

**Global Subminiature Basic Switch
Conforming to EN61058-1
(IEC601058-1), UL1054, and CSA C22.2
No.54**

- A wide operating temperature range of -25°C to 125°C is available for at high-temperature use.
- Flexible change lever using the external snap-fit lever.
- PCB terminal models are resistant to flux.
- Even-pitched PCB terminals conform to IEC1020-6-2.
- Mounting hole size conforms to IEC1020-6-2.



Ordering Information

Model Number Legend

SSG-□□□□□
1 2 3 4 5

1. Ratings

01: 0.1 A
5: 5 A

2. Actuator

None: Pin plunger
L1: Hinge lever
L3: Simulated hinge lever
L2: Hinge roller lever

3. Contact Form

None: SPDT
-2: SPST-NC
-3: SPST-NO

4. Terminals

H: Solder
T: Quick-connect terminals (#110)
P: PCB

5. Operating Force max.

None: 1.5 N {153 gf}
-5: 0.5 N {51 gf}

Note: These values are for the pin plunger model.

■ List of Models

Actuator	Rating	OF max.	Solder	Quick-connect terminal (#110)	PCB
Pin plunger 	0.1 A	1.50 N {153 gf}	SSG-01H	SSG-01T	SSG-01P
		0.50 N {51 gf}	SSG-01H-5	SSG-01T-5	SSG-01P-5
	5 A	1.50 N {153 gf}	SSG-5H	SSG-5T	SSG-5P
		0.50 N {51 gf}	SSG-5H-5	SSG-5T-5	SSG-5P-5
Hinge lever 	0.1 A	0.60 N {61 gf}	SSG-01L1H	SSG-01L1T	SSG-01L1P
		0.20 N {20 gf}	SSG-01L1H-5	SSG-01L1T-5	SSG-01L1P-5
	5 A	0.60 N {61 gf}	SSG-5L1H	SSG-5L1T	SSG-5L1P
		0.20 N {20 gf}	SSG-5L1H-5	SSG-5L1T-5	SSG-5L1P-5
Simulated hinge lever 	0.1 A	0.60 N {61 gf}	SSG-01L3H	SSG-01L3T	SSG-01L3P
		0.20 N {20 gf}	SSG-01L3H-5	SSG-01L3T-5	SSG-01L3P-5
	5 A	0.60 N {61 gf}	SSG-5L3H	SSG-5L3T	SSG-5L3P
		0.20 N {20 gf}	SSG-5L3H-5	SSG-5L3T-5	SSG-5L3P-5
Hinge roller lever 	0.1 A	0.60 N {61 gf}	SSG-01L2H	SSG-01L2T	SSG-01L2P
		0.20 N {20 gf}	SSG-01L2H-5	SSG-01L2T-5	SSG-01L2P-5
	5 A	0.60 N {61 gf}	SSG-5L2H	SSG-5L2T	SSG-5L2P
		0.20 N {20 gf}	SSG-5L2H-5	SSG-5L2T-5	SSG-5L2P-5

Note: SPST models are also available, but not listed in the above table.

Specifications

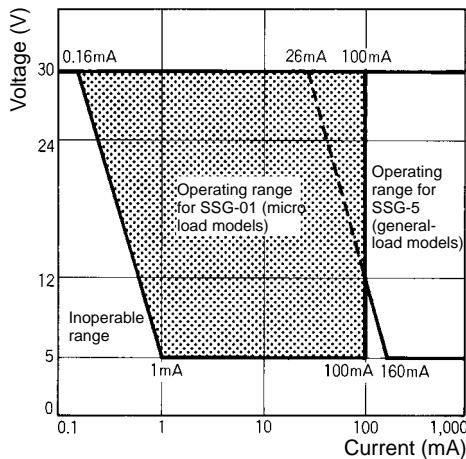
■ Ratings

General Ratings

Rated voltage	Non-inductive load				Inductive load			
	Resistive load		Lamp load		Inductive load		Motor load	
	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC	5 (0.1) A (see note 1)		1.5 A	0.7 A	3 A		2.5 A	1.3 A
250 VAC	3 A		1 A	0.5 A	2 A		1.5 A	0.8 A
8 VDC	5 A		2 A		5 A		3 A	
14 VDC	5 A		2 A		4 A		3 A	
30 VDC	4 (0.1) A (see note 1)		2 A		3 A		3 A	
125 VDC	0.4 A		0.05 A		0.4 A		0.05 A	
250 VDC	0.2 A		0.03 A		0.2 A		0.05 A	

- Note:
- The values in the parentheses are for the SSG-01.
 - The above current ratings are the values of the steady-state current.
 - Inductive load has a power factor of 0.7 min. (AC) and a time constant of 7 ms max. (DC).
 - Lamp load has an inrush current of 10 times the steady-state current.
 - Motor load has an inrush current of 6 times the steady-state current.
 - If the Switch is used in a DC circuit and is subjected to a surge current, connect a surge suppressor across the switch.

Use the Switch in the following operation range.



Model	SSG-01	SSG-5
Minimum applicable load	1 mA at 5 VDC	160 mA at 5 VDC

■ Characteristics

Operating speed	0.1 mm to 1 m/s (at pin plunger models)
Operating frequency	Mechanical: 400 operations/min Electrical: 60 operations/min
Insulation resistance	100 MΩ min.
Contact resistance	OF 1.50 N: SSG-5 models: 30 mΩ max. SSG-01 models: 50 mΩ max. OF 0.50 N SSG-5 models: 50 mΩ max. SSG-01 models: 100 mΩ max.
Dielectric strength	1,000 VAC, 50/60 Hz for 1 min between contacts of the same polarity (600 VAC for SSG-01H and SSG-01T models) 1,500 VAC, 50/60 Hz for 1 min between each terminal and ground 1,500 VAC, 50/60 Hz for 1 min between each terminal and non-current-carrying metal part
Vibration resistance	Malfunction: 10 to 2,000 Hz, 196 m/s ² {20G} (Contact open: 10 μs max., lever position: at TTP)
Shock resistance	Malfunction: 490 m/s ² {approx. 50G} (Contact open: 10 μs max., lever position: at TTP)
Life expectancy	Mechanical: 10,000,000 operations min. (OT: rated value) Electrical: 200,000 operations min. (5 A at 125 VAC for SSG-5, 0.1 A at 125 VAC for SSG-01, resistive OT: full)
Degree of protection (IP code)	IP00
Degree of protection against electrical shock	Class I
Ambient temperature	Operating: -25°C to 125°C (with no icing)
Ambient humidity	Operating: 85% max. (5°C to 30°C)
Proof tracking index	175
Switch category (IEC335-1)	D
Weight	Approx. 1.6 g (pin plunger models)

■ Approved Standards

Standard	EN61058-1/IEC601058-1
Approval body	TÜV Rheinland (File No. T9451449) BEAB (File No. C0746) IMQ (File No. EL662) VDE (File No. 100873, EN61058-1 1992+AI: 1993)
Rating	SSG-5 models: 5 A at 250 VAC (T125, 50,000 operations) SSG-01 models: 0.1 A at 30 VDC (T125, 50,000 operations)

UL1054 (File No. E41515), CSA C22.2 No. 55 (File No. LR21642) Approved Ratings

SSG-5 Models: 5 A at 125 VAC, 3 A at 250 VAC
3 A at 250 VAC, 3 A at 30 VDC (100,000 operations)
SSG-01 Models: 0.1 A at 125 VAC, 0.1 A at 30 VDC

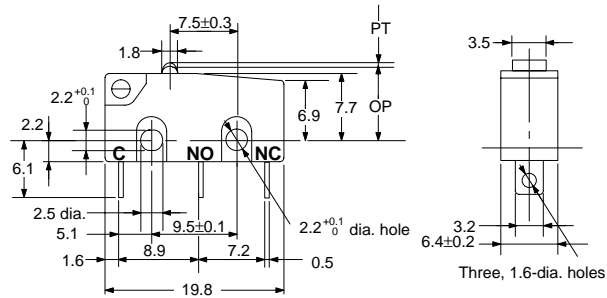
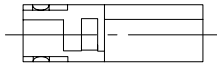
■ Contact

Item		SSG-5	SSG-01H.T	SSG-01P
Contact	Specification	Rivet	Crossbar	Crossbar
	Material	Silver	Gold alloy	Gold alloy
	Gap (standard value)	0.5 mm	0.25 mm	0.5 mm
Inrush current	NC	20 A max.	1 A max.	1 A max.
	NO	10 A max.	1 A max.	1 A max.

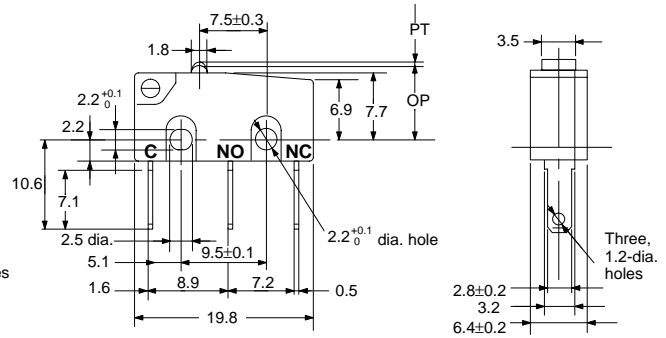
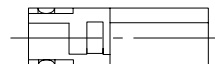
Dimensions

■ Terminals

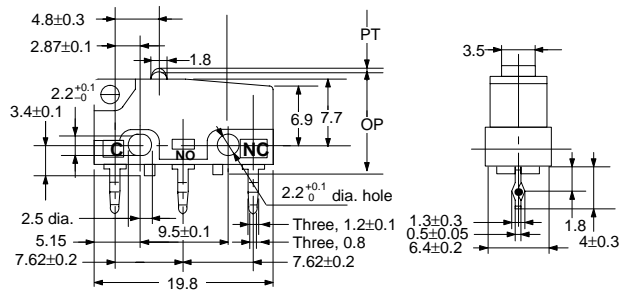
Solder Terminals



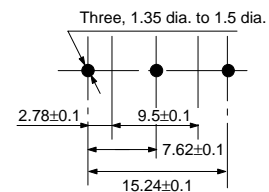
Quick-connect Terminals (#110)



PCB Terminals



PCB Mounting



■ Dimensions and Operating Characteristics

Note: 1. All units are in millimeters unless otherwise indicated.

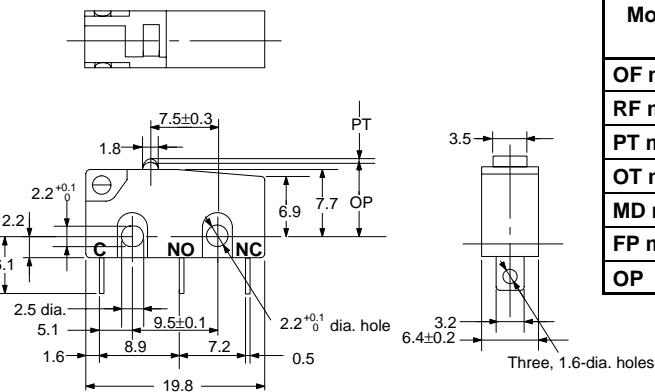
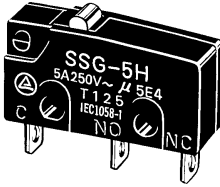
2. Every actual model number includes the code instead of □ for the kind of terminals incorporated by the model.

3. Unless otherwise specified, a tolerance of ± 0.25 mm applies to all dimensions.

Solder/Quick-connect Terminal

Pin Plunger

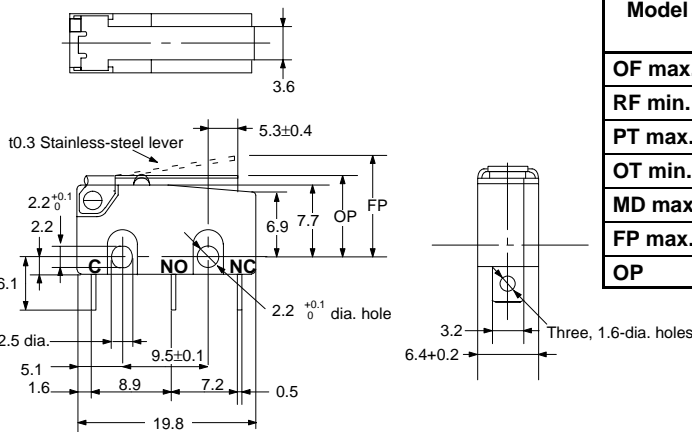
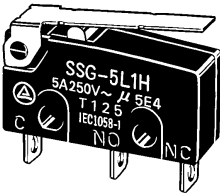
SSG-01□
SSG-5□
SSG-01□-5
SSG-5□-5



Model	SSG-01□ SSG-5□	SSG-01□-5 SSG-5□-5
OF max.	1.50 N {153 gf}	0.50 N {51 gf}
RF min.	0.25 N {25 gf}	0.04 N {4 gf}
PT max.	0.6 mm	
OT min.	0.4 mm	
MD max.	0.1 mm	
FP max.	---	
OP	8.4±0.3 mm	

Hinge Lever

SSG-01L1□
SSG-5L1□
SSG-01L1□-5
SSG-5L1□-5

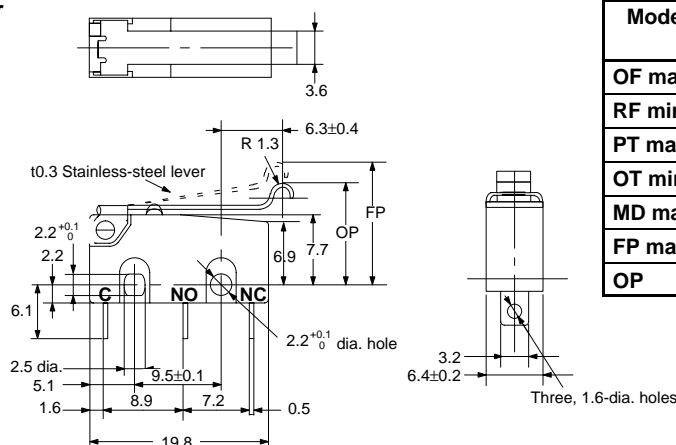
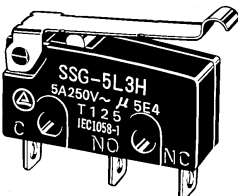


Model	SSG-01L1□ SSG-5L1□	SSG-01L1□-5 SSG-5L1□-5
OF max.	0.60 N {61 gf}	0.20 N {20 gf}
RF min.	0.06 N {6 gf}	0.02 N {2 gf}
PT max.	1.0 mm	
OT min.	0.8 mm	
MD max.	---	
FP max.	13.6 mm	
OP	8.8 ^{+1.0} / _{-0.6} mm	

Note: Also available are models with a hinge lever length of 39 mm under the following model numbers; SSG-01L14□, SSG-5L14□, SSG-01L14□-5, and SSG-5L14□-5. Contact your OMRON representative for these models.

Simulated Hinge Lever

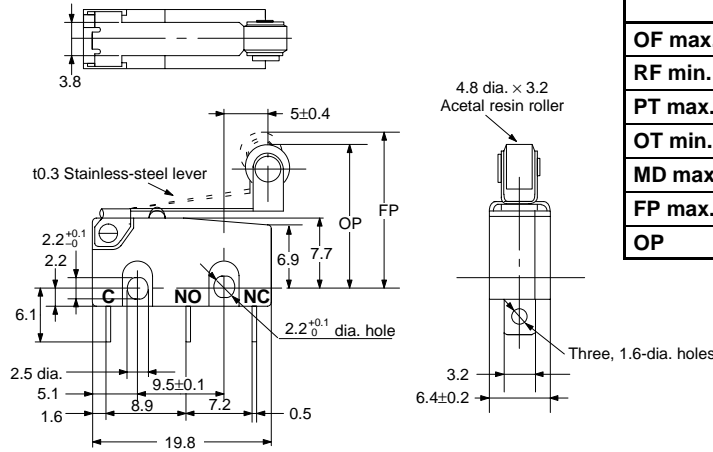
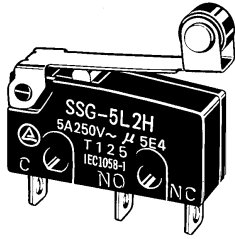
SSG-01L3□
SSG-5L3□
SSG-01L3□-5
SSG-5L3□-5



Model	SSG-01L3□ SSG-5L3□	SSG-01L3□-5 SSG-5L3□-5
OF max.	0.60 N {61 gf}	0.20 N {20 gf}
RF min.	0.06 N {6 gf}	0.02 N {2 gf}
PT max.	1.0 mm	
OT min.	0.8 mm	
MD max.	---	
FP max.	15.5 mm	
OP	10.7 ^{+1.0} / _{-0.6} mm	

Hinge Roller Lever

SSG-01L2□
SSG-5L2□
SSG-01L2□-5
SSG-5L2□-5

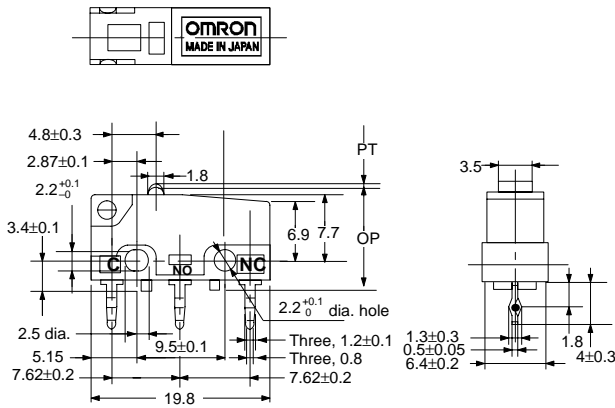
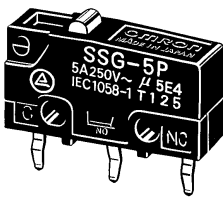


Model	SSG-01L2□ SSG-5L2□	SSG-01L2□-5 SSG-5L2□-5
OF max.	0.60 N {61 gf}	0.20 N {20 gf}
RF min.	0.06 N {6 gf}	0.02 N {2 gf}
PT max.	1.0 mm	
OT min.	0.8 mm	
MD max.	---	
FP max.	19.0 mm	
OP	14.5 ^{+1.0} / _{-0.6} mm	

PCB Terminals

Pin Plunger

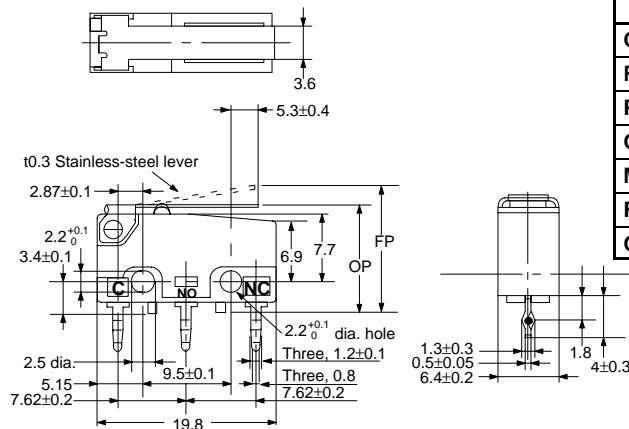
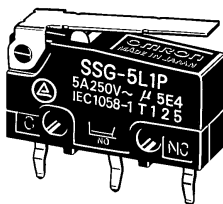
SSG-01P
SSG-5P
SSG-01P-5
SSG-5P-5



Model	SSG-01P SSG-5P	SSG-01P-5 SSG-5P-5
OF max.	1.50 N {153 gf}	0.50 N {51 gf}
RF min.	0.25 N {25 gf}	0.04 N {4 gf}
PT max.	0.6 mm	
OT min.	0.4 mm	
MD max.	0.1 mm	
FP max.	---	
OP	11.8±0.4 mm	

Hinge Lever

SSG-01L1P
SSG-5L1P
SSG-01L1P-5
SSG-5L1P-5

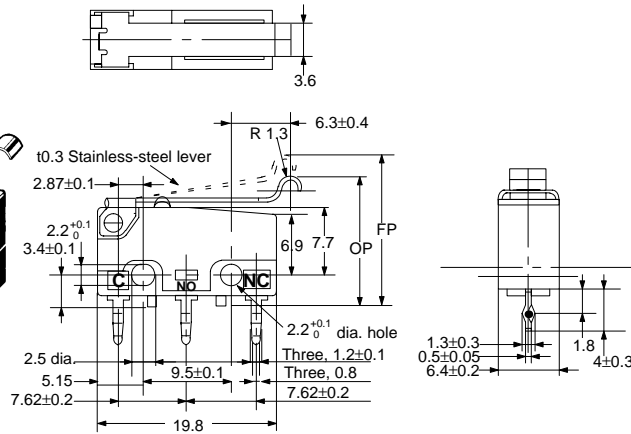
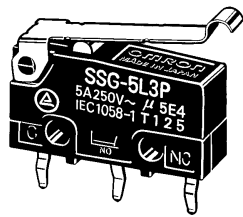


Model	SSG-01L1P SSG-5L1P	SSG-01L1P-5 SSG-5L1P-5
OF max.	0.60 N {61 gf}	0.20 N {20 gf}
RF min.	0.06 N {6 gf}	0.02 N {2 gf}
PT max.	---	
OT min.	1.0 mm	
MD max.	0.8 mm	
FP max.	17.0 mm	
OP	12.2 ^{+1.1} / _{-0.7} mm	

Note: Also available are models with a hinge lever length of 39 mm under the following model numbers; SSG-01L14P, SSG-5L14P, SSG-01L14P-5, and SSG-5L14P-5. Contact your OMRON representative for these models.

Simulated Hinge Lever

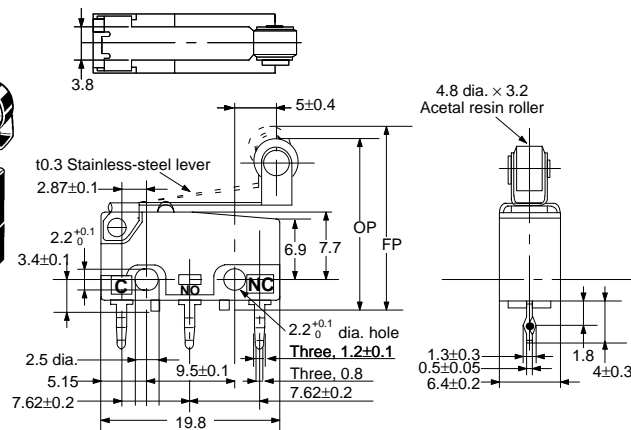
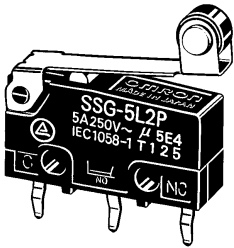
SSG-01L3P
SSG-5L3P
SSG-01L3P-5
SSG-5L3P-5



Model	SSG-01L3P SSG-5L3P	SSG-01L3P-5 SSG-5L3P-5
OF max.	0.60 N {61 gf}	0.20 N {20 gf}
RF min.	0.06 N {6 gf}	0.02 N {2 gf}
PT max.	---	---
OT min.	1.0 mm	1.0 mm
MD max.	0.8 mm	0.8 mm
FP max.	18.9 mm	18.9 mm
OP	14.4+1.1/-0.7 mm	

Hinge Roller Lever

SSG-01L2P
SSG-5L2P
SSG-01L2P-5
SSG-5L2P-5



Model	SSG-01L2P SSG-5L2P	SSG-01L2P-5 SSG-5L2P-5
OF max.	0.60 N {61 gf}	0.20 N {20 gf}
RF min.	0.06 N {6 gf}	0.02 N {2 gf}
PT max.	---	---
OT min.	1.0 mm	1.0 mm
MD max.	0.8 mm	0.8 mm
FP max.	22.4 mm	22.4 mm
OP	17.9+1.1/-0.7 mm	

Precautions

■ Terminal Connections

When soldering a lead wire to a switch terminal, insert the wire conductor into the hole of the switch terminal and take the following steps promptly.

- Make sure that the capacity of the soldering iron is 60 W maximum. Do not take more than 5 s to solder the switch terminal. Improper soldering involving an excessively high temperature or excessive soldering time may deteriorate the characteristics of the Switch.
- Be sure to apply only the minimum required amount of flux. The SSG may have contact failures if flux intrudes into the interior of the SSG.
- Use the following lead wires to connect to the solder terminals.

Type	Conductor size
SSG-01	AWG 22 to 20
SSG-5	AWG 20 to 18

- Soldering Categories (Refer to the conditions of EN61058-1.)

Type	Classified by EN61058-1
Solder terminal	Soldering iron used With soldering hole Solder terminal type 1.2
PCB terminal	Soldering bath used Solder terminal type 1.2

To automatically solder the Switch to a PCB in a soldering bath, complete soldering within 5 seconds at a flux temperature of 250°C and avoid the overflow of flux onto the surface of the PCB where the Switch or other parts are mounted.

Wire the quick-connect terminals (#110) with receptacles. Insert the terminals straight into the receptacles. Do not impose excessive force on the terminal in the horizontal direction, otherwise the terminal may be deformed or the housing may be damaged.

Insulation Distance

The Switch does not have a ground terminal. The minimum distance through insulation (IEC61058-1) is 0.9 mm. If proper insulation for the end product cannot be secured, additional insulation such as a Separator or insulation cover should be attached.

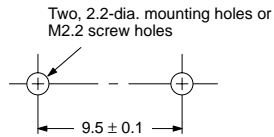
■ Correct Use

Refer to pages 22 to 29 for common precautions.

Mounting

When securing the SSG, be sure to use M2.2 mounting screws and tighten the screws with flat washers and spring washers securely within a torque range between 0.20 to 0.24 N • m {2 to 2.5 kgf • cm}.

Mounting Holes



Make sure that the plate to which the SSG is mounted is flat. If the plate has protruding or warped part, the SSG may not operate properly.

Operating Stroke

Make sure that the operating stroke is 70% to 100% of the rated OT distance. Do not operate the actuator exceeding the OT distance, otherwise the life expectancy of the SSG may be shortened.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.