcb         |       |                | 1-1825097-0 |
| TPB11FGRAES004  |                       |       |       |        |          |     |     |         | right angle | black |                | 1-1825097-4 |
| TPB11FGRAES604  |                       |       |       |        |          |     |     |         |             | blue  |                | 1-1825097-5 |
| TPBF11CGPCES004 |                       | flush |       |        | Off-(On) | Off | 1-3 |         | pcb         | black |                | 2-1825097-0 |
| TPBF11CGRAES004 |                       |       |       |        |          |     |     |         | right angle |       |                | 2-1825097-2 |
| TPBF11FGPCES004 |                       |       |       |        | On-(On)  | 1-2 | 2-3 |         | pcb         |       |                | 2-1825097-3 |
| TPBF11FGRAES004 |                       |       |       |        |          |     |     |         | right angle |       |                | 2-1825097-6 |
| TPF11CGPCES004  | 1/4-40                | std   |       |        | Off-(On) | Off | 1-3 |         | pcb         |       |                | 1825100-3   |
| TPF11FGPCES004  | UNS 2B                |       |       |        | On-(On)  | 1-2 | 2-3 |         |             |       |                | 1-1825100-0 |

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## TE Connectivity:

[TPF11FGPCES0](#) [TPF11FGPCES004](#) [TPB11CGPCES0](#) [TPB11CGPCES004](#) [TPB11CGRAES204](#) [TPB11FGPCES2](#)  
[TPB11FGPCES204](#) [TPB11FGRAES004](#) [TPB11FGRAES604](#) [TPBF11CGPCES0](#) [TPBF11CGRAES0](#)  
[TPBF11FGRAES0](#) [TPF11CGPCES0](#) [TPF11CGPCES004](#)