Potentiometers

Slide Potentiometer (Standard type)

List of Varieties

Series		RS**1	RS**H
Photo			
Direction of lever	Horizontal	—	●
	Vertical	●	●
Number of resistor elements		Dual-unit Single-unit	
Travel (mm)		15 20 30 45 60	15 20 30
Lever type		4 6 9-1 A B J-1	A C
Length of lever (mm)		5.0 10.0 15.0 20.0	4.5 9.5 14.5
Operating temperature range		-25℃ to +70℃	
Operating life (cycles)		15,000	10,000
Electrical performance	Total resistance	10kΩ	10kΩ 50kΩ 100kΩ 250kΩ
	Resistance taper	1B	1B 3B 15A
	Total resistance tolerance	±20%	
	Rated power	0.05W 0.1W 0.125W 0.2W 0.25W	0.012W 0.025W 0.05W 0.1W
	Maximum operating voltage	100V AC, 10V DC 200V AC, 10V DC	50V AC, 10V DC 100V AC, 10V DC 150V AC, 10V DC 200V AC, 10V DC
	Insulation resistance	100MΩ min. 250V DC	
	Voltage proof	300V AC for 1 minute	
Mechanical performance	Operating force	0.3 to 2.5N	0.6(+0.5, -0.4)N
	Stopper strength	50N	30N
	Lever push-pull strength	50N	30N
	Lever wobble (Both side)	1mm 2mm 3mm 4mm	1.6mm max.
	Lever deviation (One side)	0.5mm max.	—
Automotive		●	—

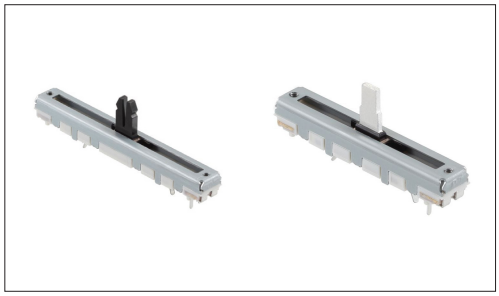
⚠Note

● Indicates applicability to all products in the series, while ○ indicates applicability to some products in the series.

Super Slide (Standard Type)

RS**1 Series

Wide product variety with auto-dip compatibility.



Automotive

- Total resistance tolerance:±20%
- Operating life:15,000 cycles
- Operating temperature range:-25℃ to +70℃

Applications:Home:Major home appliances,Office equipment
Audio_TV:Visual,Audio
Automotive:Navigation/audio systems, HVAC

■ Product List

Products No.	Type	Number of resistor elements	Direction of lever	Travel (mm)	Lever type	Length of lever (mm)	Total resistance	Resistance taper	Detent	Mounting plate	Maximum operating voltage	Automotive	Drawing No.
RS151111J026	Insulated lever	Single-unit	Vertical	15	J-1	5.0	10kΩ	1B	Without	Without	100V AC, 10V DC	●	1
RS201111J011		Single-unit	Vertical	20	J-1	5.0	10kΩ	1B	Without	Without	200V AC, 10V DC	●	2
RS301111A01G		Single-unit	Vertical	30	A	10.0	10kΩ	1B	Without	Without	200V AC, 10V DC	●	3
RS451111B010		Single-unit	Vertical	45	B	10.0	10kΩ	1B	Without	Without	200V AC, 10V DC	●	4
RS15111A9A03	Metal lever	Single-unit	Vertical	15	9-1	10.0	10kΩ	1B	Without	With	100V AC, 10V DC	●	5
RS20111A9A03		Single-unit	Vertical	20	9-1	10.0	10kΩ	1B	Without	With	200V AC, 10V DC	●	6
RS30111A9012		Single-unit	Vertical	30	9-1	10.0	10kΩ	1B	Without	With	200V AC, 10V DC	●	7
RS45111A900F		Single-unit	Vertical	45	9-1	10.0	10kΩ	1B	Without	With	200V AC, 10V DC	●	8
RS6011YA9A07		Single-unit	Vertical	60	9-1	10.0	10kΩ	1B	Without	With	200V AC, 10V DC	●	9
RS30112A900S		Dual-unit	Vertical	30	9-1	10.0	10kΩ	1B	Without	With	200V AC, 10V DC	●	10
RS45112A400G		Dual-unit	Vertical	45	4	20.0	10kΩ	1B	Without	With	200V AC, 10V DC	●	11
RS60112A6A0C		Dual-unit	Vertical	60	6	15.0	10kΩ	1B	Without	With	200V AC, 10V DC	●	12

⚠Note

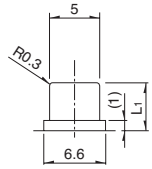
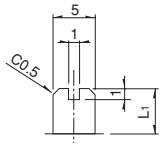
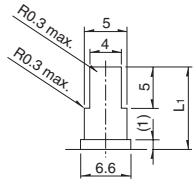
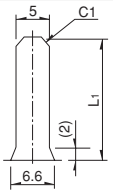
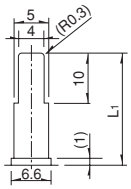
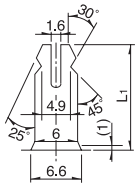
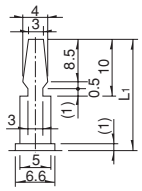
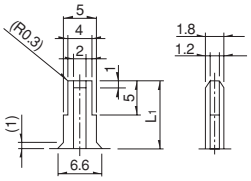
1. This catalog shows only outline specifications. When using the products, please obtain formal specifications for supply.
2. Please place purchase orders per minimum order unit (integer).
3. Products other than those listed in above products are also available. Please contact us for details.
4. Please read "Lever Types" for the kinds and code of lever type.
5. This products can be used in vehicles. Please contact us for details.

Super Slide (Standard Type)

RS**1 Series

■Lever Types

Unit:mm

Metal lever			Insulated lever		
Code	Dimensions		Code	Dimensions	
9-2		t=1.2 L1: 5	J-1		t=2 L1: 5
9-1		t=1.2 L1: 10	A		t=2 L1: 10, 15
6		t=1.2 L1: 15, 20	B		t=2 L1: 10, 15
4		t=1.2 L1: 15, 20	C		L1: 10, 15

■Packing Specifications

Tray

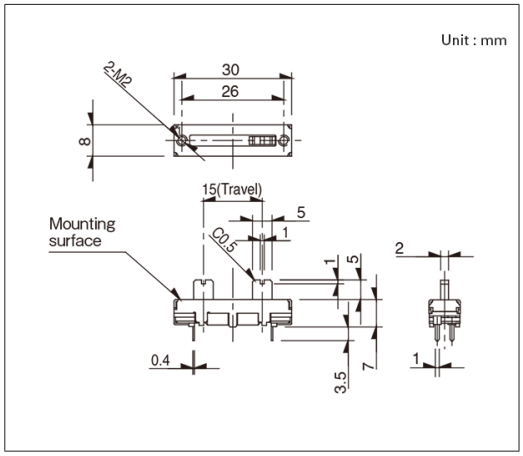
Products No.	Number of packages(pcs.)		Export package measurements (mm)
	1 case / Japan	1 case / export packing	
RS151111J026 RS201111J011 RS15111A9A03 RS20111A9A03	700	2,800	518 x 378 x 422
RS301111A01G RS30111A9012 RS30112A900S	600	2,400	518 x 378 x 422
RS451111B010 RS45111A900F	1,300	1,300	529 x 373 x 273
RS6011YA9A07 RS60112A6A0C	900	900	529 x 373 x 273
RS45112A400G	1,150	1,150	529 x 373 x 273

Super Slide (Standard Type)

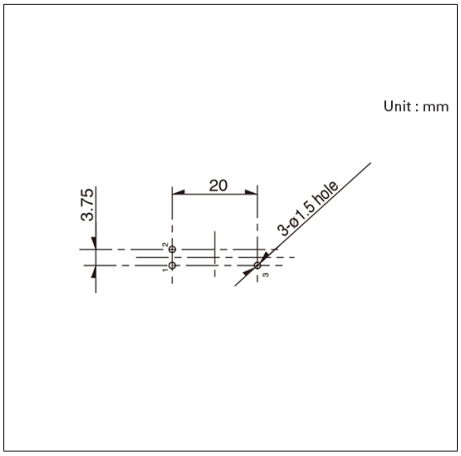
RS**1 Series

Drawing No.1

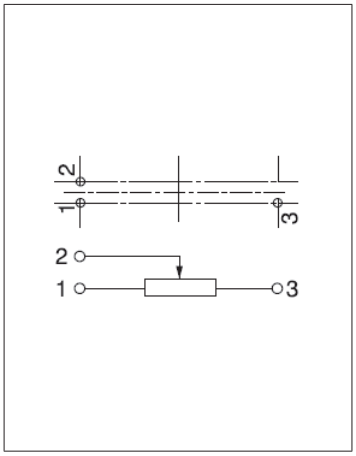
■ Dimensions



■ Mounting Hole Dimensions



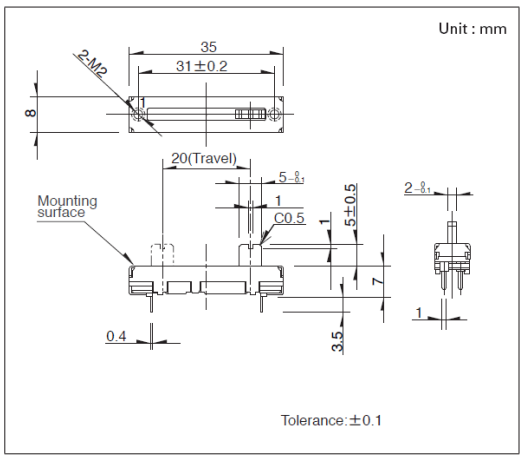
■ Terminal Layout / Circuit Diagram



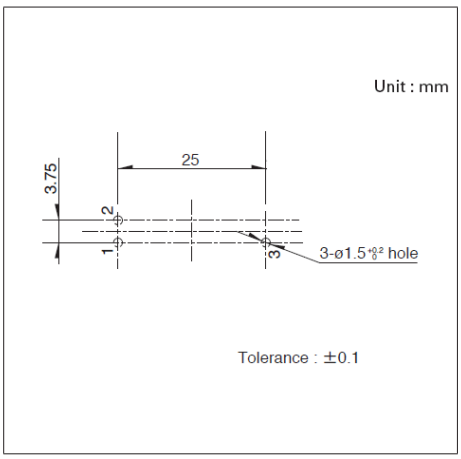
Viewed from mounting side.

Drawing No.2

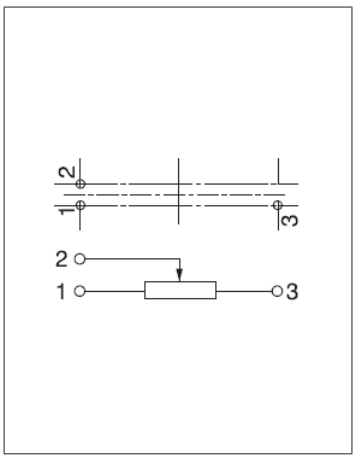
■ Dimensions



■ Mounting Hole Dimensions



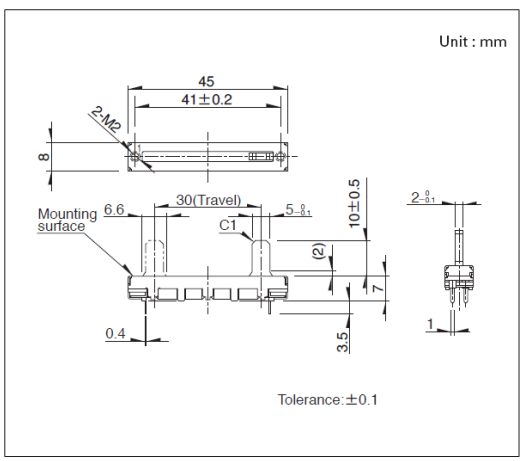
■ Terminal Layout / Circuit Diagram



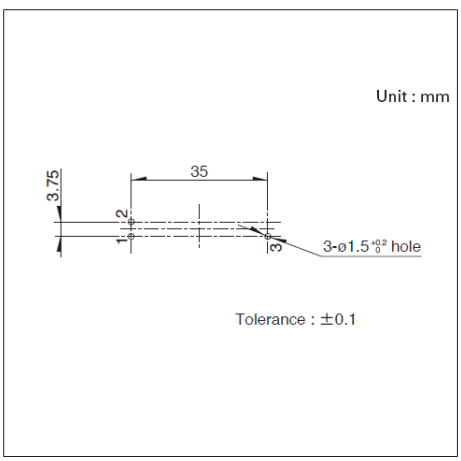
Viewed from mounting side.

Drawing No.3

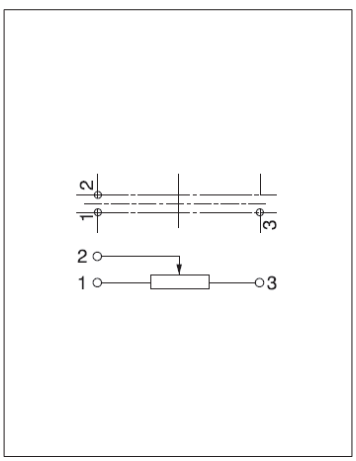
■ Dimensions



■ Mounting Hole Dimensions



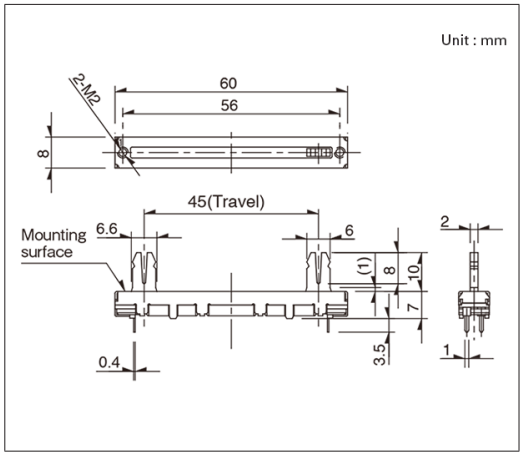
■ Terminal Layout / Circuit Diagram



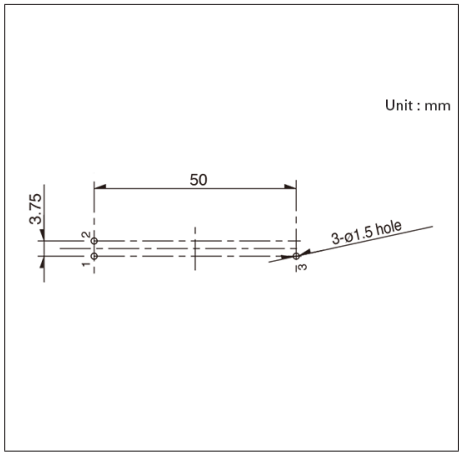
Viewed from mounting side.

Drawing No.4

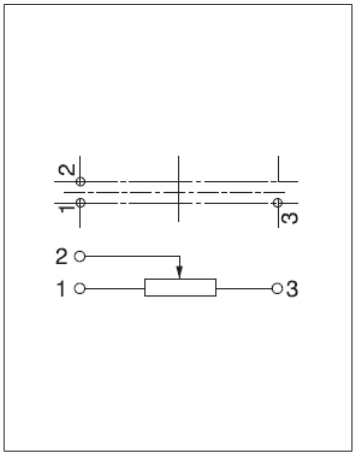
■ Dimensions



■ Mounting Hole Dimensions



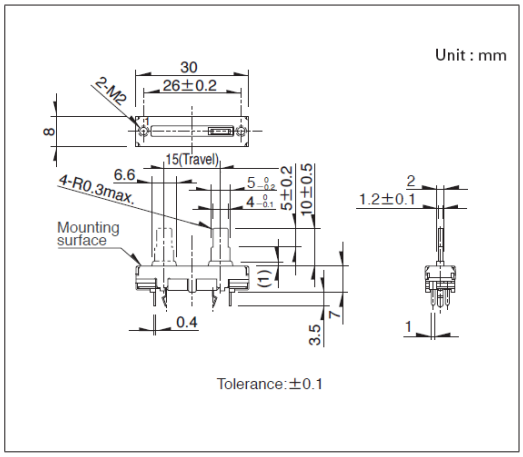
■ Terminal Layout / Circuit Diagram



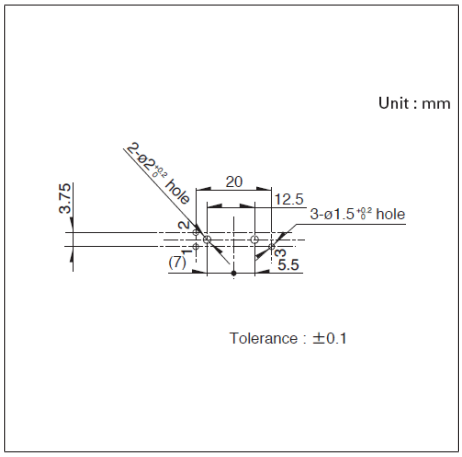
Viewed from mounting side.

Drawing No.5

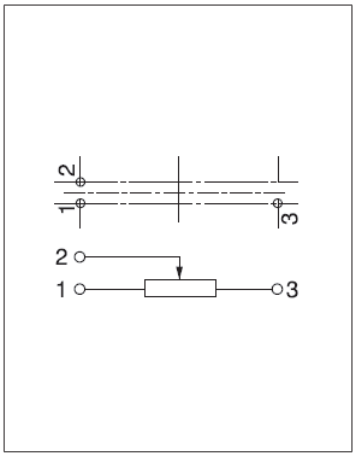
■ Dimensions



■ Mounting Hole Dimensions



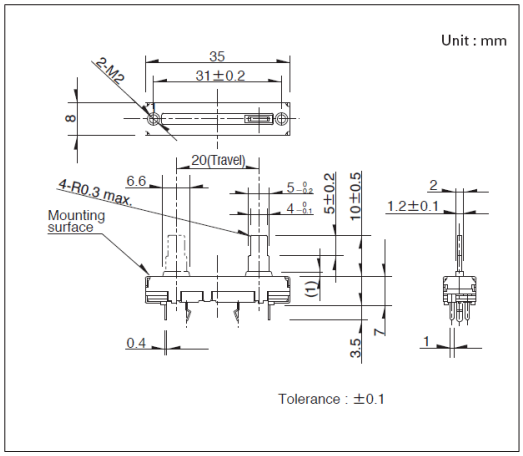
■ Terminal Layout / Circuit Diagram



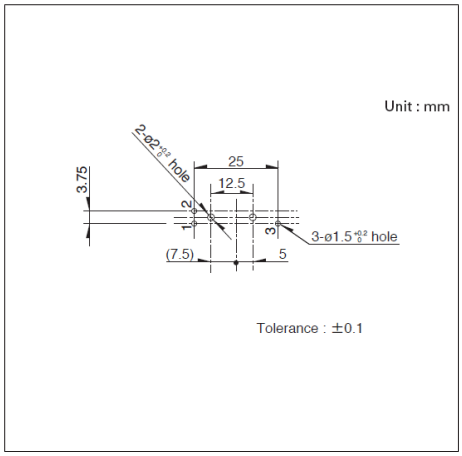
Viewed from mounting side.

Drawing No.6

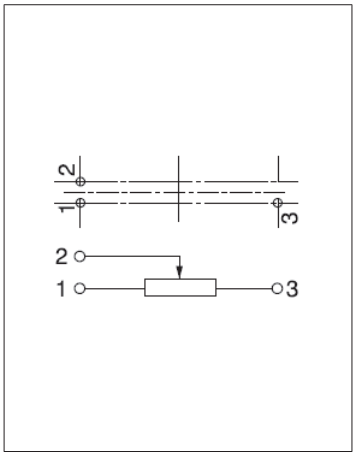
■ Dimensions



■ Mounting Hole Dimensions



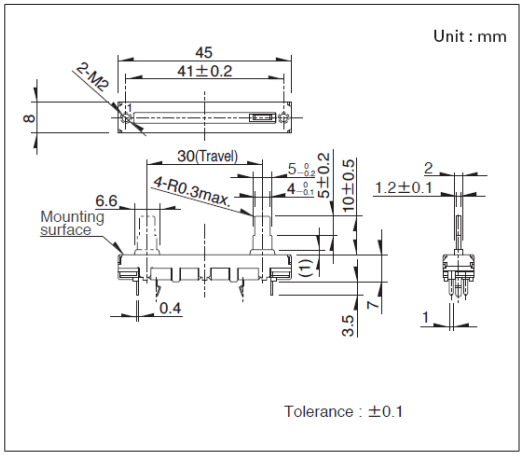
■ Terminal Layout / Circuit Diagram



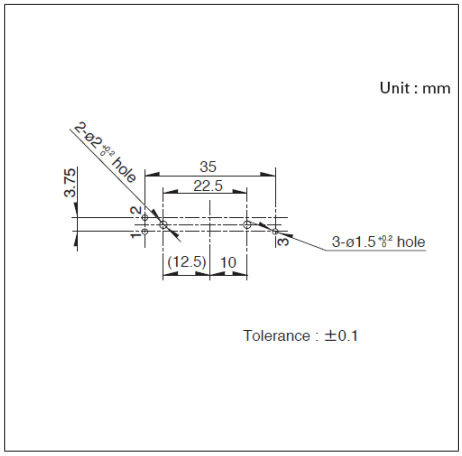
Viewed from mounting side.

Drawing No.7

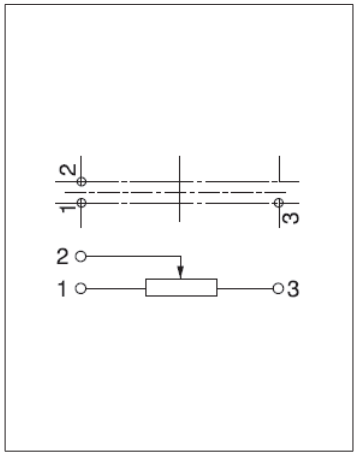
■ Dimensions



■ Mounting Hole Dimensions



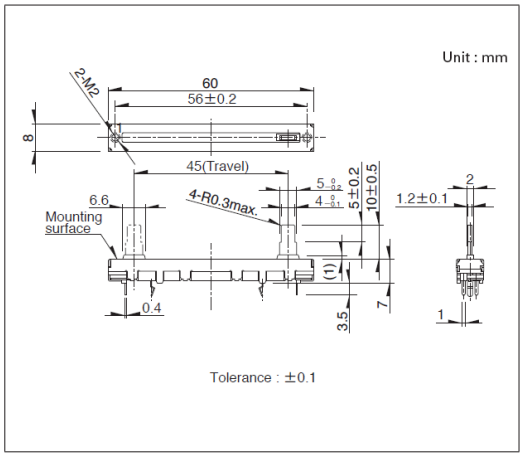
■ Terminal Layout / Circuit Diagram



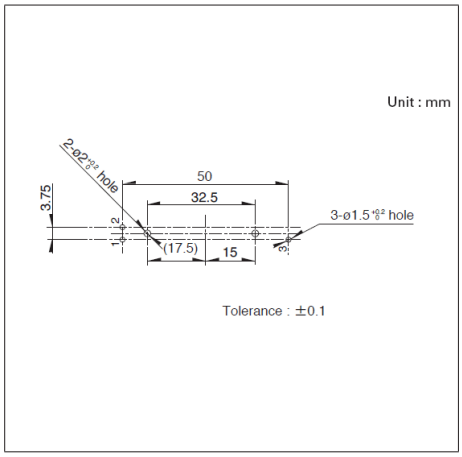
Viewed from mounting side.

Drawing No.8

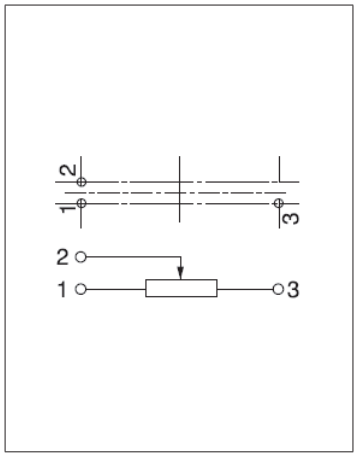
■ Dimensions



■ Mounting Hole Dimensions



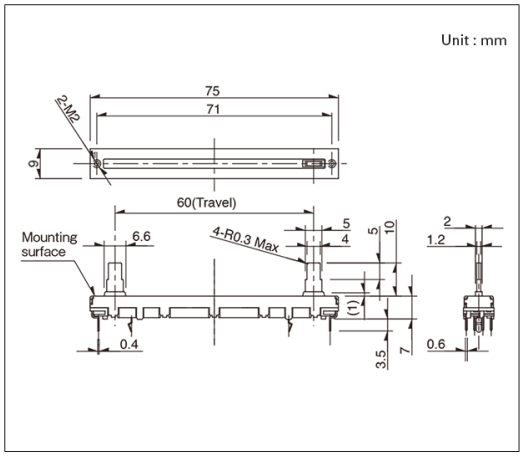
■ Terminal Layout / Circuit Diagram



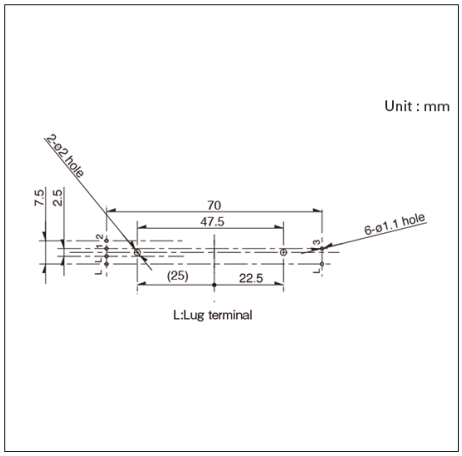
Viewed from mounting side.

Drawing No.9

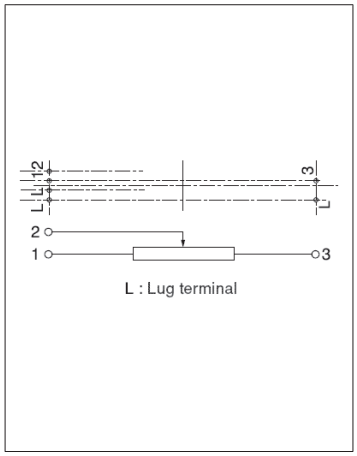
■ Dimensions



■ Mounting Hole Dimensions



■ Terminal Layout / Circuit Diagram



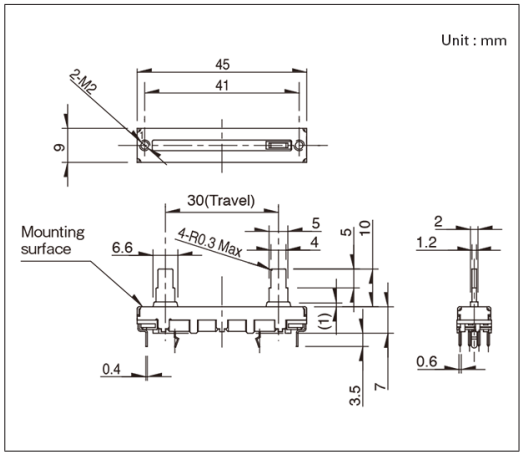
Viewed from mounting side.

Super Slide (Standard Type)

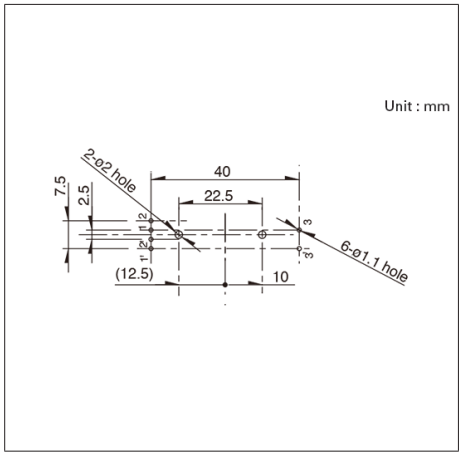
RS**1 Series

Drawing No.10

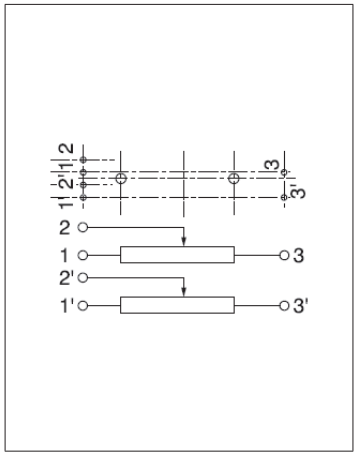
■ Dimensions



■ Mounting Hole Dimensions



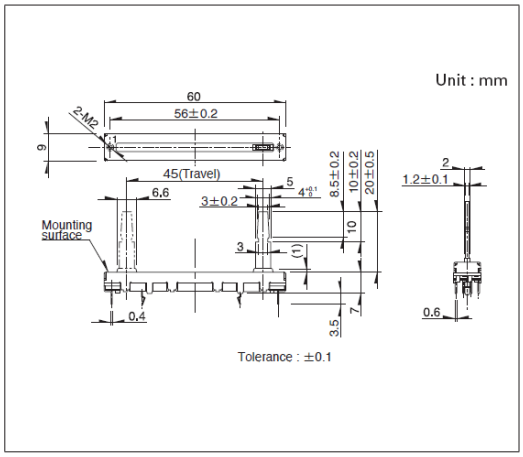
■ Terminal Layout / Circuit Diagram



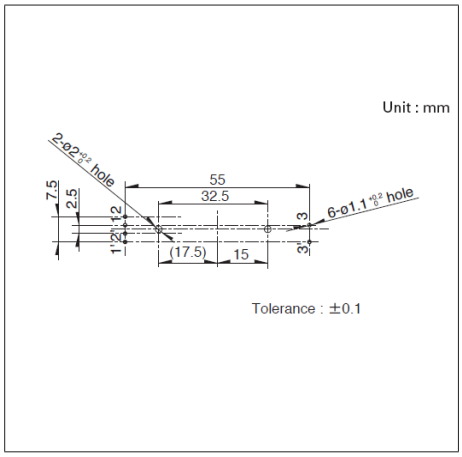
Viewed from mounting side.

Drawing No.11

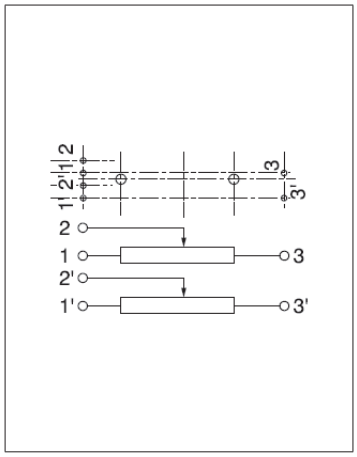
■ Dimensions



■ Mounting Hole Dimensions



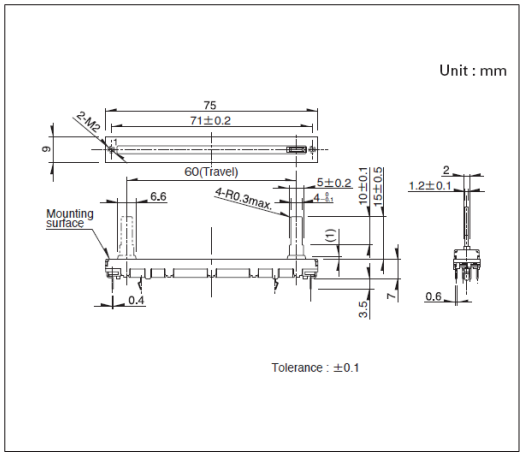
■ Terminal Layout / Circuit Diagram



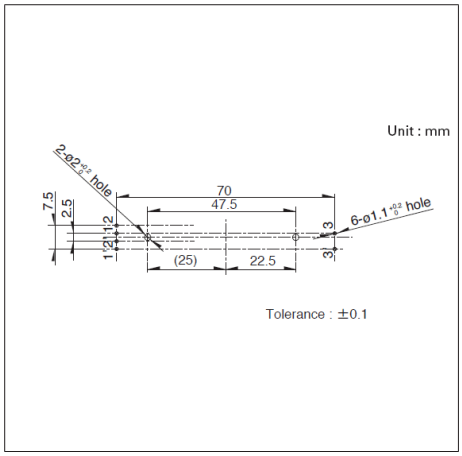
Viewed from mounting side.

Drawing No.12

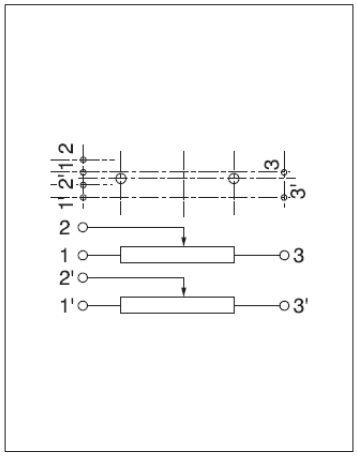
■ Dimensions



■ Mounting Hole Dimensions



■ Terminal Layout / Circuit Diagram



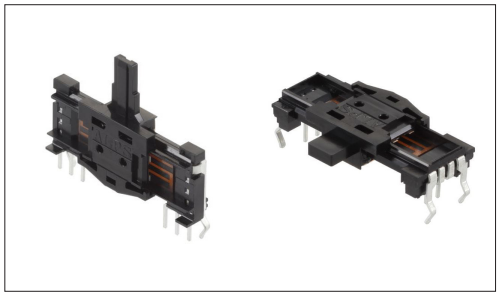
Viewed from mounting side.

Potentiometers Slide Potentiometer (Standard type)

Slim Slide (Slim 4)

RS**H Series

Achieves miniaturization with a total length of travel of +15mm, improving operation feel.



- Total resistance tolerance:±20%
- Operating life:10,000 cycles
- Operating temperature range:-25℃ to +70℃

Applications:Home:Major home appliances,Office equipment
Audio_TV:Visual,Audio

■ Product List

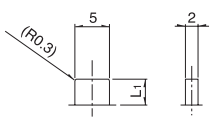
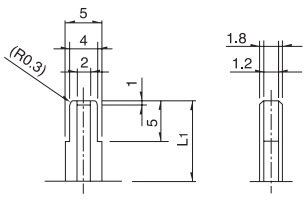
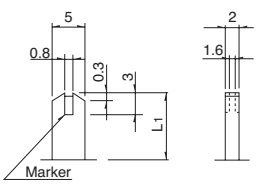
Products No.	Number of resistor elements	Direction of lever	Travel (mm)	Lever type	Length of lever (mm)	Total resistance	Resistance taper	Detent	Maximum operating voltage	Automotive	Drawing No.
RS15H111CA04	Single-unit	Vertical	15	C	9.5	50kΩ	1B	Without	100V AC, 10V DC	—	1
RS20H111C009	Single-unit	Vertical	20	C	14.5	50kΩ	1B	Without	100V AC, 10V DC	—	2
RS30H111A00D	Single-unit	Vertical	30	A	4.5	10kΩ	15A	Without	150V AC, 10V DC	—	3
RS15H11AA008	Single-unit	Horizontal	15	A	4.5	10kΩ	1B	Without	100V AC, 10V DC	—	4
RS20H11AA015	Single-unit	Horizontal	20	A	4.5	10kΩ	1B	Without	100V AC, 10V DC	—	5
RS30H11AA009	Single-unit	Horizontal	30	A	4.5	10kΩ	1B	Without	200V AC, 10V DC	—	6
RS15H121A009	Dual-unit	Vertical	15	A	4.5	10kΩ	15A	Without	50V AC, 10V DC	—	7
RS20H123A01C	Dual-unit	Vertical	20	A	9.5	100kΩ	1B	Center detent	100V AC, 10V DC	—	8
RS30H121A00B	Dual-unit	Vertical	30	A	4.5	10kΩ	1B	Without	200V AC, 10V DC	—	9
RS15H12AA00F	Dual-unit	Horizontal	15	A	4.5	10kΩ	1B	Without	100V AC, 10V DC	—	10
RS20H12AC002	Dual-unit	Horizontal	20	C	14.5	250kΩ	3B	Without	100V AC, 10V DC	—	11
RS30H12AA003	Dual-unit	Horizontal	30	A	4.5	50kΩ	15A	Without	150V AC, 10V DC	—	12

⚠Note

1. This catalog shows only outline specifications. When using the products, please obtain formal specifications for supply.
2. Place your purchase order in N minimum package units (N: integer).
3. Products other than those listed in above products are also available. Please contact us for details.
4. Please read "Lever Types" for the kinds and code of lever type.

■ Lever Types

Unit:mm

Configuration code	A		C		D	
Dimensions						
Length L1	4.5	9.5	9.5	14.5	9.5	14.5

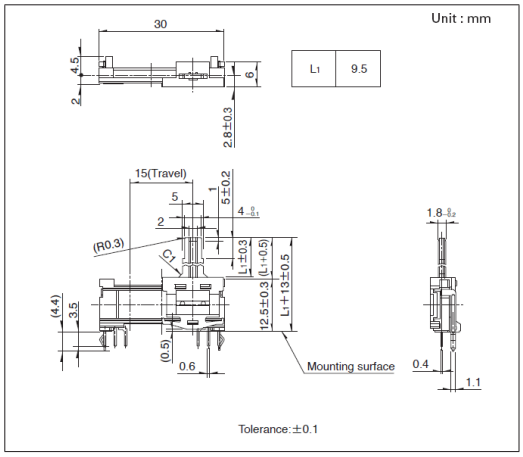
■ Packing Specifications

Tray

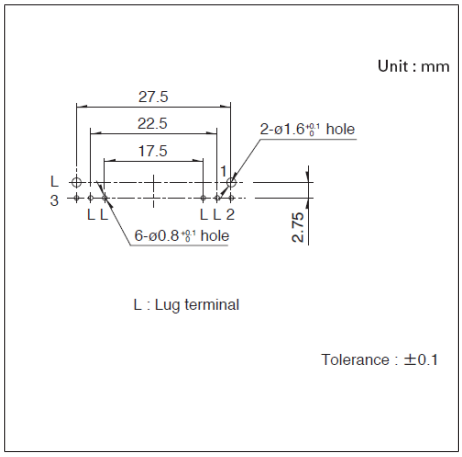
Products No.	Number of packages(pcs.)		Export package measurements (mm)
	1 case / Japan	1 case / export packing	
RS15H111CA04 RS15H121A009	2,900	5,800	514 x 378 x 512
RS20H111C009 RS20H123A01C	2,500	5,000	514 x 378 x 512
RS30H111A00D RS30H121A00B	2,000	4,000	514 x 378 x 512
RS15H11AA008 RS20H11AA015 RS15H12AA00F RS20H12AC002	2,750	5,500	508 x 374 x 408
RS30H11AA009 RS30H12AA003	1,980	3,960	508 x 374 x 408

Drawing No.1

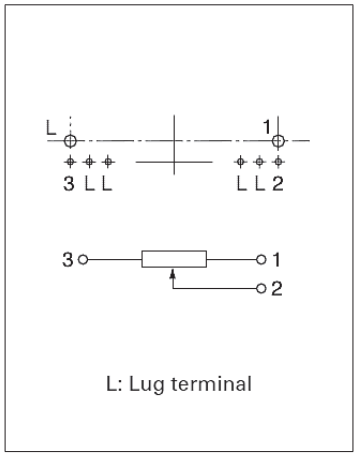
■ Dimensions



■ Mounting Hole Dimensions



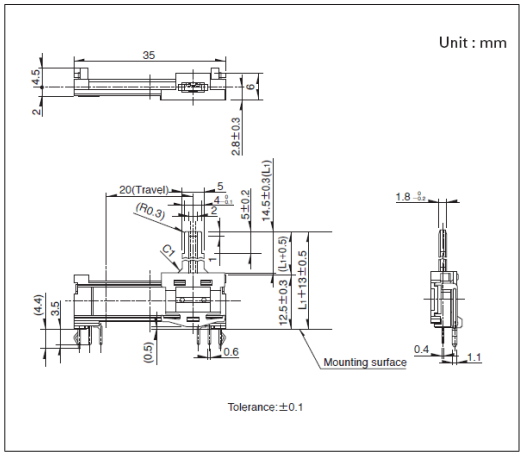
■ Terminal Layout / Circuit Diagram



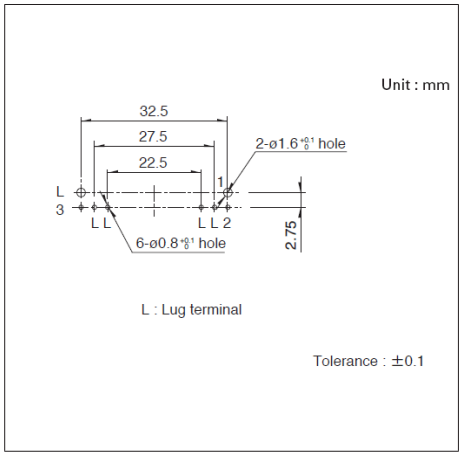
Viewed from mounting side.

Drawing No.2

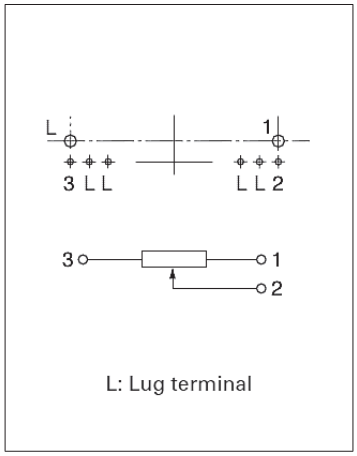
■ Dimensions



■ Mounting Hole Dimensions



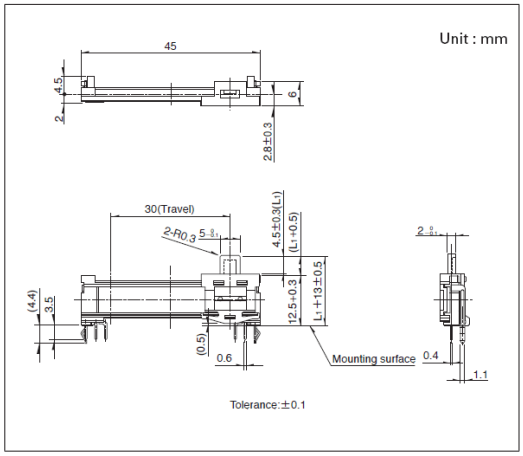
■ Terminal Layout / Circuit Diagram



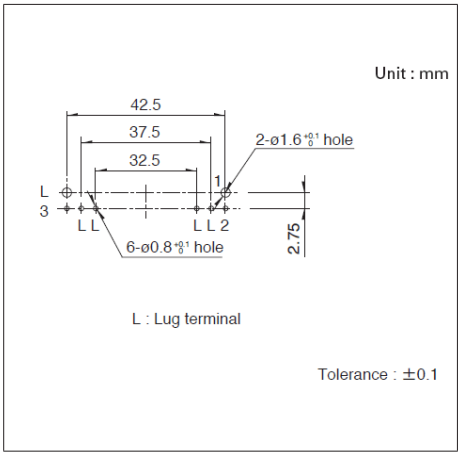
Viewed from mounting side.

Drawing No.3

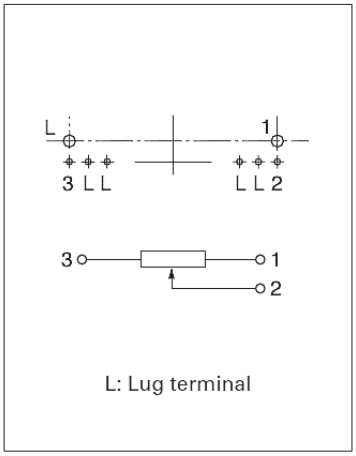
■ Dimensions



■ Mounting Hole Dimensions



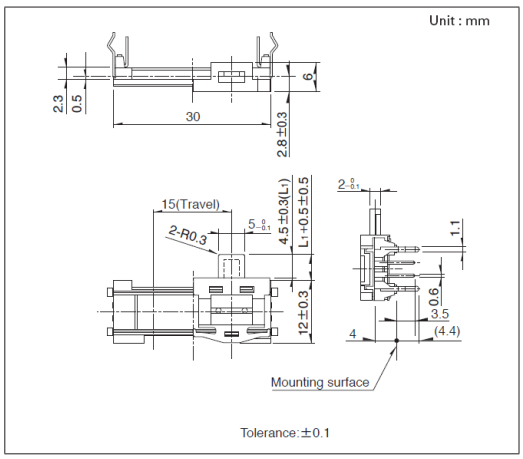
■ Terminal Layout / Circuit Diagram



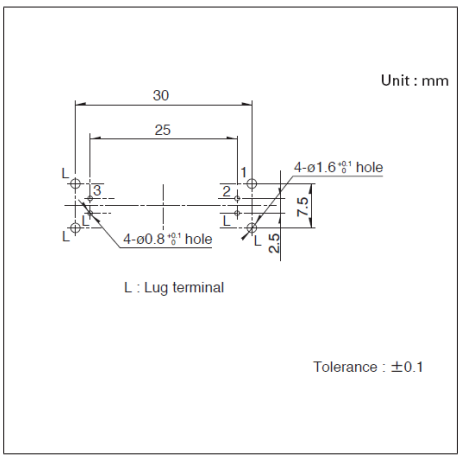
Viewed from mounting side.

Drawing No.4

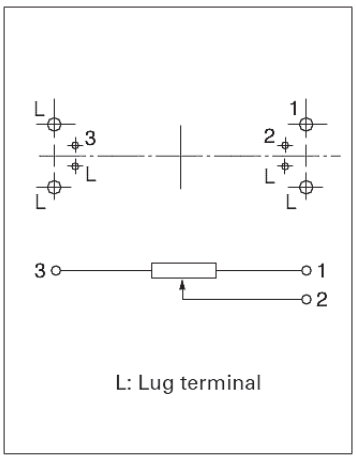
■ Dimensions



■ Mounting Hole Dimensions



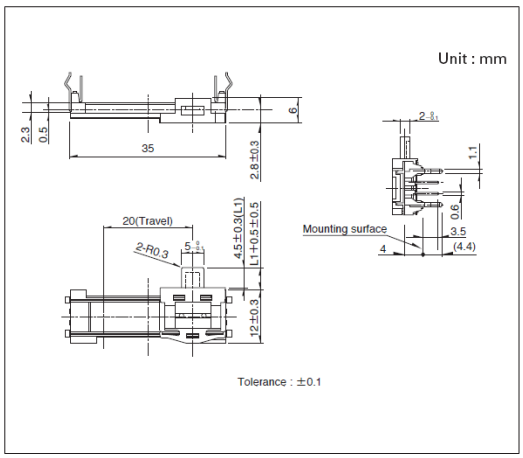
■ Terminal Layout / Circuit Diagram



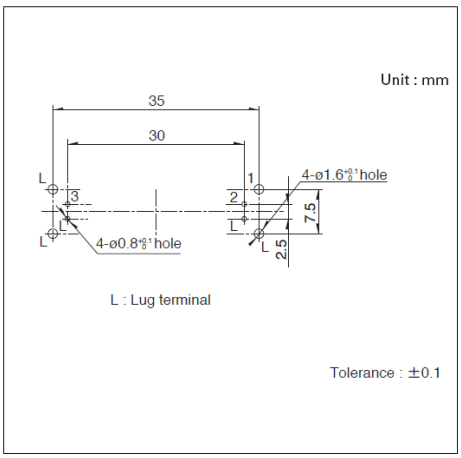
Viewed from mounting side.

Drawing No.5

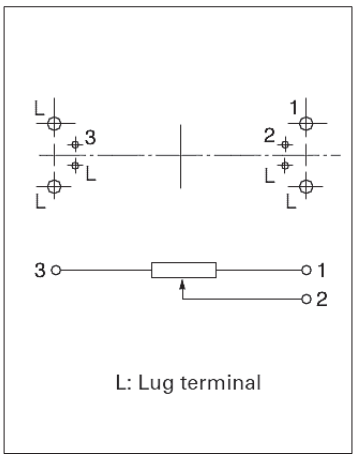
■ Dimensions



■ Mounting Hole Dimensions



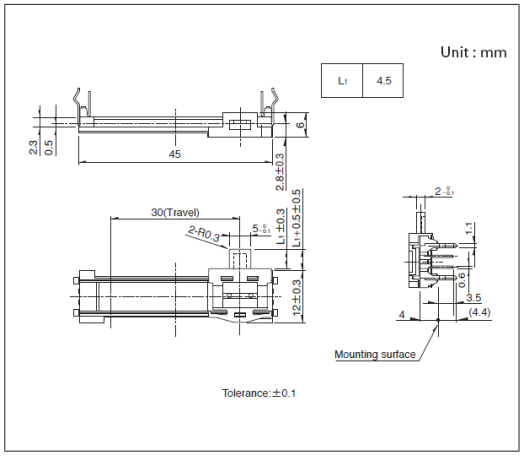
■ Terminal Layout / Circuit Diagram



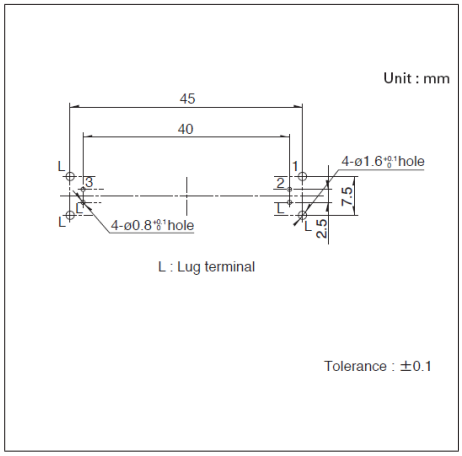
Viewed from mounting side.

Drawing No.6

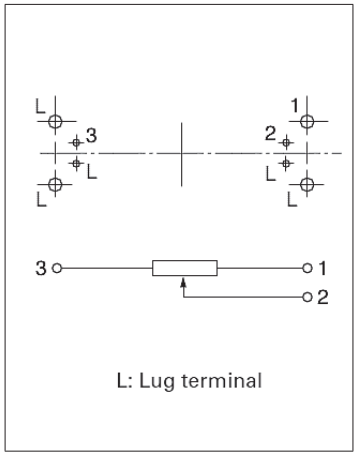
■ Dimensions



■ Mounting Hole Dimensions



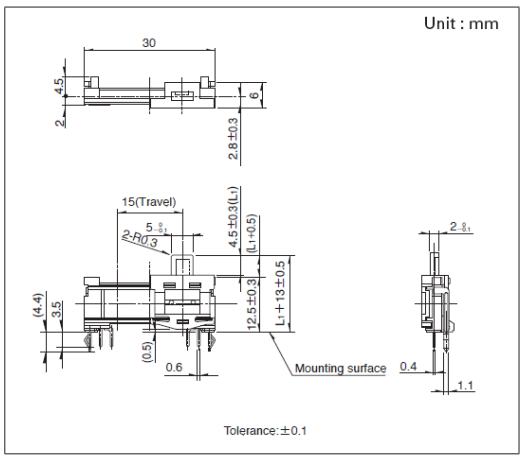
■ Terminal Layout / Circuit Diagram



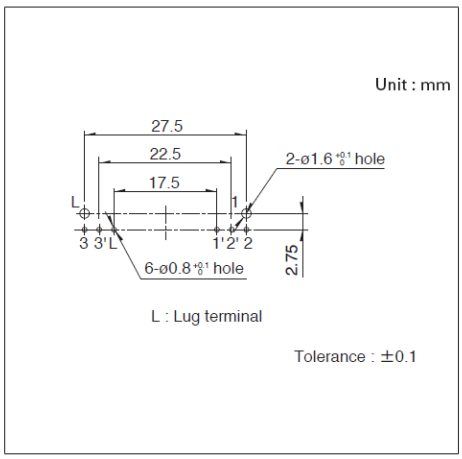
Viewed from mounting side.

Drawing No.7

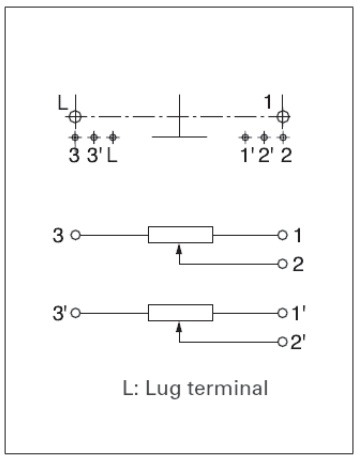
■ Dimensions



■ Mounting Hole Dimensions



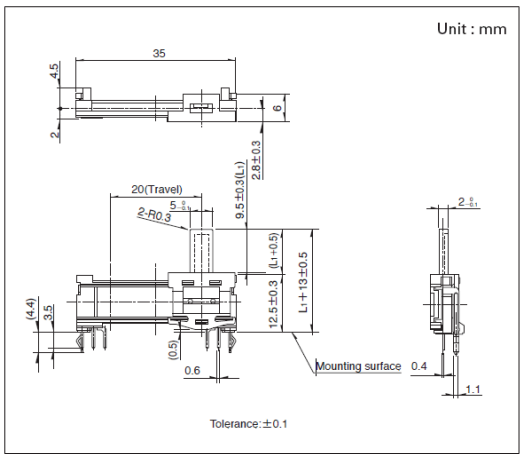
■ Terminal Layout / Circuit Diagram



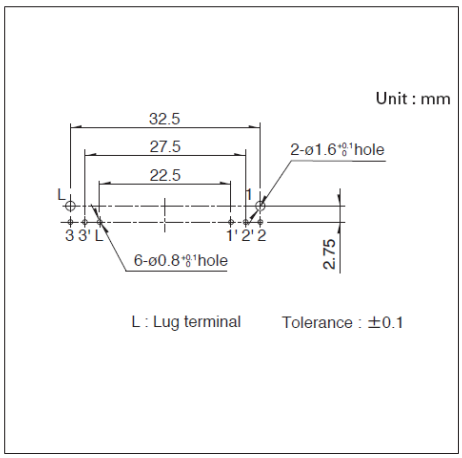
Viewed from mounting side.

Drawing No.8

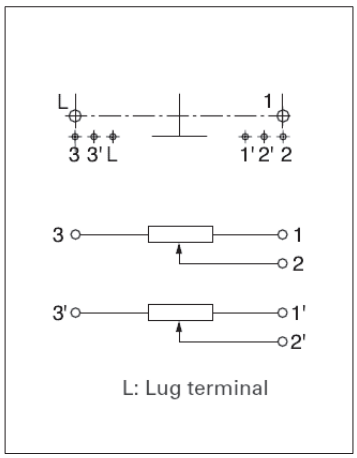
■ Dimensions



■ Mounting Hole Dimensions



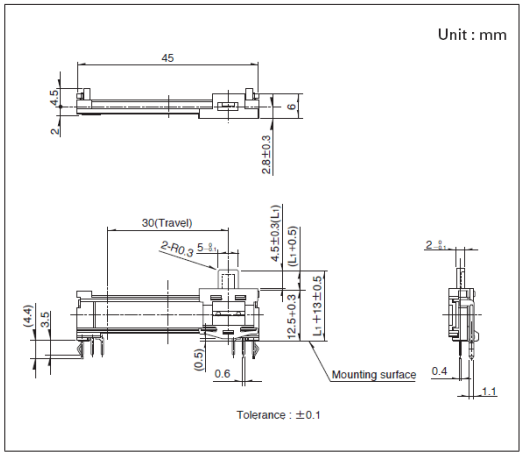
■ Terminal Layout / Circuit Diagram



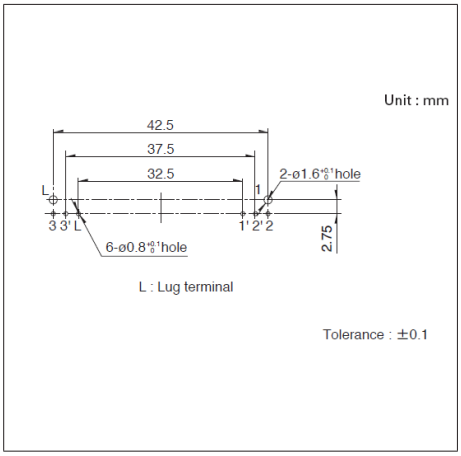
Viewed from mounting side.

Drawing No.9

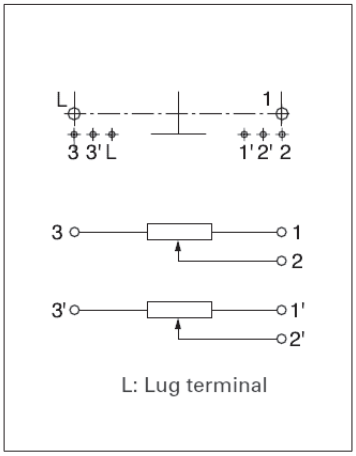
■ Dimensions



■ Mounting Hole Dimensions



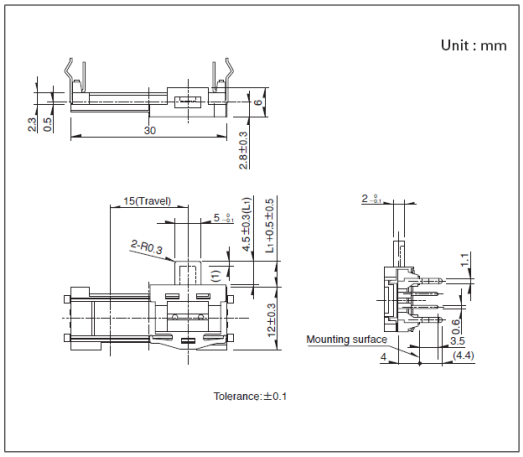
■ Terminal Layout / Circuit Diagram



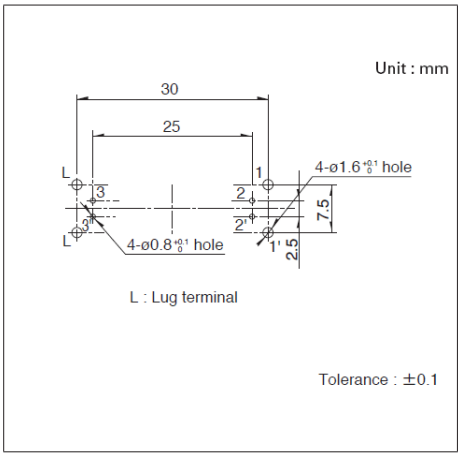
Viewed from mounting side.

Drawing No.10

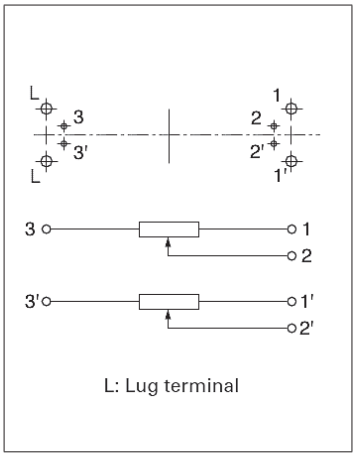
■ Dimensions



■ Mounting Hole Dimensions



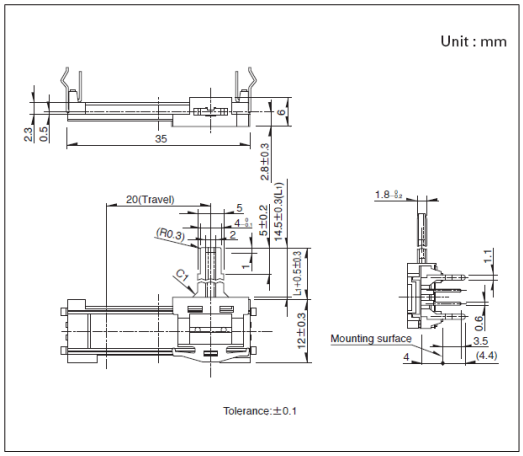
■ Terminal Layout / Circuit Diagram



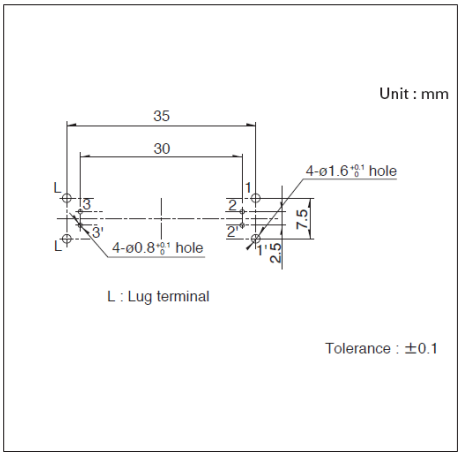
Viewed from mounting side.

Drawing No.11

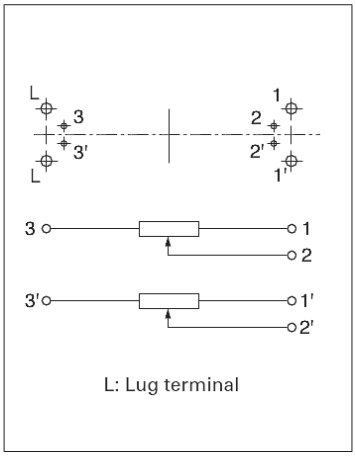
■ Dimensions



■ Mounting Hole Dimensions



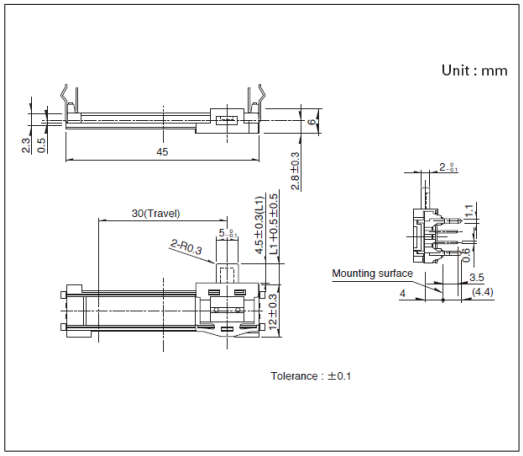
■ Terminal Layout / Circuit Diagram



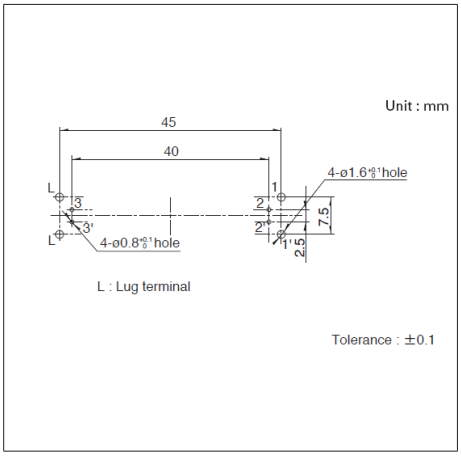
Viewed from mounting side.

Drawing No.12

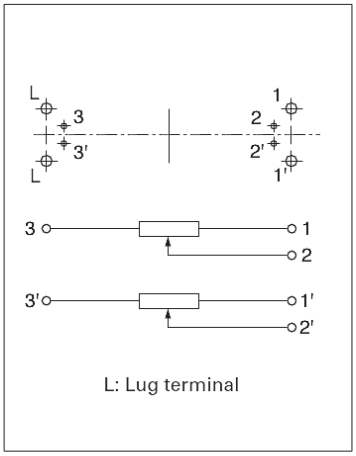
■ Dimensions



■ Mounting Hole Dimensions



■ Terminal Layout / Circuit Diagram



Viewed from mounting side.

Slide Potentiometers / Soldering Conditions

■ Reference for Manual Soldering

Series	Tip temperature	Duration of Soldering time	No. of solders
RS□□1, RS□□H, RS□□N, RS6011□P	350℃ max.	3s max.	1 time

■ Reference for Dip Soldering

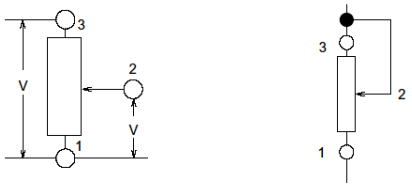
Series	Preheating		Dip soldering		Number of soldering
	Soldering surface temperature	Heating time	Soldering temperature	Soldering time	
RS□□1, RS□□H, RS□□N, RS6011□P	100℃ max.	1 min. max.	260℃	5s max.	1 time

Potentiometers / Cautions

Recommended Circuit Configuration

Please use the potentiometer in the voltage adjustment circuit (Fig. A). Avoid using it in the current adjustment circuit (Fig. B) as it is affected by the contact resistance between the resistive element and the wiper.

A.Voltage divider type　　B.Current controller type



Direct Voltage

When direct voltage is flown through this part, terminal to terminal insulation may deteriorate depending on the use environment. This is due to a migration phenomenon. Contact us if you are planning to use this part under direct voltage.

Impedance on the Output Side

There is a possibility that might de affected by contact resistance of resistive element and wiper in case of low impedance of output side in voltage regulation circuit. For this reason, we require that you adjust to impedance of output side more than 100 times of total resistance.

Residual Resistance

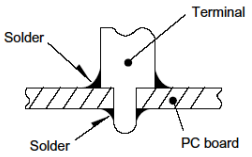
Although electric poles of resistors are generally formed by silver printing, we provide carbon coating over the silver poles to enhance reliability against sulfurization. Contact us if you wish to use the part in a low residual resistance state.

Dew Condensation

Avoid using the potentiometer where dew or water drops might occur on the surface of the resistor, etc. Deterioration of insulation or shorting may occur.

Soldering

To avoid potential contact issues, please do not solder wires to the top surface of the printed circuit board as shown in the diagram.
Solder all metal lugs into a substrate before use.



Stress Being Applied to the Terminals

Always pay special attention not to apply excessive stress when handling the terminals. Also, be sure to design appropriate soldering conditions.

Looseness of the Shaft

When lengthy shaft lengths are being employed, the looseness (deviation) tends to grow in proportion to the shaft length. Conducting a test under actual operating conditions is recommended.

Potentiometers / Cautions

Chassis Mounting

The use of a nut to fasten this part may lead to excessive tightening and can deteriorate the rotary contact performance, or strip the threads. Handle with care when tightening the nut.

Use of Chemicals

Since synthetic resins such as polycarbonate are being used as the material for the insulated type shafts, avoid using this part under gassy environments of such chemicals as ammonia, amines, alkali water solutions, aromatic hydrocarbons, ketones, esters and halogenated hydrocarbons, especially, under their intensive gas environments.

Operation at Low Temperature

When these products are expected to be used under low temperature environments such as applications for car radios and car stereos, we can customize them for easier and more smooth rotary movements. When placing orders, indicate whether the low temperature specification is necessary or not.

Storage

1. Store the products as delivered, at a normal temperature and humidity, without direct sunshine and corrosive gas ambient. Use them at an earliest possible timing, not later than six months upon receipt.

2. After breaking the seal, keep the products in a plastic bag to shut out ambient air, store them in the same environment as above, and use them up as soon as possible.

3. Do not stack too many switches.

The above operation notes are quoted from the
"Precaution and Guideline of Potentiometer for Electrical Devices" , which is a technical report issued by the Japan Electronics and Information Technology Industries Association RCR-2191A (in March 2002).
For details, see the above technical report.