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# GT Series Sealed Ultraminiature Toggle Switches

## Features/Benefits

- Sealed against solder and cleaning process contaminants
- Ultraminiature size, smallest footprint available
- Thru-hole and surface mount models
- High temperature materials (UL 94V-0)
- RoHS compliant and compatible

## Typical Applications

- Hand-held telecommunications
- Small instrumentation



## Specifications

CONTACT RATING: 0.4 VA max. @ 20 V AC or DC max.  
 MECHANICAL & ELECTRICAL LIFE: 40,000 make-and-break cycles at full load.  
 CONTACT RESISTANCE: Below 50 m Ω typ. initial @ 2-4 V DC, 100 mA.  
 INSULATION RESISTANCE: 10<sup>9</sup> Ω min.  
 DIELECTRIC STRENGTH: 500 Vrms min. @ sea level.  
 OPERATING TEMPERATURE: -30°C to 85°C.  
 SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).  
 PACKAGING: Surface mount switches shipped in anti-static tape and reel packaging per EIA 481-3, see page F-47 for drawings and reel information. Tape and cover strip are conductive for use near statically sensitive components, consult Customer Service Center.

## Materials

HOUSING AND BASE: Glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0).  
 ACTUATOR: Glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0), with standard internal o-ring seal.  
 SWITCH SUPPORT: Brass, tin plated.  
 MOVABLE CONTACTS: Copper alloy, with gold plate over nickel plate.  
 STATIONARY CONTACTS: Copper alloy, with gold plate over nickel plate.  
 TERMINALS: Gold.  
 TERMINAL SEAL: Epoxy. All terminals insert molded.

**NOTE:** Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

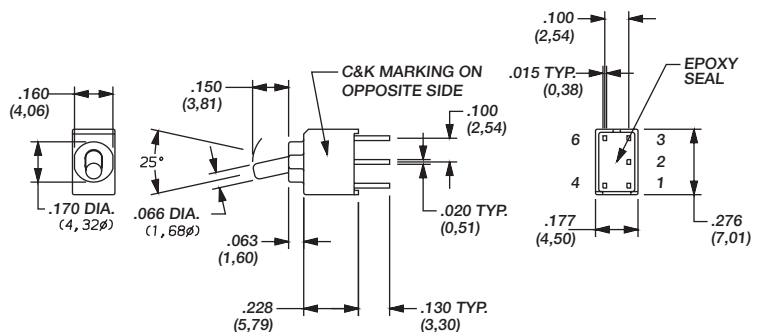
## How To Order

Complete part numbers for GT Series Sealed Ultraminiature Toggle Switches are shown on pages F-43 thru F-47.

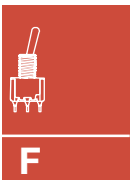
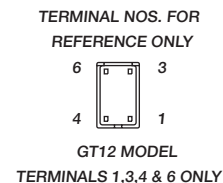
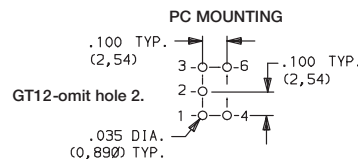


GT11MCBE  
SPDT

| PART NUMBER     | SWITCH FUNCTION                  |        |        |
|-----------------|----------------------------------|--------|--------|
|                 | POS. 1                           | POS. 2 | POS. 3 |
| <b>GT11MCBE</b> | ON                               | NONE   | ON     |
| <b>GT13MCBE</b> | ON                               | OFF    | ON     |
| Conn. Terms.    | 2-3                              | OPEN   | 2-1    |
| Schematic       |                                  |        |        |
| SPDT            | Note: Pins 4 and 6 not connected |        |        |
| <b>GT12MCBE</b> | OFF                              | NONE   | ON     |
| Conn. Terms.    | OPEN                             | N/A    | 3-1    |
| Schematic       |                                  |        |        |
| SPST            | Note: Pins 4 and 6 not connected |        |        |



ACTUATOR SHOWN IN POS. 1

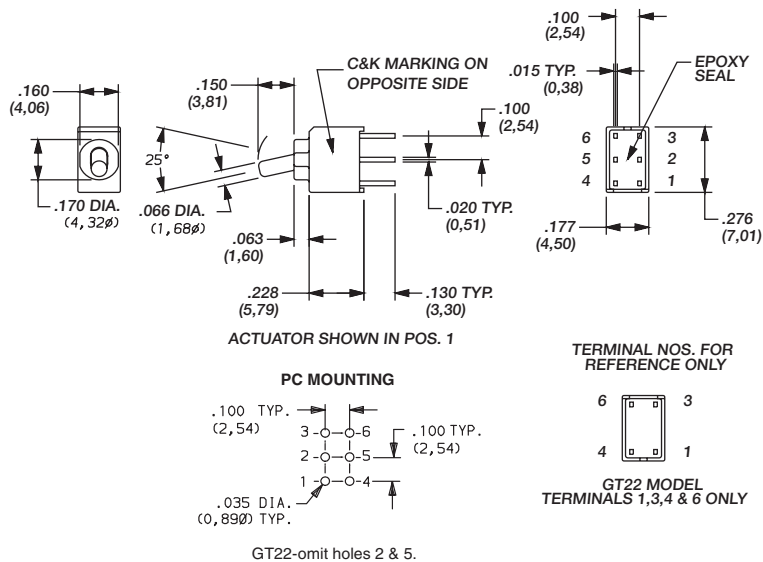


Toggle



Dimensions are shown: Inches (mm)  
 Specifications and dimensions subject to change

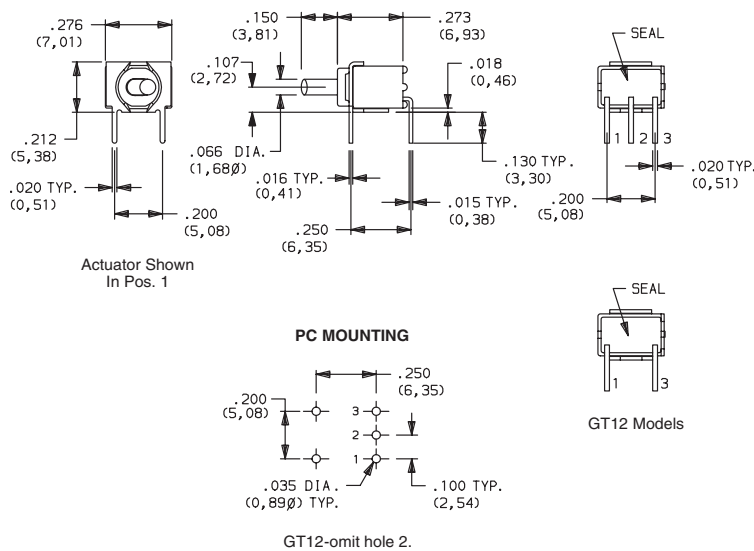
# GT Series Sealed Ultraminiature Toggle Switches



| PART NUMBER                        | SWITCH FUNCTION |        |          |
|------------------------------------|-----------------|--------|----------|
|                                    | POS. 1          | POS. 2 | POS. 3   |
| <b>GT21MCBE</b><br><b>GT23MCBE</b> | ON              | NONE   | ON       |
| Conn. Terms.                       | 2-3, 5-6        | OPEN   | 2-1, 5-4 |
| Schematic                          |                 |        |          |
| DPDT                               |                 |        |          |
| <b>GT22MCBE</b>                    | OFF             | NONE   | ON       |
| Conn. Terms.                       | OPEN            | N/A    | 3-1      |
| Schematic                          |                 |        |          |
| DPST                               |                 |        |          |



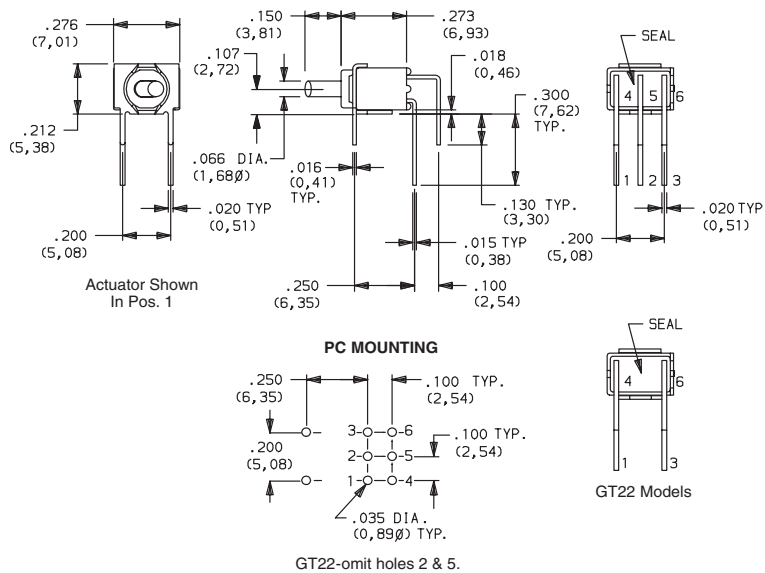
GT21MCBE  
DPDT



| PART NUMBER                        | SWITCH FUNCTION |        |        |
|------------------------------------|-----------------|--------|--------|
|                                    | POS. 1          | POS. 2 | POS. 3 |
| <b>GT11MABE</b><br><b>GT13MABE</b> | ON              | NONE   | ON     |
| Conn. Terms.                       | 2-3             | OPEN   | 2-1    |
| Schematic                          |                 |        |        |
| SPDT                               |                 |        |        |
| <b>GT12MABE</b>                    | OFF             | NONE   | ON     |
| Conn. Terms.                       | OPEN            | N/A    | 3-1    |
| Schematic                          |                 |        |        |
| SPST                               |                 |        |        |



GT11MABE  
Horizontal  
Actuation  
SPDT



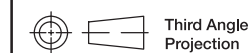
| PART NUMBER                        | SWITCH FUNCTION |        |          |
|------------------------------------|-----------------|--------|----------|
|                                    | POS. 1          | POS. 2 | POS. 3   |
| <b>GT21MABE</b><br><b>GT23MABE</b> | ON              | NONE   | ON       |
| Conn. Terms.                       | 2-3, 5-6        | OPEN   | 2-1, 5-4 |
| Schematic                          |                 |        |          |
| DPDT                               |                 |        |          |
| <b>GT22MABE</b>                    | OFF             | NONE   | ON       |
| Conn. Terms.                       | OPEN            | N/A    | 3-1, 6-4 |
| Schematic                          |                 |        |          |
| DPST                               |                 |        |          |



GT21MABE  
Horizontal  
Actuation  
DPDT



Toggle  
F



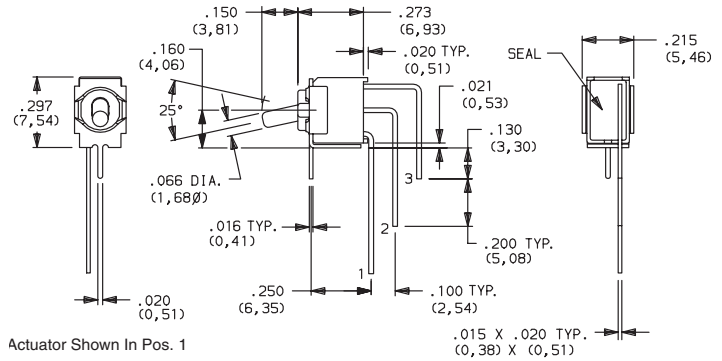
Dimensions are shown: Inches (mm)  
Specifications and dimensions subject to change

# GT Series Sealed Ultraminiature Toggle Switches

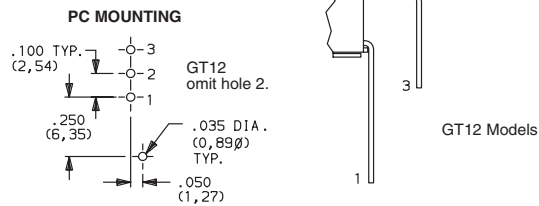


GT11MAVBE  
Vertical  
Actuation  
SPDT

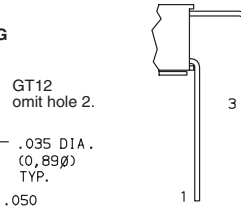
| PART NUMBER                          | SWITCH FUNCTION |        |        |
|--------------------------------------|-----------------|--------|--------|
|                                      | POS.1           | POS. 2 | POS. 3 |
| <b>GT11MAVBE</b><br><b>GT13MAVBE</b> | ON              | NONE   | ON     |
| Conn. Terms.                         | 2-3             | OPEN   | 2-1    |
| Schematic                            |                 |        |        |
| SPDT                                 |                 |        |        |
| <b>GT12MAVBE</b>                     | OFF             | NONE   | ON     |
| Conn. Terms.                         | OPEN            | N/A    | 3-1    |
| Schematic                            |                 |        |        |
| SPST                                 |                 |        |        |



Actuator Shown In Pos. 1



PC MOUNTING

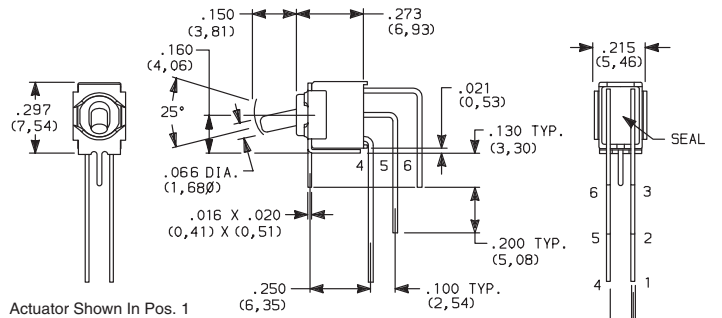


GT12 Models

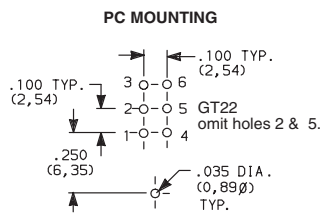


GT21MAVBE  
Vertical  
Actuation  
DPDT

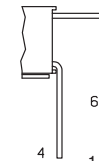
| PART NUMBER                          | SWITCH FUNCTION |        |          |
|--------------------------------------|-----------------|--------|----------|
|                                      | POS.1           | POS. 2 | POS. 3   |
| <b>GT21MAVBE</b><br><b>GT23MAVBE</b> | ON              | NONE   | ON       |
| Conn. Terms.                         | 2-3, 5-6        | OPEN   | 2-1, 5-4 |
| Schematic                            |                 |        |          |
| DPDT                                 |                 |        |          |
| <b>GT22MAVBE</b>                     | OFF             | NONE   | ON       |
| Conn. Terms.                         | OPEN            | N/A    | 3-1, 6-4 |
| Schematic                            |                 |        |          |
| DPST                                 |                 |        |          |



Actuator Shown In Pos. 1



PC MOUNTING

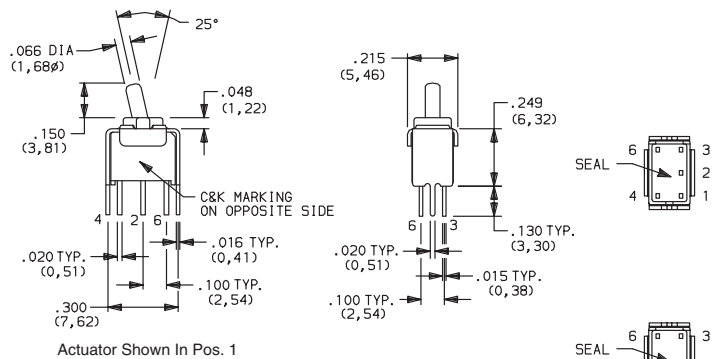


GT22 Models:  
1, 3, 4 & 6 terminals only.

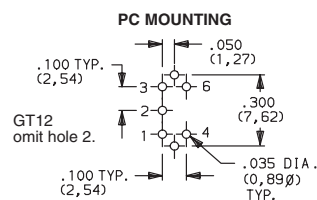


GT11MV3BE  
SPDT

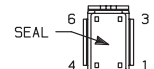
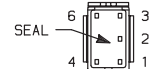
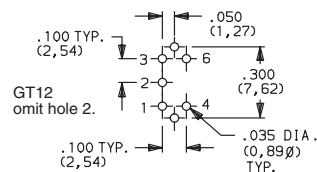
| PART NUMBER                          | SWITCH FUNCTION                  |        |        |
|--------------------------------------|----------------------------------|--------|--------|
|                                      | POS.1                            | POS. 2 | POS. 3 |
| <b>GT11MV3BE</b><br><b>GT13MV3BE</b> | ON                               | NONE   | ON     |
| Conn. Terms.                         | 2-3                              | OPEN   | 2-1    |
| Schematic                            |                                  |        |        |
| SPDT                                 | Note: Pins 4 and 6 not connected |        |        |
| <b>GT12MV3BE</b>                     | OFF                              | NONE   | ON     |
| Conn. Terms.                         | OPEN                             | N/A    | 3-1    |
| Schematic                            |                                  |        |        |
| SPST                                 | Note: Pins 4 and 6 not connected |        |        |



Actuator Shown In Pos. 1



PC MOUNTING

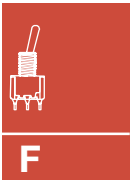


GT12 Models

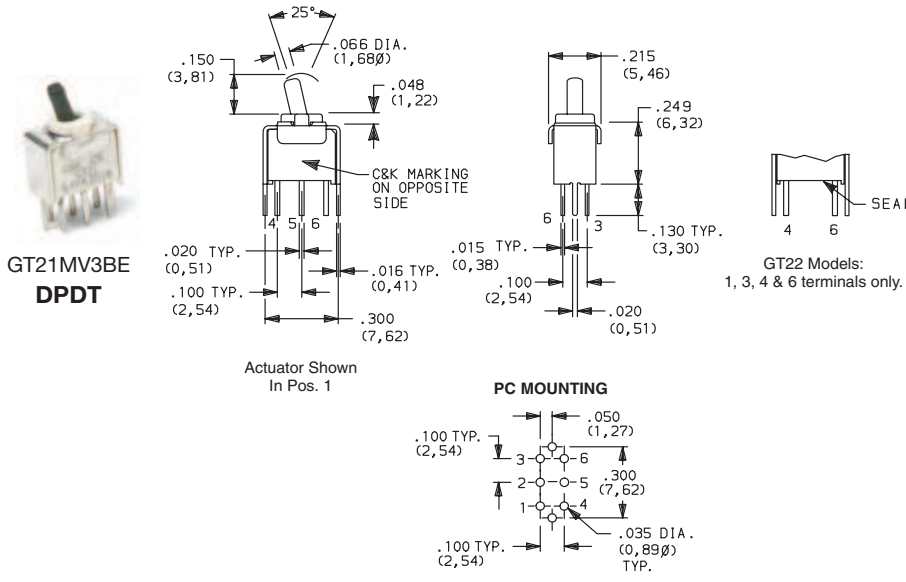


Third Angle  
Projection

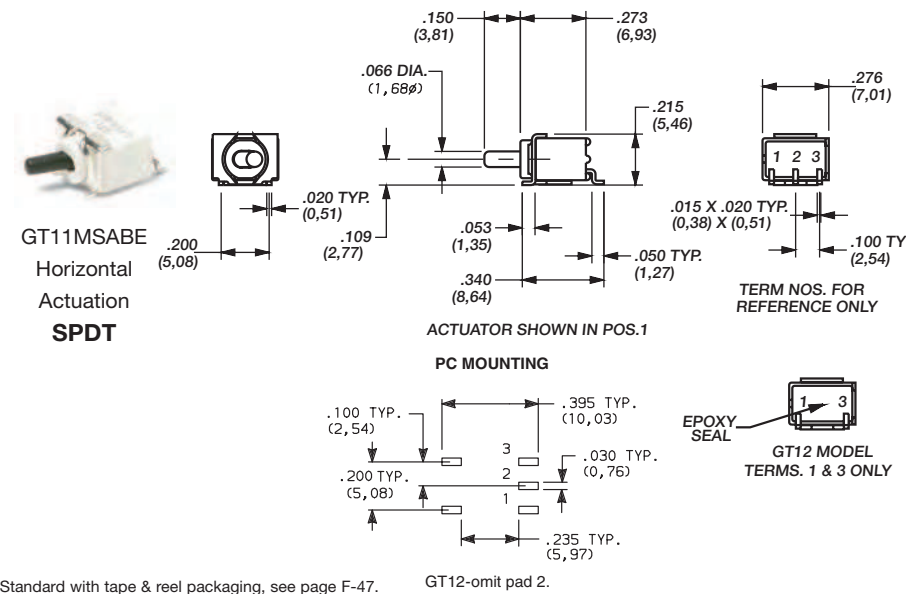
Dimensions are shown: Inches (mm)  
Specifications and dimensions subject to change



# GT Series Sealed Ultraminiature Toggle Switches

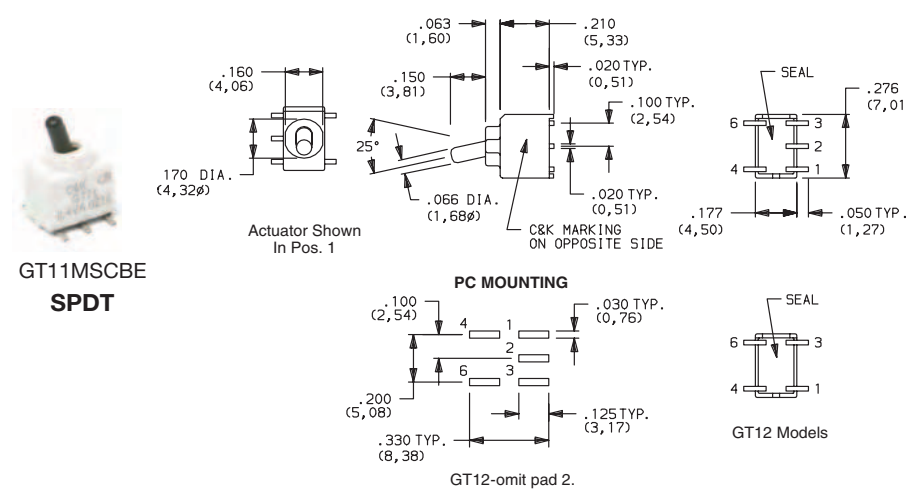


| PART NUMBER      | SWITCH FUNCTION |        |          |
|------------------|-----------------|--------|----------|
|                  | POS. 1          | POS. 2 | POS. 3   |
| <b>GT21MV3BE</b> | ON              | NONE   | ON       |
| <b>GT23MV3BE</b> | ON              | OFF    | ON       |
| Conn. Terms.     | 2-3, 5-6        | OPEN   | 2-1, 5-4 |
| Schematic        |                 |        |          |
| <b>GT22MV3BE</b> | OFF             | NONE   | ON       |
| Conn. Terms.     | OPEN            | N/A    | 3-1, 6-4 |
| Schematic        |                 |        |          |



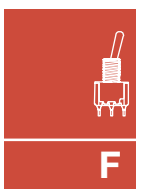
| PART NUMBER        | SWITCH FUNCTION |        |        |
|--------------------|-----------------|--------|--------|
|                    | POS. 1          | POS. 2 | POS. 3 |
| <b>GT11MSABETR</b> | ON              | NONE   | ON     |
| <b>GT13MSABETR</b> | ON              | OFF    | ON     |
| Conn. Terms.       | 2-3             | OPEN   | 2-1    |
| Schematic          |                 |        |        |
| <b>GT12MSABETR</b> | OFF             | NONE   | ON     |
| Conn. Terms.       | OPEN            | N/A    | 3-1    |
| Schematic          |                 |        |        |

Standard with tape & reel packaging, see page F-47. GT12-omit pad 2.



| PART NUMBER        | SWITCH FUNCTION |        |        |
|--------------------|-----------------|--------|--------|
|                    | POS. 1          | POS. 2 | POS. 3 |
| <b>GT11MSCBETR</b> | ON              | NONE   | ON     |
| <b>GT13MSCBETR</b> | ON              | OFF    | ON     |
| Conn. Terms.       | 2-3             | OPEN   | 2-1    |
| Schematic          |                 |        |        |
| <b>GT12MSCBETR</b> | OFF             | NONE   | ON     |
| Conn. Terms.       | OPEN            | N/A    | 3-1    |
| Schematic          |                 |        |        |

Standard with tape & reel packaging, see page F-47.



**Toggle**



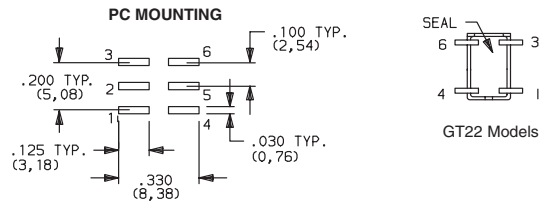
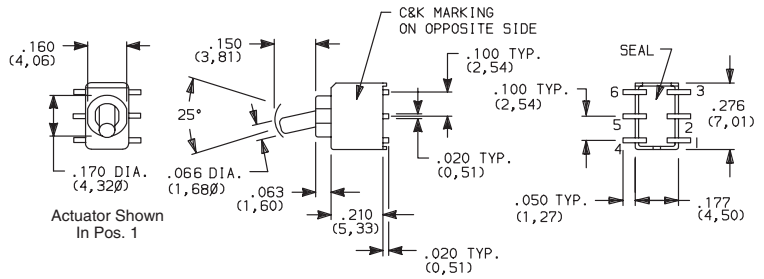
Dimensions are shown: Inches (mm)  
Specifications and dimensions subject to change

# GT Series Sealed Ultraminiature Toggle Switches



GT21MSCBE  
DPDT

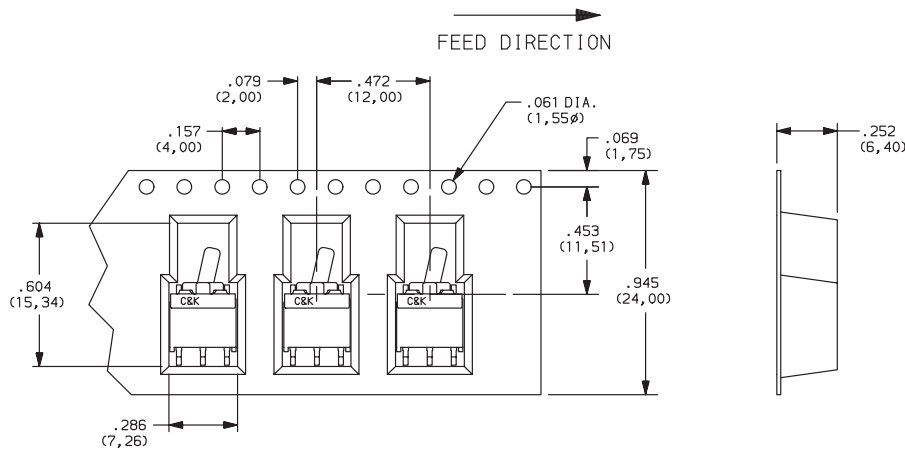
| PART NUMBER        | SWITCH FUNCTION |        |          |
|--------------------|-----------------|--------|----------|
|                    | POS. 1          | POS. 2 | POS. 3   |
| <b>GT21MSCBETR</b> | ON              | NONE   | ON       |
| <b>GT23MSCBETR</b> | ON              | OFF    | ON       |
| Conn. Terms.       | 2-3, 5-6        | OPEN   | 2-1, 5-4 |
| Schematic          |                 |        |          |
| DPDT               |                 |        |          |
| <b>GT22MSCBETR</b> | OFF             | NONE   | ON       |
| Conn. Terms.       | OPEN            | N/A    | 3-1, 6-4 |
| Schematic          |                 |        |          |
| DPST               |                 |        |          |



GT22-omit pads 2 & 5.  
Standard with tape & reel packaging

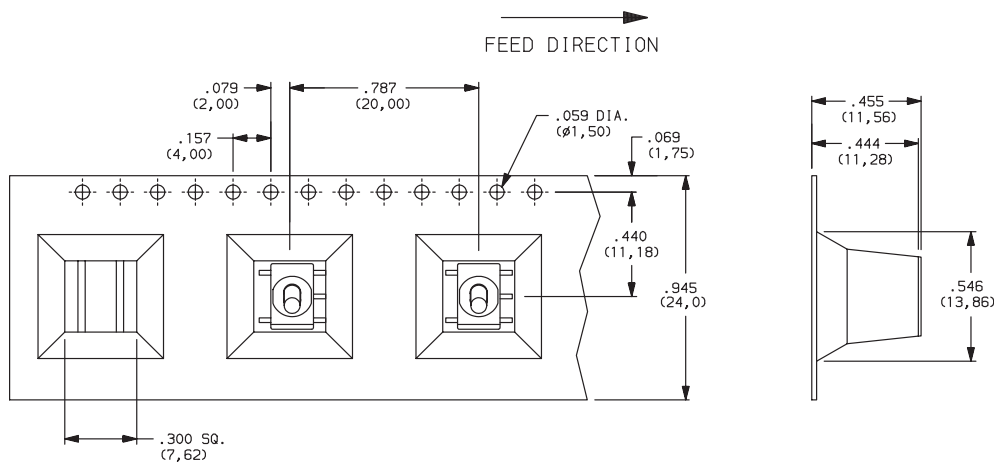
## TAPE & REEL

For part numbers GT11MSABE, GT12MSABE, GT13MSABE



| REEL INFORMATION  |               |
|-------------------|---------------|
| OUTSIDE DIAMETER  | 13.00 (330,0) |
| PILOT HOLE        | .512 (13,0)   |
| QUANTITY PER REEL | 600           |

For part numbers GT11MSCBE, GT12MSCBE, GT13MSCBE, GT21MSCBE, GT22MSCBE, GT23MSCBE,



| REEL INFORMATION  |               |
|-------------------|---------------|
| OUTSIDE DIAMETER  | 13.00 (330,0) |
| PILOT HOLE        | .512 (13,0)   |
| QUANTITY PER REEL | 200           |



Third Angle  
Projection  
Dimensions are shown: Inches (mm)  
Specifications and dimensions subject to change

