

# SPECIFICATIONS

## ELECTRICAL

1. Total resistance :  $10k \Omega \pm 20\%$
2. Rated power :  $0.05 W$
3. Rated voltage :

The rated voltage shall be the voltage of D.C. or A.C.

(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.

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

Where E : Rated voltage (V)

P : Rated power(dissipation) (W)

R : Nominal total resistance ( $\Omega$ )

Maximum working voltage :  $50 V A.C.$  ,  $10 V D.C.$

4. Resistance taper : A

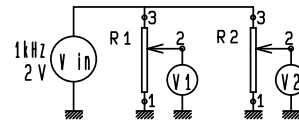
5. Maximum attenuation level at full C.C.W. position :  $80 dB_{min.}$
6. Insertion loss at full C.W. position :  $0.1 dB_{max.}$
7. Sliding noise : Less than  $100mV$ . (Measured by JIS C 6443)

8. Insulation resistance : More than  $100 M\Omega$  at  $250V D.C.$

9. Withstand voltage:  $300V A.C.$  for 1 minute.

10. Gang error :  $3 dB_{max.}$

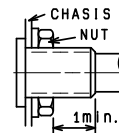
to  $-40dB$  less than  $0dB$



## MECHANICAL

1. Total rotational angle :  $300^\circ \pm 5^\circ$
2. Rotational torque :  $2 \sim 25 mN \cdot m$  (Rotational speed  $60^\circ/sec.$ )
3. Stopper strength : No damage with an application of  $0.5 N \cdot m$ .
4. Resistance to soldering heat : Please refer to the attached
5. Bushing nut tightening strength : Tightening torque to be no greater than  $1 N \cdot m$ .

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



6. Push/pull strength :

After installing the potentiometer, no damages with an application of push or pull force  $80N$  for 10 seconds.

7. Shaft wobble :

The resistor shall be mounted by soldering the mounting legs on the panel and a side thrust of  $50 mN \cdot m$  at the end of the shaft shall be applied , then the total play of the shaft shall not exceed  $0.6 \times L / 20 mm-p$ .

(L is the length between mounting surface and measuring point.)

## ENDURANCE

1. Rotational life :  $15,000$  cycles min.

## NOTE

1. Operating temperature range :  $-10 \sim +70^\circ C$
2. Storage temperature range :  $-20 \sim +80^\circ C$
3. The items except above mentioned items shall meet or exceed JIS C 6443.
4. The use for HomeAudio.
5. This type is protected against sulfides.

|      |      |       |       |       |                             |              |              |              |
|------|------|-------|-------|-------|-----------------------------|--------------|--------------|--------------|
|      |      |       |       |       | <b>ALPSALPINE CO., LTD.</b> |              |              |              |
| SYMB | DATE | APPD. | CHKD. | DSGD. | APPD.                       | CHKD.        | DSGD.        | TITLE        |
|      |      |       |       |       | Aug. 19, '93                | Aug. 19, '93 | Aug. 19, '93 |              |
|      |      |       |       |       | S. Aizawa                   | M. Satoh     | Y. Saitoh    |              |
|      |      |       |       |       |                             |              |              | DOCUMENT NO. |
|      |      |       |       |       |                             |              |              | L X          |

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# SPECIFICATIONS

Resistance to soldering heat :

There shall be no evidence of poor contact between resistance element and terminals, or any physical damages as a result of soldering.

\*Dip soldering :

Condition of soldering :

Soldering shall be certified with following condition.

Substrate to be soldered :

Copper clad laminated phenol board in one surface of 1.6mm thickness.

Solder flux :

Flux of 0.82 specific weight in bubbling type solder fluxcoating apparatus shall be used and bubbling surface height shall be defined substantially as half thickness of substrate.

Flux shall not flow up on substrate surface.

Preheating

Surface temperature of substrate shall be settled within 100°C in two minutes.

Dip soldering :

To be performed in 260±5°C , 5±1 sec.

Please use the above process only one or two times.

\*Manual soldering :

To be performed in three seconds within 350°C.

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M. Satoh

Y. Saitoh

DOCUMENT NO.

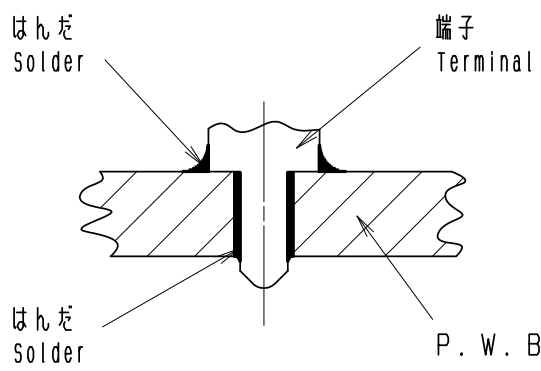
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SYMB DATE APPD CHKD DSGD

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1. はんだ付けに関するその他注意事項  
Other precautions for Soldering

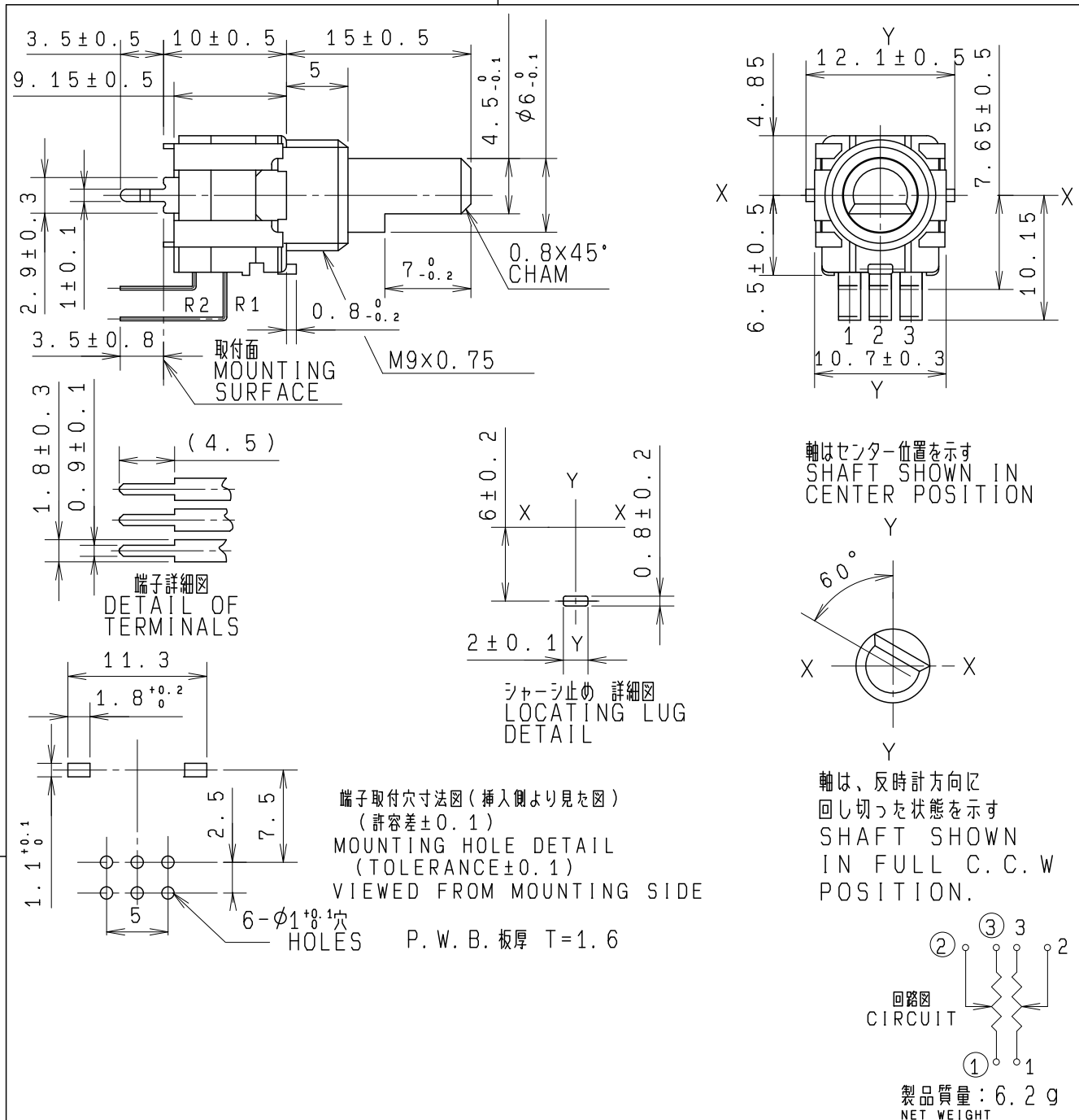
- 1) 図のようにP.W.B.の上面にはんだ付けをする配線は、お避け下さい。  
Please avoid soldering on upper surface of P.W.B. as shown below.



- 2) 基板に挿入される金属足ははんだ付けしてご使用願います。  
Please solder all inserted metal terminals and bracket to a PWB.
- 3) はんだ付け後、溶剤などで製品を洗浄しないで下さい。  
After soldering , please not to wash or clean products by liquid such as solvent or any similar.
- 4) Selective solderingの場合は、Dip solderingと条件が異なりますので、  
事前に貴社設備で充分確認の上条件設定をお願いします。  
Please thoroughly test and decide appropriate parameters for soldering by your soldering equipment under actual condition of production.(for example , parameters for selective soldering can be different from for wave soldering.)
- 5) Spray flaxerの場合は、製品の実装側からflaxが浸入しないようにして下さい。  
If you use spray fluxer equipment , please prevent the flux from entering the inside of product from mounting side.

|      |      |      |      |      |                            |               |               |  |
|------|------|------|------|------|----------------------------|---------------|---------------|--|
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|      |      |      |      |      | APPD.                      | CHKD.         | DSGD.         | TITLE  その他注意事項 (DIP/手はんだ)                |
|      |      |      |      |      | Oct. 22. 2015              | Oct. 22. 2015 | Oct. 22. 2015 | Other precautions (DIP/Manual soldering) |
|      |      |      |      |      | S.Urushihara               | K. Sasaki     | Y. Ashida     | DOCUMENT NO.                             |
| SYMB | DATE | APPD | CHKD | DSGD | C - 2 ( 1 / 1 )            |               |               |  |





| 指定なき部分の許容差<br>TOLERANCES UNLESS OTHERWISE SPEC |      |
|--|------|
| $L \leq 10$                                    | ±0.3 |
| $10 < L < 100$                                 | ±0.5 |
| $100 \leq L$                                   | ±0.8 |
| 角度<br>ANGULAR DIMENSION                        | ±5°  |

|          |      |      |      |                      |                                    |        |              |                             |  |
|----------|------|------|------|----------------------|------------------------------------|--------|--------------|-----------------------------|--|
|          |      |      |      |                      |                                    |        |              |                             |  |
| PART NO. |      | NAME |      | MATERIAL NAME / CODE |                                    | FINISH |              |                             |  |
|          |      |      |      |                      | <b>ALPSALPINE CO.,LTD.</b>         |        |              |                             |  |
|          |      |      |      |                      |                                    |        |              |                             |  |
|          |      |      |      |                      |                                    |        |              |                             |  |
|          |      |      |      |                      |                                    |        |              |                             |  |
|          |      |      |      |                      | DSGN. 1-設計1課<br>Y. Saitoh 93-10-01 |        | SCALE<br>2/1 | NO.<br>RK09L12D1F15         |  |
|          |      |      |      |                      | CHKD.<br>Y. Satoh 93-10-01         |        |              | TITLE<br>9形1軸2連VR組立図 FIGURE |  |
|          |      |      |      |                      | APPD.                              |        |              | DOCUMENT NO. F01            |  |
| SYMB     | DATE | APPD | CHKD | DSGD                 | S. Aizawa 93-10-01                 |        | m m          | K092W0011                   |  |