

## Features

- Surface mount 2 mm Square / Single-turn / Cermet / Sealed
- Compatible with surface mount manufacturing processes
- Miniature design for flexibility
- RoHS compliant\*
- For trimmer applications/processing guidelines, [click here](#)

# 3312 - 2 mm SMD Trimpot® Trimming Potentiometer

## Electrical Characteristics

Standard Resistance Range ..... 10 ohms to 2 megohms  
 (see standard resistance table)  
 Resistance Tolerance ..... ±20 % std.  
 End Resistance ..... 1 % or 2 ohms max.  
 (whichever is greater)  
 Contact Resistance Variation ..... 5 % or 3 ohms max.  
 (whichever is greater)  
 Adjustability  
 Voltage Divider ..... ±0.4 %  
 Rheostat ..... ±0.8 %  
 Resolution ..... Essentially infinite  
 Insulation Resistance ..... 500 VDC  
 100 megohms min.  
 Dielectric Strength  
 Sea Level ..... 500 VAC  
 70,000 Feet ..... 350 VAC  
 Adjustment Angle ..... 255 ° nom.

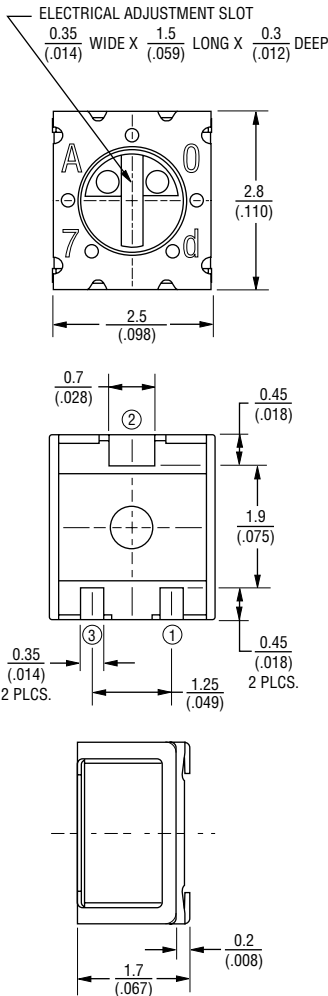
## Environmental Characteristics

Power Rating (50 volts max.)  
 70 °C ..... 0.1 watt  
 125 °C ..... 0 watt  
 Operating Temperature Range ..... -55 °C to +125 °C  
 Temperature Coefficient ..... ±100 ppm/°C  
 Seal Test .. 85 °C Fluorinert†/60 seconds  
 Humidity ..... MIL-STD-202 Method 106  
 TRS ±5 %; IR 10 megohms  
 Vibration ..... 20 G TRS ±1 %; VRS ±1 %  
 Shock ..... 100 G TRS ±1 %; VRS ±1 %  
 Load Life @ 70 °C Rated Power ..... TRS ±3 %  
 Rotational Life ..... 25 cycles TRS ±3 %  
 Thermal Shock ..... 5 cycles  
 TRS ±2 %; VRS ±4 %

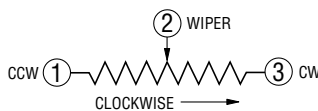
## Physical Characteristics

Mechanical Stop ..... 285 ° nom.  
 Torque ..... 0.7 oz-in. max  
 Stop Strength ..... 0.7 oz-in. nom.  
 Weight ..... Approximately 0.0321 g  
 Marking ..... Resistance code and date code  
 Standard Packaging ..... 500 pcs./7 " reel  
 (MSL-1)

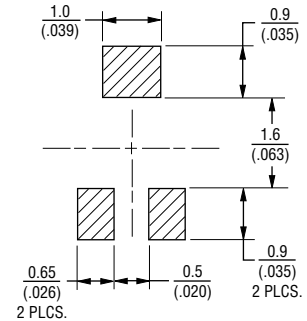
## Product Dimensions



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$   
 TOLERANCE:  $\frac{\pm 0.30}{(\pm .012)}$



## Recommended Land Pattern



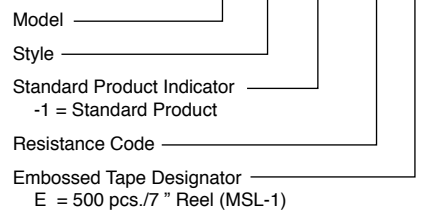
## Standard Resistance Table

| Resistance (Ohms) | Part Marking Code | Resistance Code |
|-------------------|-------------------|-----------------|
| 10                | A1                | 100             |
| 20                | U1                | 200             |
| 50                | V1                | 500             |
| 100               | A2                | 101             |
| 200               | U2                | 201             |
| 500               | V2                | 501             |
| 1,000             | A3                | 102             |
| 2,000             | U3                | 202             |
| 5,000             | V3                | 502             |
| 10,000            | A4                | 103             |
| 20,000            | U4                | 203             |
| 50,000            | V4                | 503             |
| 100,000           | A5                | 104             |
| 200,000           | U5                | 204             |
| 500,000           | V5                | 504             |
| 1,000,000         | A6                | 105             |
| 2,000,000         | U6                | 205             |

Popular values listed in boldface. Consult factory for special resistances.

## How To Order

**3312 J - 1 - 502 E**



Tape and reel material meets Antistatic ANSI/ESD 5541-2003 packaging standards.



**WARNING Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

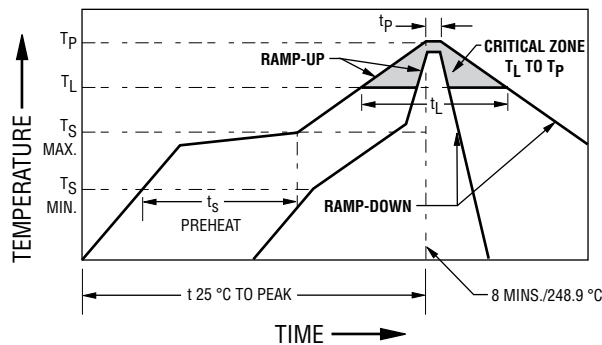
\*RoHS Directive 2015/863, Mar. 31, 2015 and Annex  
 †"Fluorinert" is a registered trademark of 3M Co.  
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# 3312 - 2 mm SMD TrimPot® Trimming Potentiometer

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## Processing Information

| Process Description                                    | Materials  | Temperature                         | Time Interval                                      |
|--|--|-------------------------------------|--|
| 1. Apply solder paste to test board (8 - 10 mil thick) | <ul style="list-style-type: none"> <li>• Sn 96.5/Ag 3.0/Cu 0.5 Alloy water soluble or no clean solder paste</li> <li>• Single sided epoxy glass (G10) (UL approved)</li> <li>• PC board approx. 4x4x.06 in.</li> </ul> | Room temperature                    |  |
| 2. Place test units onto board                         | 6 units/board  |                                     |  |
| 3. Ramp up   | Convection oven  |                                     | 2.5 °C ±0.5 °/second                               |
| 4. Preheat (T <sub>S</sub> )                           |  | 150 °C to 190 °C                    | 90 ±30 seconds                                     |
| 5. Time above liquidus (T <sub>L</sub> )               |  | 220 °C                              | 60-90 seconds                                      |
| 6. Peak temperature (T <sub>P</sub> )                  |  |                                     | 250 °C +0 °/-5 °<br>10-20 sec. within 5 °C of peak |
| 7. Ramp down   |  | Room temperature                    | 3 °C ±0.5 °C/second                                |
| 8. Cleaning water clean profile                        | High pressure deionized water<br>65 PSI maximum  | 72 °F to 160 °F<br>(22 °C to 71 °C) | As required  |



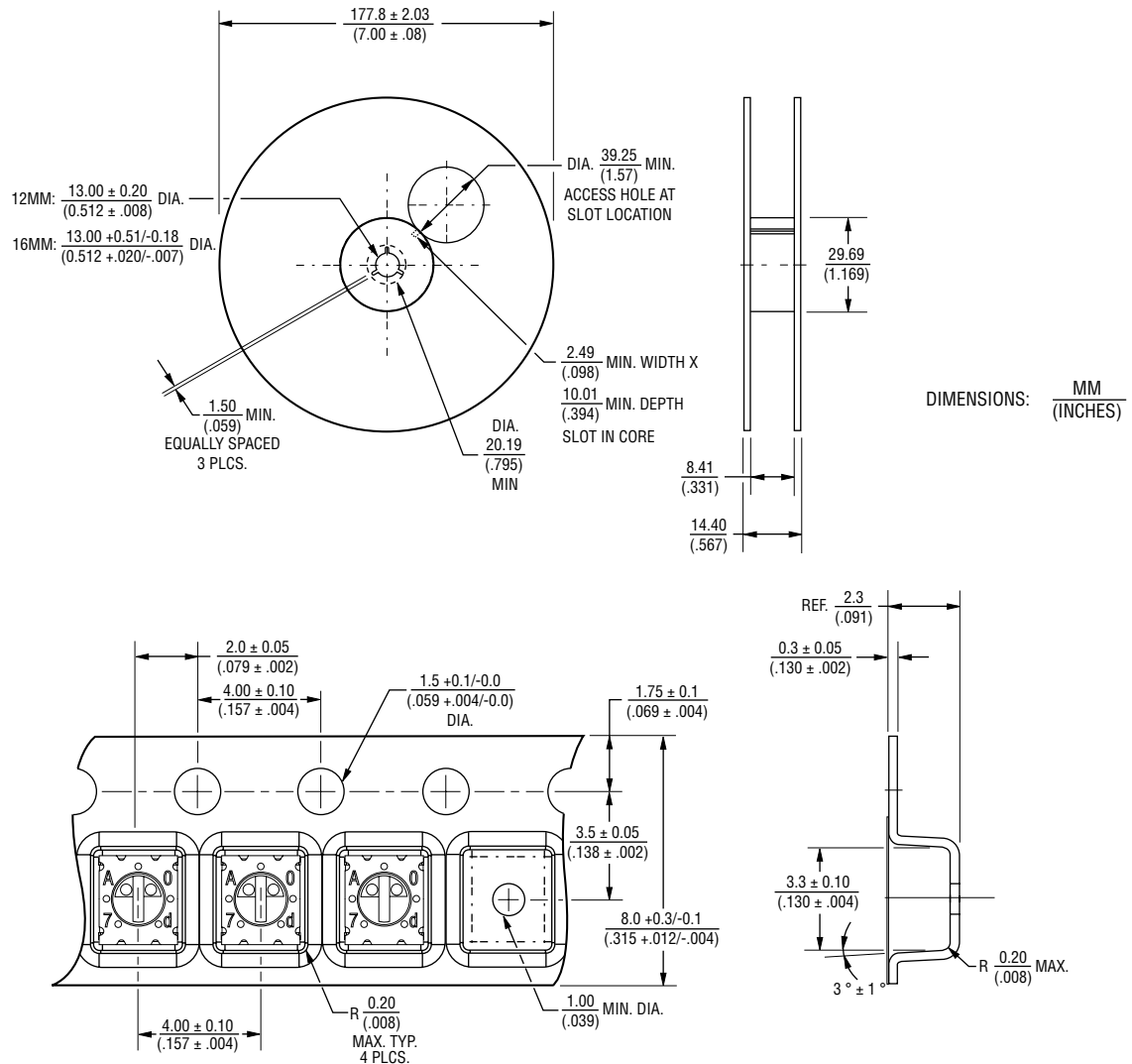
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## Packaging Specifications



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