

# G43 Series

# TOCOS<sup>®</sup>

POTENTIOMETERS

## 4mm Surface Mount, Single-Turn, Sealed Cermet Trimmers



### Features

- 4mm square SMD, single-turn, sealed cermet trimmers
- Available in J-hook and gull-wing terminal configurations
- Meets EIA, EIAJ, IPC, VECI standard SMD trimmer designs
- Pb-free and Cd-free construction
- RoHS compliant
- Gold-plated leads provide high conductivity, low contact resistance, high corrosion resistance and good solderability
- Top, side or bottom cross-slot adjustment
- High setting accuracy, zero backlash
- Tape and reel packaging

### Specifications

#### Electrical

<b>Standard Resistance Range</b>	10Ω to 2MΩ (standard 1, 2 & 5 sequence)
<b>Resistance Tolerance</b>	±20% standard
<b>End Resistance</b>	1% or 3Ω, whichever is greater
<b>Resistance Taper</b>	B = Linear
<b>Peak Noise (C.R.V.)</b>	2% or 3Ω, whichever is greater
<b>Power Rating</b>	0.25 watt at +70°C; 0 watt at +125°C
<b>Maximum Input Voltage</b>	200VDC or power rating, whichever is smaller
<b>Temperature Coefficient</b>	±100 ppm/°C, 200Ω to 1MΩ ±250 ppm/°C, other values
<b>Insulation Resistance</b>	100MΩ minimum at 500VDC
<b>Dielectric Strength</b>	500VAC, 1 minute
<b>Adjustment Travel</b>	210° ±10°

#### Mechanical

<b>Mechanical Travel</b>	240° ±10°
<b>Shaft Torque</b>	150 gf·cm (2.08 oz·in) max.
<b>Stop Strength</b>	300 gf·cm (4.16 oz·in) min.
<b>Flammability of Plastic Materials</b>	Meets UL 94V-0
<b>Nominal Weight</b>	0.14g (A, B, D, E) 0.16g (BF); 0.24g (SA)
<b>Marking</b>	Resistance code, date code

For through-hole models of the G43 series,  
refer to the G43C Series.

#### Environmental

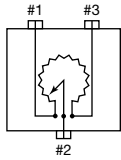
<b>Temperature Range</b>	-55°C to +125°C
<b>Low Temperature Exposure</b>	-55°C, 0.25 watt, 45 minutes ΔT/R ≤ ±2%, S.S. ≤ ±2%
<b>High Temperature Exposure</b>	+125°C, 250 hours ΔT/R ≤ ±2%, S.S. ≤ ±2%
<b>Load Life</b>	+70°C, 0.25 watt, 1,000 hours ΔT/R ≤ ±3%, S.S. ≤ ±2%
<b>Thermal Shock</b>	-55°C, +125°C, 30 minutes each, 5 cycles ΔT/R ≤ ±2%, S.S. ≤ ±1%
<b>Shock</b>	100G, 6ms, 6 directions, 3 times each ΔT/R ≤ ±1%, S.S. ≤ ±1%
<b>Vibration</b>	10-2,000Hz, 1.5mm amplitude, 20G, 12 hours ΔT/R ≤ ±1%, S.S. ≤ ±1%
<b>Humidity</b>	+40°C, 90-95% RH, 0.25 watt, 500 hours ΔT/R ≤ ±3%, S.S. ≤ ±2%
<b>Moisture Resistance</b>	-10°C to +65°C, 80-98% RH, 0.25 watt, 10 cycles, 240 hours ΔT/R ≤ ±3%
<b>Soldering Heat Resistance</b>	260°C, 10 seconds ΔT/R ≤ ±1%
<b>Seal Test</b>	+85°C, hot water for 1 minute
<b>Rotational Life</b>	100 cycles without discontinuity, no load ΔT/R ≤ ±5%

ΔT/R = Total Resistance Change; S.S. = Setting Stability (voltage ratio)

# G43 Series

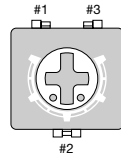
# Standard and Reverse Markings

### All A, B, D & E Models Position of Rotor Inside



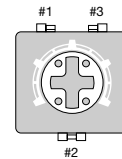
Position of the rotor inside is the same for both types of markings.

### Standard Markings Outside Positions



G43A & G43B

### Reverse Markings Outside Positions



G43D & G43E

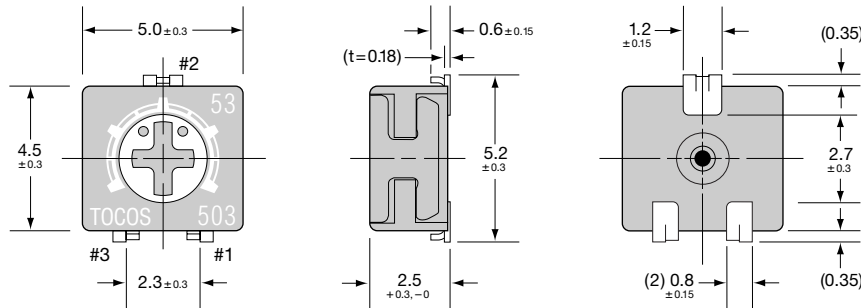
The D and E models are the same construction as the A and B models. The only difference is the reversed outside markings.

## Dimensions

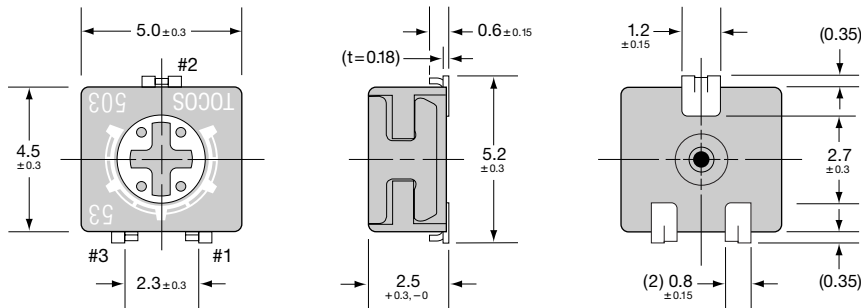
### G43A J-Hook, Top Adjust

Unit: mm

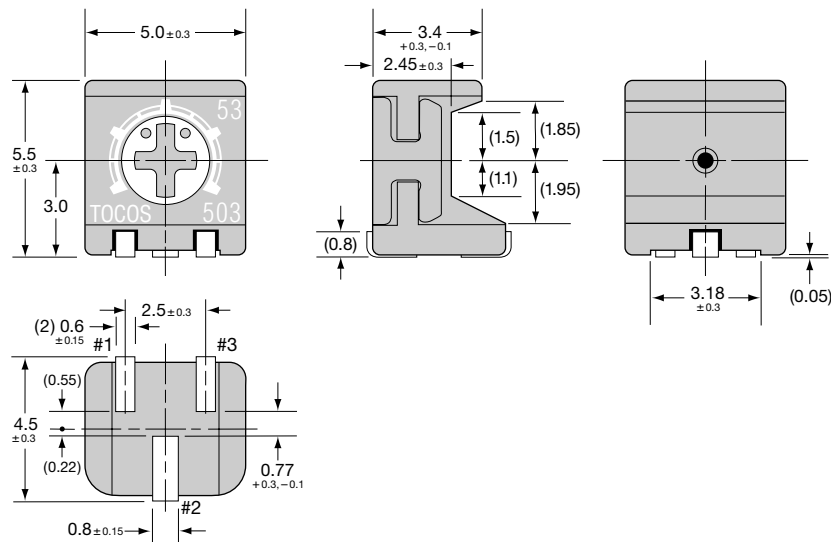
All G43 models:  
Cross-Slot accepts  
both Philips and  
single blade  
adjustment tools.



### G43D Reverse Markings, J-Hook, Top Adjust



### G43SA J-Hook, Side Adjust

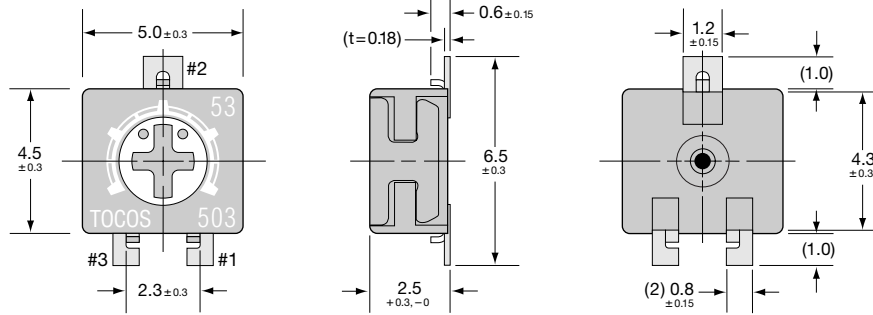


G43 Series

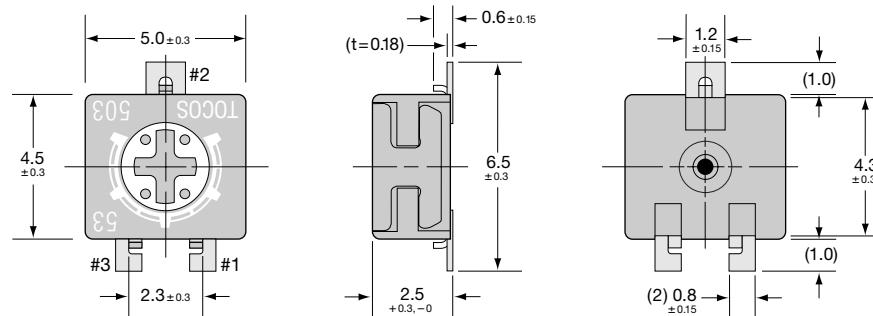
Dimensions

G43B Gull-Wing, Top Adjust

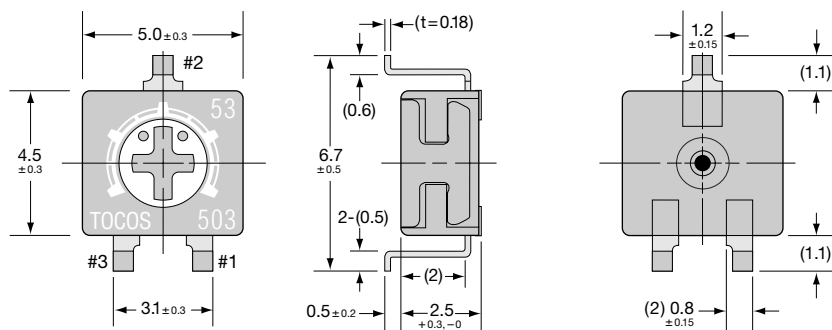
Unit: mm



G43E Reverse Markings, Gull-Wing, Top Adjust



G43BF Gull-Wing, Bottom Adjust

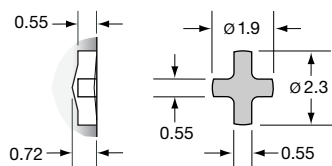


Cross-Slot Dimensions

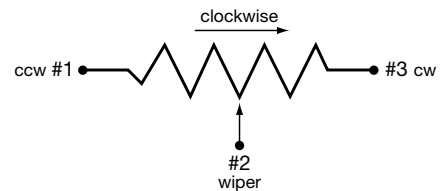
Electrical Schematic

All G43 Models

Unit: mm



Cross-Slot accepts both Philips and single blade adjustment tools.

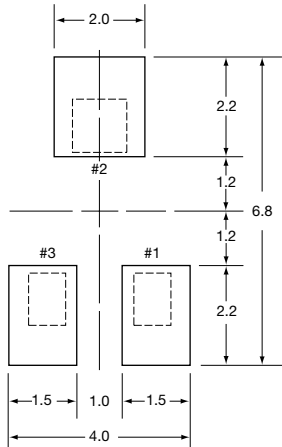


Recommended Land Patterns

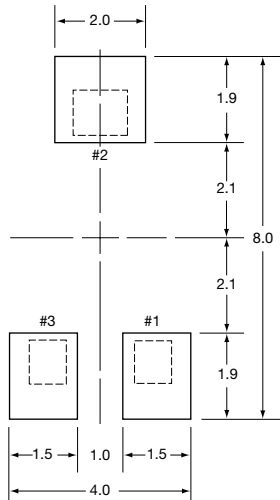
Unit: mm

Flow or Reflow Soldering Methods

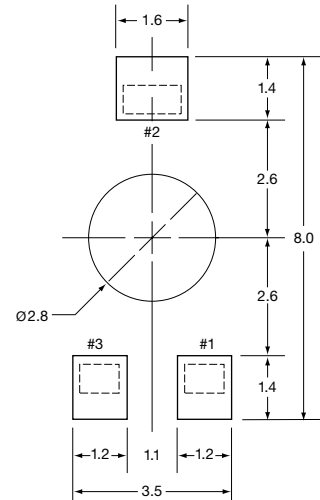
G43A, G43D



G43B, G43E

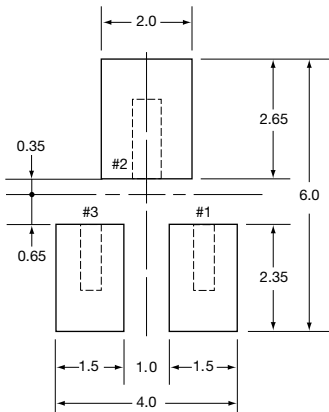


G43BF



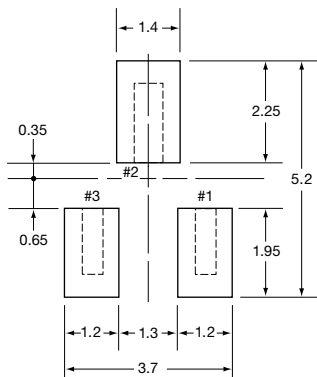
Flow Soldering Method

G43SA



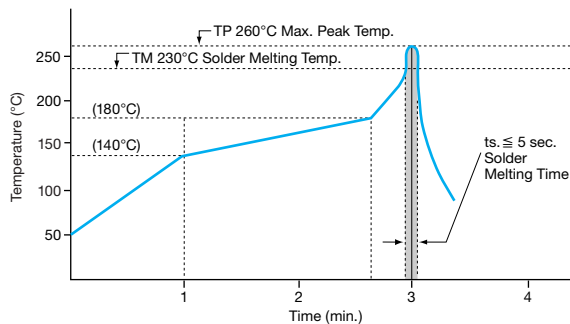
Reflow Soldering Method

G43SA

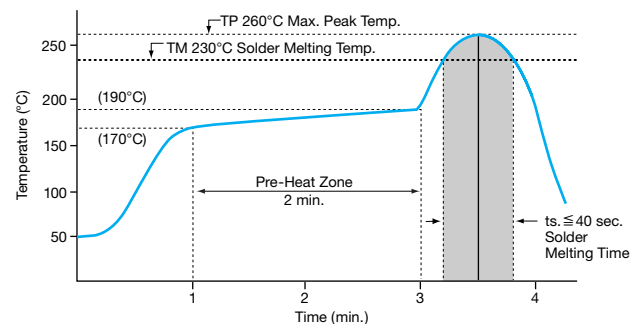


Recommended Soldering Profiles

Flow Soldering Profile



Reflow Soldering Profile



# G43 Series

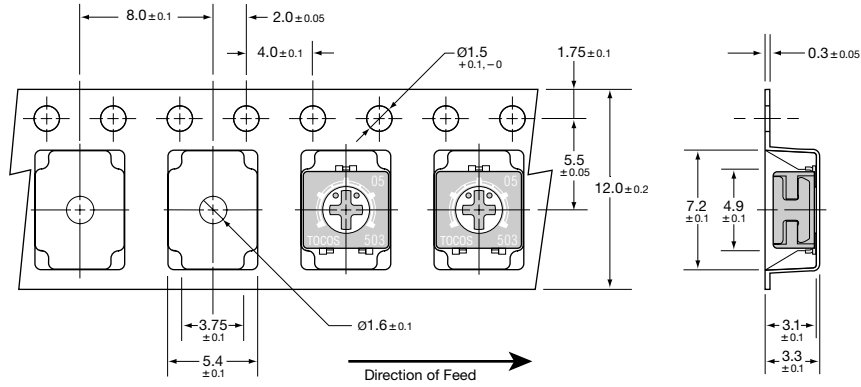
# Tape & Reel Specifications

## Embossed Tape Dimensions

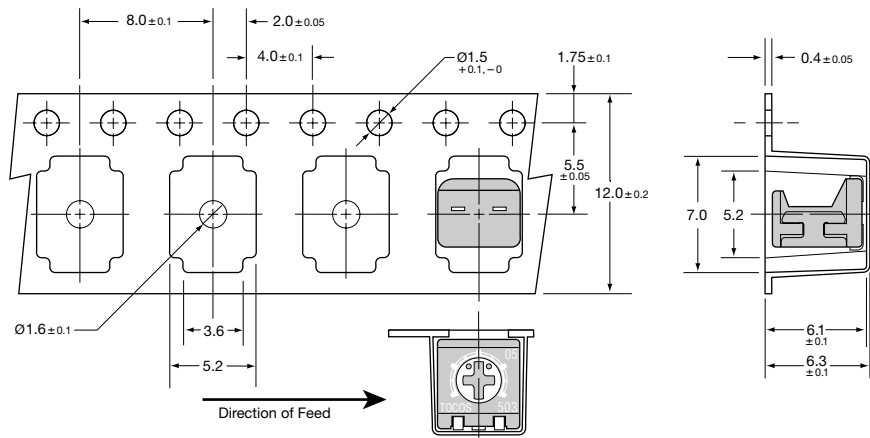
Conforms to EIA-481, JIS-C-0806 and EIAJ-RC-1009B

Unit: mm

### G43AT, G43DT, G43BT, G43ET



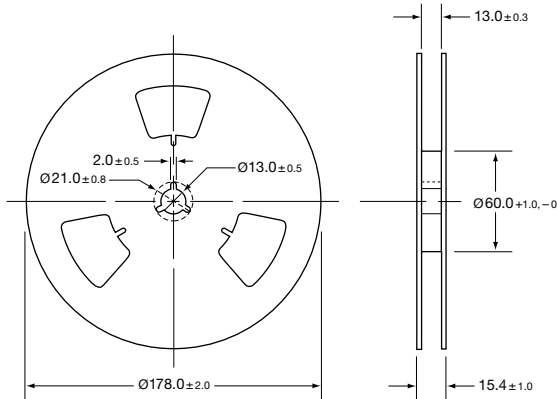
### G43SAT1



## Reel Dimensions

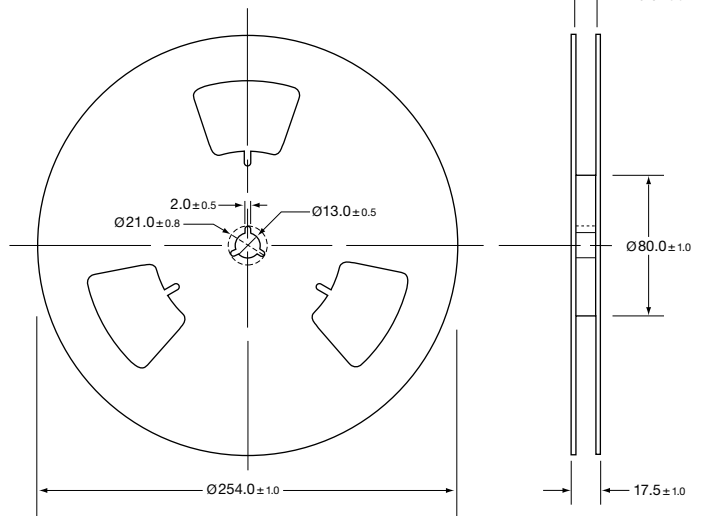
Conforms to EIA-481, JIS-C-0806 and EIAJ-RC-1009B

### G43AT, G43DT, G43BT, G43ET



500 Pieces Per 7" Reel

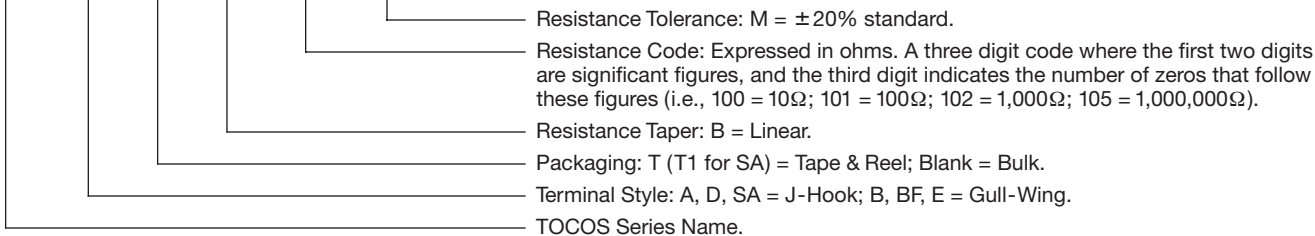
### G43SAT1



750 Pieces Per 10" Reel

# G43 Series Part Numbering System

**G43 A T B 102 M**




## Part Numbers

Nominal Resistance		Resistance Tolerance ±20%		Potentiometer Styles
Value (Ω)	Code	Catalog No. Tape & Reel	Catalog No. Bulk	

### G43A J-Hook, Top Adjust


10	100	G43AT B 100 M	G43A B 100 M
20	200	G43AT B 200 M	G43A B 200 M
50	500	G43AT B 500 M	G43A B 500 M
100	101	G43AT B 101 M	G43A B 101 M
200	201	G43AT B 201 M	G43A B 201 M
500	501	G43AT B 501 M	G43A B 501 M
1,000	102	G43AT B 102 M	G43A B 102 M
2,000	202	G43AT B 202 M	G43A B 202 M
5,000	502	G43AT B 502 M	G43A B 502 M
10,000	103	G43AT B 103 M	G43A B 103 M
20,000	203	G43AT B 203 M	G43A B 203 M
50,000	503	G43AT B 503 M	G43A B 503 M
100,000	104	G43AT B 104 M	G43A B 104 M
200,000	204	G43AT B 204 M	G43A B 204 M
500,000	504	G43AT B 504 M	G43A B 504 M
1,000,000	105	G43AT B 105 M	G43A B 105 M
2,000,000	205	G43AT B 205 M	G43A B 205 M



**G43A**

### G43D Reverse Markings, J-Hook, Top Adjust

10	100	G43DT B 100 M	G43D B 100 M
20	200	G43DT B 200 M	G43D B 200 M
50	500	G43DT B 500 M	G43D B 500 M
100	101	G43DT B 101 M	G43D B 101 M
200	201	G43DT B 201 M	G43D B 201 M
500	501	G43DT B 501 M	G43D B 501 M
1,000	102	G43DT B 102 M	G43D B 102 M
2,000	202	G43DT B 202 M	G43D B 202 M
5,000	502	G43DT B 502 M	G43D B 502 M
10,000	103	G43DT B 103 M	G43D B 103 M
20,000	203	G43DT B 203 M	G43D B 203 M
50,000	503	G43DT B 503 M	G43D B 503 M
100,000	104	G43DT B 104 M	G43D B 104 M
200,000	204	G43DT B 204 M	G43D B 204 M
500,000	504	G43DT B 504 M	G43D B 504 M
1,000,000	105	G43DT B 105 M	G43D B 105 M
2,000,000	205	G43DT B 205 M	G43D B 205 M



**G43D**

## G43 Series

## Part Numbers

Nominal Resistance		Resistance Tolerance $\pm 20\%$		Potentiometer Styles
Value ( $\Omega$ )	Code	Catalog No. Tape & Reel	Catalog No. Bulk	

## G43B Gull-Wing, Top Adjust

10	100	G43BT B 100 M	G43B B 100 M
20	200	G43BT B 200 M	G43B B 200 M
50	500	G43BT B 500 M	G43B B 500 M
100	101	G43BT B 101 M	G43B B 101 M
200	201	G43BT B 201 M	G43B B 201 M
500	501	G43BT B 501 M	G43B B 501 M
1,000	102	G43BT B 102 M	G43B B 102 M
2,000	202	G43BT B 202 M	G43B B 202 M
5,000	502	G43BT B 502 M	G43B B 502 M
10,000	103	G43BT B 103 M	G43B B 103 M
20,000	203	G43BT B 203 M	G43B B 203 M
50,000	503	G43BT B 503 M	G43B B 503 M
100,000	104	G43BT B 104 M	G43B B 104 M
200,000	204	G43BT B 204 M	G43B B 204 M
500,000	504	G43BT B 504 M	G43B B 504 M
1,000,000	105	G43BT B 105 M	G43B B 105 M
2,000,000	205	G43BT B 205 M	G43B B 205 M



G43B

## G43E Reverse Markings, Gull-Wing, Top Adjust

10	100	G43ET B 100 M	G43E B 100 M
20	200	G43ET B 200 M	G43E B 200 M
50	500	G43ET B 500 M	G43E B 500 M
100	101	G43ET B 101 M	G43E B 101 M
200	201	G43ET B 201 M	G43E B 201 M
500	501	G43ET B 501 M	G43E B 501 M
1,000	102	G43ET B 102 M	G43E B 102 M
2,000	202	G43ET B 202 M	G43E B 202 M
5,000	502	G43ET B 502 M	G43E B 502 M
10,000	103	G43ET B 103 M	G43E B 103 M
20,000	203	G43ET B 203 M	G43E B 203 M
50,000	503	G43ET B 503 M	G43E B 503 M
100,000	104	G43ET B 104 M	G43E B 104 M
200,000	204	G43ET B 204 M	G43E B 204 M
500,000	504	G43ET B 504 M	G43E B 504 M
1,000,000	105	G43ET B 105 M	G43E B 105 M
2,000,000	205	G43ET B 205 M	G43E B 205 M



G43E

## G43SA J-Hook, Side Adjust

10	100	G43SAT1 B 100 M	G43SA B 100 M
20	200	G43SAT1 B 200 M	G43SA B 200 M
50	500	G43SAT1 B 500 M	G43SA B 500 M
100	101	G43SAT1 B 101 M	G43SA B 101 M
200	201	G43SAT1 B 201 M	G43SA B 201 M
500	501	G43SAT1 B 501 M	G43SA B 501 M
1,000	102	G43SAT1 B 102 M	G43SA B 102 M
2,000	202	G43SAT1 B 202 M	G43SA B 202 M
5,000	502	G43SAT1 B 502 M	G43SA B 502 M
10,000	103	G43SAT1 B 103 M	G43SA B 103 M
20,000	203	G43SAT1 B 203 M	G43SA B 203 M
50,000	503	G43SAT1 B 503 M	G43SA B 503 M
100,000	104	G43SAT1 B 104 M	G43SA B 104 M
200,000	204	G43SAT1 B 204 M	G43SA B 204 M
500,000	504	G43SAT1 B 504 M	G43SA B 504 M
1,000,000	105	G43SAT1 B 105 M	G43SA B 105 M
2,000,000	205	G43SAT1 B 205 M	G43SA B 205 M



G43SA

## G43 Series

## Part Numbers

Nominal Resistance		Resistance Tolerance $\pm 20\%$		Potentiometer Styles
Value ( $\Omega$ )	Code	Catalog No. Tape & Reel	Catalog No. Bulk	

## G43BF Gull-Wing, Bottom Adjust

10	100	—	G43BF B 100 M
20	200	—	G43BF B 200 M
50	500	—	G43BF B 500 M
100	101	—	G43BF B 101 M
200	201	—	G43BF B 201 M
500	501	—	G43BF B 501 M
1,000	102	—	G43BF B 102 M
2,000	202	—	G43BF B 202 M
5,000	502	—	G43BF B 502 M
10,000	103	—	G43BF B 103 M
20,000	203	—	G43BF B 203 M
50,000	503	—	G43BF B 503 M
100,000	104	—	G43BF B 104 M
200,000	204	—	G43BF B 204 M
500,000	504	—	G43BF B 504 M
1,000,000	105	—	G43BF B 105 M
2,000,000	205	—	G43BF B 205 M



G43BF

## Packaging

## Standard:

## Tape &amp; Reel Packaging

G43AT, G43DT, G43BT, G43ET

500 pieces per 7" reel.

## G43SAT1

750 pieces per 10" reel.

## Bulk Packaging

All G43 Models

100 pieces per vinyl bag.

1,000 pieces per box.

## Cleaning Guidelines

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