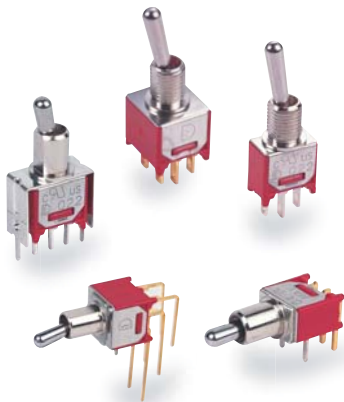


# 2M Series

Sub-Miniature Toggle Switches



2M  
Toggle Switches



## SPECIFICATIONS

**CONTACT RATING:** Dependent upon contact material See Page 29.

**MECHANICAL LIFE:** 30,000 make-and-break cycles.

**CONTACT RESISTANCE:** 20 mΩ max. initial @ 2-4VDC  
100mA for both silver and gold plated contacts.

**INSULATION RESISTANCE:** 1,000 MΩ min.

**DIELECTRIC STRENGTH:** 1,000 Vrms min.@sea level.

**OPERATING TEMPERATURE:** -40°C to 85°C.

## MATERIALS

**CASE:** Diallyl phthalate (DAP) (UL94v-0).

**ACTUATOR:** Brass, chrome plated.

**BUSHING:** Brass or zinc, nickel plated.

**HOUSING:** Stainless Steel.

**SWITCH SUPPORT:** Brass,tin plated.

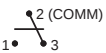
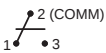
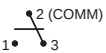
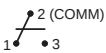
**TERMINAL/CONTACT:** Brass or copper alloy,with Silver or gold plated.(See Page 29 )

## HOW TO ORDER

| MODEL NO.                                               | ACTUATOR                          | BUSHING                                      | TERMINATIONS                                    | TERMINAL PLATING       | SEAL                   | RoHS SOLDERING         |
|---------------------------------------------------------|-----------------------------------|----------------------------------------------|-------------------------------------------------|------------------------|------------------------|------------------------|
| <div><div></div><div></div><div></div><div></div></div> | <div><div></div><div></div></div> | <div><div></div><div></div><div></div></div> | <div><div></div><div></div><div></div></div>    | <div><div></div></div> | <div><div></div></div> | <div><div></div></div> |
| Model NO.                                               | Actuator                          |                                              | Terminations                                    | Terminal plating       | Seal                   | RoHS soldering         |
| 2MS1 SP ON-NONE-ON                                      | T1 9.40 high                      |                                              | M1 Solder Lug                                   | Q Silver               | E EPOXY (std)          |                        |
| 2MS2 SP ON-NONE-(ON)                                    | T2 5.33 high                      |                                              | M2 PC thru-hole                                 | R Gold                 | N NO EPOXY             |                        |
| 2MS3 SP ON-OFF-ON                                       | T3 7.37 high                      |                                              | M51 15.24 high, wire wrap                       | C Gold over silver     |                        |                        |
| 2MS4 SP (ON)-OFF-(ON)                                   | T4 10.41 high                     |                                              | M52 6.00 high, wire wrap                        |                        |                        |                        |
| 2MS5 SP ON-OFF-(ON)                                     | T5 5.59 high                      |                                              | M6 Right angle, PC thru-hole                    |                        |                        |                        |
| 2MS6 SP OFF-NONE-ON                                     | TL1 Locking lever                 |                                              | M6N Right angle, snap-in, PC thru-hole          |                        |                        |                        |
| 2MD1 DP ON-NONE-ON                                      | TL2 Locking lever                 |                                              | M7 Vertical right angle, PC thru-hole           |                        |                        |                        |
| 2MD2 DP ON-NONE-(ON)                                    |                                   |                                              | M7N Vertical right angle, snap-in, PC thru-hole |                        |                        |                        |
| 2MD3 DP ON-OFF-ON                                       |                                   |                                              | VS2 V-bracket                                   |                        |                        |                        |
| 2MD6 DP ON- ON -ON.                                     |                                   |                                              | V2N Snap-in V-bracket                           |                        |                        |                        |
|                                                         |                                   |                                              | VS3 V-bracket                                   |                        |                        |                        |
|                                                         |                                   |                                              | V3N Snap-in V-bracket                           |                        |                        |                        |
|                                                         |                                   |                                              |                                                 |                        |                        | S RoHS & Lead Free     |
| Bushing                                                 |                                   |                                              |                                                 |                        |                        |                        |
| B1 5.59 high,flat (thd)                                 |                                   |                                              |                                                 |                        |                        |                        |
| B2 5.59 high,flat (non-thd)                             |                                   |                                              |                                                 |                        |                        |                        |
| B3 5.59 high,keyway (thd)                               |                                   |                                              |                                                 |                        |                        |                        |
| B4 5.59 high,keyway (non-thd)                           |                                   |                                              |                                                 |                        |                        |                        |
| B5 7.87 high,flat (thd)                                 |                                   |                                              |                                                 |                        |                        |                        |
| B6 7.87 high,flat (non-thd)                             |                                   |                                              |                                                 |                        |                        |                        |
| B7 6.60 high,keyway (thd)                               |                                   |                                              |                                                 |                        |                        |                        |
| B8 6.60 high,keyway (non-thd)                           |                                   |                                              |                                                 |                        |                        |                        |
| B25 8.00 high,keyway,locking lever (thd )               |                                   |                                              |                                                 |                        |                        |                        |

\* 2MS6 model type not applicable to  
M6/M6N/M7/M7N terminations

SWITCH FUNCTION

| NO. POLES | UL/CSA MODEL NO. | MODEL NO. | SWITCH FUNCTION                                                                   |                                                                                   |                                                                                   | CONNECTED TERMINALS / SCHEMATIC                                                                 |                                                                                     |                                                                                     |
|-----------|------------------|-----------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|           |                  |           | POS.1                                                                             | POS.2                                                                             | POS.3                                                                             | POS.1                                                                                           | POS.2                                                                               | POS.3                                                                               |
|           |                  |           |  |  |  |                |  |  |
| SP        | Q2211            | 2MS1      | ON                                                                                | NONE                                                                              | ON                                                                                | 2-3<br>        | N/A                                                                                 | 2-1                                                                                 |
|           | Q2212            | 2MS2      | ON                                                                                | NONE                                                                              | (ON)                                                                              |                                                                                                 | OPEN                                                                                |  |
|           | Q2213            | 2MS3      | ON                                                                                | OFF                                                                               | ON                                                                                |                                                                                                 |                                                                                     |                                                                                     |
|           | Q2214            | 2MS4      | (ON)                                                                              | OFF                                                                               | (ON)                                                                              | 1-2 (COMM)<br> | OPEN                                                                                |  |
|           | Q2215            | 2MS5      | ON                                                                                | OFF                                                                               | (ON)                                                                              |                                                                                                 |                                                                                     |                                                                                     |
|           | Q2216            | 2MS6      | OFF                                                                               | NONE                                                                              | ON                                                                                | OPEN                                                                                            | N/A                                                                                 | 3-1                                                                                 |
| DP        | Q2221            | 2MD1      | ON                                                                                | NONE                                                                              | ON                                                                                | 2-3,5-6<br>    | N/A                                                                                 | 2-1,5-4                                                                             |
|           | Q2222            | 2MD2      | ON                                                                                | NONE                                                                              | (ON)                                                                              |                                                                                                 | OPEN                                                                                |  |
|           | Q2223            | 2MD3      | ON                                                                                | OFF                                                                               | ON                                                                                |                                                                                                 |                                                                                     |                                                                                     |
|           | Q2226            | 2MD6      | ON                                                                                | ON                                                                                | ON                                                                                | 2-3,5-6                                                                                         | 2-3,5-4                                                                             | 2-1,5-4                                                                             |

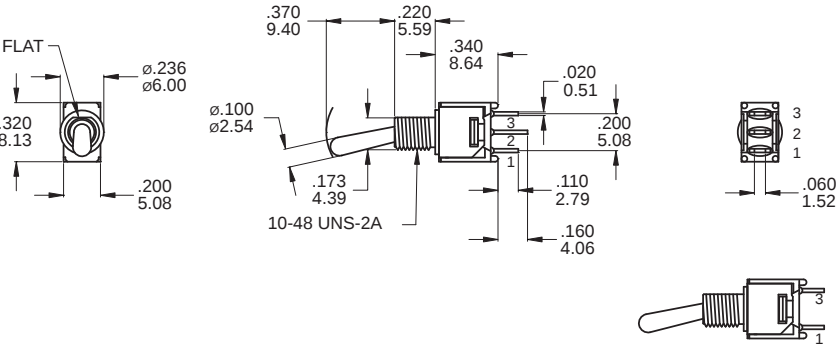


2M  
Toggle Switches

( )=MOMENTARY

▲ Please check the availability in advance before order

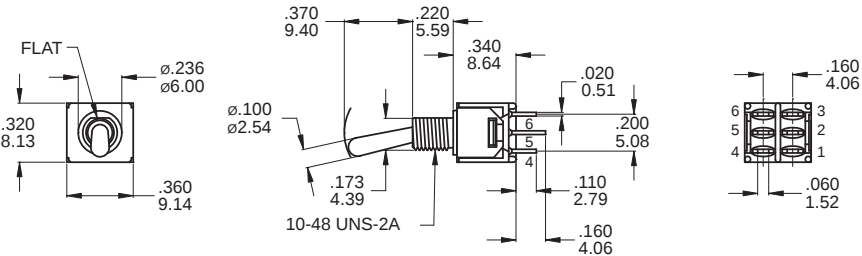
POLE OPTIONS



SPDT

2MS6 Models : Omit 2nd terminal

Part No. Shown : 2MS1T1B1M1QES



DPDT

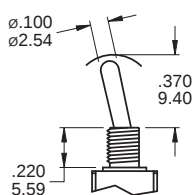
Part No. Shown : 2MD1T1B1M1RES

# 2M Series

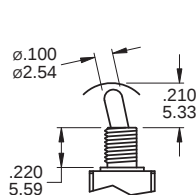
Sub-Miniature Toggle Switches

## ACTUATOR OPTIONS

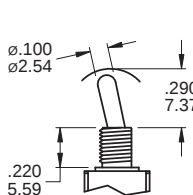
T1



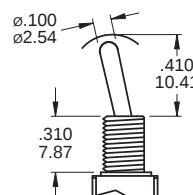
T2



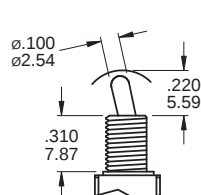
T3



T4



T5

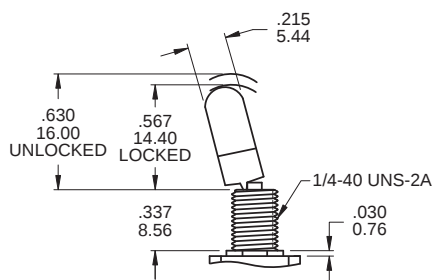


NONE: T1,T2,T3 Actuator shown with B1 to B4 bushing, subtract 0.09 ( 2.29 ) for B5 bushing, subtract 0.04 ( 1.02 ) for B7 bushing.

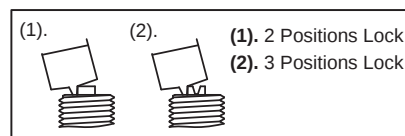
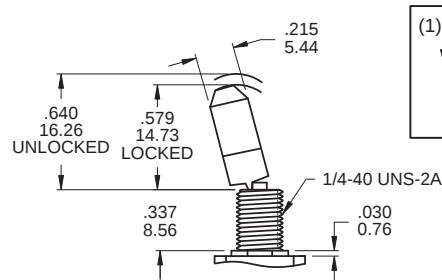
T4,T5 Actuator shown with B5,B6 bushing, add 0.09 ( 2.29 ) for B1 to B3 bushing, add 0.05 ( 1.27 ) for B7 bushing.

Std for M1,M2 Terminal sub .016(.040) for M6,M7,VSX

TL1B25

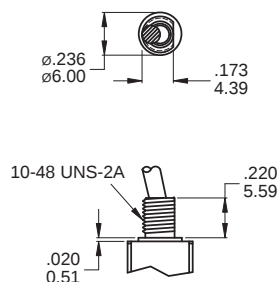


TL2B25

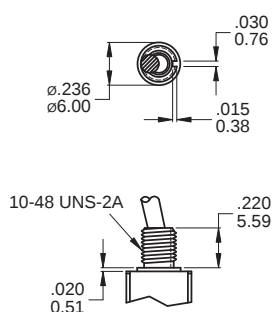


## BUSHING OPTIONS

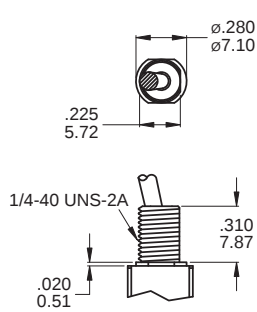
B1 THD  
B2 NON-THD



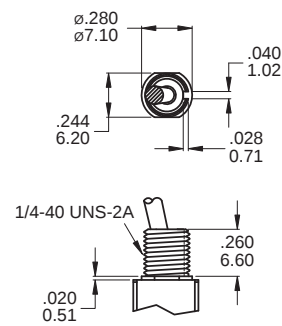
B3 THD  
B4 NON-THD



B5 THD  
B6 NON-THD

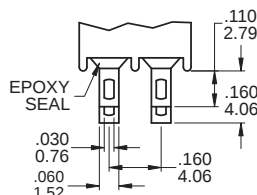
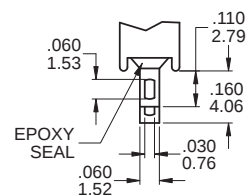


B7 THD  
B8 NON-THD



## TERMINATION OPTIONS

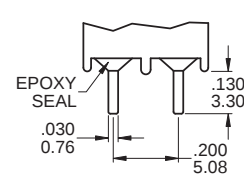
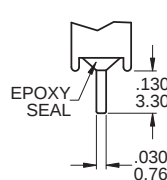
M1 Solder lug



Double Pole

.020(0.51) THK.

M2 PC Thru-hole



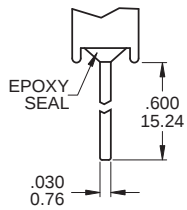
Double Pole

.020(0.51) THK.

## 2M Series

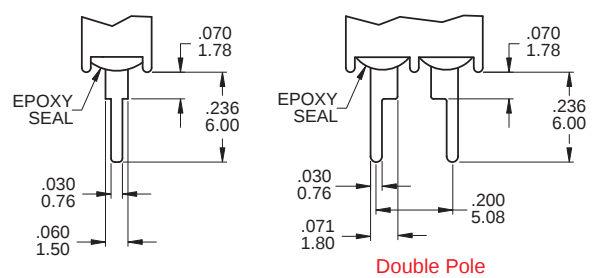
## Sub-Miniature Toggle Switches

## M51 Wire Wrap



.020(0.51) THK.

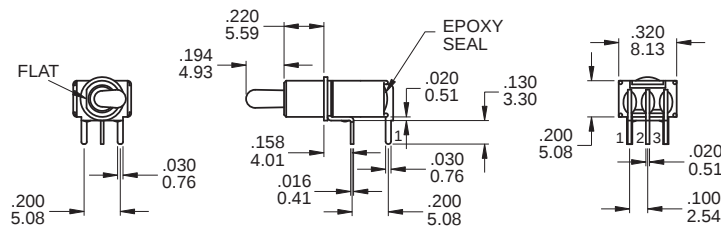
## M52 Wire Wrap



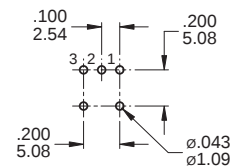
.020(0.51) THK.

2M  
Toggle Switches

## M6



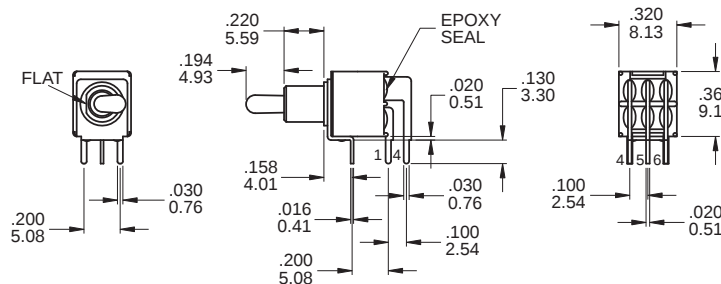
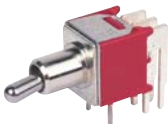
## P.C. MOUNTING



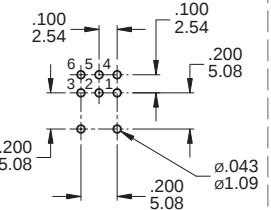
## SPDT

Part No. Shown : 2MS1T2B2M6RES

## M6



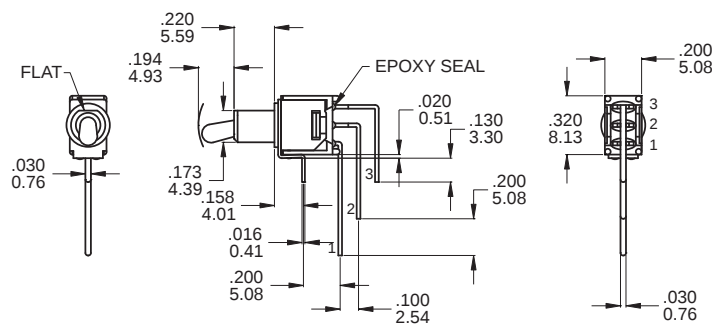
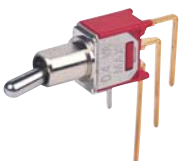
## P.C. MOUNTING



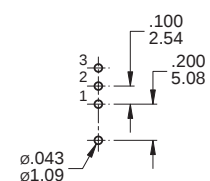
## DPDT

Part No. Shown : 2MD1T2B2M6QES

## M7



## P.C. MOUNTING



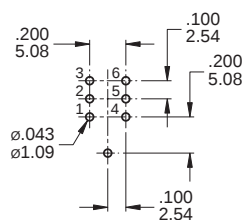
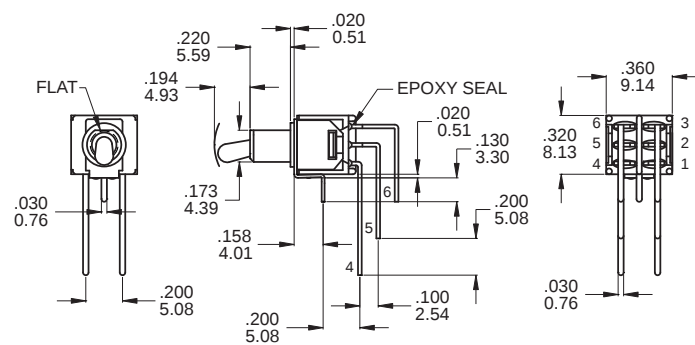
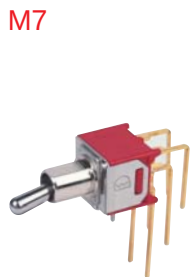
## SPDT

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## Sub-Miniature Toggle Switches

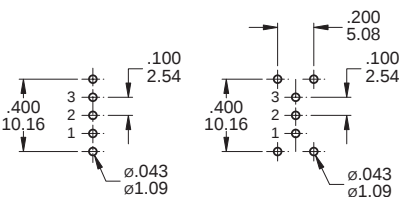
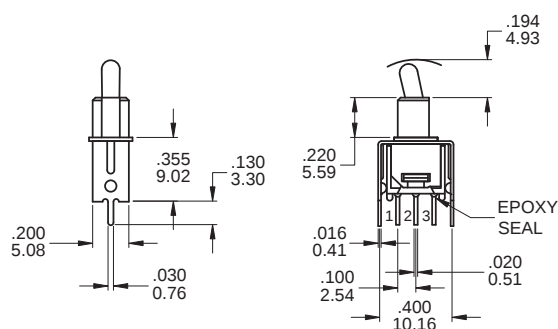


DPDT



Part No. Shown : 2MD1T2B2M7RES

## SPDT

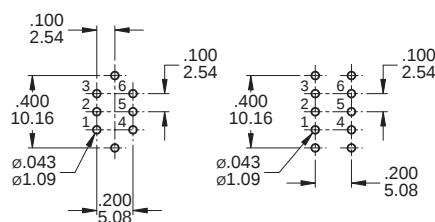
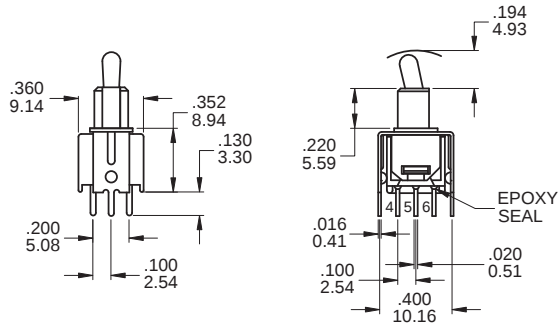


VS2

VS3

Part No. Shown : 2MS1T2B2VS2QES

## DPDT



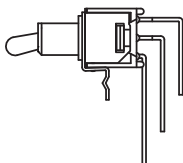
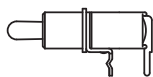
VS2

VS3

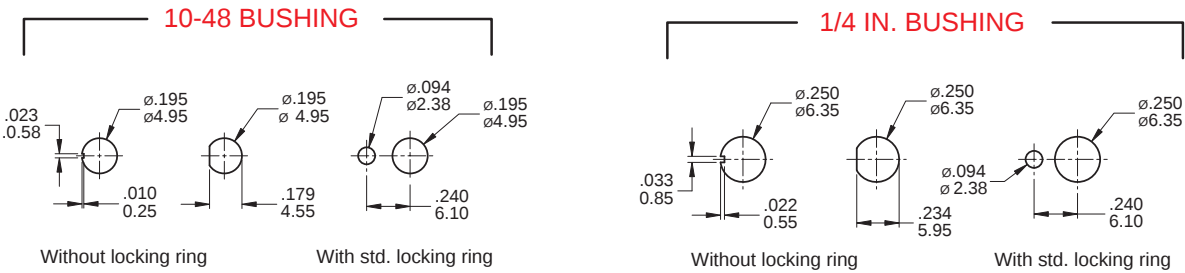
Part No. Shown : 2MD1T2B2VS2QES

## SNAP-IN TERMINATION OPTIONS

V3N

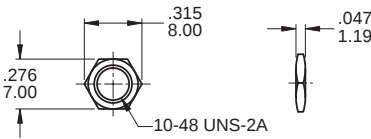


PANEL MOUNTING



HARDWARE

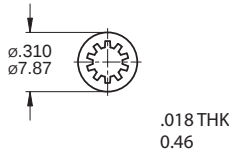
10-48 NUT



MNU-2M01

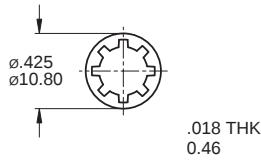
Supplied standard with B1/ B3 bushing

LOCKWASHER



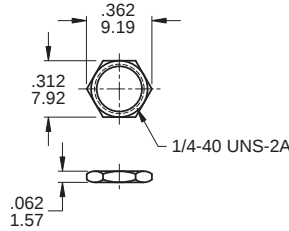
Supplied standard with B1 / B3 bushing

LOCKWASHER



Supplied standard with B5 / B7 bushing

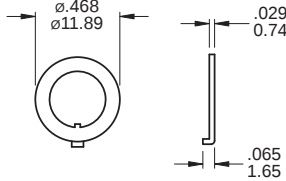
1/4 NUT



MNU-1M01A

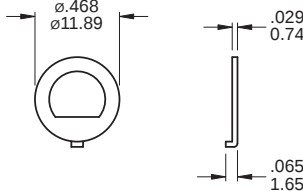
Supplied standard with B5/ B7 bushing

LOCKING RING



Supplied standard with B7 bushing

LOCKING RING



Supplied standard with B5 bushing

CONTACT MATERIAL OPTIONS

|   | CONTACT PLATING  | TERMINAL PLATING | RATINGS                                                                             |
|---|------------------|------------------|-------------------------------------------------------------------------------------|
| Q | Silver           | Silver           | 3 Amps with resistant load @ 120VAC or 28VDC<br>1 Amps with resistant load @ 250VAC |
| C | Gold over Silver | Gold over silver |                                                                                     |
| R | Gold             | Gold             | 0.4 Volt - Amps ( VA ) max. @ 20V max. ( AC or DC )                                 |

SOLDERING PROCESSES

MANUAL SOLDERING: Use soldering iron of 30 watts, controlled at 350°C approximately 5 seconds while applying solder.

WAVE SOLDERING: Recommended Soldering Temperature: 270 ± 5°C  
Duration of Solder Immersion: Max 5 sec. (PCB is 1.6mm in thickness)

# Mouser Electronics

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[2MD1T2B3M2QES](#) [2MD1T2B4M2QES](#) [2MD1T3B1M7QES-5](#) [2MD3T1B1M2QES](#) [2MD3T1B3M2QES](#)  
[2MD3T2B3M2QES](#) [2MS1T1B1M1QES](#) [2MS1T1B1M1QNS](#) [2MS1T1B1M2QES](#) [2MS1T1B2M6RES](#)  
[2MS1T1B2VS2QES](#) [2MS1T1B3M2QES](#) [2MS1T1B4M2QES](#) [2MS1T1B4M7QES](#) [2MS1T2B2M2RES](#)  
[2MS1T2B2M6QES](#) [2MS1T2B2M6RES](#) [2MS1T2B3M1QES](#) [2MS1T2B3M2QES](#) [2MS1T2B4M2QES](#)  
[2MS1T2B4M6QNS](#) [2MS1T4B3M2CES](#) [2MS3T1B1M1QES](#) [2MS3T1B1M2QES](#) [2MS3T1B3M2QES](#)  
[2MS3T1B4M2QES](#) [2MS3T2B1M2QES](#) [2MS3T2B2M6QES](#) [2MS3T2B3M1QES](#) [2MS3T2B3M2QES](#)  
[2MS6T1B3M2QES](#) [2MS6T2B4M2QES](#) [2MS6T4B3M2CES](#) [2MS1T1B1M6QES](#) [2MS1T1B1M7QES](#)  
[2MS1T2B4M7QES](#) [2MS3T2B3M6QES](#) [2MS1T2B1M2QES-1](#)

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