

**MODEL NO: VR162N11CUP-10C3M-L16R/Φ6.35/M8-6.5/TIN/GN**

**P/N: R-VSN-3MC-SS**

**ELECTRICAL:**

1. Total resistance : **3MΩ ±30%**
2. Rated power : **0.1 W max..**
3. Rated voltage :

The rated voltage shall be the voltage of DC or AC (commercial frequency, effective value) corresponding to the rated power (dissipation), and be obtained from the following formula.

When the obtained rated voltage exceeds the maximum working voltage given in the following, however, the Maximum working voltage of the following shall be the rated voltage.

$$E = \sqrt{P \cdot R} \quad (V)$$

E: Rated voltage (V)

Where P: Rated power (dissipation) (W)

R: Nominal total resistance (Ω)

Maximum working voltage : **150 V AC** (AC only)

4. Maximum attenuation level 90 dB min. Insertion loss 0.18 dB max..
5. Rotation Noise : Less than **47 mV** measured by method of JIS C6443.
6. Insulation resistance : Greater than **100 MΩ** measured by D.C. **500V**.
7. Withstand voltage : More than 1 minute with an apple action of AC **500V**.
8. Taper : **10C** audio taper. See curve attached.

△9. Gang error : **3 dB max.**

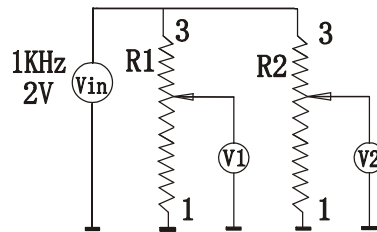
between -20 to 0 dB

4 dB max.

Between -40 to -20db.

Measure between R1&R2

$$\left[ \frac{\text{term 1-2 output V}}{\text{term 1-3 input V}} \right]$$



10. Residual resistance between terminals :

Classification by characteristic of resistance change and terminations for measurement	A and D: between terminations 1 and 2 C: between terminations 2 and 3 B: between terminations 1 and 2 as well as 2 and 3	A and D: between terminations 2 and 3 C: between terminations 1 and 2
Noninal total resistance		
10KΩ max.		
Over 10KΩ to 1MΩ excl		
1MΩ min.	≤10Ω	≤10Ω

[Note: Although electric poles of resistors are being formed by silver printing generally, we are providing carbon coating over the silver printing poles to enhance the reliability against sulfurization. If these specifications are not meeting your particular requirements on the said residual resistance, please consult the manufacturer in advance.]

△ Note : where it is applicable, delete if it is not applicable.

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**MECHANICAL**

1. Overall rotation angle : **300° ±5°** .
2. Without centre detent : **20-300 gf.cm.**
3. Shaft end stop strength : **5 kgf.cm MIN.**
4. Starting torque : **200 gf.cm. MAX.**
5. Resistance to soldering heat :

After soldering (Less than 300°C and quicker than 3 seconds ) there shall be no evidence of poor contact between resistance element and terminals ,or any physical damages as a result of the test.

6. Play of shaft (wobble) :

The resistor shall be mounted by soldering the mounting legs on the panel,and a side thrust of 250 gf.cm at the shaft shall be applied, then the total play (wobble) of the shaft shall not exceed the following criterion according to JIS C6443:

**0.7XL/30 mm P-P Max(different resistors will have different criteria)**

Where L is the length of the shaft .

7. Eccentricity of shaft :

The eccentricity of the root of shaft shall not exceed 0.35mm against the center of the mounting position.

8. Robustness of shaft against end thrust :

The shaft shall withstand against end thrust of not less than 5 kgf for 3 seconds.

9. Robustness of shaft against side thrust :

The shaft shall withstand against side thrust of not less than 4 kgf.cm for 3 seconds on the shaft at right angles to the axis of the shaft after mounting the resistor by soldering.

- △10. Bushing nut tightening strength :(where threaded bushing exists will be applied , where no bushing resistors will be deleted)

Tightening torque to be no greater than 7 kgf.cm.

\*Pay attention otherwise the strength may not be measured.

**CAUTION**

(chassis mounting)

In case you are using this part fastening to the chassis using a nut,excessive tightening torque may deteriorate the rotary contact performance or brake the threads and pay due attention when determining the tightening torque.

(The above operation notes are quoted from the “precaution and Guideline of potentiometer for Electrical Devices” , which is a technical report issued by the Electronic Industries Association of Japan (in July 1994))for details,refer to the original technical report.

11. Push pull strength :

(a). Push pull strength (applicable to deformation of shaft only) No damages with an application of push pull force 10Kgf-cm for 10 second. (max.)

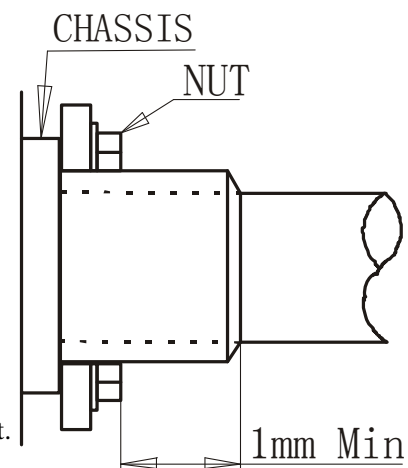
(b). Push pull strength (applicable to wiper only) No damages with an application of push pull force=less 5Kgf-cm for=less 5 seconds.

12. ENDURANCE

Rotational life : **15,000** cycles min.

**NOTE**

1. The other items above-mentioned shall meet or exceed JIS C6443.
2. Any special specifications that exceed JIS C6443 shall be discussed with the manufacturer for revisions subject to acceptance of the manufacturer.



## MODE NO: 16 $\Phi$ SINGLE SHAFT DUAL ROTARY POTENTIOMETERS SPECIFICATIONS

### 1. General

1-1. Application: This specification is applied to potentiometers used for electronic equipment.

#### 1-2. Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and test is per the following limits:

Ambient temperature : 15°C to 35°C

Relative humidity : 25% to 75%

Air pressure : 86 kpa to 106 kpa

1-3. Operating temperature range : -10°C to +70°C

1-4. Storage temperature range : -30°C to +70°C

1-5. Suggested storage period : About 6 months

### 2. Construction

#### 2-1 Dimensions

Refer to attached drawing

### 3. Soldering conditions

#### 3-1. Manual soldering :

Temperature of soldering iron : 300°C or less.

Application time of soldering iron : within 3s.

#### 3-2. Dip Soldering

Printed wiring board: Single-sided copper clad laminate board with thickness of 1.6mm.

Flux:

- Specific gravity: 0.82 or more.
- Flux shall be applied to the board using a bubble foaming type fluxer.
- The board shall be soaked in the flux bubble only to the middle of its thickness.
- Flux shall not come into contact with the component side surface.

Preheating:

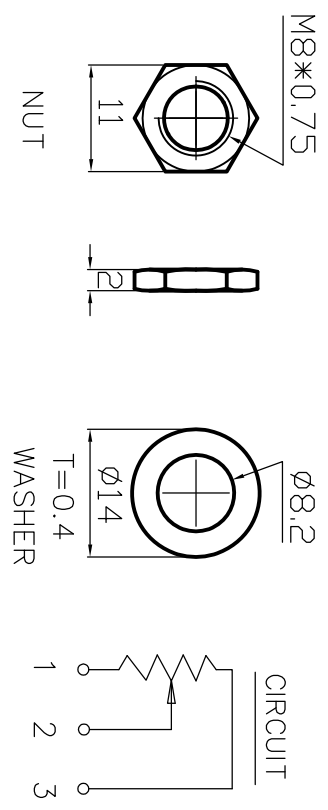
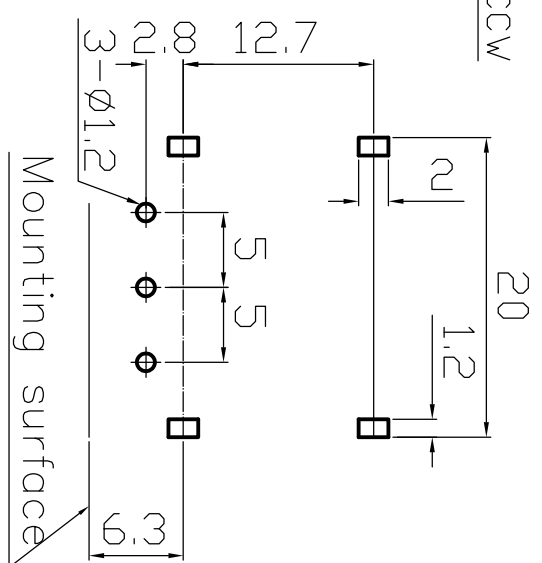
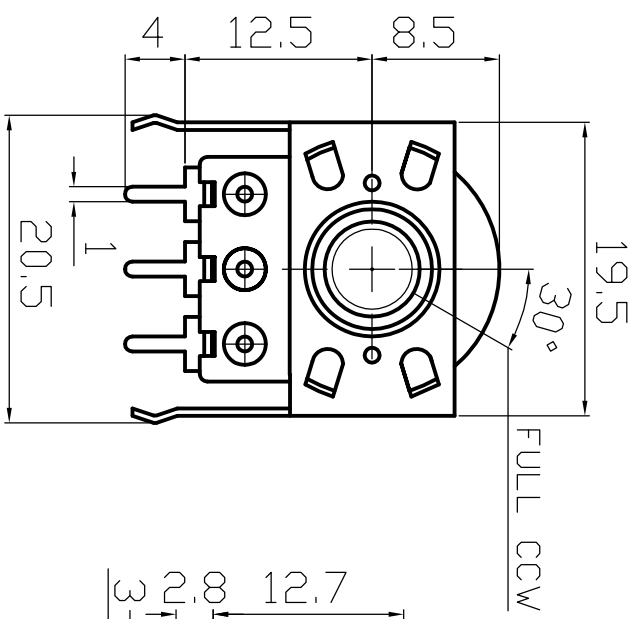
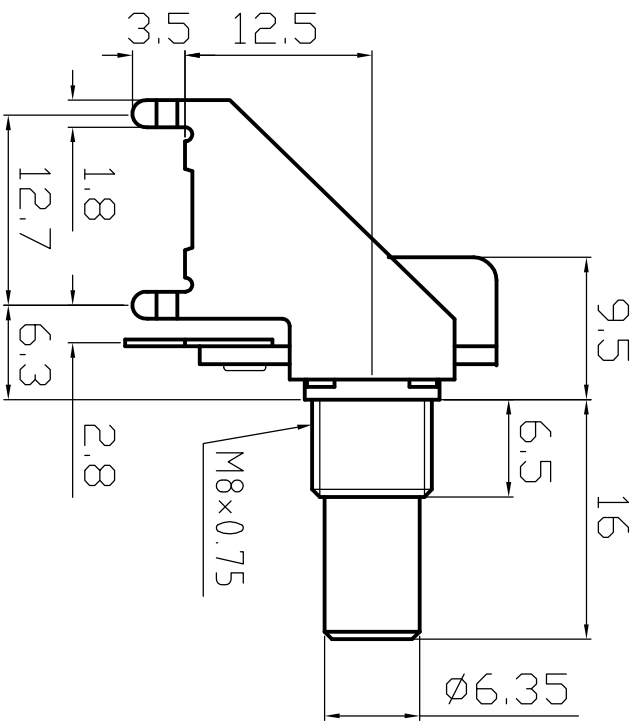
- Surface temperature of board: 100°C or less.
- Preheating time : Within 2 min.

Soldering:

- Solder temperature : 260°C less.
- Immersion time : Within 3 s.

4. Apply the above soldering process for 1 or 2 times.

5. To be careful for using this unit in such violent gas atmospheric condition as ammonia, amine, alkaline aqueous solution, aromatic hydrocarbon, keton, ester alkyl hydrocarbon, etc.



TOLERANCE	
UNDER 10	±0.3
10 ~100	±0.5
OVER 100	±0.8

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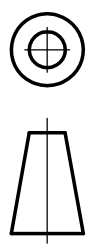
MODEL: RA16N11(VR162N11CUP)-L16R/Ø6.35/M8-6.5

APPROVAL BY: CHECK BY: MADE BY: Zhu Zhen 2010-9-27

NO: UNIT: mm EDITION: 1.0

CUSTOMER CONFIRM (客户认可签章)

SCALE: 1.8/1



# 10C Curve

