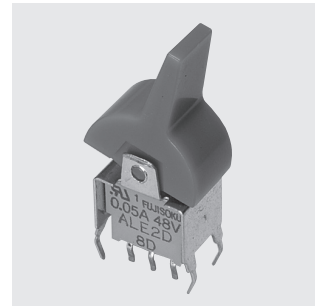


# ALE

Washable

RoHS Compliant



## Standard Lever & Rocker Switches

UL

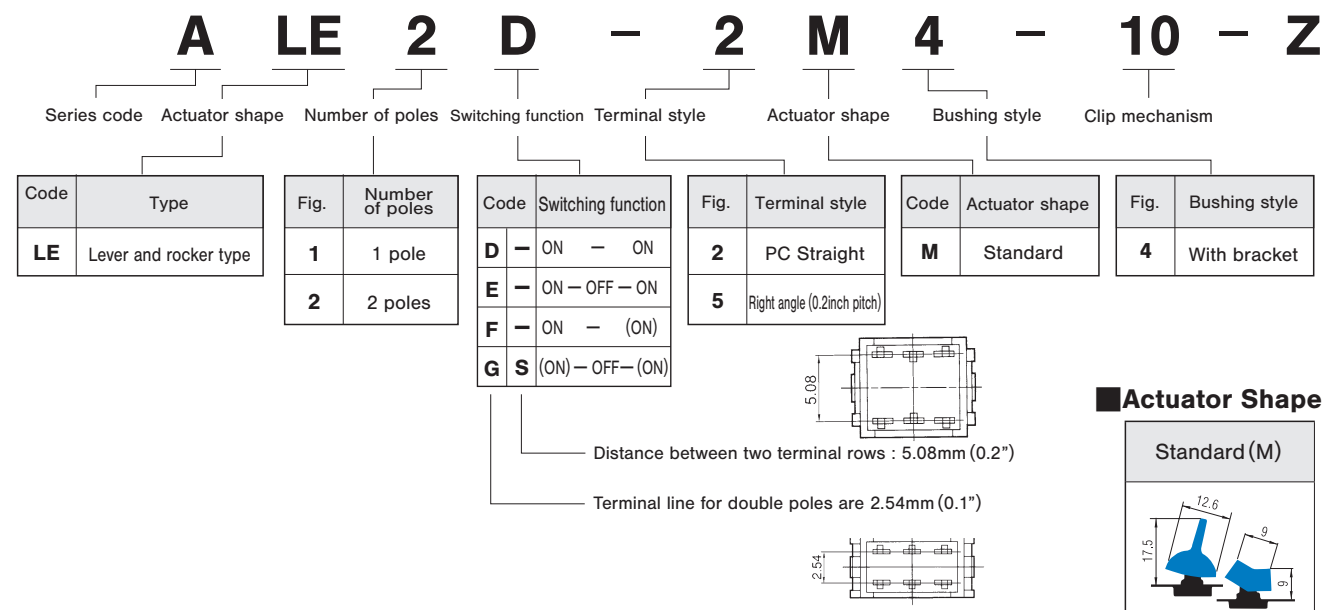
### ■ Features

1. High reliability  
The twin-contact clip mechanism is employed for the contact section to ensure high reliability.
2. Process sealed structure  
All types of the switch feature the completely sealed structure.
3. Designed for dry circuit applications  
Since the contacts are gold-plated, the switches are best suited for use in the dry circuit areas.
4. Designed for PC board applications  
The terminal pitches are all in inch size (2.54 mm).
5. Improved operability  
The independent detent structure provides a light operating touch.
6. All models are of UL approved type.

### ■ Specifications

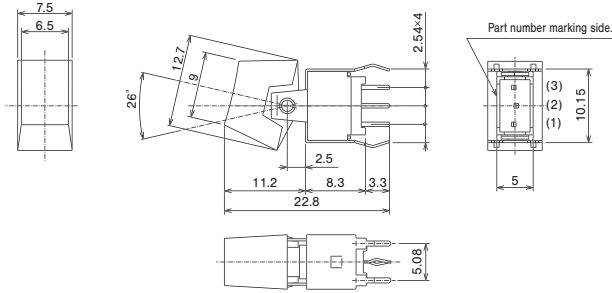
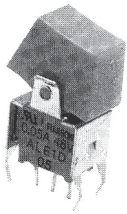
Rating	Max : 0.4VA (60VAC/DC 50mA) Min : 1μA 20mVAC/DC UL:48VAC/DC 50mA
Initial contact resistance	50mΩ max. (1.5mA 200μVAC)
Dielectric strength	250VAC 1 minute
Insulation resistance	500MΩ min. (500VDC)
Electrical life	10,000 cycles at maximum rating 50,000 cycles at 0.4VA min. (D,E type) 30,000 cycles at 0.4VA min. (F,G type)
Operating temperature range	-20~+85°C
Storage temperature range	-40~+85°C

### ■ Part Numbering



**SPDT**

**PC Straight**



(Mount with Rocker)

Terminal numbers are not shown on the bottom of the switch.

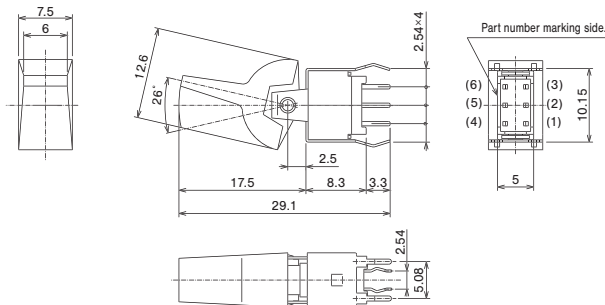
Switching function	Viewed from part No. marking side		
Part No.			
▲ ALE1D-2M4-10-Z	ON	—	ON
☆ ALE1E-2M4-10-Z	ON	OFF	ON
☆ ALE1F-2M4-10-Z	ON	—	(ON)
☆ ALE1G-2M4-10-Z	(ON)	OFF	(ON)
Connecting terminals	2-3	—	2-1

**DPDT**

**PC Straight**



Distance between two terminal rows : 2.54 mm



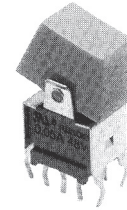
(Mount with Lever)

Terminal numbers are not shown on the bottom of the switch.

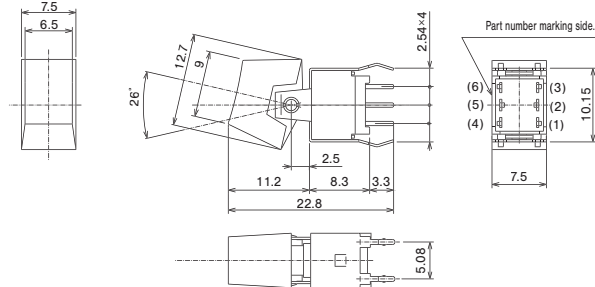
Switching function	Viewed from part No. marking side		
Part No.			
▲ ALE2D-2M4-10-Z	ON	—	ON
Connecting terminals	2-3 5-6	—	2-1 5-4

**DPDT**

**PC Straight**



Distance between two terminal rows : 5.08 mm



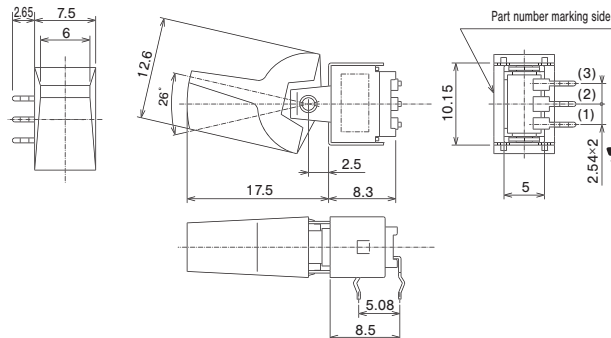
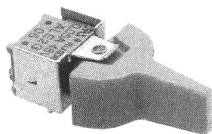
(Mount with Rocker)

Terminal numbers are not shown on the bottom of the switch.

Switching function	Viewed from part No. marking side		
Part No.			
▲ ALE2S-2M4-10-Z	(ON)	OFF	(ON)
Connecting terminals	2-3 5-6	—	2-1 5-4

**SPDT**

**0.2R/A**



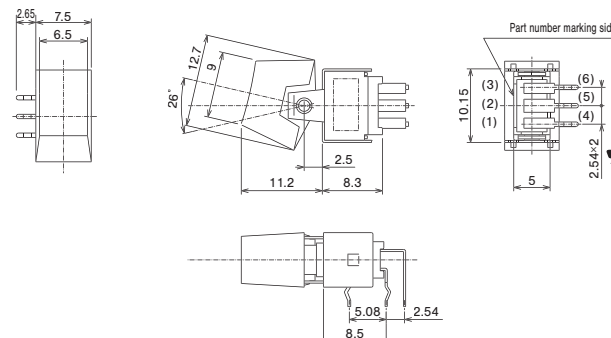
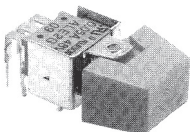
(Mount with Lever)

Terminal numbers are not shown on the bottom of the switch.

Switching function	Viewed from part No. marking side		
Part No.			
☆ ALE1D-5M4-10-Z	ON	—	ON
Connecting terminals	2-3	—	2-1

**DPDT**

**0.2R/A**



(Mount with Rocker)

Terminal numbers are not shown on the bottom of the switch.

Switching function	Viewed from part No. marking side		
Part No.			
☆ ALE2D-5M4-10-Z	ON	—	ON
Connecting terminals	2-3 5-6	—	2-1 5-4

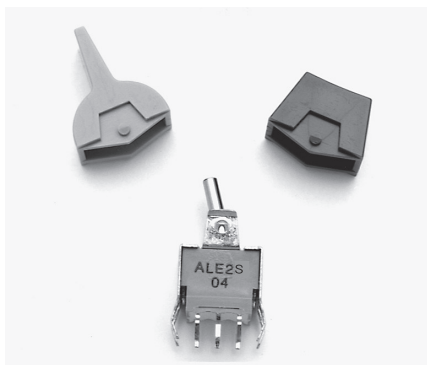
■ Standard Accessories

《Supplied separately》

Lever			Rocker		
Dimension	Color	Part No.	Dimensions	Color	Part No.
	White	140000050624		White	140000480673
	Red	140000050626		Red	140000480675
	Black	140000050625		Black	140000480674
	Gray	140000050630		Gray	140000480679

The lever and the rocker are standard accessories. Specify either of the lever or the rocker in part number.

■ Lever•rocker Installation procedure



Mount the lever or the rocker after cleaning.

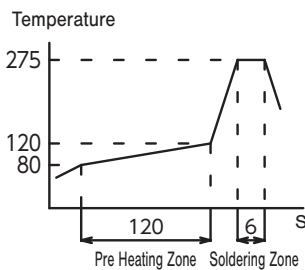
■ Soldering Specifications

(1) Manual Soldering

Device : Soldering iron  
380°C, Max.; 3 seconds, Max.

(2) Auto Soldering

Device : Jet wave type or dip type  
275°C, Max.; 6 seconds, Max.



- Pre-heating should be done at temperatures ranging from 80°C to 120°C and within 120 seconds.
- Note: Mount the accessories of knob and lever after the soldering.

■ PC Hole Layouts

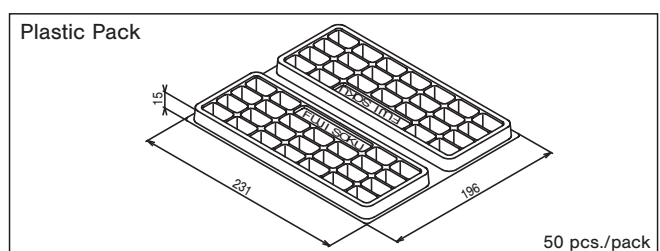
(Top view)

PC Straight	( 1-pole Compact type )	
	( 2-poles Compact type )	
	( 2-poles Two terminal rows )	
Right angle terminal	( 1-pole Compact type )	
	( 2-poles Compact type )	

■ Flux Cleaning

- (1) For the solvent, use the fluorine- or alcohol-based solvent.  
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.

■ Packaging Specification



## A series

Poles	Part number	Switching function	UL (※1)
1 pole	ALE1D-2M4-10-Z	ON - ON	○
	ALE1D-5M4-10-Z		○
	ALE1E-2M4-10-Z	ON -OFF- ON	○
	ALE1F-2M4-10-Z	ON - (ON)	○
	ALE1G-2M4-10-Z	(ON) -OFF- (ON)	○
2 poles	ALE2D-2M4-10-Z	ON - ON	○
	ALE2D-5M4-10-Z		○
	ALE2S-2M4-10-Z	(ON) -OFF- (ON)	○

## Miniature Poewr Switches

Poles	Type	Switching function	UL (※1)	SP (※2)
1 pole	HLA112D12	ON-ON	○	○
	HLS112D		○	○
	HLS112D12		○	○

Poles	Type	Switching function	UL (※1)	SP (※2)
2 poles	HLC208N	ON-ON	○	○
	HLC208N12		○	○
	HLS208N		○	○
	HLS208N12		○	○

## Miniature Rocker Switches

Poles	Part number	Switching function	UL (※1)	SP (※2)
1 pole	HLA112A	ON-OFF	○	○
	HLA112A12		○	○
	HLC112A		○	○
	HLS112A		○	○
	HLS112A12		○	○
2 poles	HLA208K	ON-OFF	○	○
	HLA208K12		○	○
	HLC208K		○	○
	HLC208K12		○	○
	HLS208K		○	○
	HLS208K12		○	○

## Miniature Rocker Switches

Poles	Part number	Switching function	UL (※1)	SP (※2)	UL (※4)	SEM (※5)	Poles	Part number	Switching function	UL (※1)	SP (※2)	UL (※4)	SEM (※5)		
1-pole	SLE6A	ON-OFF	○	○	○	○	1-pole	SLE10A	ON-OFF	○	○	○	○		
	SLE6A-5		○	○	○	○		SLE10A-5		○	○	○	○		
	SLE6A-6		○	○	○	○		SLE10A-6		○	○	○	○		
	SLE6A-7		○	○	○	○		SLE10A-7		○	○	○	○		
	SLE6A-8		○	○	○	○		SLE10A2-5		○	○	○	○		
	SLE6A-9		○	○	○	○		SLE10A2-6		○	○	○	○		
	SLE6A2		○	○	○	○		SLE10A2-7		○	○	○	○		
	SLE6A2-5		○	○	○	○		SLE10A5-5		○	○	○	○		
	SLE6A2-6		○	○	○	○		SLE10A5-6		○	○	○	○		
	SLE6A2-7		○	○	○	○		SLE10A5-7		○	○	○	○		
	SLE6A2-9		○	○	○	○									
	SLE6A4-5		○	○	○	○									
	SLE6A4-6		○	○	○	○									
	SLE6A4-7		○	○	○	○									
	SLE6A5-5		○	○	○	○									
	SLE6A5-6		○	○	○	○									
	SLE6D		ON-ON	○	○	○		○		SLE10D-5	ON-ON	○	○	○	○
	SLE6D-5			○	○	○		○		SLE10D2-5		○	○	○	○
	SLE6D2			○	○	○		○		SLE10D2-6		○	○	○	○
SLE6D2-5	○	○		○	○										
SLE6D2-7	○	○		○	○										
SLE6D4	○	○		○	○										
SLE6D5	○	○		○	○										

(※1) UL File No. E43275

(※4) VDE File No. 120752

(※2) CSA File No. LR38341

(※5) SEMKO File No. 614385