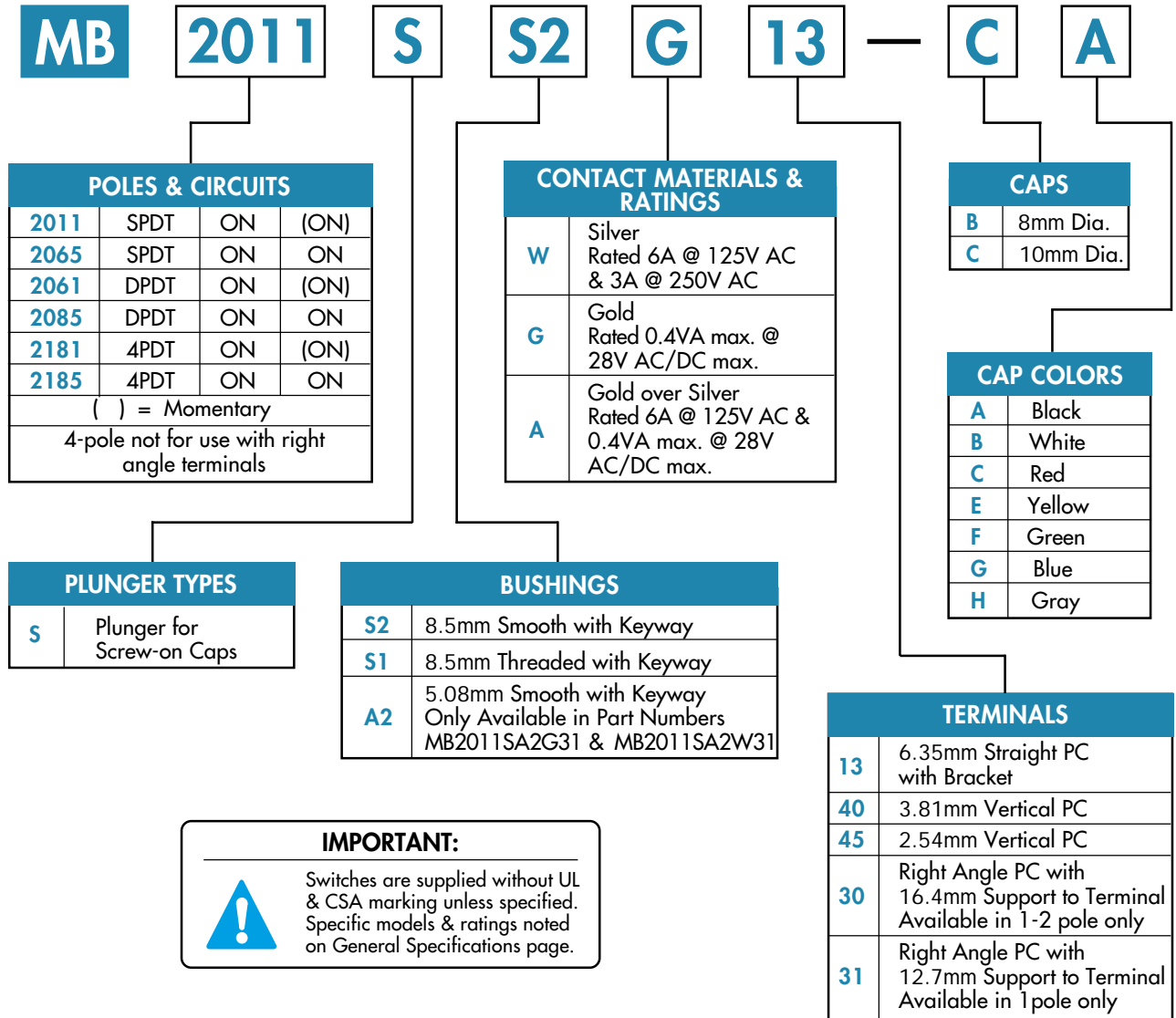




Series MB2000

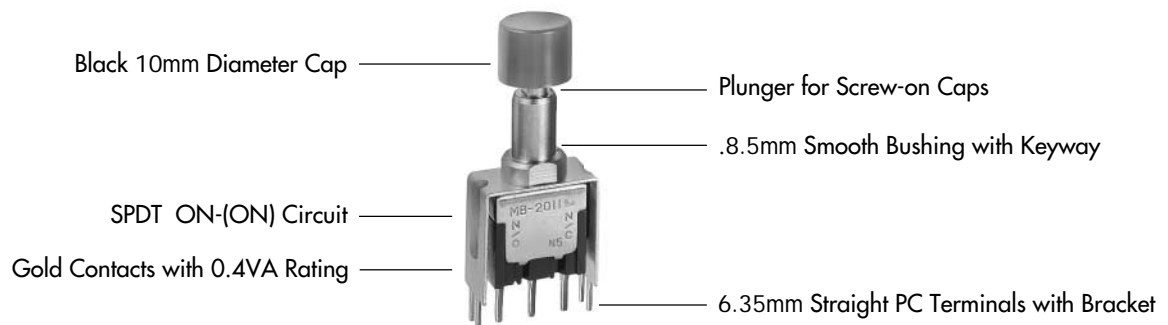
Alternate Action & Momentary Miniature Pushbutton Switches

TYPICAL SWITCH ORDERING EXAMPLE



DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

MB2011SS2G13-CA





Series MB2000

Alternate Action & Momentary Miniature Pushbutton Switches

GENERAL SPECIFICATIONS

Electrical Capacity (Resistive Load)

- Power Level (code W):** 6A @ 125V AC & 3A @ 250V AC or 3A @ 30V DC
 - Logic Level (code G):** 0.4VA maximum @ 28V AC/DC maximum
 - Logic/Power Level (code A):** Combines W & G ratings
- Note: See [Supplement Index](#) to find explanation of dual rating & operating range.

Other Ratings

- Contact Resistance:** 10 milliohms maximum for silver; 20 milliohms maximum for gold
- Insulation Resistance:** 1,000 megohms minimum @ 500V DC
- Dielectric Strength:** 1,000V AC minimum between contacts; 1,500V AC minimum between contacts & case
- Mechanical Life:** 50,000 operations minimum for splashproof models; 100,000 for all other models
- Electrical Life:** 25,000 operations minimum for silver at 100% power level; 50,000 operations minimum for silver at 50% power level; 50,000 operations minimum for gold
- Nominal Operating Force:** Momentary Action: 1-pole 950 grams; 2-pole 1,650 grams; 4-pole 2,400 grams; Alternate Action: 1-pole 450 grams; 2-pole 720 grams; 4-pole 1,200 grams
- Plunger Travel:**

	Screw-on Cap (Mom.)	Screw-on Cap (Alt.)	Snap-on Cap (Mom. & Alt.)
Pretravel:	0.71 mm (.028")	2.80 mm (.110")	3.19 mm (.125")
Overtravel:	1.09 mm (.043")	1.10 mm (.043")	1.26 mm (.050")
Total Travel:	1.80mm (.071")	3.90 mm (.153")	4.45 mm (.175")

Materials & Finishes

- Plunger:** Brass with nickel plating
- Bushing:** Brass with nickel plating
- Frame:** Stainless steel
- Case:** Diallyl phthalate resin
- Movable Contactor:** Phosphor bronze with silver or gold plating
- Movable Contacts:** Silver alloy (code W); copper with gold plating over nickel plating (code G); or silver alloy with gold plating over nickel plating (code A)
- Stationary Contacts:** Silver with silver plating (code W); copper or brass with gold plating over nickel plating (code G); or silver with gold plating over nickel plating (code A)
- Terminals:** Copper or brass with silver plating; copper or brass with gold plating over nickel plating

Environmental Data

- Operating Temp Range:** -30°C through +85°C (-22°F through +185°F)
- Humidity:** 90 ~ 95% humidity for 96 hours @ 40°C (104°F)
- Vibration:** 10 ~ 55 Hz with peak-to-peak amplitude of 1.5 mm traversing the frequency range & returning in 1 minute; 3 right angled directions for 2 hours
- Shock:** 50g acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

Installation

- Mounting Torque:** 15 kgf/cm (13 lb/in) for double nut; 7 kgf/cm (6 lb/in) for single nut
- Cap Installation Force:** 8.16 kg (18 lb) maximum downward force on actuator
- Soldering Time & Temperature:** 3 seconds @ 350°C or 5 seconds @ 270°C
- Process Seal:** Not available

Standards & Certifications





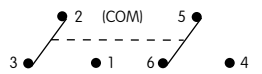
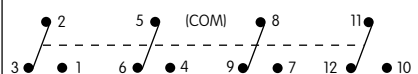
- Flammability Standards:** UL94V-0 available
- UL Recognized:** All models recognized at 6A @ 125V AC or 3A @ 250V AC or 0.4VA maximum @ 28V AC/DC maximum; UL File No. E44145
- CSA Certified:** All models certified at 6A @ 125V AC or 3A @ 250V AC or 0.4VA maximum @ 28V AC/DC maximum; CSA File No. LR23535



Series MB2000

Alternate Action & Momentary Miniature Pushbutton Switches

POLES & CIRCUITS

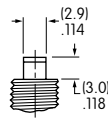
		Plunger Position () = Momentary		Connected Terminals		Throw & Schematics
Pole	Model	Normal  Keyway	Down 	Normal  Keyway	Down 	Note: Terminal numbers are not actually on the switch.
SP	MB2011 MB2065	ON	(ON)	2-3	2-1	
DP	MB2061 MB2085	ON	(ON)	2-3 5-6	2-1 5-4	DPDT 
4P	MB2181 MB2185	ON	(ON)	2-3 5-6 8-9 11-12	2-1 5-4 8-7 11-10	4PDT 

PLUNGER TYPES

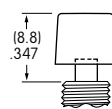
On alternate action models, after transferring circuit, the plunger returns to its original position and does not latch down.

S Plunger for Screw-on Caps

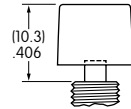
For
Momentary
Action:



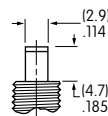
With
8mm Dia. Cap
AT413



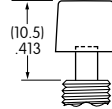
With
10mm Dia. Cap
AT407



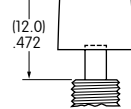
For
Alternate
Action:



With
8mm Dia. Cap
AT413

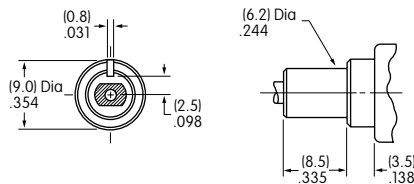


With
10mm Dia. Cap
AT407

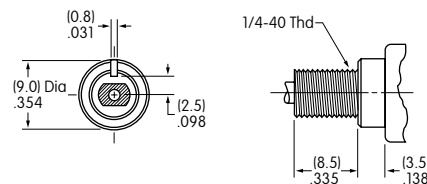


BUSHINGS

S2 8.5mm Smooth with Keyway

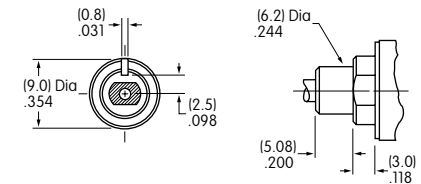


S1 8.5mm Threaded with Keyway



Standard hardware: 2 hex nuts (AT513M)
& 1 lockwasher (AT509)
Optional hardware: Locking ring (AT507)

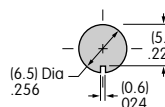
A2 5.08mm Smooth with Keyway



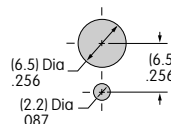
Only available in part numbers
MB2011SA2W31 & MB2011SA2G31

Panel Cutouts

For S2, S1, or A2 Bushing
with Keyway



With Optional
Locking Ring



Maximum panel thickness with
standard hardware: 3.9mm (.154")



Series MB2000

Alternate Action & Momentary Miniature Pushbutton Switches

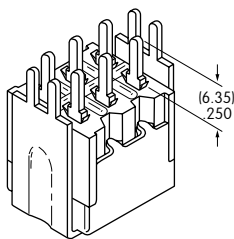
CONTACT MATERIALS & RATINGS

W	Silver over Silver	Power Level	6A @ 125V AC & 3A @ 250V AC
G	Gold over Brass or Copper	Logic Level	0.4VA maximum @ 28V AC/DC maximum
A	Gold over Silver	Power Level or Logic Level	6A @ 125V AC & 3A @ 250V AC or 0.4VA maximum @ 28V AC/DC maximum

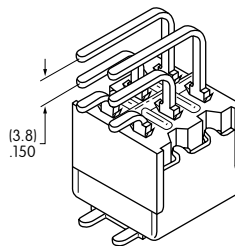
Note: This dual rated option is suitable when two or more identical switches are used in logic and in power circuits within the same application. See [Supplement Index](#) to find complete explanation of dual rating and operating range.

TERMINALS

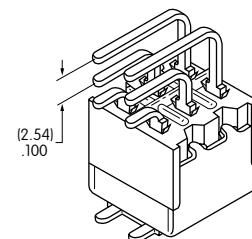
13 6.35mm Straight PC with Bracket



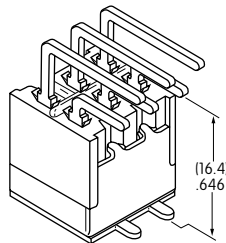
40 3.81mm Vertical PC



45 3.81mm Vertical PC

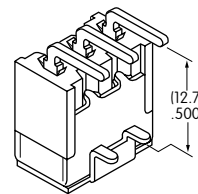


30 Right Angle PC with 16.4mm Support to Terminal



Only Available in 1 & 2 Pole

31 Right Angle PC with 12.7mm Support to Terminal



Only Available in Part No. MB2011SA2W31 & MB2011SA2G31

Note: Full dimensioned drawings appear on the following pages.

CAPS & CAP COLORS

B AT413 8mm Diameter Screw-on Cap

Material: Polystyrene
Finish: Glossy



C AT407 10mm Diameter Screw-on Cap

Material: Polystyrene
Finish: Glossy



Cap Colors Available:

- A** Black **B** White **C** Red **E** Yellow **F** Green **G** Blue **H** Gray **J** Clear



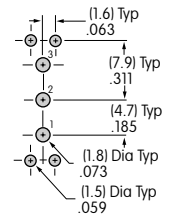
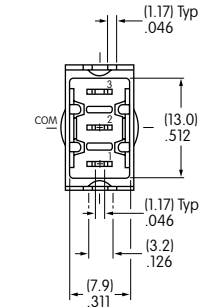
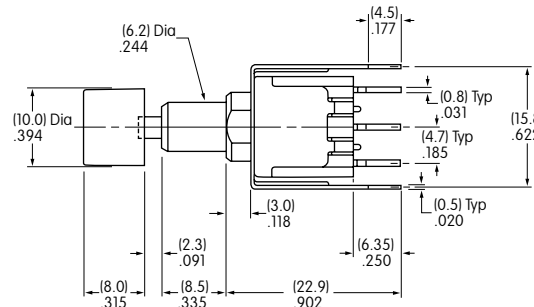
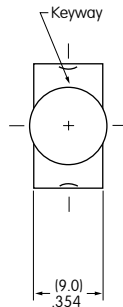
Series MB2000

Alternate Action & Momentary Miniature Pushbutton Switches

TYPICAL SWITCH DIMENSIONS

Straight PC with Bracket

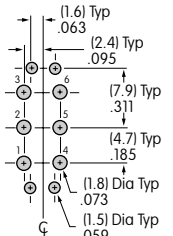
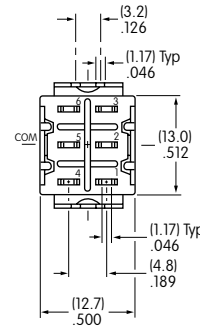
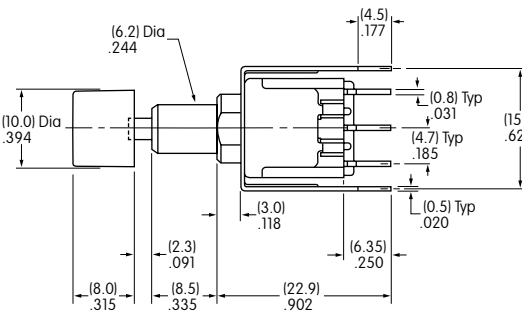
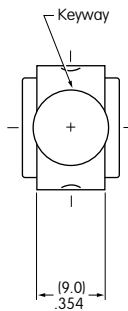
Single Pole



MB2011SS2G13-CA

Straight PC with Bracket

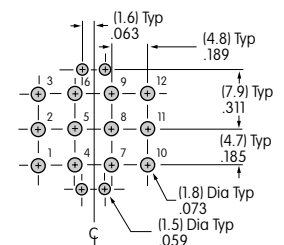
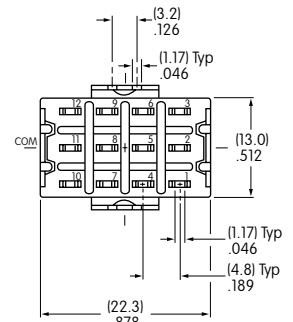
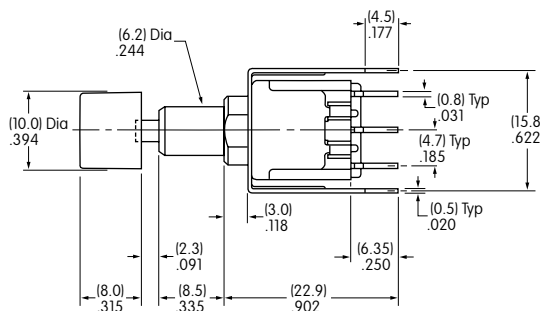
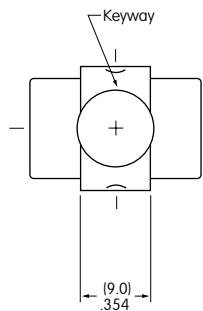
Double Pole



MB2061SS2G13-CA

Straight PC with Bracket

Four Pole



MB2181SS2G13-CA



Series MB2000

Alternate Action & Momentary Miniature Pushbutton Switches

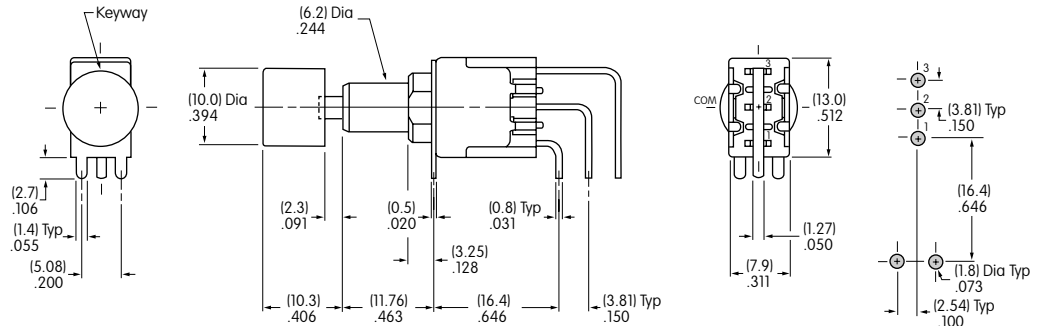
TYPICAL SWITCH DIMENSIONS

3.81mm Vertical PC

Single Pole



MB2011SS2G40-CA

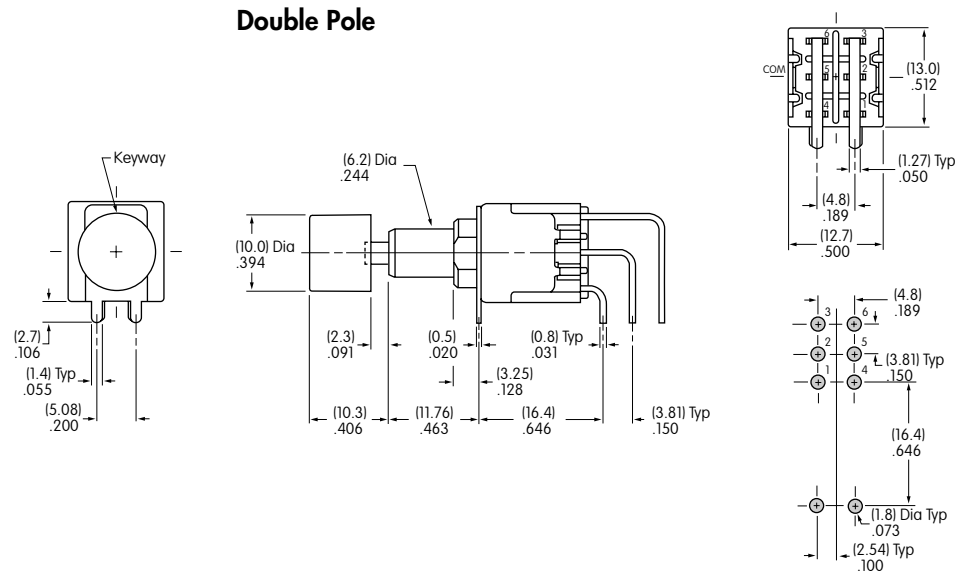


3.81mm Vertical PC

Double Pole



MB2061SS2G40-CA

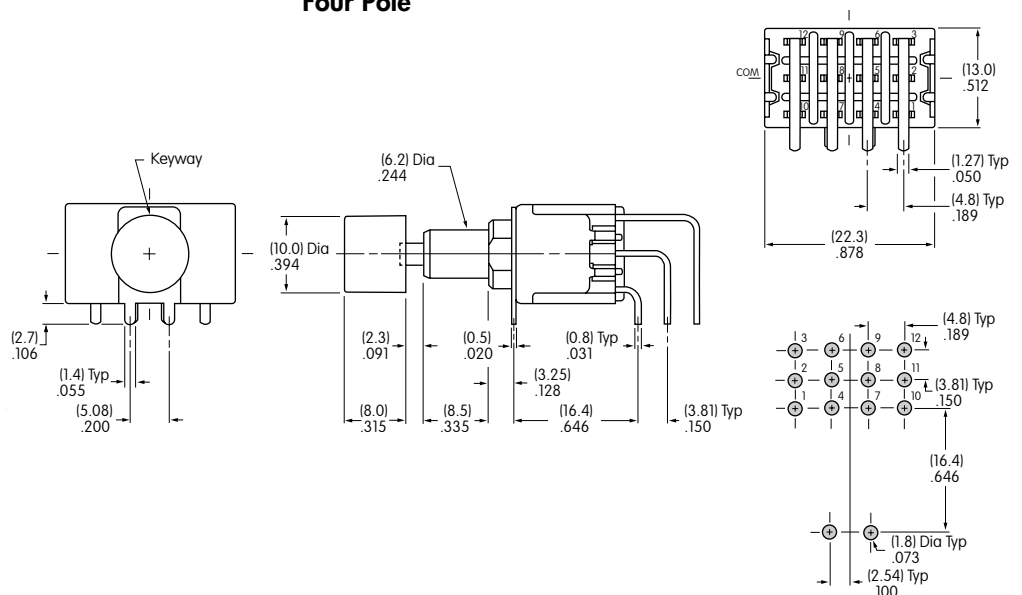


3.81mm Vertical PC

Four Pole



MB2181SS2G40-CA





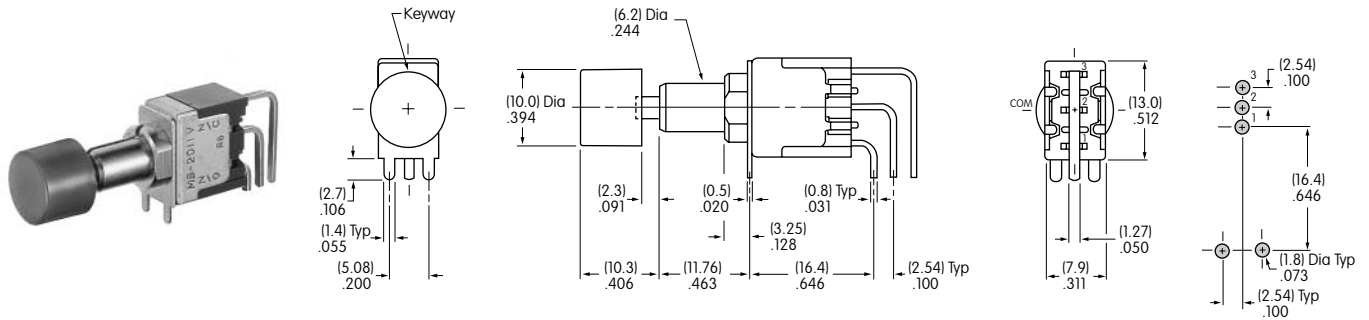
Series MB2000

Alternate Action & Momentary Miniature Pushbutton Switches

TYPICAL SWITCH DIMENSIONS

2.54mm Vertical PC

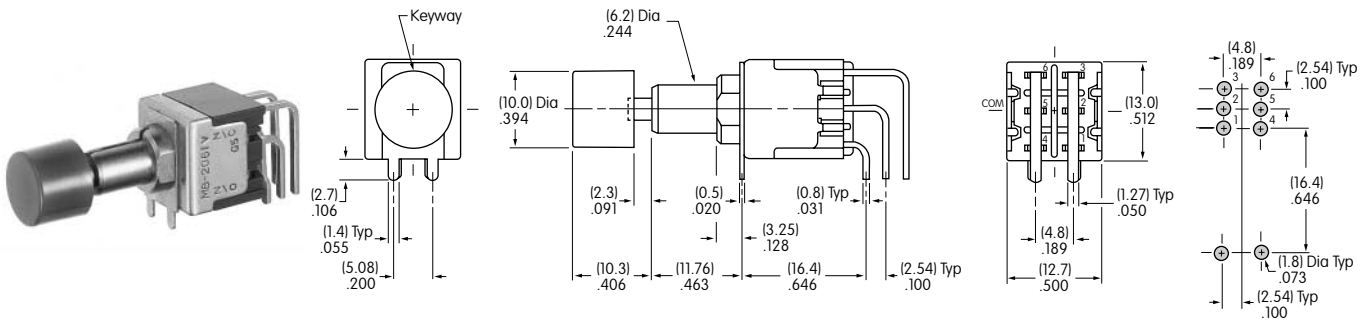
Single Pole



MB2011SS2G45-CA

2.54mm Vertical PC

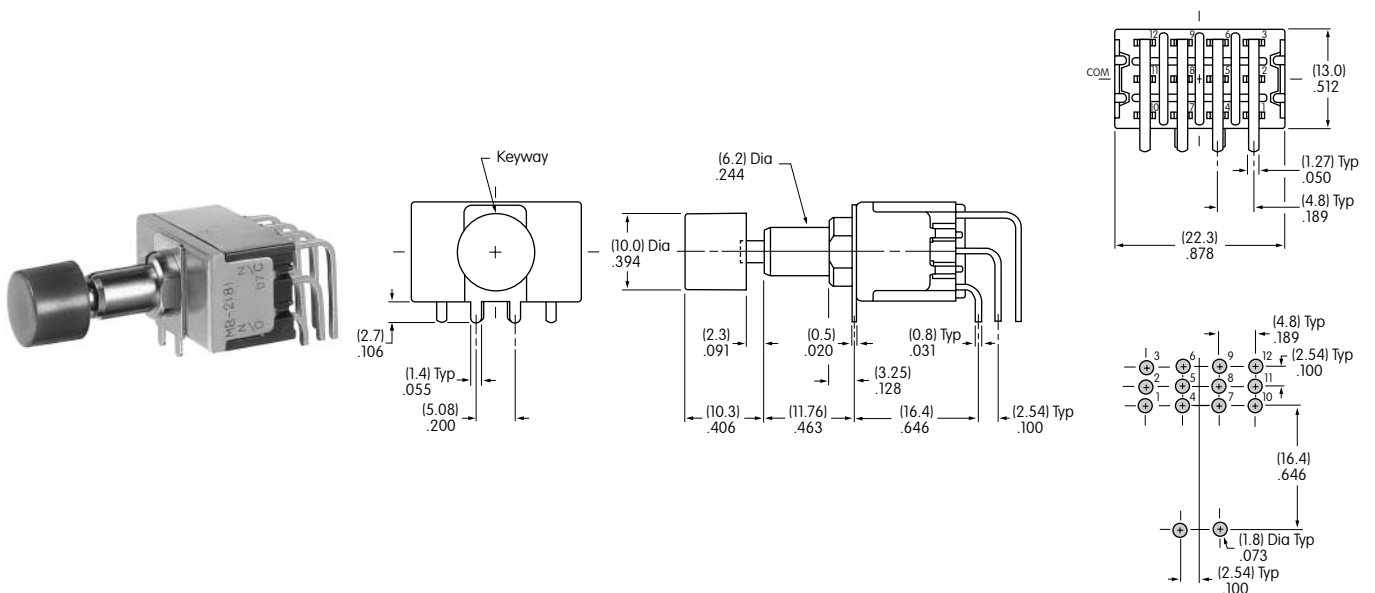
Double Pole



MB2061SS2G45-CA

2.54mm Vertical PC

Four Pole



MB2181SS2G45-CA



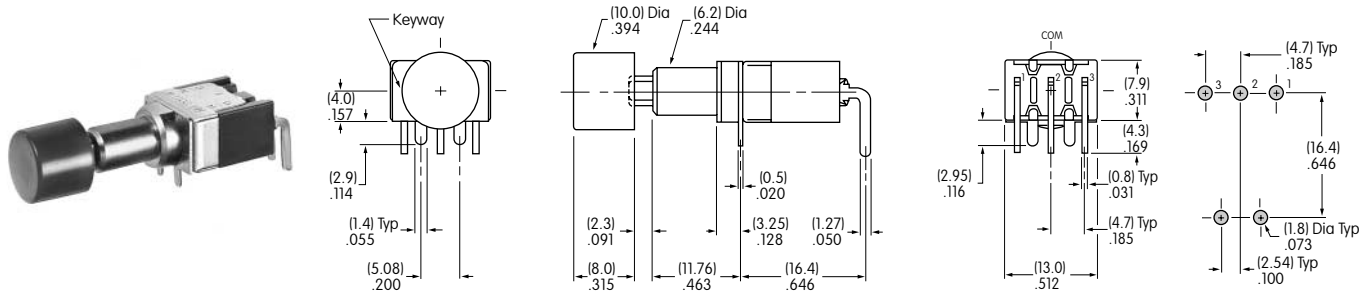
Series MB2000

Alternate Action & Momentary Miniature Pushbutton Switches

TYPICAL SWITCH DIMENSIONS

Right Angle PC

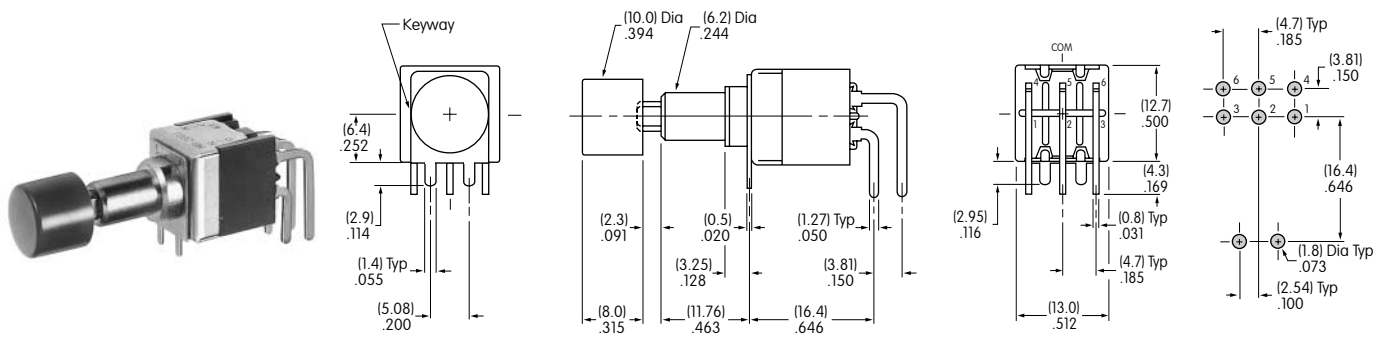
Single Pole



MB2011SS2G30-CA

Right Angle PC

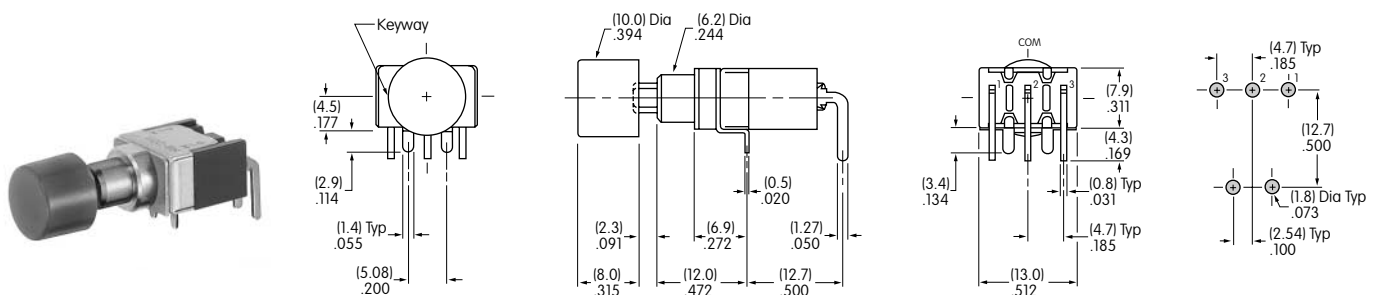
Double Pole



MB2061SS2G30-CA

Right Angle PC with 12.7mm Support to Terminal

Single Pole



MB2011SA2G31-CA

Only available in Part Numbers MB2011SA2W31 & MB2011SA2G31