

# STANDARD TOGGLE SWITCHES

# ATE

## FEATURES

- **High Reliability**  
Twin-contact clip mechanism is used in the contact section to ensure reliability.
- **Washable Structure**  
All switches are of a completely sealed construction.
- **Ideal for Extremely Dry Circuit Applications**  
Gold-plated contacts make these switches ideal for use with extremely dry circuit applications.
- **Designed for PC Boards**  
Terminal pitches are all in inch size (multiples of 2.54 mm).
- **Quality Touch**  
Independent detent construction provides a light operating touch.
- **UL approved.**

## SPECIFICATIONS

Rating	Max.	50mA 48VAC • DC
	Min.	1μA 20mVAC • DC
Initial contact resistance	50mΩMax	(1.5mA 200 μVAC)
Dielectric strength	250VAC 1 minute	
Insulation resistance	500MΩMin.	(250VDC)
Electrical life	10,000 cycles at max. rating, 50,000 cycles at 0.4VA max. ( <b>D,E</b> type) 30,000 cycles at 0.4VA max. ( <b>F</b> type)	
Operating temperature range	-20~+85°C	
Storage temperature range	-40~+85°C	

## PART NUMBERING

A		TE		2	D		—	2	M	3	—	10	—	Z
Series code		Structure		Number of poles	Switching function			Terminal style	Actuator shape	Bushing		Clip mechanism		
Code	Type	Fig.	Number of poles	Code	Switching function	Fig.	Terminal style	Code	Actuator shape	Fig.	Bushing			
TE	Toggle type	1	1 pole	D	ON - ON	2	P/C terminal	M	Standard	3	Without bracket			
		2	2 poles	E	ON - OFF - ON		Right angle (0.2 inch pitch)							
				F	ON - (ON)									

Terminal line for double poles are 2.54mm(0.1")

## TABLE OF PART NUMBERS

Number of poles	Switching function	P/C terminal	Right angle (0.2 inch pitch)
1	ON - ON	ATE1D-2M3-10-Z	ATE1D-5M3-10-Z
	ON - OFF - ON	ATE1E-2M3-10-Z	ATE1E-5M3-10-Z
	ON - (ON)	ATE1F-2M3-10-Z	ATE1F-5M3-10-Z
2	ON - ON	ATE2D-2M3-10-Z	ATE2D-5M3-10-Z
	ON - OFF - ON	ATE2E-2M3-10-Z	ATE2E-5M3-10-Z
	ON - (ON)	ATE2F-2M3-10-Z	ATE2F-5M3-10-Z

★ : Made-to-order items.

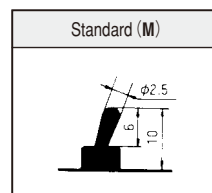
※ Please contact us if you can't find your preferable combination in the table of part numbers.

■ Specifications are subject to change without notice. Specifications in this catalog are for reference. The formal specification sheets will be submitted upon request.

## RoHS compliant



## ACTUATOR SHAPE



## TYPE OF BUSHING AND BRACKET MOUNT

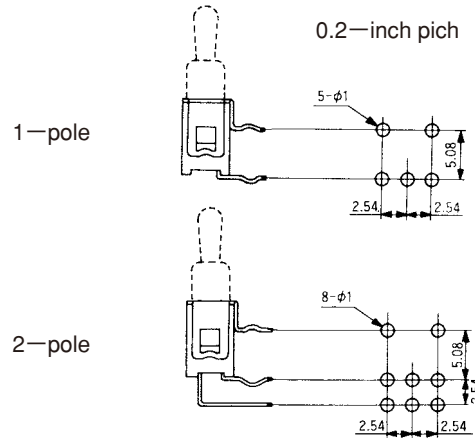
Fig.	Type of bushing	Shape
3	Unthreaded Bushing	

# ATE STANDARD TOGGLE SWITCHES

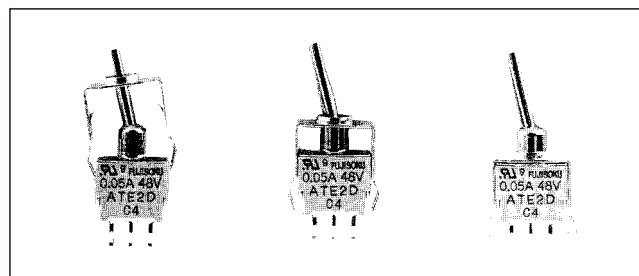
## RIGHT ANGLE TERMINALS

- The pitch between terminals and PC support is as the sketch below.

Examples: 0.2 inch pitch ATE1D-5M3-10



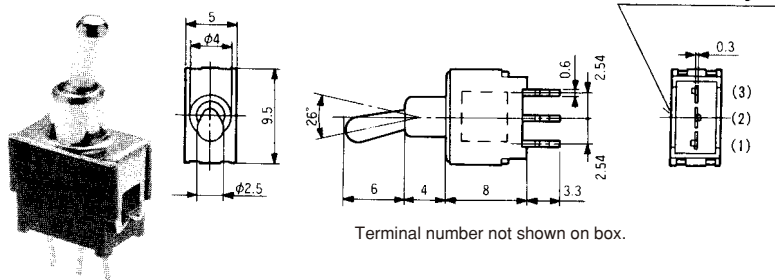
## BRACKET INSTALLATION PROCEDURE



## OUTLINE DIMENSIONS

### SPDT

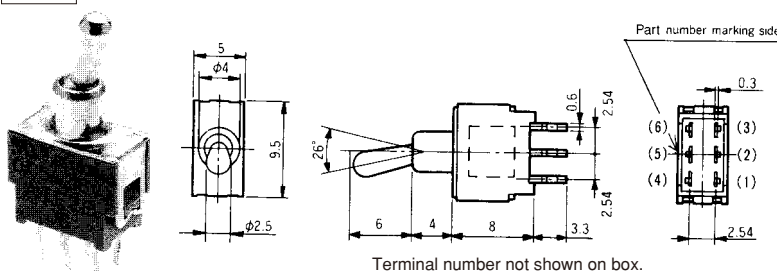
PC



Switching function	Viewed from part No. marking side		
Part No.			
ATE1D-2M3-10-Z	ON	—	ON
ATE1E-2M3-10-Z	ON	OFF	ON
ATE1F-2M3-10-Z	ON	—	(ON)
Connecting terminals	2—3	—	2—1

### DPDT

PC



Switching function	Viewed from part No. marking side		
Part No.			
ATE2D-2M3-10-Z	ON	—	ON
ATE2E-2M3-10-Z	ON	OFF	ON
★ATE2F-2M3-10-Z	ON	—	(ON)
Connecting terminals	2—3 5—6	—	2—1 5—4

(ON) : Momentary.

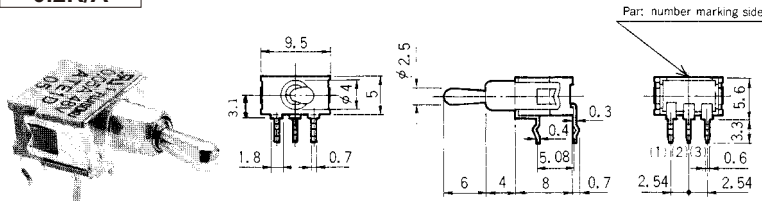
★ : Made-to-order items.

# ATE STANDARD TOGGLE SWITCHES

## OUTLINE DIMENSIONS

### SPDT

0.2R/A

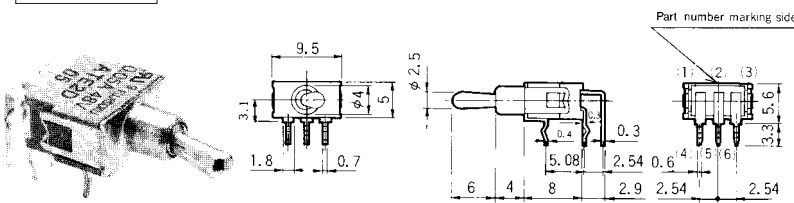


Terminal number not shown on box.

Switching function Part No.	Viewed from part No. marking side		
ATE1D-5M3-10-Z	ON	—	ON
ATE1E-5M3-10-Z	ON	OFF	ON
☆ATE1F-5M3-10-Z	ON	—	(ON)
Connecting terminals	2—3	—	2—1

### DPDT

0.2R/A



Terminal number not shown on box.

Switching function Part No.	Viewed from part No. marking side		
☆ATE2D-5M3-10-Z	ON	—	ON
★ATE2E-5M3-10-Z	ON	OFF	ON
★ATE2F-5M3-10-Z	ON	—	(ON)
Connecting terminals	2—3 5—6	—	2—1 5—4

(ON) : Momentary.

☆ : Quasi-standard items.

★ : Made-to-order items.

## OPTIONAL ACCESSORIES

Type	ATE—2M · 5M
Part name	Color Cap
Dimensions	<p>Gloss finish (Vinyl chloride resin)</p>
White	140000470174
Red	140000470175
Black	140000470173
Gray	140000470179
Green	140000470177
Blue	140000470178
Orange	140000470181
Yellow	140000470176
Brown	140000470180

Type	ATE—2M		
Part name	Bracket		
Dimensions			
Part number	140000640314	140000640315	140000640318

● When using **Bracket**, pay attention to the printed circuit board hole dimensions which differ according to type of bracket.

# ATE

## STANDARD TOGGLE SWITCHES

### PC HOLE LAYOUTS

#### PC terminal

(Top view)

Series	ATE-2M	ATE-2M		
Installation	Without bracket	When optional bracket is used		
		140000640314	140000640315	140000640318
1-pole				
2-pole Two terminal rows 2.54mm				

#### Right Angle terminal · Vertical Mount terminal (Top view)

Series	ATE-5M · 5F
Terminal	0.2-inch pitch
1-pole	
2-pole	

### BRACKET MOUNTED DIMENSIONS

Type	ATE-2M
	Standard
Dimensions	

# ATE STANDARD TOGGLE SWITCHES

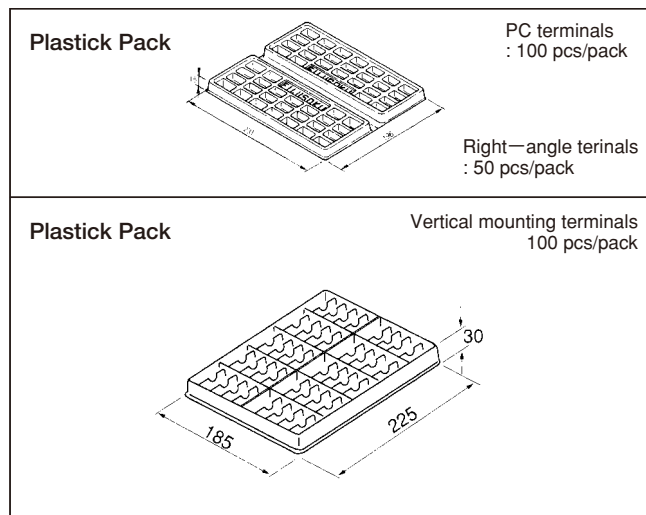
## ■ SOLDERING

- (1) Hand soldering  
Device : Solder iron  
380 °C Max. 3 sec. Max.
- (2) Auto soldering  
Device : Wave or dip type  
275 °C Max. 6 sec. Max.  
● Preheat should be within 80-120 °C, 120sec.

## ■ FLUX CLEANING

- (1) Solvent : Fluorine or Alcohol type.
- (2) Cleaning shall be made when terminal temperature falls to 90 °C or lower. Or, leave the switch at normal temperature for 5 minutes or longer, before cleaning.

## ■ PACKAGING SPECIFICATIONS



## ■ INSTALLATION

- Use printed circuit boards with 1 mm diameter holes.
- Do not bend the terminals prior to installation to PC Board.
- Following the switch installation, avoid placing the device in a position where its weight will be placed on the switch actuator, etc.
- Do not apply a load exceeding 12.7N to the actuator.  
Use Bracket (option) when a force exceeding 12.7N is to be applied to the actuator.

