Customer: ROXBURGH ELECTRONICS LIMITED

Attention:

Your ref. No:
Your Part. No: 226074

SPECIFICATIONS

ALPS:

MODEL: RS451150K

F.E.C. No: 698-040

Sample No.: 0444749

RECEIPT STATUS
RECEIVED
By: Date

Signature
Name
Title

ALPS ELECTRIC CO., LTD.

HEAD OFFICE
1-7 YUKIGAYA-OHTSUCA-CHO,
OHTA-KU, TOKYO 145 JAPAN

DSG'D 

APP'D
ENG. DEPT. DIVISION
Sales
SPECIFICATIONS

1. This Specifications apply to RS451114 Potentiometers.

2. Contents of This Specifications.
   4S451G-32M, 4S9008-45M
   4S0001-200, 4S0001-201
   4S100402A

3. Marking
   - Marking on all units,
   Date code, resist. value, taper, trade mark

Marking ➔ in specifications shows
standard and condition for application
1. Overall resistance:
   Overall resistance tolerances: ±20 %
   Unit: KΩ
   | 5   | 10  | 20  | 50  | 100 | 200 | 250 | 500 | 1,000 |

2. Minimum resistance:
   Unit: Ω
   | Overall resistance (KΩ) | 5,10 | 20,50 | 100 | 200 | 250 | 500 | 1,000 |
   | Across term.1-2         | 30   | 50   | 70  | 120 | 220 | 320 | 500   |
   | Across term.2-3         | 50   | 100  | 200 | 300 | 500 |

3. Taper: ALPS "B" (SBS49)

4. Rated power: 0.25 Watts.

5. Rated voltage:
   \[ \text{Rated voltage} = \sqrt{\frac{P \cdot R}{P \cdot R}} \] (V)
   \[ P \] : rated power (W)
   \[ R \] : nominal overall resistance (Ω)
   When the rated voltage exceeds the maximum operating voltage, the maximum operating voltage shall be the rated voltage.
   Maximum operating voltage: A.C. 200V, D.C. 10V

6. Dielectric test:
   Units shall be designed to withstand 300 volts A.C. 50 Hz R.M.S. between resistance elements and case for a period of one minute without damage or arcing.

7. Insulation resistance:
   Greater than 100 megohms between resistance elements and case when tested by a 250 volts D.C. insulation resistance meter.

8. Sliding lifetest: 15,000 cycles

- Lever shall be operable with speed of 20 mm per sec. without noise by static electricity.
MECHANICAL

1. Travel: Specified in particular figure.
2. Operating force: 30-250 gf (Note 1)
3. Starting force: Operating force + 100 gf max. (Note 1)
   (Note 1) Measuring temperature: 5°C - 35°C
   Measuring point:
   ➔ 5 mm from lever end (Lever length > 6 mm)
   ➔ 11 mm from lever end (Lever length ≤ 6 mm)
   Sliding speed: 20 mm per sec.
4. Stop strength:
   ➔ 5 kgf at a position 5 mm from mounting surface.
   (Lever length > 6 mm)
   ➔ 5 kgf at a position 2 mm from mounting surface.
   (Lever length ≤ 6 mm)
5. Lever lateral play:
   When an alternating bending moment of 250 gf-cm is applied
   perpendicular to the direction of lever travel, the bothside
   movement of the lever shall be less than 2 (2×L/20) mm
   L: Lever length on the measurement point from mtg. surface.
   (Note 2) Exempt warping of insulated lever.

   Lever lateral play
   \[ M = 250 \text{ gf-cm} \]
   \[ \text{The bothside movement of the lever shall be less than 1.2 mm} \]

6. Lever strength:
   (1) To be resistant with 5 kgf static force of pull or push
   applied to lever in thrust direction for 10 seconds
   without damage.

7. Lever inclination and twist:
   Twist
   Inclination
   \[ 2^\circ \text{max.} \]

8. Resistance to soldering heat: 3 sec. max. at 300°C
1. When the operating point is away from the center line of the lever, it should be as short as possible.

2. About the length of the lever:
   If conditions permit, it is advisable to use the shortest possible lever.
   The longer the length up to the operating point, the more unfavorable slide feeling will be given.

3. Regarding the operation of the lever, please consider the above mentioned and make sure nothing is wrong with the operation under installing in your appliance that you plan to use our products actually.

4. Knob assembly on the lever and functioning the lever to be performed under the condition of P.C.B. without warp.
FOLLOW THE NEXT CONDITIONS FOR SOLDERING

1. はんだ SOLDER
   JIS Z 3282 に規定の 63% Sn はんだを使用
   63% Sn solder specified in JIS Z 3282.

2. 使用基板 BOARD IN USE
   薄板スルーホール基板又は、片面鋼板複層板 板厚 t = 1.6 mm
   Double-faces through-hole board or Single-face copper laid laminate board.
   Plate thickness (t) = 1.6 mm

3. 自動はんだ＜DIP条件＞
   (1) レバー位置 センター付近に設定願います。
   (2) フラックス比量 0.83±0.01（発泡式）
   (3) フラックス高さ リント基板の半分の位置にフラックスの上部が降る様に（図1）
   又、ボリューム挿入面への流れ込みのないこと。（フラックス上がり、破損に注意）
   (4) ボリューム温度 100°C max. 時間1分以内。（リント基板のボリューム挿入側の温度）
   (5) はんだ温度 260°C max. 時間5秒以内。はんだ回数は1回までとする。

IN THE CASE OF DIP SOLDERING
(1) State of potentiometer
   Position a lever in the vicinity of center.
(2) Specific Gravity of Flux
   0.83±0.01 (foaming type)
(3) Height of Flux face
   A level of the upper face of flux for reaching the position at a half of the plate thickness of printed board. (Fig. 1)
   Further, no flow of flux invading on the surface of printed board on the side of installing potentiometer is allowed.
(4) Preheat condition
   100°C max. within 1 minute
   (Temperature on the side of installing printed board is designated.)
(5) Soldering condition
   Solder temperature: 260°C max.
   Soldering period: within 5 seconds
   Time of soldering: only one time is permitted

4. 手はんだ IN THE CASE OF MANUAL SOLDERING
   はんだ温度 300°C Cmax. 時間3秒以内 はんだ回数は1回までとする。
   Solder temperature: 300°C Cmax.
   Soldering period: within 3 seconds
   Time of soldering: only one time is permitted

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ORIGINAL 91-9-3 Y-Y S-A S-S
SYMB DATE APPD CHK'D DSGD
TITLE スライド*ボリューム仕様書
SPECIFICATIONS 1/2
DOCUMENT NO. 4S0001-201

G0444749M
5. 注意事項
(1) はんだ付けの際、端子にストレスを加えないで下さい。例えば、端子に熱を加えたまま製品を動かすと、かせめがい及び電気的特性が劣化する恐れがあります。
(2) 両面スルーホール基板を使用する場合は、ポリューム挿入側の端子取付穴に、はんだランドがないようにご配慮願います。ポリューム挿入側の配線が必要な場合は端子取付穴からの直接取出しを容易スルーホール配線用の穴を設けるなどのご配慮をお願いします。
(3) ポリューム挿入側へのはんだ上がりは、はんだ熱による端子接続不良の発生原因となりますので（図2）を参照願います。
(4) リート・配線の場合、ポリューム本体と、はんだ付け部の距離を1mm以上開けてはんだ付け願います。（図3）
(5) はんだ付けによるポリュームへの影響は、フリップ基板の大きさ、ポリュームの取付け位置、はんだの大きさ等により異なりますのであらかじめ実使用状態で実施し、異常のないことを確認の上、はんだ付けして下さい。

MATTERS TO BE NOTED
(1) Do not add any stress on terminals in the case of soldering. For instance, forced movement of potentiometer with terminals being heated may probably deteriorate the electric features due to generation of looseness in connection between resistive board and terminals.
(2) Avoid use of double-faces through-hole board as much as possible. If it is necessary to use it, do not apply through-hole plating to a hole in which a potentiometer is inserted, and install a land to which terminals are soldered only on a face opposite to the face on the side of installing potentiometer.
(3) Use caution to soldering process so as to prevent solder from rising up to the surface of printed board on the side of installing potentiometer, because defective contact may take place in terminal connecting part due to soldering heat. (Fig. 2)
(4) In the case of lead wiring, solder it so that a gap of 1 mm or more may be reserved between the potentiometer body and soldering part. (Fig. 3)
(5) The grade of influence of soldering exerted on the potentiometer depends upon the size of a printed board, installing position of the potentiometer, and the size of a solder bath etc. Therefore, make sure in advance, of no abnormal state under the conditions of soldering to be carried out at present.

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NOTES 1. MOUNTING SCREW THREAD LENGTH IS CHASSIS THICKNESS +2mm MAX.
   取付用ネジの宛下長さは、シャーシ板厚 2mm以下とする。
2. TOP SIDE OF KNOB SHALL BE MOUNTED TO LEVER WITHIN 30mm LENGTH FROM LEVER MTG. SURFACE.
   取付面からツマミ先端まで 30mm以内でご使用願います。

MOUNTING HOLE DETAIL
(VIEWED FROM MOUNTING SIDE)

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<th>PART NO.</th>
<th>NAME</th>
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<td>S. ABE '93-06-16</td>
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<td>APP'D.</td>
<td>Y. YOSHIOKA '93-06-16</td>
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SCALE 1:1
TITLE SLIDE POTENTIOMETER SINGLE UNIT

DOCUMENT NO.

G0444749M
S4518G402A