

8 Series

Toggle Switches

■ Introduction

The 8 Series Toggles is our high-reliability miniature switch product offering. This product line meets and exceeds all basic international switch standards.

With 8 toggle options, PC and solder lug terminals, power and logic level current ratings, 1-4 pole and many circuit offerings these switches can be used in many industries and various applications within these industries.

Four of the 8 Series lines are washable. Specifically designed for PC applications with automated solder and cleaning methods.

The 8 Series is available with UL Recognition and CSA Certification upon request from the customer.

■ Applications


























- Communication equipment
- Computer peripheral equipment
- Measuring instruments
- Medical equipment
- Automotive diagnosis

The switches can be used in a wide range of fields from industrial to consumer equipment.

■ Features of 8 Series Toggles

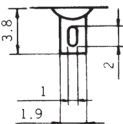
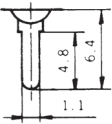
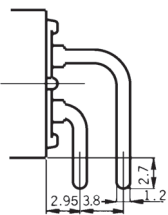
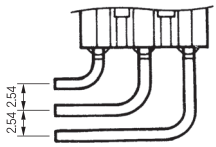
- 1. Terminal style :**
Solder, Straight, Right angle and vertical mount PC terminals.
- 2. Contacts :**
Silver or gold.
- 3. Epoxy resin case :**
UL94V-0 self-extinguishing epoxy.
- 4. Actuator styles :**
Over 30 actuator variations.
- 5. Insulation between terminal and ground :**
4 mm minimum.
- 6. Prevention of flux entry**
The epoxy resin seal on bottom of the switch helps prevent the entry of solder and flux.
- 7. Insulation barrier :**
Insulation barrier design between poles helps prevent short-circuiting between poles ensuring high reliability.
- 8. UL Recognized product File No.E43275**
- 9. CSA Certified product File No.LR38341**
- 10. For the UL Recognized and CSA Certified products please see page 358.**

8 Series Toggles Selection Table

Part No.	Name	Actuator shape	Number of poles	Switching function	Terminals	Page	
8A	Standard toggle		1•2•3•4		 	341 } 343	
8B	Mustang Toggle		1•2•3•4		ON - - ON ON - OFF - ON	 	344 } 345
8C	Flatted Toggle		1•2•3		※1/2 Poles ON - - ON ON - OFF - ON	 	346 } 347
8E	Lever Lock Toggle		1•2•3•4		※3/4 Poles	 	348 } 349
8F	Splash Proof Toggle		1•2•4		ON - ON - ON ※8A Type 4 Poles only	 	350 } 351
8J	Short Toggle		1•2•3•4			 	352 } 353
Washable	8G	Short Toggle Washable	1•2	ON - - ON ON - OFF - ON (ON) - OFF - (ON) ON - - (ON)	  	354 } 355	
	8GA	Standard Toggle Washable		1•2		  	356

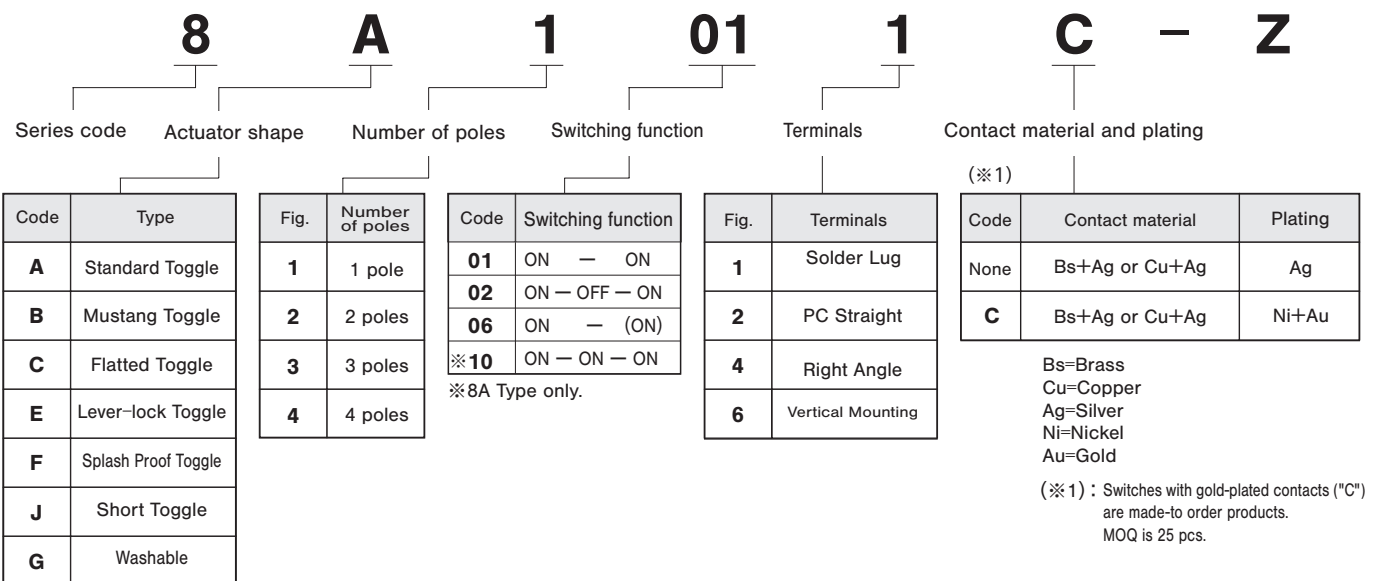
() indicates momentary actuation

■ Terminals

Solder Lug (Style:1)	PC Straight (Style:2)	Right Angle (Style:4)	Vertical Mounting (Style:6)
t=0.8 	t=0.8 PC 	t=0.8 R/A 	t=0.8 w=1.2 V/M 

8 Series Toggles

Part Numbering



Note : Some combinations may not be available. Please check the "Table of Part Numbers" for each series.

8 Series Toggles Common Specifications

Contact specs.		Silver	Gold
Rating	Max.	AC125 V 6 A AC250 V 3 A DC30 V 4 A	AC125 V 6 A AC250 V 3 A DC30 V 4 A DC20V 25mA
Initial contact resistance		10 mΩ Max. (DC2~4 V 1 A)	20 mΩ Max. (AC200 μV 1.5 mA)
Initial dielectric strength		AC1500 V / 1 minute	
Initial insulation resistance		1000 MΩ Min. (DC500 V)	
Electrical life	Alternate type	50,000/cycles	
	Momentary type	25,000/cycles	
Operating temperature range		-30~+85°C	
Storage temperature range		-40~+85°C	

8G

Washable Toggle Switches

Washable

RoHS Compliant



Features

The 8G Washable Toggle Switch is designed for PC boards and are easily mountable on the board. A PC support terminal is provided for stable mounting. The process-sealed structure allows cleaning after soldering.

Specifications

Rating	Max.	6 A 125 VAC·3 A 250 VAC·4 A 30 VDC
Initial contact resistance	10 mΩ max.	(1A 2~4 VDC)
Initial dielectric strength	1500 VAC 1 minute	
Initial Insulation resistance	1,000 MΩ min.	(500 VDC)
Electrical life	Alternate type	50,000 cycles
	Momentary type	25,000 cycles
Operating temperature range	-30~+85°C	
Storage temperature range	-40~+85°C	

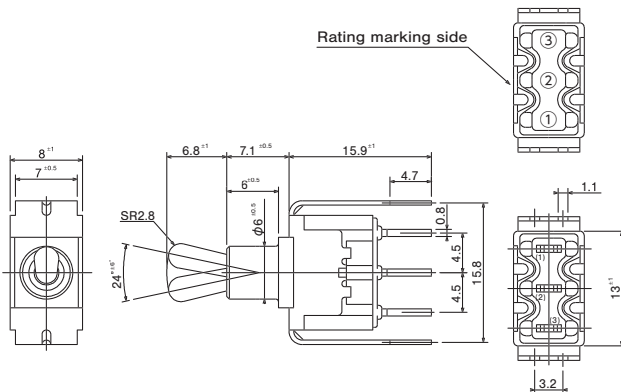
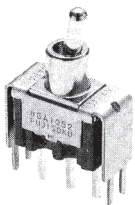
Terminals

PC Straight (Style:2)	Right Angle (Style:4)	Vertical Mounting (Style:6)
t=0.8 PC 	t=0.8 R/A 	t=0.8 w=1.2 V/M

8G : Short Toggle

SPDT

PC Straight



Part No.	Viewed from rating marking side		
	Switching function	ON	OFF
8G1012-Z	ON	-	ON
★8G1022-Z	ON	OFF	ON
8G1042-Z	(ON)	OFF	(ON)
Connecting terminals	2-3	-	2-1

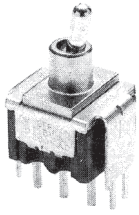
Terminal numbers are not shown on the switch.

(ON) : Momentary.

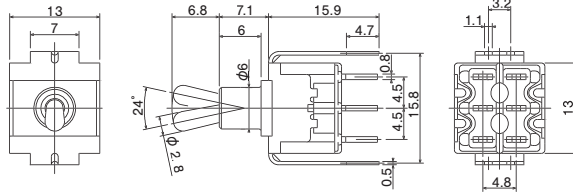
★ : Made to order products.

DPDT

PC Straight



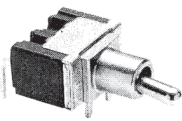
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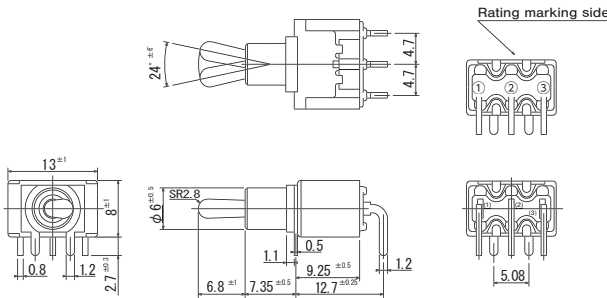
Part No.	Viewed from rating marking side		
	Switching function		
8G2012-Z	ON	-	ON
Connecting terminals	2-3 5-6	-	2-1 5-4

SPDT

Right Angle



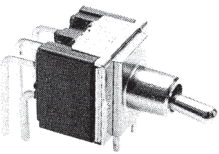
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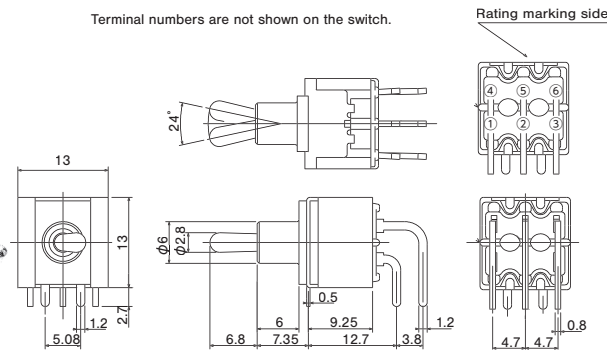
Part No.	Viewed from rating marking side		
	Switching function		
8G1014-Z	ON	-	ON
★ 8G1024-Z	ON	OFF	ON
☆ 8G1064-Z	ON	-	(ON)
Connecting terminals	2-3	-	2-1

DPDT

Right Angle



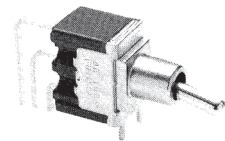
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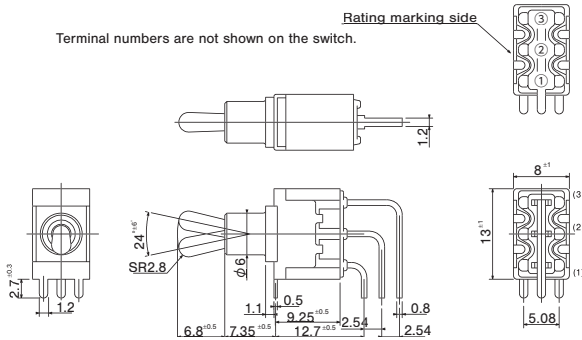
Part No.	Viewed from rating marking side		
	Switching function		
8G2014-Z	ON	-	ON
Connecting terminals	2-3 5-6	-	2-1 5-4

SPDT

Vertical Mounting



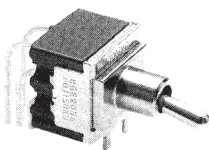
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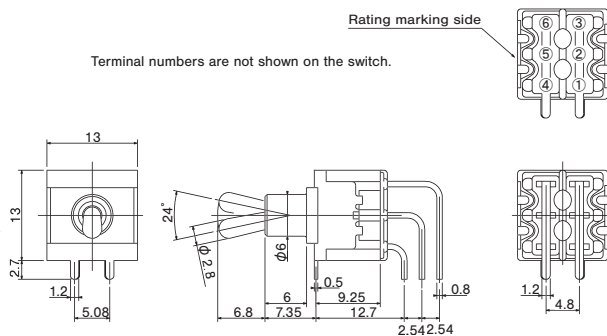
Part No.	Viewed from rating marking side		
	Switching function		
8G1016-Z	ON	-	ON
Connecting terminals	2-3	-	2-1

DPDT

Vertical Mounting



Terminal numbers are not shown on the switch.



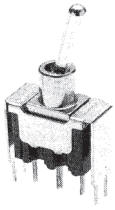
Part No.	Viewed from rating marking side		
	Switching function		
8G2016-Z	ON	-	ON
Connecting terminals	2-3 5-6	-	2-1 5-4

Washable

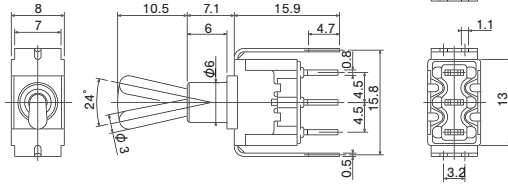
8GA : Standard Toggle

SPDT

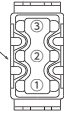
PC Straight



Terminal numbers are not shown on the switch.



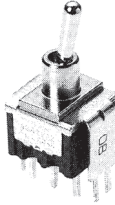
Rating marking side



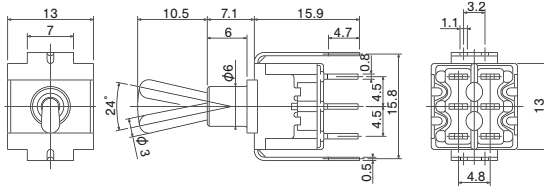
Switching function	Viewed from rating marking side		
Part No.	8GA1012-Z		
Connecting terminals	2-3	-	2-1

DPDT

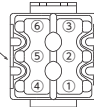
PC Straight



Terminal numbers are not shown on the switch.



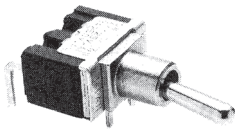
Rating marking side



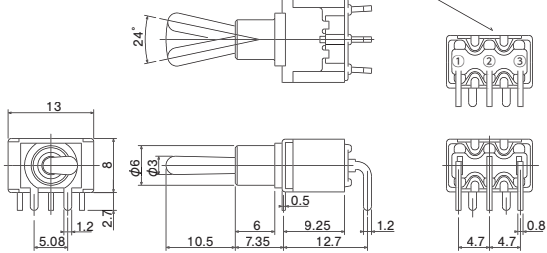
Switching function	Viewed from rating marking side		
Part No.	★ 8GA2012-Z		
Connecting terminals	2-3 5-6	-	2-1 5-4

SPDT

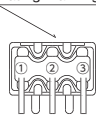
Right Angle



Terminal numbers are not shown on the switch.



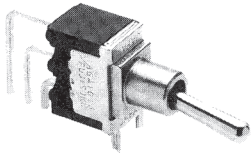
Rating marking side



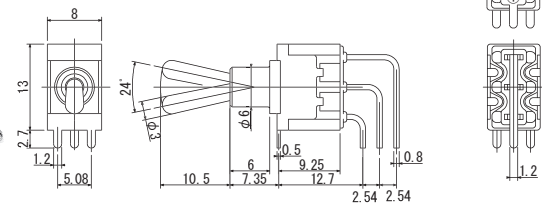
Switching function	Viewed from rating marking side		
Part No.	8GA1014-Z		
Connecting terminals	2-3	-	2-1

SPDT

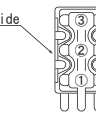
Vertical Mounting



Terminal numbers are not shown on the switch.



Rating marking side



Switching function	Viewed from rating marking side		
Part No.	☆ 8GA1016-Z		
Connecting terminals	2-3	-	2-1

PC Hole Layouts

Terminal style	PC Straight	Right Angle	Vertical Mounting
1 pole			
2 poles			

☆ : Semi-standard products. ★ : Made to order products. • Optional accessories (Color Caps) for 8GA series are shown on P.361.

■ Table UL and CSA Listed

Poles	Switching function		UL (※1.)		CSA (※2.)	
			8G	8GA	8G	8GA
1 pole	101□	ON - ON	○	○	○	○
	102□	ON - OFF - ON	○		○	
	104□	(ON) - OFF - (ON)	○		○	
	106□	ON - (ON)	○		○	
2 poles	201□	ON - ON	○	○	○	○

- (1) Terminal types: 1 Solder terminal; 2 Straight terminal
- (2) Even if the products are of UL-or CSA-approved ones. The products in stock do not carry the UL mark of the CSA mark. When placing an order, be sure to specify "With UL/CSA Mark." For the products with the UL mark or the CSA mark, extra costs will be added.
- (3) (※1.) UL File No.E43275
(※2.) CSA File No.LR38341
- (4) As shown in the above chart, not all products are UL-recognized or CSA-certified. Please check with your local sales representative if you have any questions.

■ Precaution

1. Soldering Specifications

(1) Manual soldering

Device : Solder iron

- ① 350°C Max. 3 sec. Max.
- ② 310°C Max. 7 sec. Max.

(2) Auto soldering

Device : Jet wave or dip type

- ① 270°C Max. 5 sec. Max.
- ② 250°C Max. 7 sec. Max.

Pre-heating should be done at temperatures below 100°C and within 30 seconds.

2. Flux Cleaning

- (1) Solvent : Fluorine or Alcohol type.
- (2) Cleaning after soldering should be done after the terminal temperature falls to 90°C or below, or after leaving the switch for five minutes or longer at room temperature.
- (3) Do not use the ultrasonic cleaning.

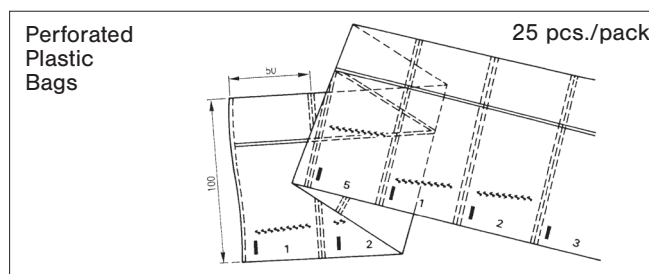
3. Mounting

- Do not bend the terminals before mounting the switch on the PC board.
- After mounting the switch, do not place the device in such a way that the device weight will be applied on to the actuator of the switch.

4. Mounting Accessories

Mount the accessories after soldering and flux cleaning.

■ Packaging Specification



Optional Accessories

《Sold separately》

Type	8A · 8F · 8GA	8A · 8F · 8GA	8B	8E
Part Name	Color Cap			
Dimensions	<p style="text-align: center;">Gloss finish Vinyl chloride resin</p>	<p style="text-align: center;">Gloss finish Vinyl chloride resin</p>	<p style="text-align: center;">Gloss finish Vinyl chloride resin</p>	<p style="text-align: center;">Alumite finish Aluminum alloy</p>
Silver	-	-	-	140000470058
White	140000470030	140000470038	140000470063	-
Red	140000470098	140000470100	140000470108	140000470060
Black	140000470031	-	140000470064	140000470059
Gray	140000470037	140000470077	-	-

/Type	8A	8B	
Part Name	Boot	Plate	Plate
Part No.	140000470422	140008040021	140008040025
Dimensions	<p style="text-align: center;">With Nut (1/4" - 40THD)</p>	<p style="text-align: center;">Red Black t = 0.5</p>	<p style="text-align: center;">Red Black t = 1</p>