

## 3mm Surface Mount, Single-Turn, Sealed Cermet Trimmers



### Features

- 3mm square SMD, single-turn, sealed cermet trimmers
- Available in J-hook and gull-wing terminal configurations
- Top adjustment in single-slot or automatic adjust cross-slot design
- Wide temperature range of  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- Designed for flow, reflow or infrared reflow soldering
- Sealed to withstand immersion cleaning processes
- Tape and reel packaging
- Meets EIA, EIAJ, IPC, VECL standard SMD trimmer designs

### Specifications

#### Electrical

<b>Standard Resistance Range</b>	..... $50\Omega$ to $2\text{M}\Omega$ (standard 1, 2 & 5 sequence)
<b>Resistance Tolerance</b>	..... $\pm 20\%$ standard
<b>End Resistance</b>	..... $1\%$ or $3\Omega$ , whichever is greater
<b>Resistance Taper</b>	..... Linear
<b>Peak Noise (C.R.V.)</b>	..... $2\%$ or $3\Omega$ , whichever is greater
<b>Power Rating</b>	..... $0.125$ watt at $+70^{\circ}\text{C}$ ; $0$ watt at $+125^{\circ}\text{C}$
<b>Maximum Input Voltage</b>	..... $200\text{VDC}$ or power rating, whichever is smaller
<b>Temperature Coefficient</b>	..... $\pm 100$ ppm/ $^{\circ}\text{C}$ , $200\Omega$ to $1\text{M}\Omega$ $\pm 250$ ppm/ $^{\circ}\text{C}$ , other values
<b>Insulation Resistance</b>	..... $100\text{M}\Omega$ minimum at $500\text{VDC}$
<b>Dielectric Strength</b>	..... $500\text{VAC}$ , 1 minute
<b>Adjustment Travel</b>	..... $220^{\circ} \pm 10^{\circ}$

#### Mechanical

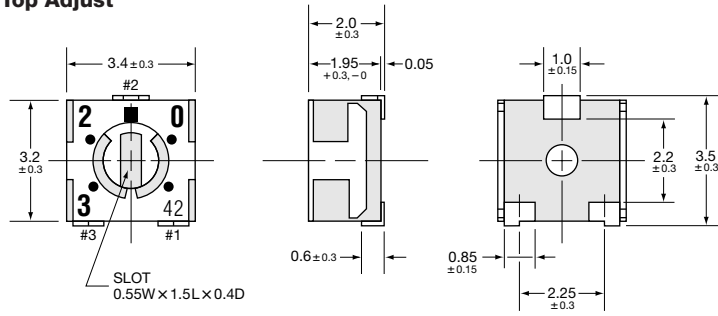
<b>Mechanical Travel</b>	..... $250^{\circ} \pm 10^{\circ}$
<b>Shaft Torque</b>	..... $50$ gf $\cdot$ cm ( $0.69$ oz $\cdot$ in) max.
<b>Stop Strength</b>	..... $200$ gf $\cdot$ cm ( $2.77$ oz $\cdot$ in) min.
<b>Flammability of Plastic Materials</b>	..... Meets UL 94V-0
<b>Nominal Weight</b>	..... $0.068$ g
<b>Marking</b>	..... Resistance value or code, date code

#### Environmental

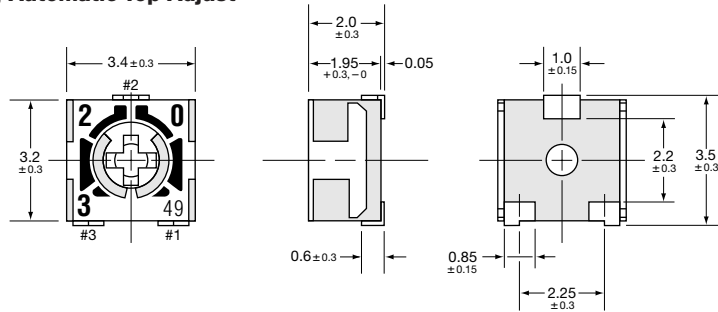
<b>Temperature Range</b>	..... $-55^{\circ}\text{C}$ to $+125^{\circ}\text{C}$
<b>Low Temperature Operation</b>	..... $-55^{\circ}\text{C}$ , $0.125$ watt, 1 hour $\Delta\text{T/R} \leq \pm 2\%$ , S.S. $\leq \pm 2\%$
<b>High Temperature Exposure</b>	..... $+125^{\circ}\text{C}$ , 250 hours $\Delta\text{T/R} \leq \pm 2\%$ , S.S. $\leq \pm 2\%$
<b>Load Life</b>	..... $+70^{\circ}\text{C}$ , $0.125$ watt, 1,000 hours $\Delta\text{T/R} \leq \pm 3\%$ , S.S. $\leq \pm 2\%$
<b>Thermal Shock</b>	..... $-55^{\circ}\text{C}$ , $+125^{\circ}\text{C}$ , 30 minutes each, 5 cycles $\Delta\text{T/R} \leq \pm 2\%$ , S.S. $\leq \pm 1\%$
<b>Shock</b>	..... $100\text{G}$ , 6ms, 6 directions, 3 times each $\Delta\text{T/R} \leq \pm 1\%$ , S.S. $\leq \pm 1\%$
<b>Vibration</b>	..... $10$ - $2,000\text{Hz}$ , $1.5\text{mm}$ amplitude, $20\text{G}$ , 12 hours $\Delta\text{T/R} \leq \pm 1\%$ , S.S. $\leq \pm 1\%$
<b>Humidity</b>	..... $+40^{\circ}\text{C}$ , $90$ - $95\%$ RH, $0.125$ watt, 500 hours $\Delta\text{T/R} \leq \pm 3\%$ , S.S. $\leq \pm 2\%$
<b>Moisture Resistance</b>	..... $-10^{\circ}\text{C}$ to $+65^{\circ}\text{C}$ , $80$ - $98\%$ RH, $0.125$ watt, 10 cycles, 240 hours $\Delta\text{T/R} \leq \pm 3\%$
<b>Soldering Heat Resistance</b>	..... $240^{\circ}\text{C}$ , 10 seconds $\Delta\text{T/R} \leq \pm 1\%$
<b>Seal Test</b>	..... $+85^{\circ}\text{C}$ , hot water for 1 minute
<b>Rotational Life</b>	..... 100 cycles without discontinuity, no load $\Delta\text{T/R} \leq \pm 5\%$

$\Delta\text{T/R}$  = Total Resistance Change; S.S. = Setting Stability (voltage ratio)

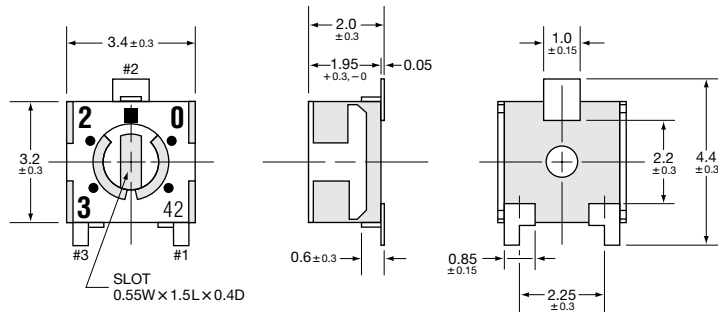
**G3A J-Hook, Single-Slot, Top Adjust**



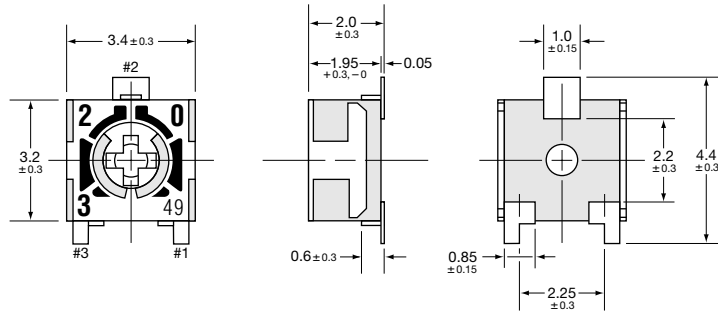
**G31A J-Hook, Cross-Slot, Automatic Top Adjust**



**G3B Gull-Wing, Single-Slot, Top Adjust**



**G31B Gull-Wing, Cross-Slot, Automatic Top Adjust**

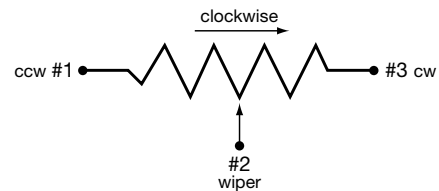
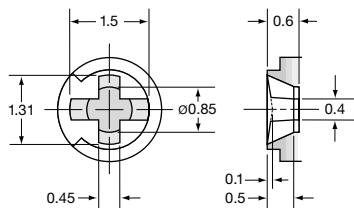


**Cross-Slot Dimensions**

**Electrical Schematic**

**All G31 Models**

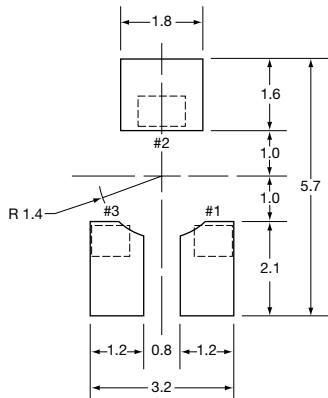
Unit: mm



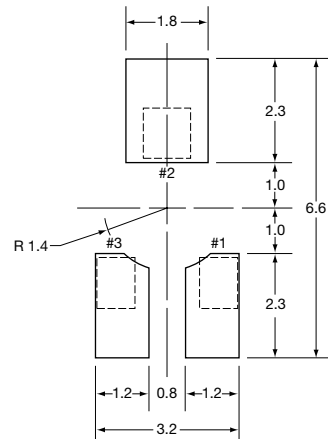
**Recommended Land Patterns**

**Flow Soldering Method**

**G3A & G31A**

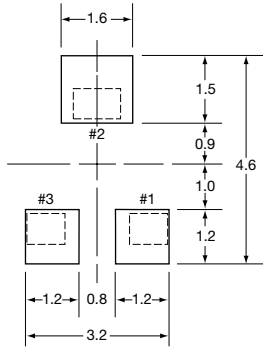


**G3B & G31B**

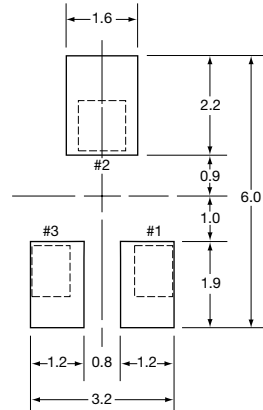


**Reflow Soldering Method**

**G3A & G31A**

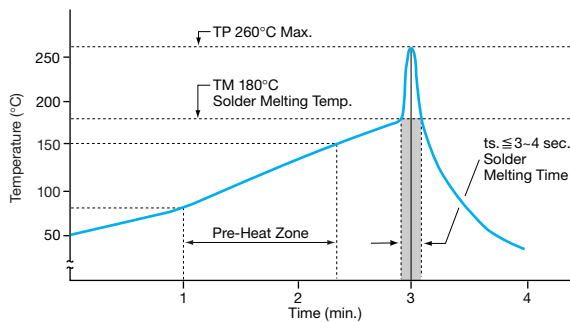


**G3B & G31B**

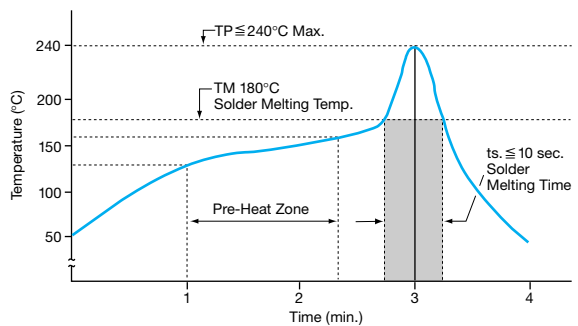


**Recommended Soldering Profiles**

**Flow Soldering Profile**



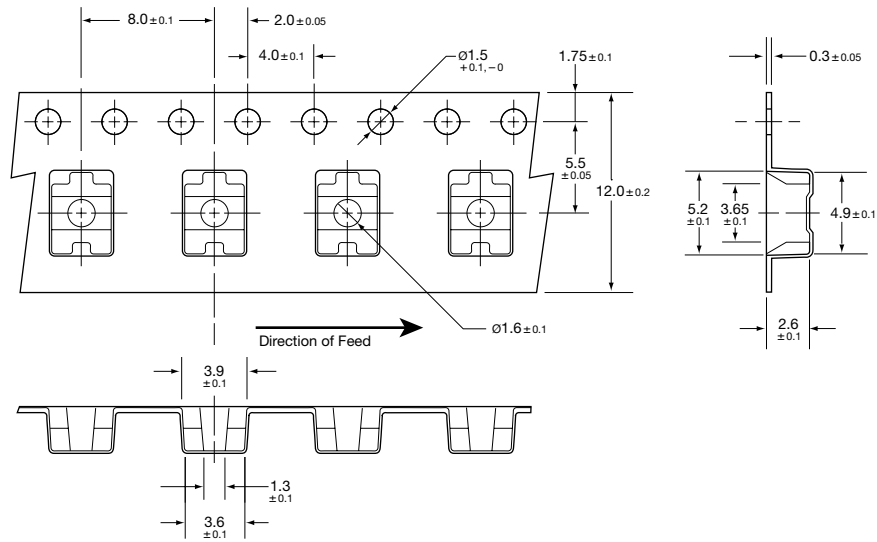
**Reflow Soldering Profile**



**Embossed Tape Dimensions**

Conforms to EIA-481, JIS-C-0806 and EIAJ-RC-1009B

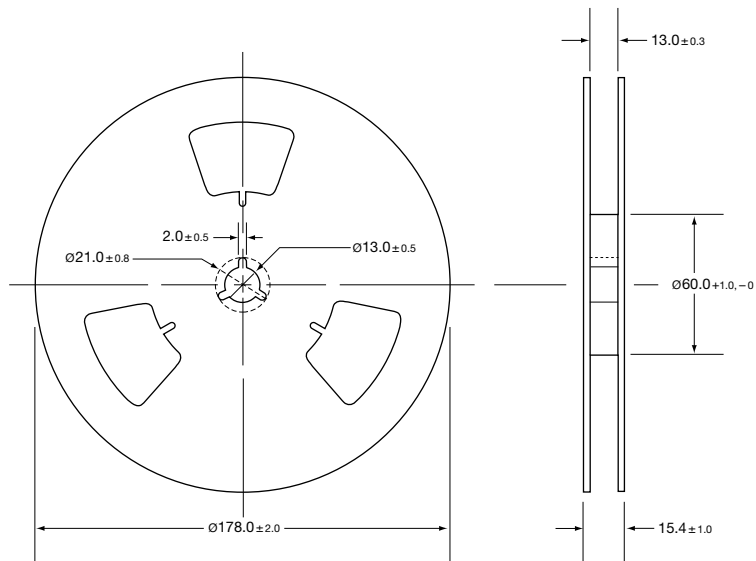
**G3AT, G31AT, G3BT, G31BT**



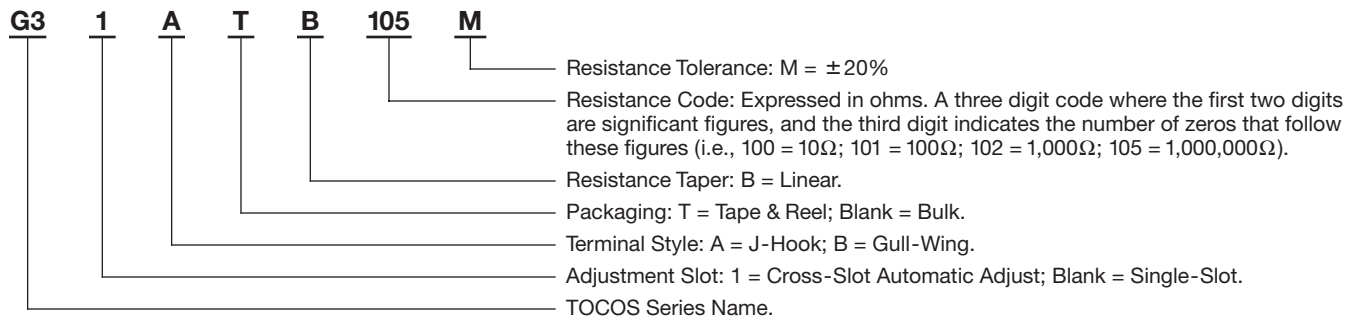
**Reel Dimensions**

Conforms to EIA-481, JIS-C-0806 and EIAJ-RC-1009B

**G3AT, G31AT, G3BT, G31BT**




500 Pieces Per 7" Reel




**Part Numbers**

Nominal Resistance		Single-Slot		Potentiometer Styles
Value ( $\Omega$ )	Code	Catalog No. Tape & Reel	Catalog No. Bulk	

**G3A J-Hook, Single-Slot, Top Adjust**

Value ( $\Omega$ )	Code	Catalog No. Tape & Reel	Catalog No. Bulk	 <b>G3A</b>
50	500	G3AT B 500 M	G3A B 500 M	
100	101	G3AT B 101 M	G3A B 101 M	
200	201	G3AT B 201 M	G3A B 201 M	
500	501	G3AT B 501 M	G3A B 501 M	
1,000	102	G3AT B 102 M	G3A B 102 M	
2,000	202	G3AT B 202 M	G3A B 202 M	
5,000	502	G3AT B 502 M	G3A B 502 M	
10,000	103	G3AT B 103 M	G3A B 103 M	
20,000	203	G3AT B 203 M	G3A B 203 M	
50,000	503	G3AT B 503 M	G3A B 503 M	
100,000	104	G3AT B 104 M	G3A B 104 M	
200,000	204	G3AT B 204 M	G3A B 204 M	
500,000	504	G3AT B 504 M	G3A B 504 M	
1,000,000	105	G3AT B 105 M	G3A B 105 M	
2,000,000	205	G3AT B 205 M	G3A B 205 M	

**G31A J-Hook, Cross-Slot, Automatic Top Adjust**


Value ( $\Omega$ )	Code	Catalog No. Tape & Reel	Catalog No. Bulk	 <b>G31A</b>
50	500	G31AT B 500 M	G31A B 500 M	
100	101	G31AT B 101 M	G31A B 101 M	
200	201	G31AT B 201 M	G31A B 201 M	
500	501	G31AT B 501 M	G31A B 501 M	
1,000	102	G31AT B 102 M	G31A B 102 M	
2,000	202	G31AT B 202 M	G31A B 202 M	
5,000	502	G31AT B 502 M	G31A B 502 M	
10,000	103	G31AT B 103 M	G31A B 103 M	
20,000	203	G31AT B 203 M	G31A B 203 M	
50,000	503	G31AT B 503 M	G31A B 503 M	
100,000	104	G31AT B 104 M	G31A B 104 M	
200,000	204	G31AT B 204 M	G31A B 204 M	
500,000	504	G31AT B 504 M	G31A B 504 M	
1,000,000	105	G31AT B 105 M	G31A B 105 M	
2,000,000	205	G31AT B 205 M	G31A B 205 M	

## G3 Series


## Part Numbers

Nominal Resistance		Single-Slot		Potentiometer Styles
Value ( $\Omega$ )	Code	Catalog No. Tape & Reel	Catalog No. Bulk	

### G3B Gull-Wing, Single-Slot, Top Adjust

Value ( $\Omega$ )	Code	Catalog No. Tape & Reel	Catalog No. Bulk	 <p><b>G3B</b></p>
50	500	G3BT B 500 M	G3B B 500 M	
100	101	G3BT B 101 M	G3B B 101 M	
200	201	G3BT B 201 M	G3B B 201 M	
500	501	G3BT B 501 M	G3B B 501 M	
1,000	102	G3BT B 102 M	G3B B 102 M	
2,000	202	G3BT B 202 M	G3B B 202 M	
5,000	502	G3BT B 502 M	G3B B 502 M	
10,000	103	G3BT B 103 M	G3B B 103 M	
20,000	203	G3BT B 203 M	G3B B 203 M	
50,000	503	G3BT B 503 M	G3B B 503 M	
100,000	104	G3BT B 104 M	G3B B 104 M	
200,000	204	G3BT B 204 M	G3B B 204 M	
500,000	504	G3BT B 504 M	G3B B 504 M	
1,000,000	105	G3BT B 105 M	G3B B 105 M	
2,000,000	205	G3BT B 205 M	G3B B 205 M	

### G31B Gull-Wing, Cross-Slot, Automatic Top Adjust

Value ( $\Omega$ )	Code	Catalog No. Tape & Reel	Catalog No. Bulk	 <p><b>G31B</b></p>
50	500	G31BT B 500 M	G31B B 500 M	
100	101	G31BT B 101 M	G31B B 101 M	
200	201	G31BT B 201 M	G31B B 201 M	
500	501	G31BT B 501 M	G31B B 501 M	
1,000	102	G31BT B 102 M	G31B B 102 M	
2,000	202	G31BT B 202 M	G31B B 202 M	
5,000	502	G31BT B 502 M	G31B B 502 M	
10,000	103	G31BT B 103 M	G31B B 103 M	
20,000	203	G31BT B 203 M	G31B B 203 M	
50,000	503	G31BT B 503 M	G31B B 503 M	
100,000	104	G31BT B 104 M	G31B B 104 M	
200,000	204	G31BT B 204 M	G31B B 204 M	
500,000	504	G31BT B 504 M	G31B B 504 M	
1,000,000	105	G31BT B 105 M	G31B B 105 M	
2,000,000	205	G31BT B 205 M	G31B B 205 M	

## Packaging

### Standard:

#### Tape & Reel Packaging

500 pieces per 7" reel.

#### Bulk Packaging

100 pieces per vinyl bag.  
1,000 pieces per box.

For additional information, refer to Guidelines and Precautions for Using Potentiometers.