

## Pushbutton Switches, Tiny, Part Number Matrix

### MATERIAL SPECIFICATIONS:

Contacts .....Gold - gold plate, silver - silver plate  
Case Material .....High temperature polyester  
Actuator Material.....Polyamide  
Terminals/Fixed Contacts .....Tin lead plate  
Terminal Seal.....SP epoxy, DP epoxy optional

### ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature .....-22°F to +149°F (-30°C to +65°C)  
Storage Temperature .....-22°F to +149°F (-30°C to +65°C)  
Solder Heat Resistance .....See page M3-4

### TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating .....Gold: 0.4 VA Max. @ 20 VDC or peak AC  
Silver: 1A @ 125 VAC or 28 VDC resistive  
Initial Contact Resistance .....20 Milliohms max.  
Contact Timing .....Break-before-make  
Insulation Resistance .....1,000 Megohms @ 500VDC min.  
Dielectric Strength.....1,000 Volts @ sea level  
Actuation Force .....50 to 400 Grams  
Plunger/Actuator Travel ......030" (.762)  
Life Expectancy.....See below  
Note: Hardware included with switches

### PART NUMBERING MATRIX

| Model                                                                                                                                                                                           | Bushing     | Actuator    | Poles                      | Rating                                      | Function                    | Plating                                                                                   | Terminations                                                                          | Process Seal     | Button Colors |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|----------------------------|---------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------|---------------|
| <div>TP</div>                                                                                                                                                                                   | <div></div> | <div></div> | <div></div>                | <div></div>                                 | <div></div>                 | <div></div>                                                                               | <div></div>                                                                           | <div></div>      | <div></div>   |
| Blank= Sq. No Bushing<br>A=Rnd. No Bushing<br>B=Rnd., .188" Bushing Dia.<br>Unthreaded<br>C=Rnd., 10/48 Bushing Dia.<br>D=Rnd., .250" Bushing Dia.<br>Unthreaded<br>F=Rnd., 1/4-40 Bushing Dia. |             |             | 1 = Single<br>2 = Double   | 1 = Gold<br>0.4 VA<br>3 = Silver**<br>1 Amp | G = Gold<br>None = Silver** | Blank=Wire lug<br>PC=Printed Circuit<br>RA=Right Angle***<br>VRA=Vertical Right Angle**** | ES = Process Sealed***<br>Process Seal:<br>Disposable boot,<br>epoxied double<br>case | 0=Black<br>2=Red |               |
| F = Flush Actuator*                                                                                                                                                                             |             |             | <b>SP DP</b><br>C M<br>F R | S.T. Momentary<br>D.T. Momentary            |                             |                                                                                           |                                                                                       |                  |               |

- \* Available with "B" and "C" bushing only
- \*\* Silver - available only in wire lug and PC termination
- \*\*\* Right angle, ES available with "B" and "C" bushing only
- \*\*\*\* Available only in single pole

ES switches provided with disposable boot used only during cleaning operation.

### Application Note:

For 3 pole and 4 pole, refer to pages D22 and D24 . . . "MP Series"  
For Surface Mount termination, refer to pages D3-D5 . . . "TSP Series"

| TP Series Life Expectancy Chart |         |        |
|---------------------------------|---------|--------|
| Pushbuttons                     | 1 Pole  | 2 Pole |
| 0.4 (Gold Plate)                | 100,000 | 80,000 |
| 1A (Silver Plate)               | 60,000  | 50,000 |

### PROCESS SEAL VERSION NOT



TP



TPA

### PROCESS SEAL VERSION AVAILABLE



TPB



TPC



TPD

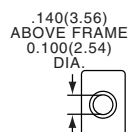


TPF

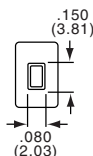
### SERIES (TP)

# Pushbutton Switches, Tiny, Straight or Right Angle, Single or Dual Actuators

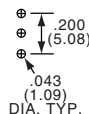
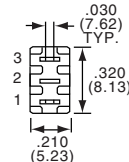
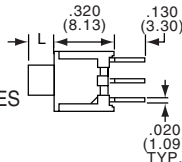
SEE PAGE D6 FOR PRODUCT SPECIFICATIONS



TPA SERIES



TP SERIES



SPST/SPDT



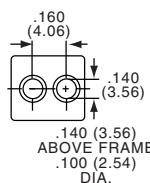
TP11CGPC0



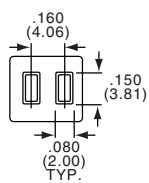
TPA11CGPC0

| Model        | Actuator Type | Dim.L | Type | Act. Code P. M6 | Action         | Contact Type |
|--------------|---------------|-------|------|-----------------|----------------|--------------|
| TP11CGPC(*)  | SQ.           | .125  | SPST | C               | N.O. Momentary | Gold         |
| TP11FGPC(*)  | SQ.           | .125  | SPDT | F               | Momentary      | Gold         |
| TPA11CGPC(*) | RND.          | .150  | SPST | C               | N.O. Momentary | Gold         |
| TPA11FGPC(*) | RND.          | .150  | SPDT | F               | Momentary      | Gold         |

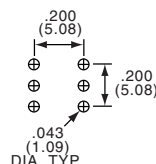
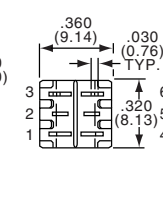
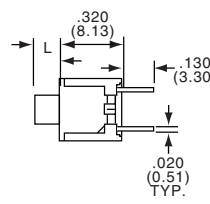
(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "C" action switch.



TPA SERIES



TP SERIES



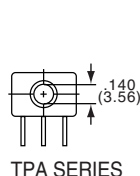
SPST/SPDT (DUAL)



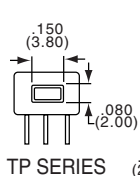
TP21CCGPC0

| Model         | Actuator Type | Dim.L | Type   | Act. Code P. M6 | Action         | Contact Type |
|---------------|---------------|-------|--------|-----------------|----------------|--------------|
| TP21CCGPC(*)  | SQ.           | .125  | 2xSPST | C               | N.O. Momentary | Gold         |
| TPA21CCGPC(*) | RND.          | .150  | 2xSPST | C               | N.O. Momentary | Gold         |
| TPA21FFGPC(*) | RND.          | .150  | 2xSPDT | F               | Momentary      | Gold         |

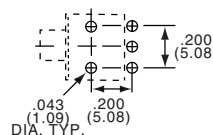
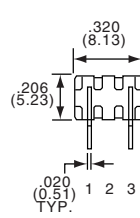
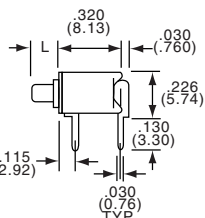
(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "C" action switch.



TPA SERIES



TP SERIES



SPST/SPDT



TPA11CGRA



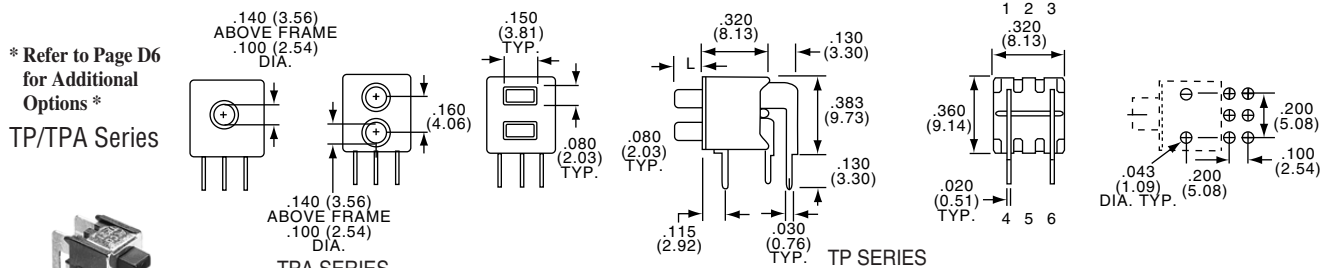
TP11CGRA

| Model        | Actuator Type | Dim.L | Type | Act. Code P. M6 | Action         | Contact Type |
|--------------|---------------|-------|------|-----------------|----------------|--------------|
| TP11CGRA(*)  | SQ.           | .125  | SPST | C               | N.O. Momentary | Gold         |
| TP11FGRA(*)  | SQ.           | .125  | SPDT | F               | Momentary      | Gold         |
| TPA11CGRA(*) | RND.          | .150  | SPST | C               | N.O. Momentary | Gold         |
| TPA11FGRA(*) | RND.          | .150  | SPDT | F               | Momentary      | Gold         |

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "C" action switch.

## Pushbutton Switches, Tiny, Right Angle, Single or Dual Actuators

SEE PAGE D6 FOR PRODUCT SPECIFICATIONS



TP21CCGRA0

SPST/SPDT (DUAL)  
DPST

| Model         | Actuator Type | Dim.L | Type   | Act. Code P. M6 | Action         | Contact Type |
|---------------|---------------|-------|--------|-----------------|----------------|--------------|
| TP21CCGRA(*)  | SQ.           | .125  | 2xSPST | C               | N.O. Momentary | Gold         |
| TP21FFGRA(*)  | SQ.           | .125  | 2xSPDT | F               | Momentary      | Gold         |
| TPA21MGRA(*)  | RND.          | .150  | DPST   | M               | N.O. Momentary | Gold         |
| TPA21CCGRA(*) | RND.          | .150  | 2xSPST | C               | N.O. Momentary | Gold         |
| TPA21FFGRA(*) | RND.          | .150  | 2xSPDT | F               | Momentary      | Gold         |

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "C" or "M" action switch.

## Pushbutton Switches, Tiny, Straight or Right Angle, Unthreaded or 10-48 Bushing

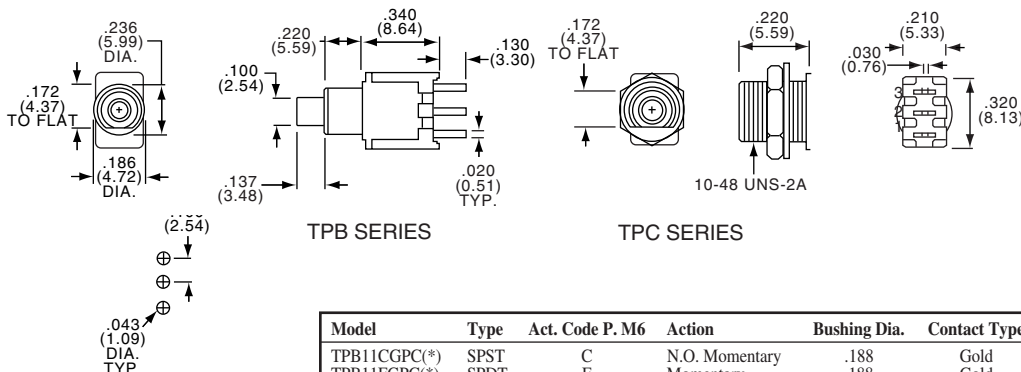
SPST/SPDT



TPB11CGPC



TPC11FGPC



| Model        | Type | Act. Code P. M6 | Action         | Bushing Dia. | Contact Type |
|--------------|------|-----------------|----------------|--------------|--------------|
| TPB11CGPC(*) | SPST | C               | N.O. Momentary | .188         | Gold         |
| TPB11FGPC(*) | SPDT | F               | Momentary      | .188         | Gold         |
| TPC11CGPC(*) | SPST | C               | N.O. Momentary | 10-48        | Gold         |
| TPC11FGPC(*) | SPDT | F               | Momentary      | 10-48        | Gold         |

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "C" action switch.

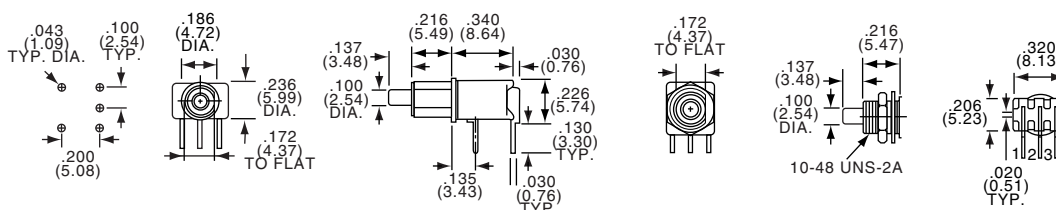
DPST/DPDT



TPB11CGRA



TPC11CGRA

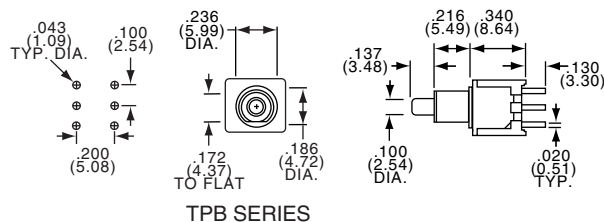


| Model        | Type | Act. Code P. M6 | Action         | Bushing Dia. | Contact Type |
|--------------|------|-----------------|----------------|--------------|--------------|
| TPB11CGRA(*) | SPST | C               | N.O. Momentary | .188         | Gold         |
| TPB11FGRA(*) | SPDT | F               | Momentary      | .188         | Gold         |
| TPC11CGRA(*) | SPST | C               | N.O. Momentary | 10-48        | Gold         |
| TPC11FGRA(*) | SPDT | F               | Momentary      | 10-48        | Gold         |

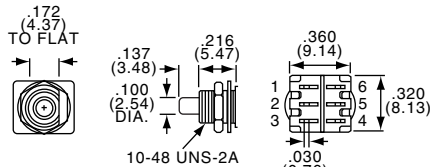
(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "C" action switch.

**Pushbutton Switches, Tiny, Straight or Right Angle, Unthreaded or 10-48 Bushing**

SEE PAGE D6 FOR PRODUCT SPECIFICATIONS  
DPST/DPDT



TPB SERIES



TPC SERIES



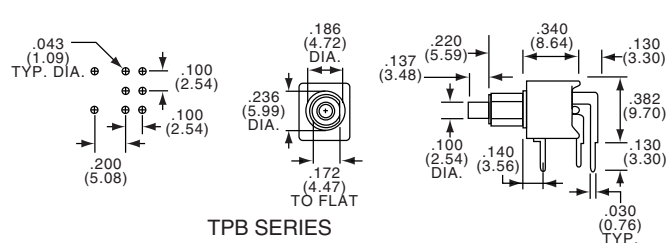
TPB21MGPC



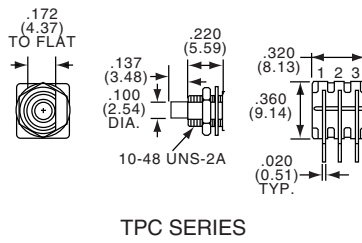
TPC21RGPC

| Model        | Type | Act. Code P. M6 | Action         | Bushing Dia. | Contact Type |
|--------------|------|-----------------|----------------|--------------|--------------|
| TPB21MGPC(*) | DPST | M               | N.O. Momentary | .188         | Gold         |
| TPB21RGPC(*) | DPDT | R               | Momentary      | .188         | Gold         |
| TPC21MGPC(*) | DPST | M               | N.O. Momentary | 10-48        | Gold         |
| TPC21RGPC(*) | DPDT | R               | Momentary      | 10-48        | Gold         |

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "M" action switch.



TPB SERIES



TPC SERIES

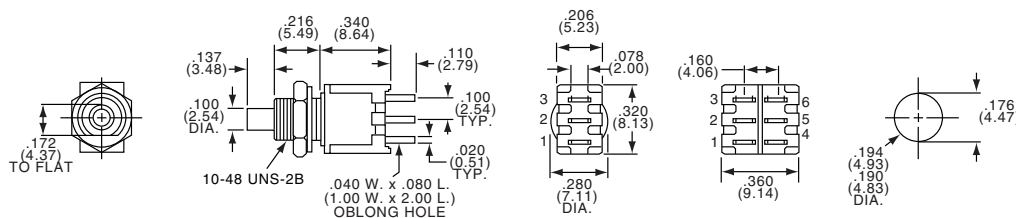
DPST/DPDT



TPC21MGRA

| Model        | Type | Act. Code P. M6 | Action         | Bushing Dia. | Contact Type |
|--------------|------|-----------------|----------------|--------------|--------------|
| TPB21MGRA(*) | DPST | M               | N.O. Momentary | .188         | Gold         |
| TPB21RGRA(*) | DPDT | R               | Momentary      | .188         | Gold         |
| TPC21MGRA(*) | DPST | M               | N.O. Momentary | 10-48        | Gold         |
| TPC21RGRA(*) | DPDT | R               | Momentary      | 10-48        | Gold         |

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "M" action switch.



1 & 2 POLE



TPC23M



TPC13C

| Model     | Type | Act. Code P. M6 | Action         | Contact Type |
|-----------|------|-----------------|----------------|--------------|
| TPC13C(*) | SPST | C               | N.O. Momentary | Silver       |
| TPC13F(*) | SPDT | F               | Momentary      | Silver       |
| TPC23M(*) | DPST | M               | N.O. Momentary | Silver       |
| TPC23R(*) | DPDT | R               | Momentary      | Silver       |

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "C" or "M" action switches.

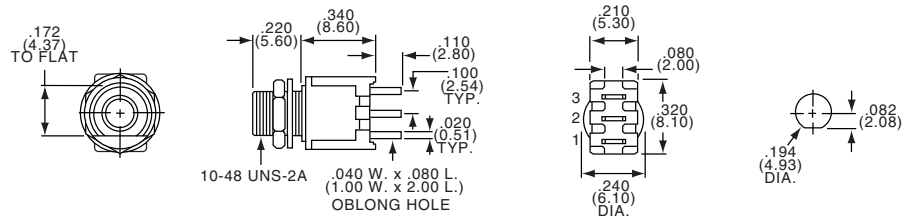
**Pushbutton Switches, Tiny, Straight or Right Angle, Flush Actuator**

SEE PAGE D6 FOR PRODUCT SPECIFICATIONS

SPST/SPDT  
Wire Lugs 10-48 Bushing



TPCF13C



| Model      | Silver Contacts | Type | Act. Code P. M6 | Action   | Bushing Type |
|------------|-----------------|------|-----------------|----------|--------------|
| TPCF13C(*) | SPST            | C    | N.O. Momentary  | Threaded |              |
| TPCF13F(*) | SPDT            | F    | Momentary       | Threaded |              |

(\*) Specify button color by adding suffix numbers: (0) Black, (2) Red.  
Note: No center terminal on "C" action switch.

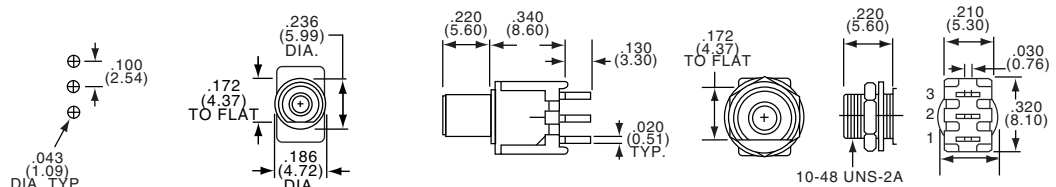
SPST/SPDT  
PC 10-48 Bushing



TPBF11FGPC



TPCF11CGPC



TPB SERIES

TPC SERIES

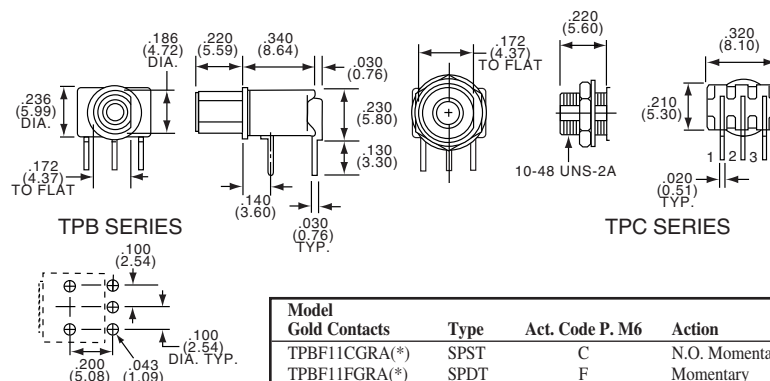
| Model         | Gold Contacts | Type | Act. Code P. M6 | Action     | Bushing Type |
|---------------|---------------|------|-----------------|------------|--------------|
| TPBF11CGPC(*) | SPST          | C    | N.O. Momentary  | Unthreaded |              |
| TPBF11FGPC(*) | SPDT          | F    | Momentary       | Unthreaded |              |
| TPCF11CGPC(*) | SPST          | C    | N.O. Momentary  | Threaded   |              |
| TPCF11FGPC(*) | SPDT          | F    | Momentary       | Threaded   |              |

(\*) Specify button color by adding suffix numbers: (0) Black, (2) Red.  
Note: No center terminal on "C" action switch.

SPST/SPDT  
RA 10-48 Bushing



TPBF11CGRA



TPB SERIES

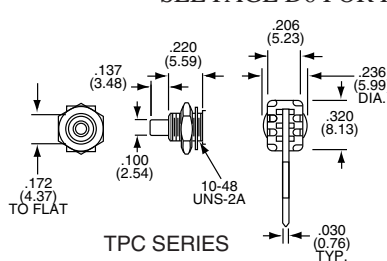
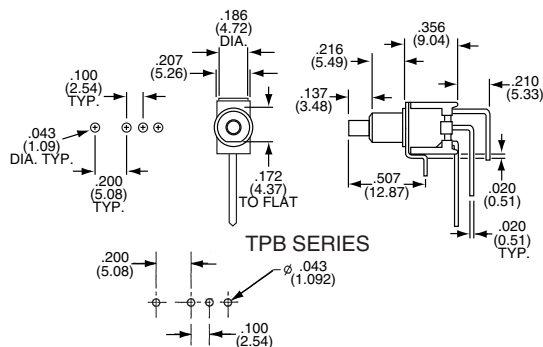
TPC SERIES

| Model         | Gold Contacts | Type | Act. Code P. M6 | Action     | Bushing Type |
|---------------|---------------|------|-----------------|------------|--------------|
| TPBF11CGRA(*) | SPST          | C    | N.O. Momentary  | Unthreaded |              |
| TPBF11FGRA(*) | SPDT          | F    | Momentary       | Unthreaded |              |
| TPCF11CGRA(*) | SPST          | C    | N.O. Momentary  | Threaded   |              |
| TPCF11FGRA(*) | SPDT          | F    | Momentary       | Threaded   |              |

(\*) Specify button color by adding suffix numbers: (0) Black, (2) Red.  
Note: No center terminal on "C" action switch.

## Pushbutton Switches, Tiny, Vertical Right Angle, Unthreaded or 10-48 Bushing

SEE PAGE D6 FOR PRODUCT SPECIFICATIONS



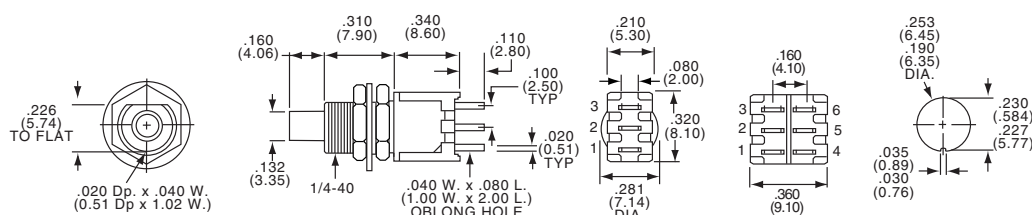
TPB11FGVRA

| Model         | Type | Act. Code | P. M6 | Action         | Contact Type |
|---------------|------|-----------|-------|----------------|--------------|
| TPB11CGVRA(*) | SPST | C         |       | N.O. Momentary | Gold         |
| TPB11FGVRA(*) | SPDT | F         |       | Momentary      | Gold         |
| TPC11CGVRA(*) | SPST | C         |       | N.O. Momentary | Gold         |
| TPC11FGVRA(*) | SPDT | F         |       | Momentary      | Gold         |

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "C" action switches.

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "C" action switches.

## Pushbutton Switches, Tiny, Vertical, Unthreaded or 1/4-40 Bushing



TPF23M

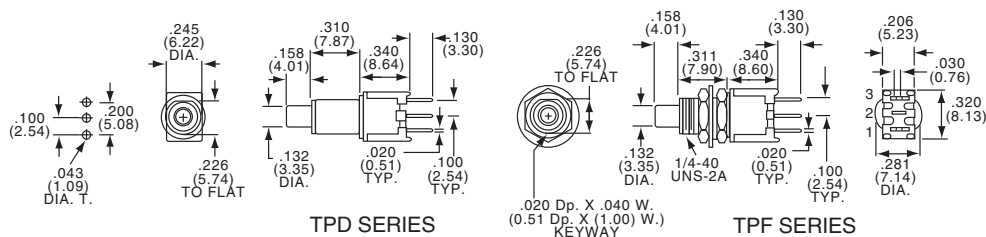


TPF13C

| Model     | Type | Act. Code | P. M6 | Action         | Contact Type |
|-----------|------|-----------|-------|----------------|--------------|
| TPF13C(*) | SPST | C         |       | N.O. Momentary | Silver       |
| TPF13F(*) | SPDT | F         |       | Momentary      | Silver       |
| TPF23M(*) | DPST | M         |       | N.O. Momentary | Silver       |
| TPF23R(*) | DPDT | R         |       | Momentary      | Silver       |

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "C" or "M" action switches.

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "C" or "M" action switches.



SPST/SPDT



TPD11CGPC

| Model        | Type | Act. Code | P. M6 | Action         | Bushing Dia. | Contact Type |
|--------------|------|-----------|-------|----------------|--------------|--------------|
| TPD11CGPC(*) | SPST | C         |       | N.O. Momentary | .250         | Gold         |
| TPD11FGPC(*) | SPDT | F         |       | Momentary      | .250         | Gold         |
| TPF11CGPC(*) | SPST | C         |       | N.O. Momentary | 1/4-40       | Gold         |
| TPF11FGPC(*) | SPDT | F         |       | Momentary      | 1/4-40       | Gold         |

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
NOTE: No center terminal on "C" action switch.

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
NOTE: No center terminal on "C" action switch.

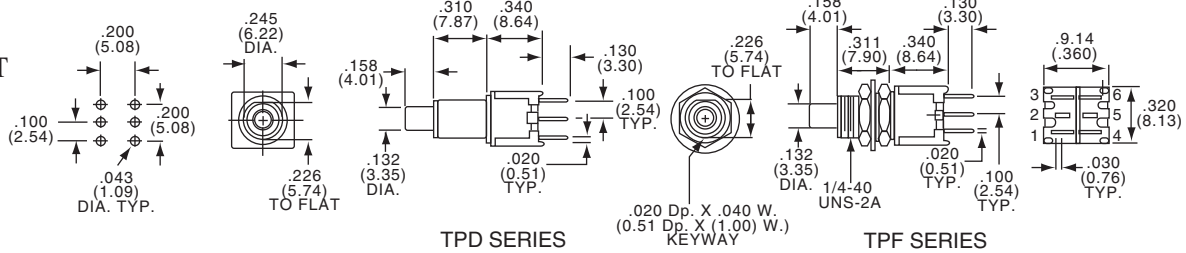
**Pushbutton Switches, Tiny, Vertical or Right Angle, Unthreaded or 1/4-40 Bushing**

SEE PAGE D6 FOR PRODUCT SPECIFICATIONS

**DPST/DPDT**



TPD21MGPC



TPD SERIES

TPF SERIES

| Model        | Type | Act. Code | P. M6 | Action         | Bushing Dia. | Contact Type |
|--------------|------|-----------|-------|----------------|--------------|--------------|
| TPD21MGPC(*) | DPST | M         |       | N.O. Momentary | .250         | Gold         |
| TPD21RGPC(*) | DPDT | R         |       | Momentary      | .250         | Gold         |
| TPF21MGPC(*) | DPST | M         |       | N.O. Momentary | 1/4-40       | Gold         |
| TPF21RGPC(*) | DPDT | R         |       | Momentary      | 1/4-40       | Gold         |

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminals on "M" Action switches.

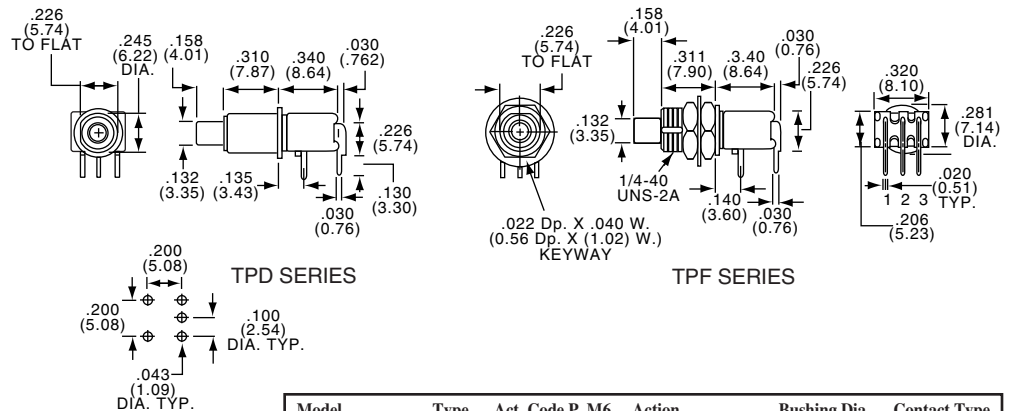
**SPST/SPDT**



TPD11CGRA



TPF11CGRA



TPD SERIES

TPF SERIES

| Model        | Type | Act. Code | P. M6 | Action         | Bushing Dia. | Contact Type |
|--------------|------|-----------|-------|----------------|--------------|--------------|
| TPD11CGRA(*) | SPST | C         |       | N.O. Momentary | .250         | Gold         |
| TPD11FGRA(*) | SPDT | F         |       | Momentary      | .250         | Gold         |
| TPF11CGRA(*) | SPST | C         |       | N.O. Momentary | 1/4-40       | Gold         |
| TPF11FGRA(*) | SPDT | F         |       | Momentary      | 1/4-40       | Gold         |

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "C" action switch.

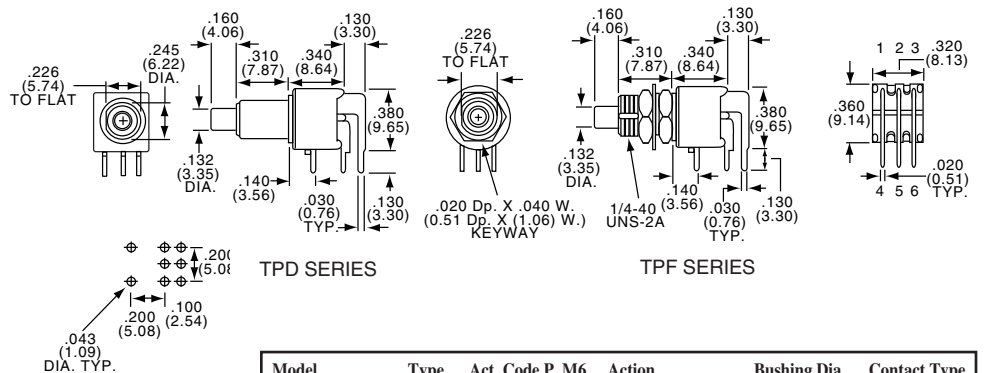
**DPST/DPDT**



TPF21MGRA



TPD21MGRA



TPD SERIES

TPF SERIES

| Model        | Type | Act. Code | P. M6 | Action         | Bushing Dia. | Contact Type |
|--------------|------|-----------|-------|----------------|--------------|--------------|
| TPD21MGRA(*) | DPST | M         |       | N.O. Momentary | .250         | Gold         |
| TPD21RGRA(*) | DPDT | R         |       | Momentary      | .250         | Gold         |
| TPF21MGRA(*) | DPST | M         |       | N.O. Momentary | 1/4-40       | Gold         |
| TPF21RGRA(*) | DPDT | R         |       | Momentary      | 1/4-40       | Gold         |

(\*) Specify button color by adding suffix number: (0) Black, (2) Red.  
Note: No center terminal on "M" Action switches.