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.

■Features of 8 Series Toggles
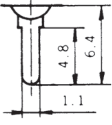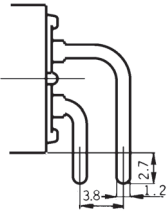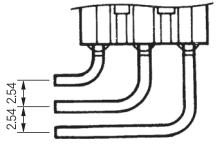
1. Terminal style :
    Solder, Straight, Right angle and vertical mount PC terminals.

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.

■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.

8 Series Toggles Selection Table

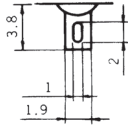| Part No.		Name	Actuator shape	Number of poles	Switching function	Terminals	Page
8A		Standard toggle		1・2・3・4	ON – ON ON – OFF – ON ※1/2 Poles ON – ON ON – OFF – ON ※3/4 Poles ON – ON – ON ※8A Type 4 Poles only	Solder Lug Straight PC	341 〜 343
8B		Mustang Toggle		1・2・3・4		Solder Lug Straight PC	344 〜 345
8C		Flatted Toggle		1・2・3		Solder Lug Straight PC	346 〜 347
8E		Lever Lock Toggle		1・2・3・4		Solder Lug Straight PC	348 〜 349
8F		Splash Proof Toggle		1・2・4		Solder Lug Straight PC	350 〜 351
8J		Short Toggle		1・2・3・4		Solder Lug Straight PC	352 〜 353
Board mounting washable	**8G**	Short Toggle Washable		1・2	ON – ON ON – OFF – ON (ON) – OFF – (ON) ON – (ON)	Straight PC Right Angle Vertical	354 〜 355
	8GA	Standard Toggle Washable		1・2		Straight PC Right Angle Vertical	356
Board mounting	**8K**	Short Toggle		1・2	ON – ON	Straight PC Right Angle Vertical	357 〜 358
	8KA	Standard Toggle		1・2		Straight PC Right Angle Vertical	359

( ) 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　　　　　　V/M w=1.2
3.8　2 1 1.9	4.8　6.4 1.1	2.7 3.8　1.2	2.54　2.54

■Part Numbering

| 8 | A | 1 | 01 | 1 | C | – | Z |

Series code · Actuator shape · Number of poles · Switching function · Terminals · Contact material and plating

Code	Type
A	Standard Toggle
B	Mustang Toggle
C	Flatted Toggle
E	Lever–lock Toggle
F	Splash Proof Toggle
J	Short Toggle
G	Board mounting washable
K	Board mounting

Fig.	Number of poles
1	1 pole
2	2 poles
3	3 poles
4	4 poles

Code	Switching function
01	ON — ON
02	ON — OFF — ON
04	(ON) — OFF — (ON)
06	ON — (ON)
※10	ON — ON — ON

※ 8A Type only.

Fig.	Terminals
1	Solder Lug
2	PC Straight
4	Right Angle
6	Vertical Mounting

(※1)

Code	Contact material	Plating
None	Bs＋Ag or Cu＋Ag	Ag
C	Bs＋Ag or Cu＋Ag	Ni＋Au

Bs=Brass
Cu=Copper
Ag=Silver
Ni=Nickel
Au=Gold

(※1)： Switches with gold-plated contacts ("C") are made-to order products. MOQ is 25 pcs.

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

■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℃	
Storage temperature range		−40〜+85℃	

■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　V/M　　　w=1.2

8G：Short Toggle

SPDT

PC Straight

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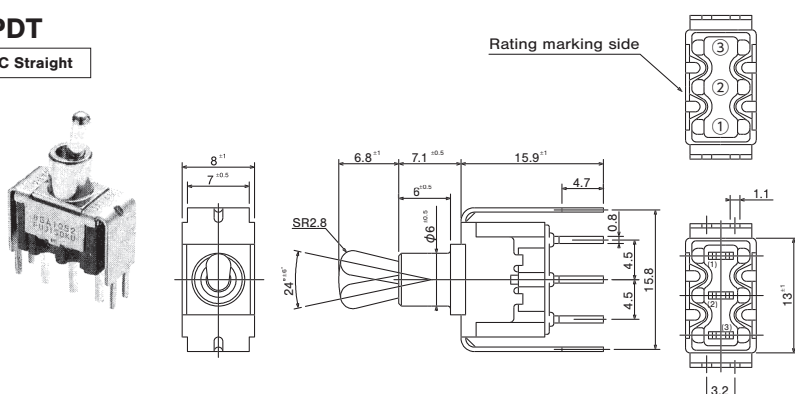
	Switching function	Viewed from rating marking side		
Part No.				
8G1012−Z		ON	–	ON
★ 8G1022−Z		ON	OFF	ON
8G1042−Z		(ON)	OFF	(ON)
Connecting terminals		2−3	–	2−1

Terminal numbers are not shown on the switch.

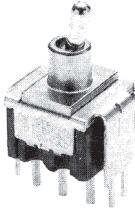(ON)：Momentary.　　★：Made to order products.

DPDT

PC Straight

Rating marking side

Terminal numbers are not shown on the switch.

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

SPDT

Right Angle

Terminal numbers are not shown on the switch.
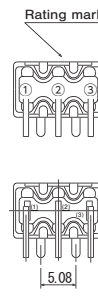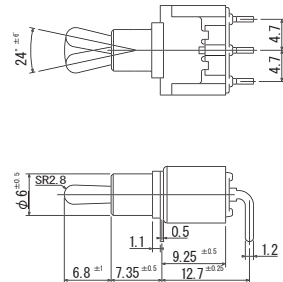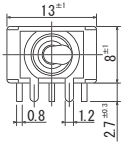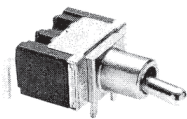
Rating marking side

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

DPDT

Right Angle

Terminal numbers are not shown on the switch.
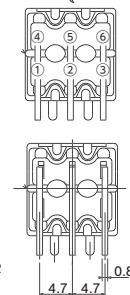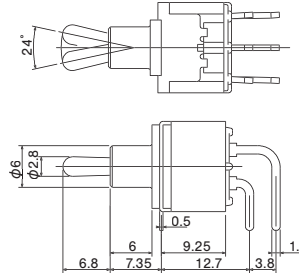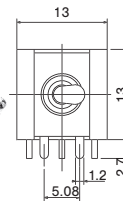
Rating marking side
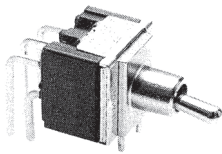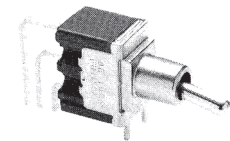
	Switching function	Viewed from rating marking side		
Part No.				
8G2014-Z		ON	–	ON
Connecting terminals		2-3 5-6	–	2-1 5-4

SPDT

Vertical Mounting
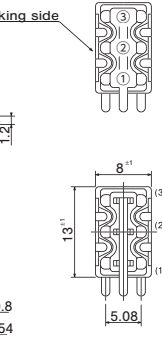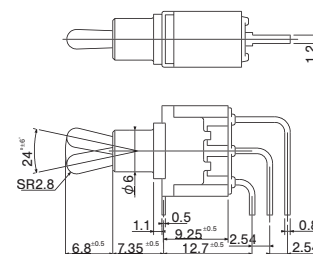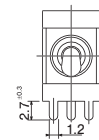
Rating marking side

Terminal numbers are not shown on the switch.

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

DPDT

Vertical Mounting
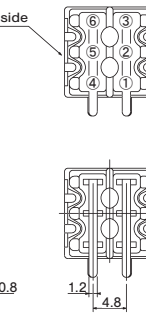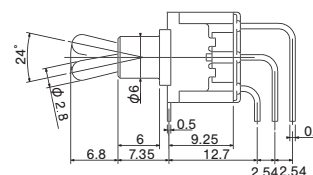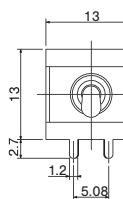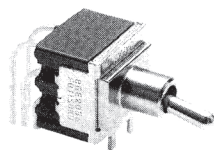
Rating marking side

Terminal numbers are not shown on the switch.

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

★ : Made to order products.   ☆ : Semi-standard products.   (ON) : Momentary.

SPDT

PC Straight

Rating marking side

Terminal numbers are not shown on the switch.
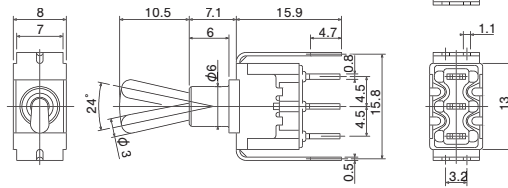
Part No.	Switching function	Viewed from rating marking side		
8GA1012–Z		ON	–	ON
Connecting terminals		2–3	–	2–1

DPDT

PC Straight
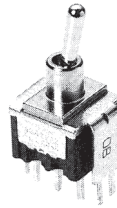
Rating marking side

Terminal numbers are not shown on the switch.
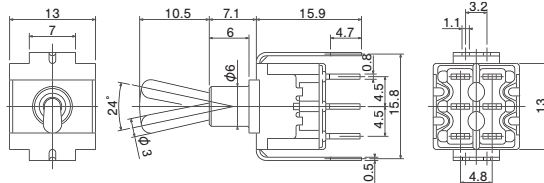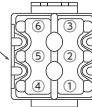
Part No.	Switching function	Viewed from rating marking side		
★**8GA2012–Z**		ON	–	ON
Connecting terminals		2–3 5–6	–	2–1 5–4
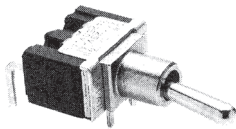
SPDT

Right Angle

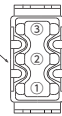Terminal numbers are not shown on the switch.
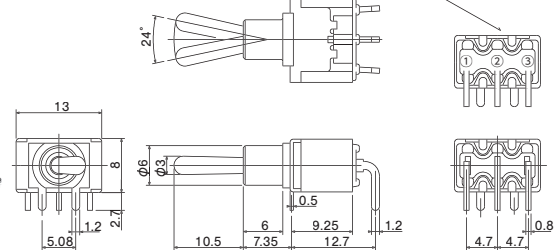
Rating marking side
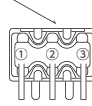
Part No.	Switching function	Viewed from rating marking side		
8GA1014–Z		ON	–	ON
Connecting terminals		2–3	–	2–1

SPDT

Vertical Mounting
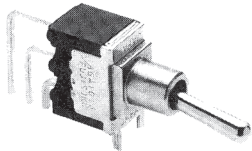
Rating marking side

Terminal numbers are not shown on the switch.
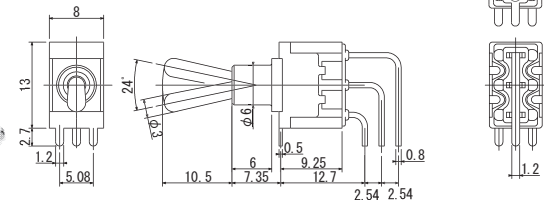
Part No.	Switching function	Viewed from rating marking side		
☆**8GA1016–Z**		ON	–	ON
Connecting terminals		2–3	–	2–1

■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		� （※1.）		Ⓢ （※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℃ Max. 3 sec. Max.
　② 　310℃Max. 7 sec. Max.
(2)Auto soldering
　　Device：Jet wave or dip type
　① 　270℃ Max. 5 sec. Max.
　② 　250℃ Max. 7 sec. Max.

Pre-heating should be done at temperatures below 100℃ 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℃ or below, or after leaving the switch for five minutes or longer at room temperature.
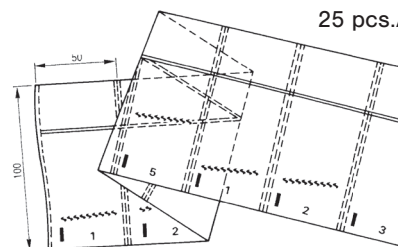(3)Do not use the ultrasonic cleaning.

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

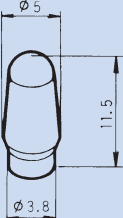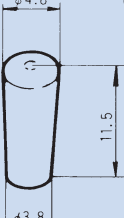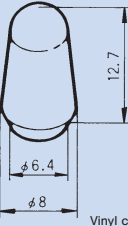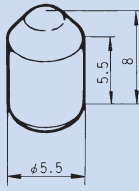Mount the accessories after soldering and flux cleaning.

■Packaging Specification
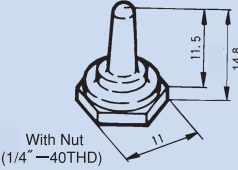
Perforated Plastic Bags

25 pcs./pack

■ Optional Accessories ——————————————— 《Sold separately》

Type	8A・8F・8GA・8KA	8A・8F・8GA・8KA	8B	8E
Part Name	Color Cap			
Dimensions	Gloss finish / ø5 / 11.5 / ø3.8 / Vinyl chloride resin	Gloss finish / ø4.8 / 11.5 / ø3.8 / Vinyl chloride resin	Gloss finish / 12.7 / ø6.4 / ø8 / Vinyl chloride resin	Alumite finish / 5.5 / 8 / ø5.5 / Aluminum alloy
Silver	–	–	–	140000470058
White	140000470030	140000470038	140000470063	–
Red	140000470098	140000470100	140000470108	140000470060
Black	140000470031	–	140000470064	140000470059
Gray	140000470037	140000470077	–	–

Type	8A
Part Name	Waterproof boot
Part No.	140000470422
Dimensions	11.5 / 14.8 / With Nut (1/4″—40THD) / 11