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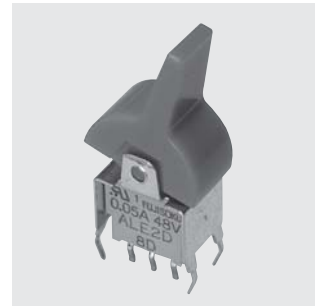
# ALE

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.

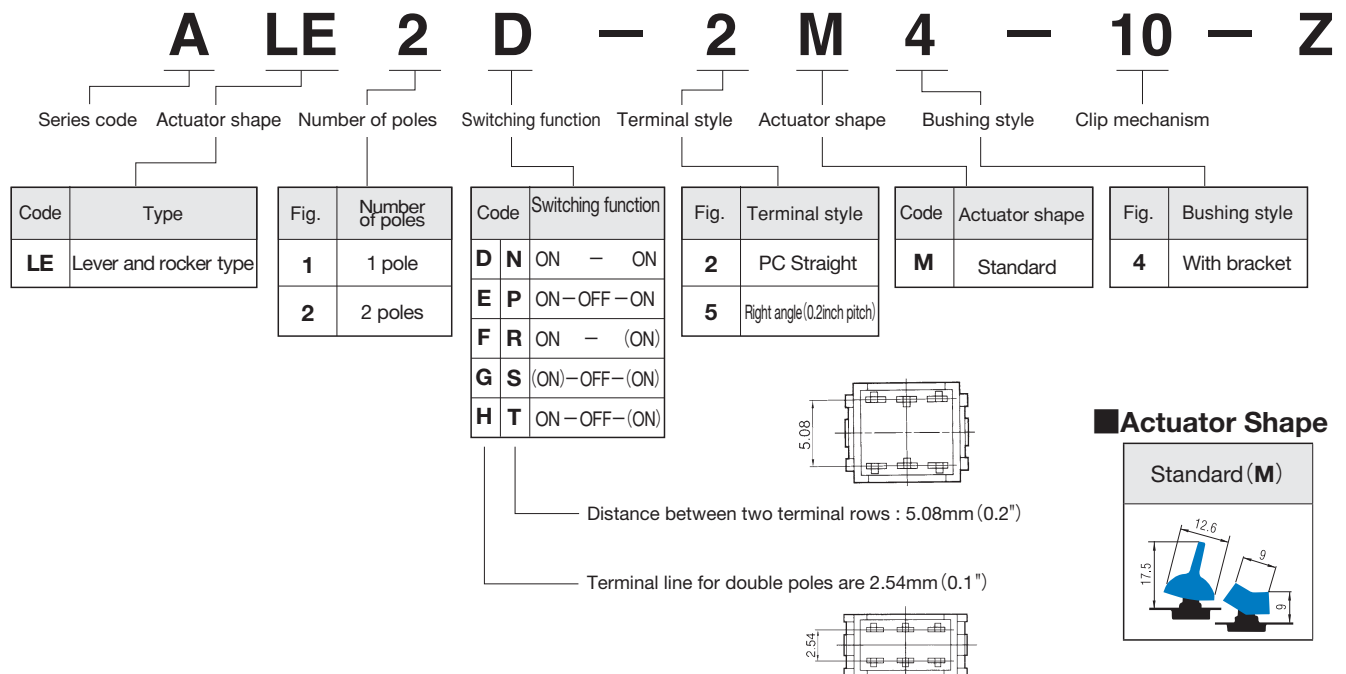
#### 6. All models are of UL approved type.

(File No. E42375)

### ■ Specifications

Rating	Max : 50mA 60VAC/DC Min : 1μA 20mVAC/DC
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,H type)
Operating temperature range	-20~+85°C
Storage temperature range	-40~+85°C

### ■ Part Numbering



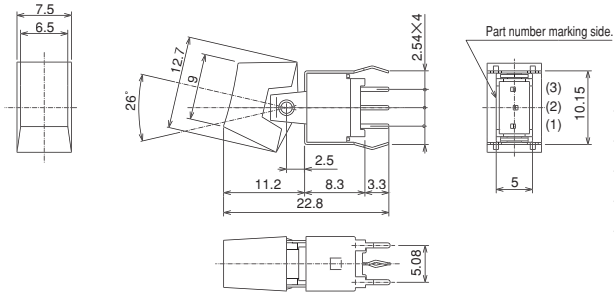
# APE (Standard Lever & Rocker Switches)

## SPDT

### PC Straight



(Mount with **Rocker**)



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

Switching function	Viewed from part No. and rating marking side		
Part No.			
RU ALE1D-2M4-10-Z	ON	—	ON
RU ☆ALE1E-2M4-10-Z	ON	OFF	ON
RU ☆ALE1F-2M4-10-Z	ON	—	(ON)
RU ☆ALE1G-2M4-10-Z	(ON)	OFF	(ON)
RU ★ALE1H-2M4-10-Z	ON	OFF	(ON)
Connecting terminals	2-3	—	2-1

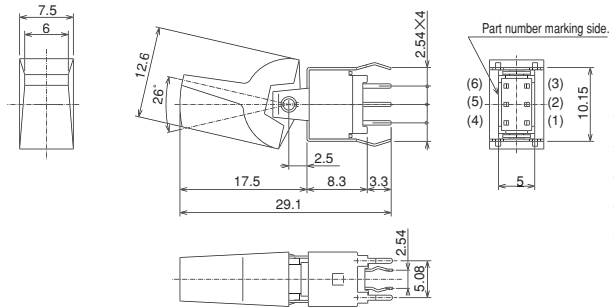
## DPDT

### PC Straight



(Mount with **Lever**)

Distance between two terminal rows : 2.54 mm



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

Switching function	Viewed from part No. marking side		
Part No.			
RU ☆ALE2D-2M4-10-Z	ON	—	ON
RU ▲ALE2E-2M4-10-Z	ON	OFF	ON
RU ▲ALE2F-2M4-10-Z	ON	—	(ON)
RU ▲ALE2G-2M4-10-Z	(ON)	OFF	(ON)
RU ▲ALE2H-2M4-10-Z	ON	OFF	(ON)
Connecting terminals	2-3 5-6	—	2-1 5-4

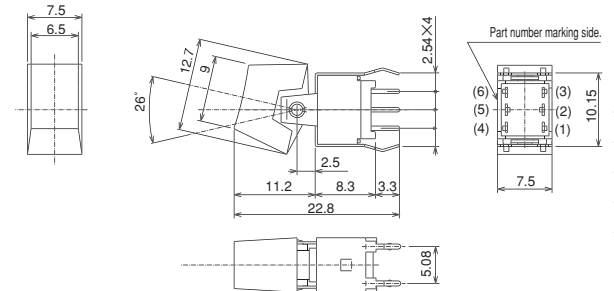
## DPDT

### PC Straight



(Mount with **Rocker**)

Distance between two terminal rows : 5.08 mm



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

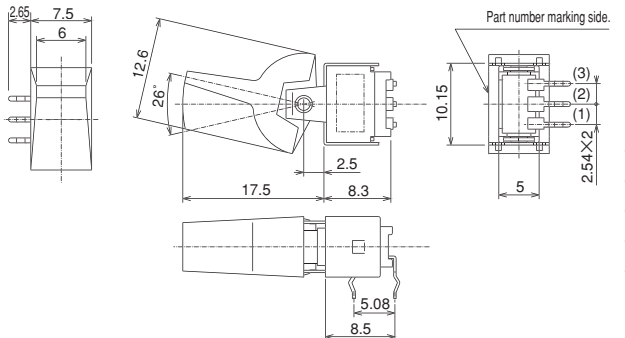
Switching function	Viewed from part No. marking side		
Part No.			
RU ★ALE2N-2M4-10-Z	ON	—	ON
RU ▲ALE2P-2M4-10-Z	ON	OFF	ON
RU ★ALE2R-2M4-10-Z	ON	—	(ON)
RU ★ALE2S-2M4-10-Z	(ON)	OFF	(ON)
RU ★ALE2T-2M4-10-Z	ON	OFF	(ON)
Connecting terminals	2-3 5-6	—	2-1 5-4

## SPDT

### 0.2R/A



(Mount with **Lever**)



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

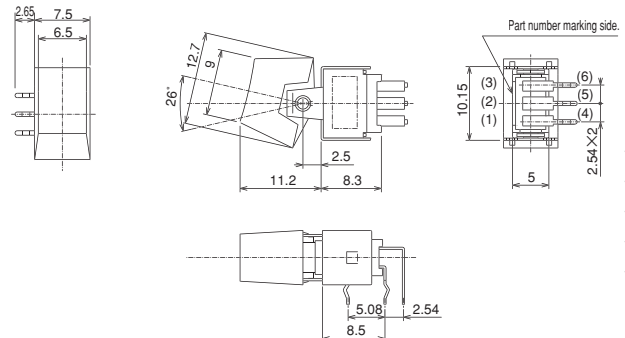
Switching function	Viewed from part No. marking side		
Part No.			
RU ☆ALE1D-5M4-10-Z	ON	—	ON
RU ▲ALE1E-5M4-10-Z	ON	OFF	ON
RU ▲ALE1F-5M4-10-Z	ON	—	(ON)
RU ▲ALE1G-5M4-10-Z	(ON)	OFF	(ON)
RU ▲ALE1H-5M4-10-Z	ON	OFF	(ON)
Connecting terminals	2-3	—	2-1

## 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.			
RU ☆ALE2D-5M4-10-Z	ON	—	ON
RU ▲ALE2E-5M4-10-Z	ON	OFF	ON
RU ▲ALE2F-5M4-10-Z	ON	—	(ON)
RU ★ALE2G-5M4-10-Z	(ON)	OFF	(ON)
RU ▲ALE2H-5M4-10-Z	ON	OFF	(ON)
Connecting terminals	2-3 5-6	—	2-1 5-4

(ON) : Momentary

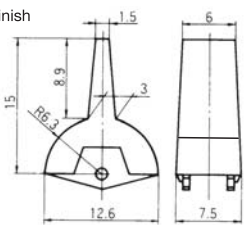
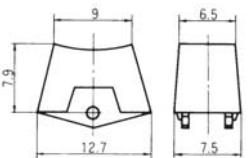
▲ : Inquiry products.

☆ : Semi-standard products.

★ : Made to order products.

Standard Accessories

(Supplied separately)

Lever			Rocker		
Dimension	Color	Part No.	Dimensions	Color	Part No.
Gloss finish  ABS resin	White	14000050624	Gloss finish  ABS resin	White	140000480673
	Red	14000050626		Red	140000480675
	Black	14000050625		Black	140000480674
	Gray	14000050630		Gray	140000480679
	Green	14000050628		Green	140000480677
	Blue	14000050629		Blue	140000480678
	Orange	14000050632		Orange	140000480680
	Yellow	14000050627		Yellow	140000480676
	Brown	14000050647		Brown	140000480693

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

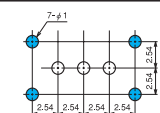
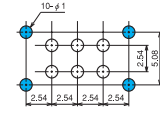
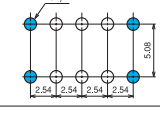
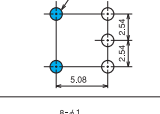
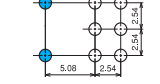
Lever•rocker Installation procedure

PC Hole Layouts



Mount the lever or the rocker after cleaning.

(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)	

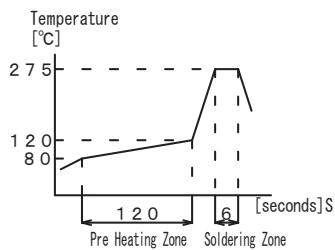
Soldering Specifications

(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.



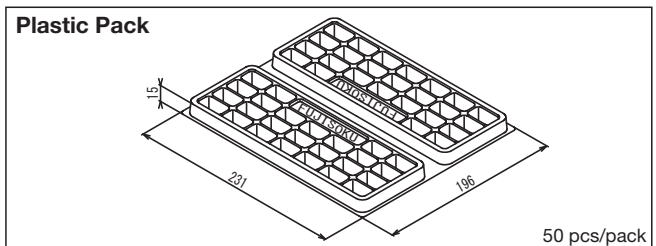
● Pre-heating should be done at temperatures ranging from 80°C to 120°C and within 120 seconds.

Note: Mount the accessories of knob and lever after the soldering.

Flux Cleaning

- For the solvent, use the fluorine- or alcohol-based solvent. Solvent: Fluorine or Alcohol type
- 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 -OFF- ON	<input type="radio"/>
	ALE1D-5M4-10-Z		<input type="radio"/>
	ALE1E-2M4-10-Z	ON -OFF- ON	<input type="radio"/>
	ALE1E-5M4-10-Z		<input type="radio"/>
	ALE1F-2M4-10-Z	ON - (ON)	<input type="radio"/>
	ALE1F-5M4-10-Z		<input type="radio"/>
	ALE1G-2M4-10-Z	(ON) -OFF- (ON)	<input type="radio"/>
	ALE1G-5M4-10-Z		<input type="radio"/>
	ALE1H-2M4-10-Z	ON -OFF- (ON)	<input type="radio"/>
	ALE1H-5M4-10-Z		<input type="radio"/>
2 poles	ALE2D-2M4-10-Z	ON - ON	<input type="radio"/>
	ALE2D-5M4-10-Z		<input type="radio"/>
	ALE2N-2M4-10-Z	ON -OFF- ON	<input type="radio"/>
	ALE2E-2M4-10-Z		<input type="radio"/>
	ALE2E-5M4-10-Z	ON - (ON)	<input type="radio"/>
	ALE2P-2M4-10-Z		<input type="radio"/>
	ALE2F-2M4-10-Z	(ON) -OFF- (ON)	<input type="radio"/>
	ALE2F-5M4-10-Z		<input type="radio"/>
	ALE2R-2M4-10-Z	ON -OFF- (ON)	<input type="radio"/>
	ALE2G-2M4-10-Z		<input type="radio"/>
	ALE2G-5M4-10-Z	ON -OFF- (ON)	<input type="radio"/>
	ALE2S-2M4-10-Z		<input type="radio"/>
	ALE2H-2M4-10-Z	ON -OFF- (ON)	<input type="radio"/>
	ALE2H-5M4-10-Z		<input type="radio"/>
	ALE2T-2M4-10-Z		<input type="radio"/>

## Miniature Rocker Switches

Poles	Part number	Switching function	UL (※1)	CSA (※2)
1 pole	HLA112A	ON-OFF	<input type="radio"/>	<input type="radio"/>
	HLA112A12		<input type="radio"/>	<input type="radio"/>
	HLC112A		<input type="radio"/>	<input type="radio"/>
	HLC112A12		<input type="radio"/>	<input type="radio"/>
	HLS112A		<input type="radio"/>	<input type="radio"/>
	HLS112A12		<input type="radio"/>	<input type="radio"/>
	STE115A10-Z		<input type="radio"/>	<input type="radio"/>
	STE115A12-Z		<input type="radio"/>	<input type="radio"/>
	2 poles		HLA208K	ON-OFF
HLA208K12		<input type="radio"/>	<input type="radio"/>	
HLC208K		<input type="radio"/>	<input type="radio"/>	
HLC208K12		<input type="radio"/>	<input type="radio"/>	
HLS208K		<input type="radio"/>	<input type="radio"/>	
HLS208K12		<input type="radio"/>	<input type="radio"/>	

## Miniature Poewr Switches

Poles	Type	Switching function	UL (※1)	CSA (※2)
1 pole	HLA112D	ON-ON	<input type="radio"/>	<input type="radio"/>
	HLA112D12		<input type="radio"/>	<input type="radio"/>
	HLC112D		<input type="radio"/>	<input type="radio"/>
	HLC112D12		<input type="radio"/>	<input type="radio"/>
	HLS112D		<input type="radio"/>	<input type="radio"/>
	HLS112D12		<input type="radio"/>	<input type="radio"/>
	STE115D10-Z		<input type="radio"/>	<input type="radio"/>

## Miniature Rocker Switches

Poles	Part number	Switching function	UL (※1)	CSA (※2)	VDE (※4)	SEMKO (※5)	Poles	Part number	Switching function	UL (※1)	CSA (※2)	VDE (※4)	SEMKO (※5)				
1-pole	SLE6A	ON-OFF	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1-pole	SLE10A	ON-OFF	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A-5		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A-5		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A-6		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A-6		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A-7		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A-7		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A-8		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A-8		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A2		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A2		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A2-5		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A2-5		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A2-6		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A2-6		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A2-7		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A2-7		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A2-8		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A2-8		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A4		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A4		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A4-5		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A4-5		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A4-6		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A4-6		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A4-7		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A4-7		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A4-8		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A4-8		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A5		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A5		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A5-5		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A5-5		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A5-6		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A5-6		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A5-7		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A5-7		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6A5-8		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		SLE10A5-8		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	SLE6D		ON-ON	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		SLE10D	ON-ON	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	SLE6D-5			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		SLE10D-5		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	SLE6D-6			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		SLE10D-6		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	SLE6D-7			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		SLE10D-7		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	SLE6D-8			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		SLE10D-8		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	SLE6D2			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		SLE10D2		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	SLE6D2-5			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		SLE10D2-5		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	SLE6D2-6			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		SLE10D2-6		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	SLE6D2-7			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		SLE10D2-7		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	SLE6D2-8			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		SLE10D2-8		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	SLE6D4			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		SLE10D4		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	SLE6D4-5			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		SLE10D4-5		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
SLE6D4-6	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	SLE10D4-6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>							
SLE6D4-7	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	SLE10D4-7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>							
SLE6D4-8	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	SLE10D4-8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>							
SLE6D5	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	SLE10D5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>							
SLE6D5-5	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	SLE10D5-5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>							
SLE6D5-6	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	SLE10D5-6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>							
SLE6D5-7	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	SLE10D5-7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>							
SLE6D5-8	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	SLE10D5-8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>							

(※1) UL File No. E43275

(※4) VDE File No. 120752

(※2) CSA File No. LR38341

(※5) SEMKO File No. 614385