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

D

TP Series

PART NUMBERING MATRIX

Model	Bushing	Actuator	Poles	Rating	Function	Plating	Terminations	Process Seal	Button Colors

TP

Blank= Sq. No Bushing
A=Rnd. No Bushing
B=Rnd., .188" Bushing Dia.
       Unthreaded
C=Rnd., 10/48 Bushing Dia.
D=Rnd., .250" Bushing Dia.
       Unthreaded
F=Rnd., 1/4-40 Bushing Dia.

F = Flush Actuator*

1 = Single
2 = Double

SP	DP	
C	M	S.T. Momentary
F	R	D.T. Momentary

1 = Gold 0.4 VA
3 = Silver** 1 Amp

G = Gold
None = Silver**

Blank=Wire lug
PC=Printed Circuit
RA=Right Angle***
VRA=Vertical Right Angle****

ES = Process Sealed***
Process Seal:
Disposable boot,
epoxied double
case

0=Black
2=Red

*   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

PROCESS SEAL
VERSION AVAILABLE

SERIES (TP)

TP   **TPA**   **TPB**   **TPC**   **TPD**   **TPF**

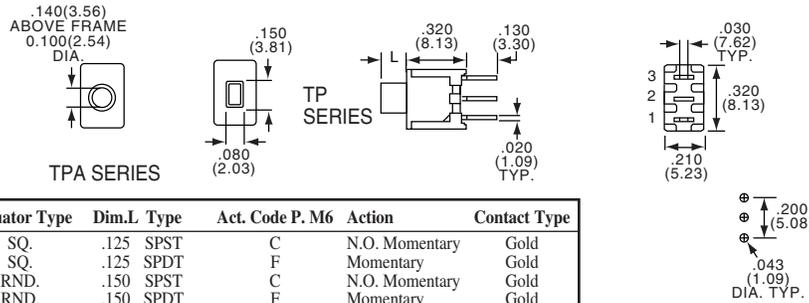tyco
Electronics

TP/TPA Series

TINY

Alcoswitch

D

TP/TPA Series

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

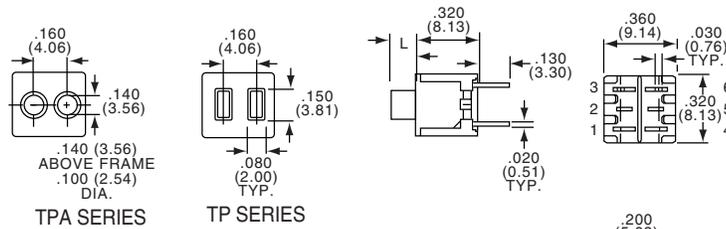SEE PAGE D6 FOR PRODUCT SPECIFICATIONS

SPST/SPDT

.140(3.56)
ABOVE FRAME
0.100(2.54)
DIA.

.150
(3.81)

.320
(8.13)

.130
(3.30)

TP
SERIES

L

.030
(7.62)
TYP.

3
2
1

.320
(8.13)

.210
(5.23)

.200
(5.08)

.043
(1.09)
DIA. TYP.

.080
(2.03)

TPA SERIES

.020
(1.09)
TYP.

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.

SPST/SPDT (DUAL)

.160
(4.06)

.160
(4.06)

.320
(8.13)

.360
(9.14)

.030
(0.76)
TYP.

.140
(3.56)

.150
(3.81)

L

.130
(3.30)

3
2
1

6
5
4

.320
(8.13)

.140 (3.56)
ABOVE FRAME
.100 (2.54)
DIA.

.080
(2.00)
TYP.

.020
(0.51)
TYP.

.200
(5.08)

.200
(5.08)

.043
(1.09)
DIA. TYP.

TPA SERIES

TP SERIES

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.

SPST/SPDT

.150
(3.80)

.320
(8.13)

.030
(.760)

.320
(8.13)

.140
(3.56)

L

.226
(5.74)

.206
(5.23)

.200
(5.08)

.080
(2.00)

.130
(3.30)

.043
(1.09)
DIA. TYP.

.200
(5.08)

TPA SERIES

TP SERIES

.115
(2.92)

.030
(0.76)
TYP.

.020
(0.51)
TYP.

1 2 3
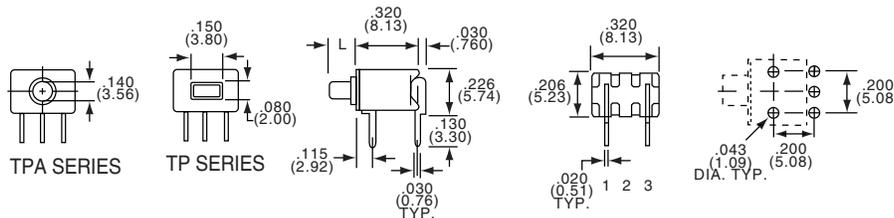
TPA11CGRA

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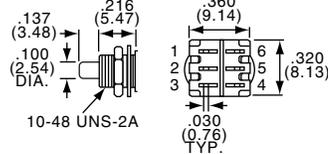
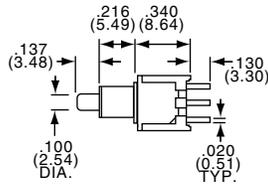## Pushbutton Switches, Tiny, Right Angle, Single or Dual Actuators

SEE PAGE D6 FOR PRODUCT SPECIFICATIONS

* Refer to Page D6 for Additional Options *

TP/TPA Series

TP21CCGRA0

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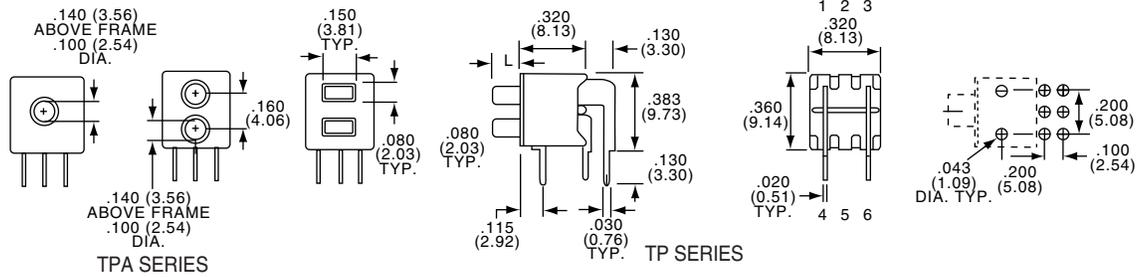
Model	Actuator Type	Dim.L	Type	Act. Code P. M6	Action	Contact Type
TP21CCGRA(*)	SQ.	.125	2xSPST	C	N.O. Momentary	Gold
TP21FFGRA(*)	SQ.	.125	2xSPDT	F	Momentary	Gold
TPA21MGRA(*)	RND.	.150	DPST	M	N.O. Momentary	Gold
TPA21CCGRA(*)	RND.	.150	2xSPST	C	N.O. Momentary	Gold
TPA21FFGRA(*)	RND.	.150	2xSPDT	F	Momentary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

TPB SERIES

TPC SERIES

10-48 UNS-2A
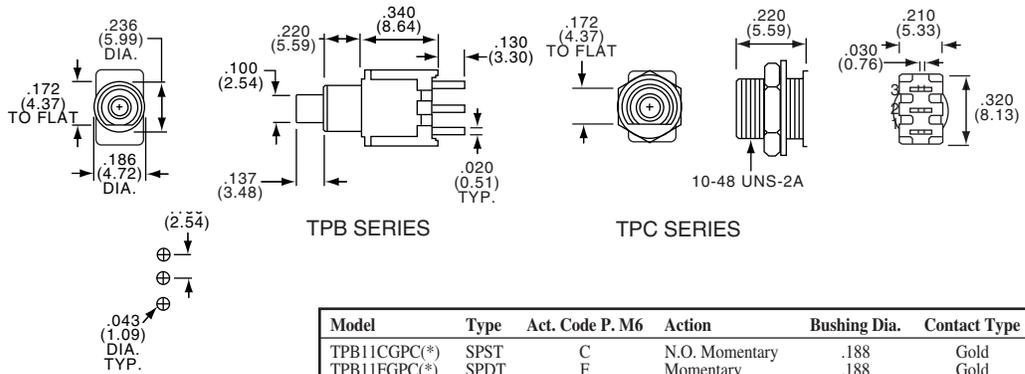
Model	Type	Act. Code P. M6	Action	Bushing Dia.	Contact Type
TPB11CGPC(*)	SPST	C	N.O. Momentary	.188	Gold
TPB11FGPC(*)	SPDT	F	Momentary	.188	Gold
TPC11CGPC(*)	SPST	C	N.O. Momentary	10-48	Gold
TPC11FGPC(*)	SPDT	F	Momentary	10-48	Gold

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

DPST/DPDT

TPB11CGRA

TPC11CGRA

TPB SERIES

TPC SERIES

10-48 UNS-2A
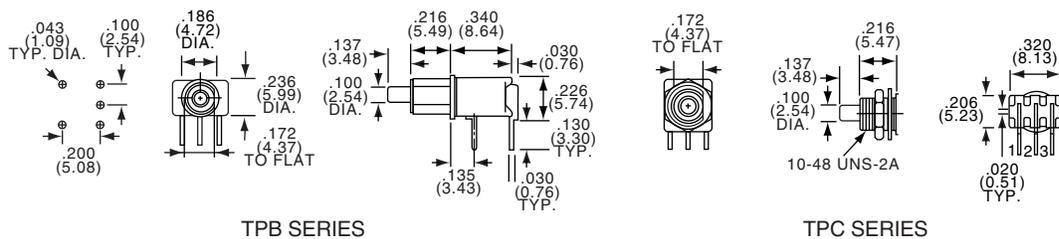
Model	Type	Act. Code P. M6	Action	Bushing Dia.	Contact Type
TPB11CGRA(*)	SPST	C	N.O. Momentary	.188	Gold
TPB11FGRA(*)	SPDT	F	Momentary	.188	Gold
TPC11CGRA(*)	SPST	C	N.O. Momentary	10-48	Gold
TPC11FGRA(*)	SPDT	F	Momentary	10-48	Gold

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

D

TP/TPA and TPB/TPC Series

Catalog 1308390
Issued 9-04

www.tycoelectronics.com

Dimensions are in inches and millimeters unless otherwise specified. Values in parentheses or brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-5-729-0425

South America: 55-11-3611-1514
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-141-810-8967

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

SEE PAGE D6 FOR PRODUCT SPECIFICATIONS
DPST/DPDT

D

TPB/TPC Series
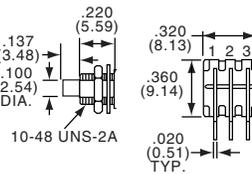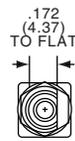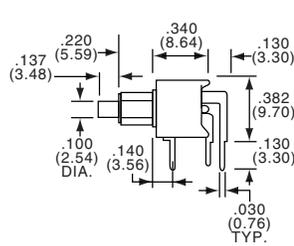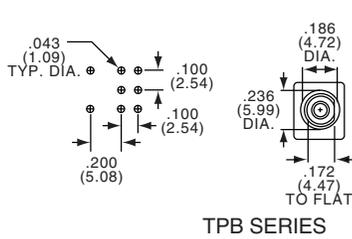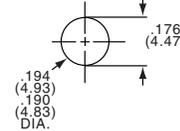
.043 (1.09) TYP. DIA.   .100 (2.54)   .236 (5.99) DIA.   .216 (5.49)   .340 (8.64)   .130 (3.30)   .172 (4.37) TO FLAT   .137 (3.48)   .216 (5.47)   .360 (9.14)   .320 (8.13)

.200 (5.08)   .172 (4.37) TO FLAT   .186 (4.72) DIA.   .137 (3.48)   .100 (2.54) DIA.   .020 (0.51) TYP.   .100 (2.54) DIA.   10-48 UNS-2A   .030 (0.76) TYP.

TPB SERIES   **TPC SERIES**
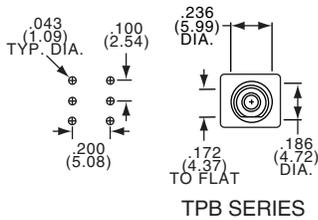
TPB21MGPC

TPC21RGPC

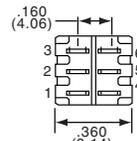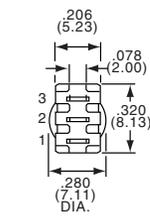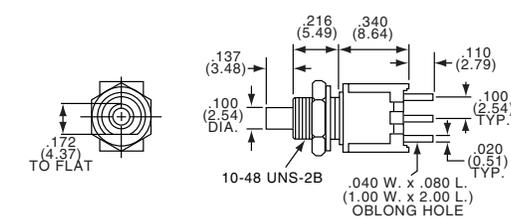| Model	Type	Act. Code P. M6	Action	Bushing Dia.	Contact Type
TPB21MGPC(*)	DPST	M	N.O. Momentary	.188	Gold
TPB21RGPC(*)	DPDT	R	Momentary	.188	Gold
TPC21MGPC(*)	DPST	M	N.O. Momentary	10-48	Gold
TPC21RGPC(*)	DPDT	R	Momentary	10-48	Gold
(*) Specify button color by adding suffix number: (0) Black, (2) Red.					
Note: No center terminal on "M" action switch.					

DPST/DPDT

.043 (1.09) TYP. DIA.   .100 (2.54)   .100 (2.54)   .186 (4.72) DIA.   .137 (3.48)   .220 (5.59)   .340 (8.64)   .130 (3.30)   .172 (4.37) TO FLAT   .137 (3.48)   .220 (5.59)   .320 (8.13)   .360 (9.14)

.200 (5.08)   .236 (5.99) DIA.   .172 (4.47) TO FLAT   .382 (9.70)   .100 (2.54) DIA.   .140 (3.56)   .130 (3.30)   .030 (0.76) TYP.   .100 (2.54) DIA.   10-48 UNS-2A   .020 (0.51) TYP.

TPB SERIES   **TPC SERIES**

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

.172 (4.37) TO FLAT   .137 (3.48)   .216 (5.49)   .340 (8.64)   .110 (2.79)   .206 (5.23)   .078 (2.00)   .160 (4.06)   .176 (4.47)

.100 (2.54) DIA.   10-48 UNS-2B   .100 (2.54) TYP.   .020 (0.51) TYP.   .040 W. x .080 L. (1.00 W. x 2.00 L.) OBLONG HOLE   .320 (8.13)   .280 (7.11) DIA.   .360 (9.14)   .194 (4.93) .190 (4.83) DIA.

TPC23M

TPC13C

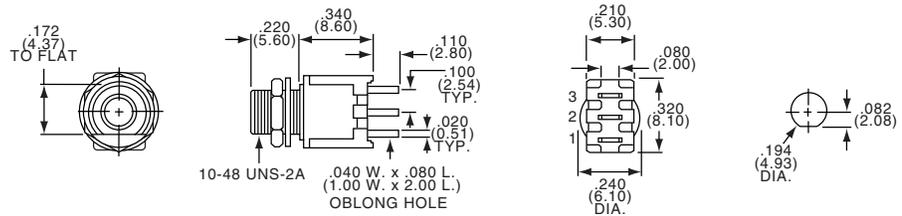| Model	Type	Act. Code P. M6	Action	Contact Type
TPC13C(*)	SPST	C	N.O. Momentary	Silver
TPC13F(*)	SPDT	F	Momentary	Silver
TPC23M(*)	DPST	M	N.O. Momentary	Silver
TPC23R(*)	DPDT	R	Momentary	Silver
(*) Specify button color by adding suffix number: (0) Black, (2) Red.				
Note: No center terminal on "C" 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

.172
(4.37)
TO FLAT

.220
(5.60)

.340
(8.60)

.110
(2.80)

.100
(2.54)
TYP.

.020
(0.51)
TYP.

10-48 UNS-2A

.040 W. x .080 L.
(1.00 W. x 2.00 L.)
OBLONG HOLE

.210
(5.30)

.080
(2.00)

.320
(8.10)

3
2
1

.240
(6.10)
DIA.

.082
(2.08)

.194
(4.93)
DIA.

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
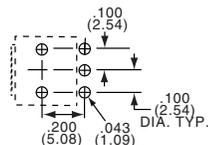
PC 10-48 Bushing

TPBF11FGPC

TPCF11CGPC

.100
(2.54)

.043
(1.09)
DIA. TYP.

.236
(5.99)
DIA.

.172
(4.37)
TO FLAT

.186
(4.72)
DIA.

.220
(5.60)

.340
(8.60)

.130
(3.30)

.020
(0.51)
TYP.

TPB SERIES

.172
(4.37)
TO FLAT

.220
(5.60)

.210
(5.30)

.030
(0.76)

.320
(8.10)

3
2
1

10-48 UNS-2A
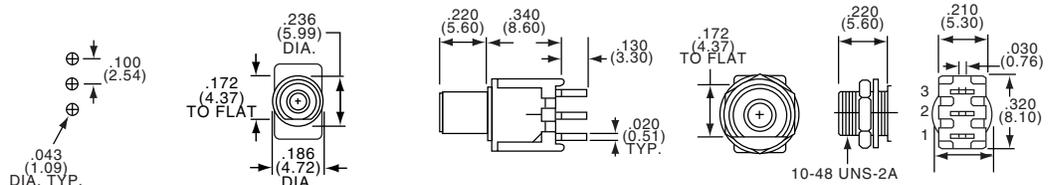
TPC SERIES

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

.236
(5.99)
DIA.

.186
(4.72)
DIA.

.220
(5.59)

.340
(8.64)

.030
(0.76)

.230
(5.80)

.130
(3.30)

.172
(4.37)
TO FLAT

.140
(3.60)

.030
(0.76)
TYP.

TPB SERIES

.172
(4.37)
TO FLAT

.220
(5.60)

.210
(5.30)

.320
(8.10)

10-48 UNS-2A

1 2 3

.020
(0.51)
TYP.

TPC SERIES

.100
(2.54)

.200
(5.08)

.043
(1.09)

.100
(2.54)
DIA. TYP.

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.				

D

TPB/TPC and TP Series

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

SEE PAGE D6 FOR PRODUCT SPECIFICATIONS

TPB SERIES

TPC SERIES
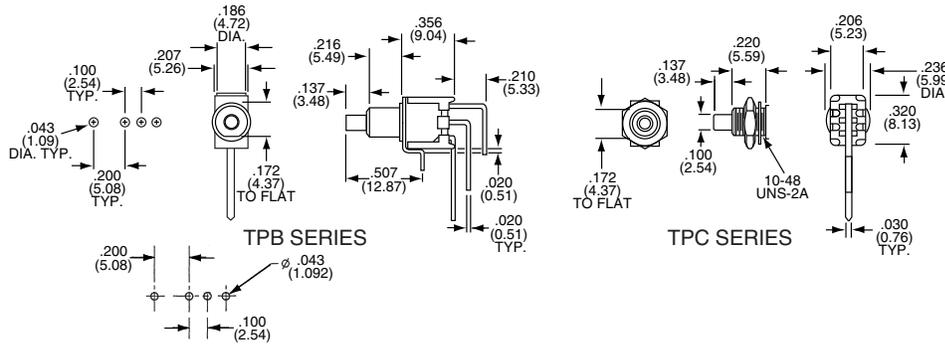
TPB11FGVRA

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.

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

1 & 2 POLE
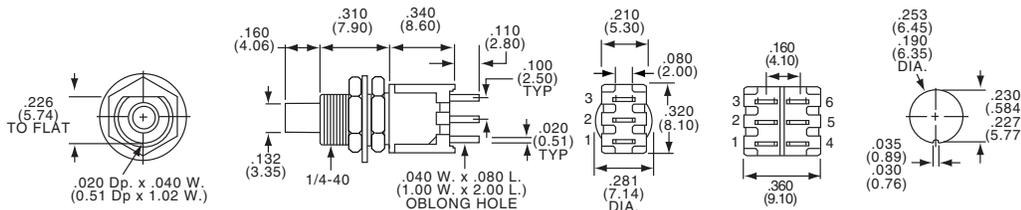
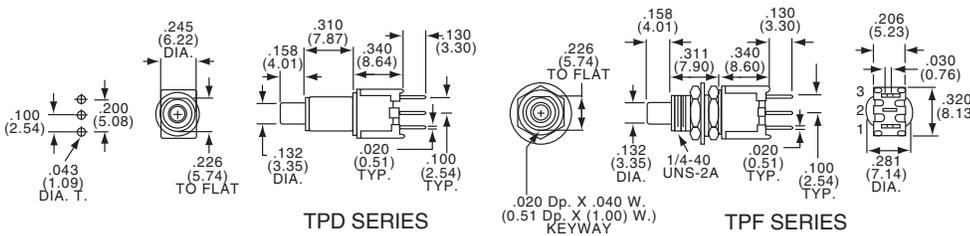TPF23M

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.
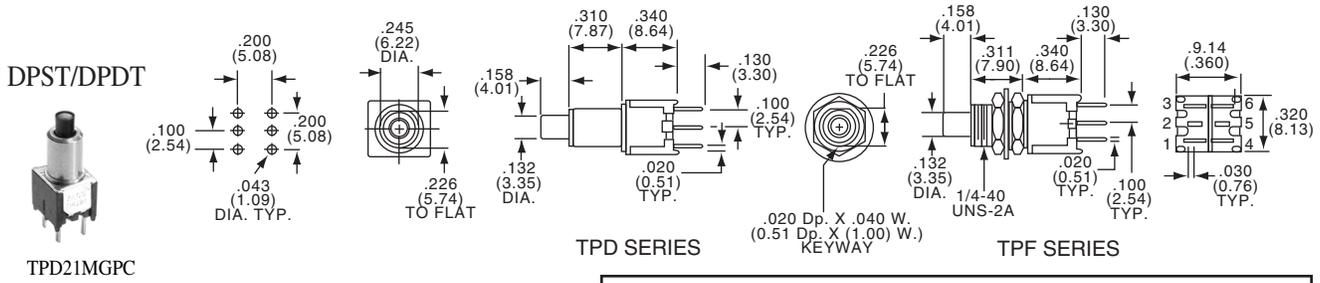Note: No center terminal on "C" or "M" action switches.

SPST/SPDT

TPD SERIES

TPF SERIES

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 swtch.

D

TP Series

D11

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

SEE PAGE D6 FOR PRODUCT SPECIFICATIONS

TPD/TPF Series

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
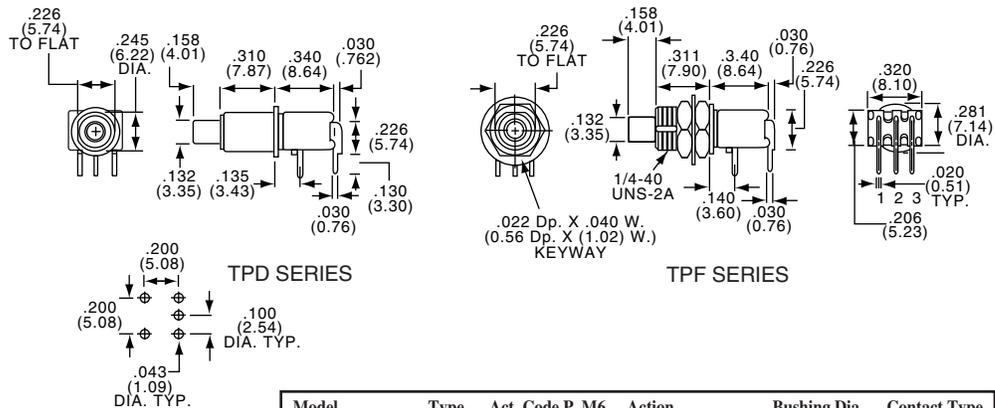
Model	Type	Act. Code P. M6	Action	Bushing Dia.	Contact Type
TPD11CGRA(*)	SPST	C	N.O. Momentary	.250	Gold
TPD11FGRA(*)	SPDT	F	Momentary	.250	Gold
TPF11CGRA(*)	SPDT	C	N.O. Momentary	1/4-40	Gold
TPF11FGRA(*)	SPDT	F	Momentary	1/4-40	Gold
(*) Specify button color by adding suffix number: (0) Black, (2) Red.					
Note: No center terminal on "C" action switch.					

DPST/DPDT

TPF21MGRA

TPD21MGRA

TPD SERIES

TPF SERIES
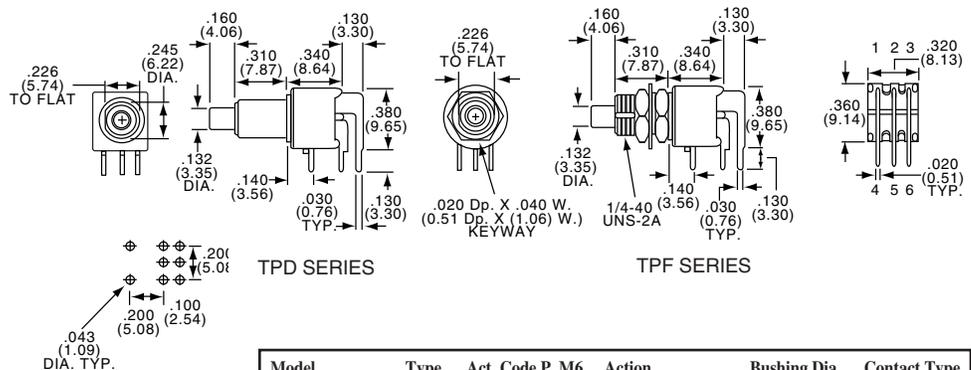
Model	Type	Act. Code P. M6	Action	Bushing Dia.	Contact Type
TPD21MGRA(*)	DPST	M	N.O. Momentary	.250	Gold
TPD21RGRA(*)	DPDT	R	Momentary	.250	Gold
TPF21MGRA(*)	DPST	M	N.O. Momentary	1/4-40	Gold
TPF21RGRA(*)	DPDT	R	Momentary	1/4-40	Gold
(*) Specify button color by adding suffix number: (0) Black, (2) Red.					
Note: No center terminal on "M" Action switches.					

Dimensions are in inches
and millimeters unless otherwise
specified. Values in parentheses
or brackets are metric equivalents.

Dimensions are shown for
reference purposes only.
Specifications subject
to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-5-729-0425

South America: 55-11-3611-1514
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-141-810-8967