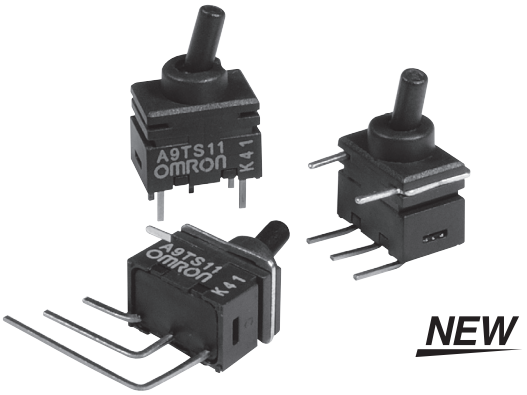
Toggle Switch (Ultra subminiature)
A9TS

Ultra subminiature size.

- Gold-plated clip contacts ensure high reliability.
- Sealed bottom prevents flux penetration.
- Sealed to IP64 (IEC-60529). Washable with alcohol based solvents.
- 35% smaller than A9T
- Typical applications include Security Control Boards, Electric Power Instrumentation and Program Controllers.
- RoHS Compliant



Ordering Information

Model Number Legend

A9TS□□-00□□
1 2 3 4

1. Contact Form
1: SPDT
2: DPDT

2. Switch Function
1: ON - ON
2: ON - OFF - ON

3. Actuator Style
1: Standard

4. Terminal Style
1: DIP, Top Actuated
2: Right Angle, Horizontal
3: Right Angle, Vertical

Available Models

Terminal Style			DIP Terminal, Top Actuated		Right Angle, Horizontal		Right Angle, Vertical	
Switching Function								
			Single Pole Double Throw	Double Pole Double Throw	Single Pole Double Throw	Double Pole Double Throw	Single Pole Double Throw	Double Pole Double Throw
ON	---	ON	A9TS11-0011	A9TS21-0011	A9TS11-0012	A9TS21-0012	A9TS11-0013	A9TS21-0013
ON	OFF	ON	A9TS12-0011	A9TS22-0011	A9TS12-0012	A9TS22-0012	A9TS12-0013	A9TS22-0013
Quantity per tray			100		25		50	

Note: 1. Lever does not stop at "-" position.
2. Switching functions are shown from marked side of the switch.

Specifications

Switching capacity	100mA @ 28 VAC/VDC
Minimum Permissible Load	0.1 μA @ 20 mVAC/mVDC
Operating force	500 gf max. (4.9 N max.)
Insulation resistance	500 MΩ min. (Initial value)
Contact resistance	80 mΩ max (Initial value)
Dielectric strength	500VAC for 1 min. between terminals, between terminals and ground
Vibration resistance	Malfunction: 10 to 55Hz, 1.5-mm double amplitude
Shock resistance	Malfunction: 500m/s^2 min.
Life expectancy	Mechanical: 50,000 operations min. Electrical: 50,000 operations min.
Ambient operating temperature	-20 to 80°C (at 60% RH max.) with no icing or condensation
Ambient operating humidity	45% to 85% RH (at 5 to 35°C)
Weight	0.3 g

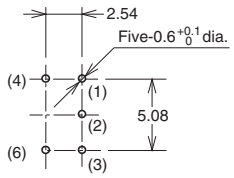
Engineering Data

Note: Unless otherwise specified, all units are in millimeters.

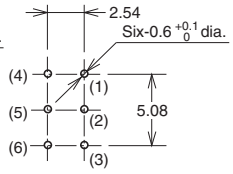
■ PCB Layout (Top view)

DIP terminal

Single Pole Type

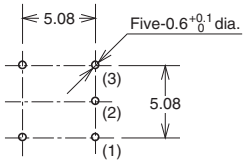


Double Pole Type

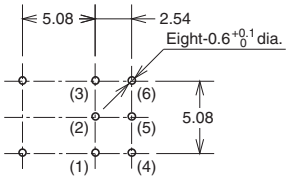


Right Angle, Horizontal

Single Pole Type

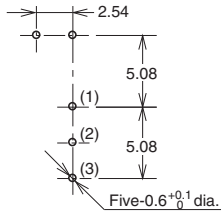


Double Pole Type

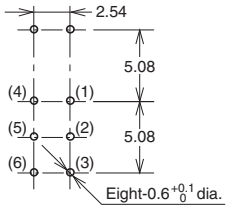


Vertical

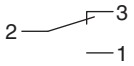
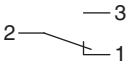
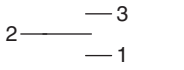
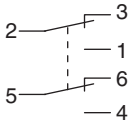
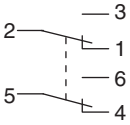
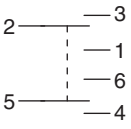
Single Pole Type



Double Pole Type



■ Switching Function / Internal Connections

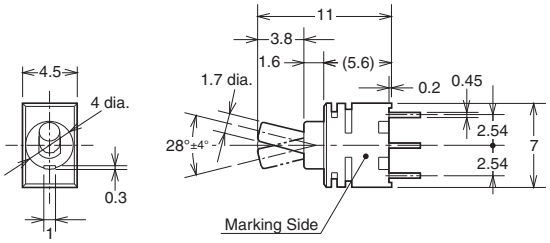
	Switching Functions					
SPDT Models	ON	---	ON		–	
	ON	OFF	ON			
DPDT Models	ON	---	ON		–	
	ON	OFF	ON			

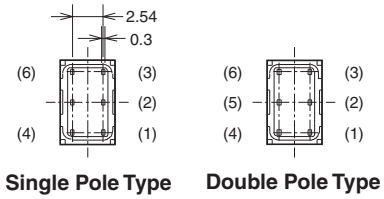
Note: Lever does not stop at "-" position.

Dimensions

(Unit: mm)

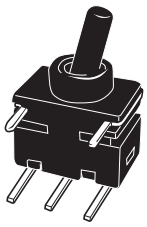
DIP terminal

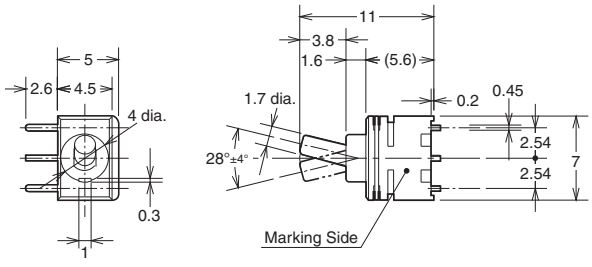


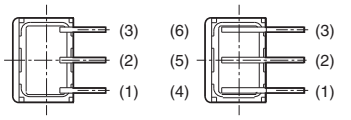


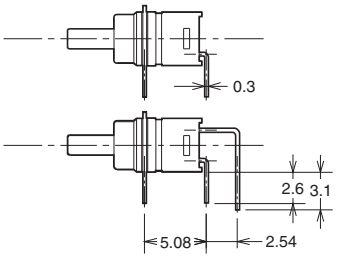
Note: NO.(4) and (6) terminals in the SPDT models are dummys to support the Switch case.

Right Angle

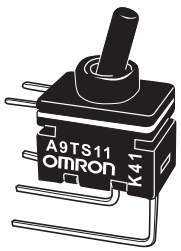


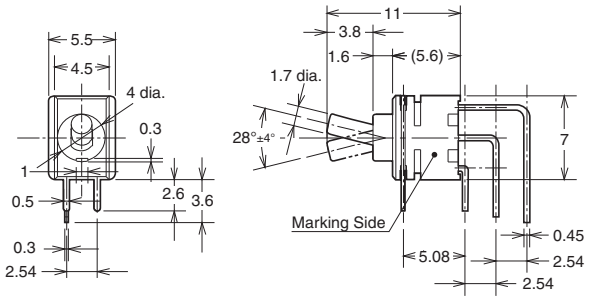


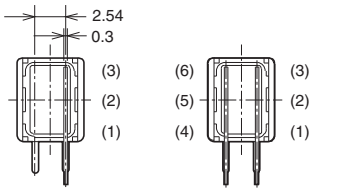




Vertical Mount







Precautions

■ Correct Use

Soldering

Observe the following conditions when soldering the Switch.

Automatic Soldering Bath

Soldering temperature: 260°C max. (Preheating: 100°C 120 s)
Soldering time: 5 s max.

Manual Soldering

Soldering temperature: 350°C at the tip of the soldering iron.
Soldering time: 3 s max.

Washing

Apply alcohol based solvents to clean.

Do not clean the switch immediately after soldering. Wait for at least five minutes after soldering before cleaning.

Ultrasonic cleaning is not available dip into the switch washing agents for two minute maximum.

Using Flux

Making mistakes in the type of flux or in the amount or method in which it is applied can cause flux to enter the interior of the Switch, with adverse effects on Switch performance. Assess the proper flux, conditions, and methods prior to using it.

Environment for Storage and Use

To prevent discoloration of the terminals and other problems during storage, do not store the switch in locations subject to the following conditions.

1. High temperatures or humidity
2. Corrosive gases
3. Direct sunlight

Also, the switch is not waterproof or splash-resistant. Do not install or use the switch in locations that are subject to contact with water.

Do not subject the switch to freezing or condensation.

■ Cautions

Use the Toggle Switch within the rated voltage and current ranges, otherwise the Toggle Switch may have a shortened life expectancy, radiate heat, or burn out. This particularly applies to the instantaneous voltages and currents when switching.

Handling

Do not apply excessive operating force to the Switch. Otherwise the Switch may be damaged or deformed, and the switch mechanism may malfunction as a result. Apply an operating force not exceeding 9.8 N (1,000 gf). Apply the operating load from the side of the striker in the direction of actuation travel. Do not apply a load from an angle or from above the striker. Doing so may deform the Switch contact.

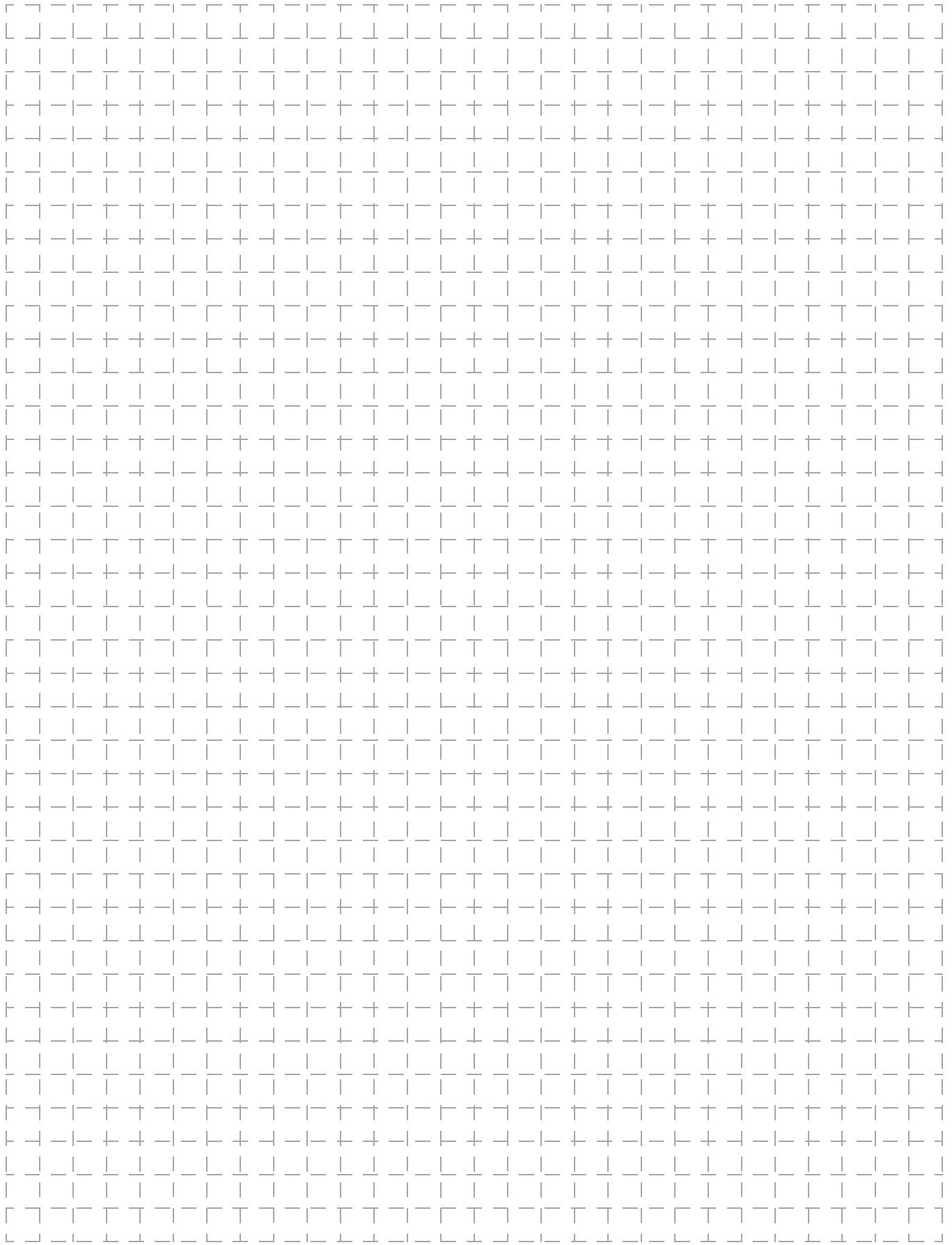
■ RoHS Compliant

The “RoHS Compliant” designation indicates that the listed models do not contain the six hazardous substances covered by the RoHS Directive.

Reference: The following standards are used to determine compliance for the six substances.

Lead:	1,000 ppm max.
Mercury:	1,000 ppm max.
Cadmium:	100 ppm max.
Hexavalent chromium:	1,000 ppm max.
PBB:	1,000 ppm max.
PBDE:	1,000 ppm max.

MEMO



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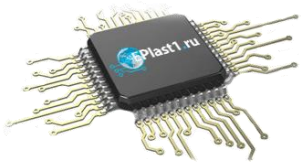
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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