

G43 Series

TOCOS[®]

POTENTIOMETERS

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

**RoHS Compliant
IMPROVED DESIGN
Pb-Free and Cd-Free**



Features

- 4mm square SMD, single-turn, sealed cermet trimmers
- Available in J-hook and gull-wing terminal configurations
- Meets EIA, EIAJ, IPC, VECL 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

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

Mechanical

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

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

Environmental

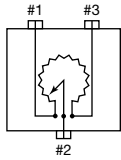
Temperature Range	-55°C to +125°C
Low Temperature Exposure	-55°C, 0.25 watt, 45 minutes ΔT/R ≤ ±2%, S.S. ≤ ±2%
High Temperature Exposure	+125°C, 250 hours ΔT/R ≤ ±2%, S.S. ≤ ±2%
Load Life	+70°C, 0.25 watt, 1,000 hours ΔT/R ≤ ±3%, S.S. ≤ ±2%
Thermal Shock	-55°C, +125°C, 30 minutes each, 5 cycles ΔT/R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

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

G43 Series

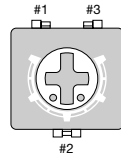
Standard and Reverse Markings

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



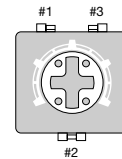
Position of the rotor inside is the same for both types of markings.

Standard Markings Outside Positions



G43A & G43B

Reverse Markings Outside Positions



G43D & G43E

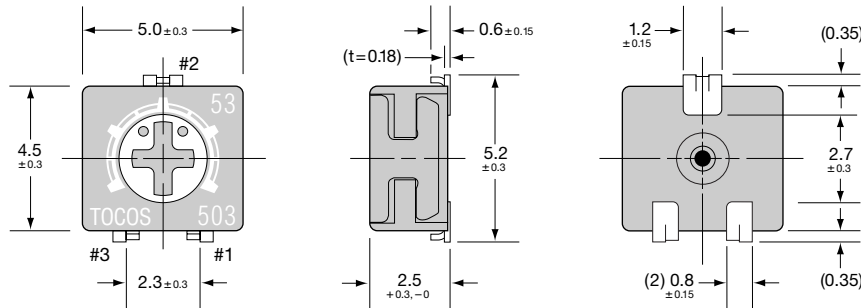
The D and E models are the same construction as the A and B models. The only difference is the reversed outside markings.

Dimensions

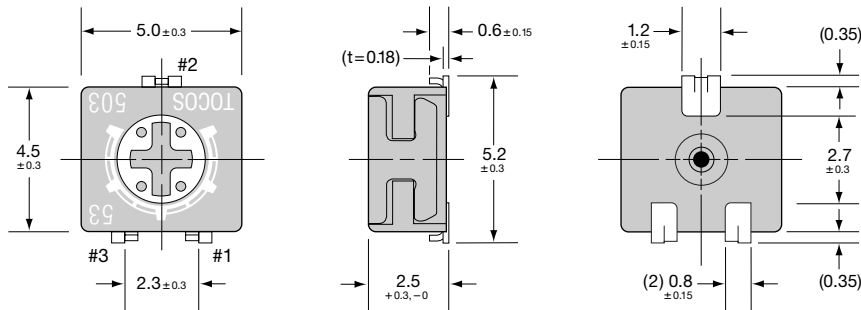
G43A J-Hook, Top Adjust

Unit: mm

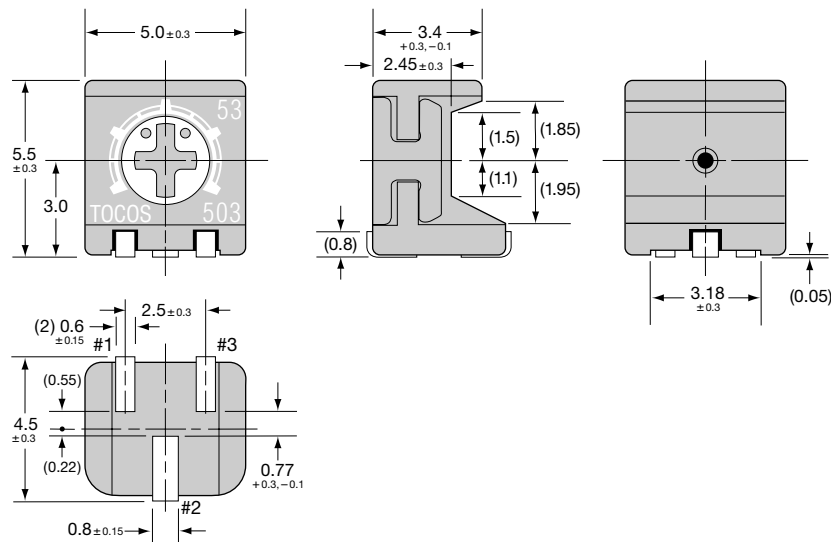
All G43 models:
Cross-Slot accepts
both Philips and
single blade
adjustment tools.



G43D Reverse Markings, J-Hook, Top Adjust



G43SA J-Hook, Side Adjust

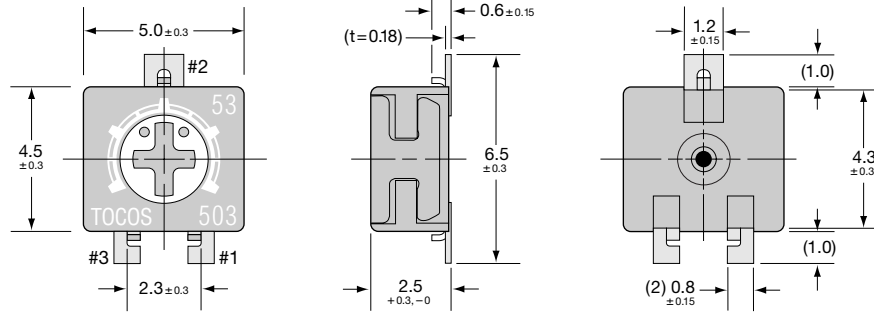


G43 Series

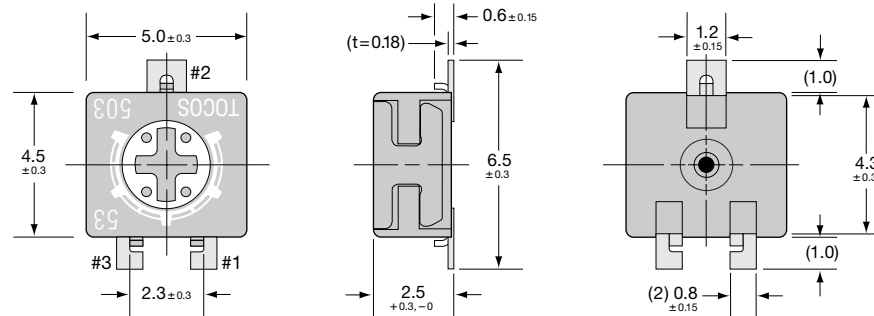
Dimensions

G43B Gull-Wing, Top Adjust

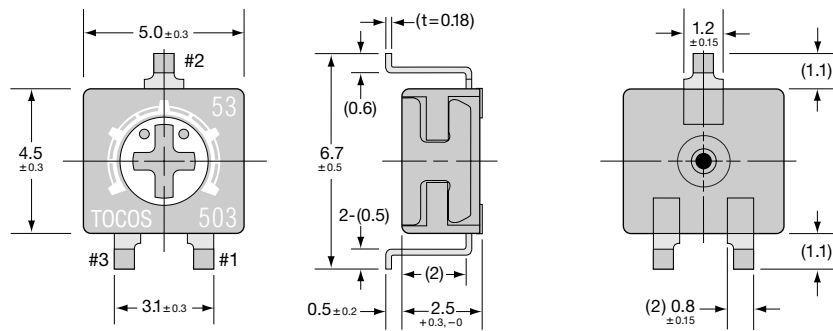
Unit: mm



G43E Reverse Markings, Gull-Wing, Top Adjust



G43BF Gull-Wing, Bottom Adjust

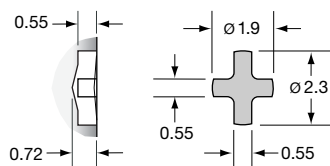


Cross-Slot Dimensions

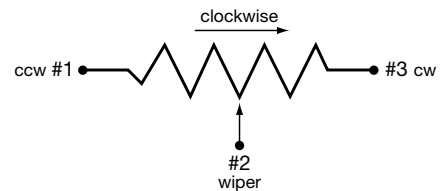
Electrical Schematic

All G43 Models

Unit: mm



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

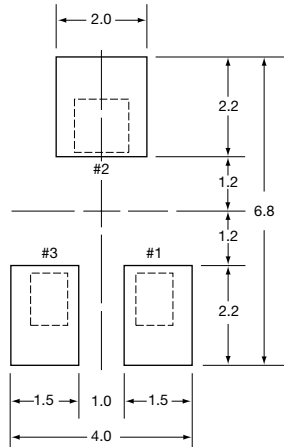


Unit: mm

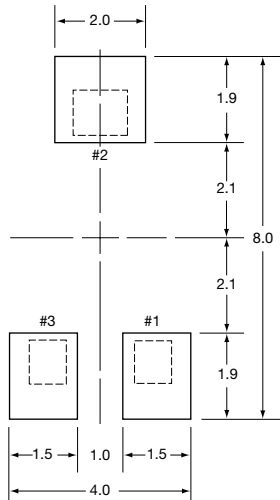
Recommended Land Patterns

Flow or Reflow Soldering Methods

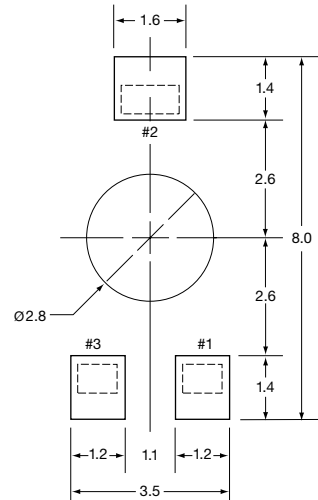
G43A, G43D



G43B, G43E

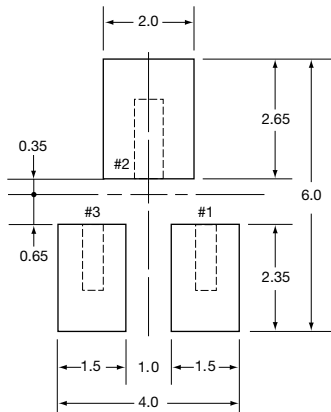


G43BF



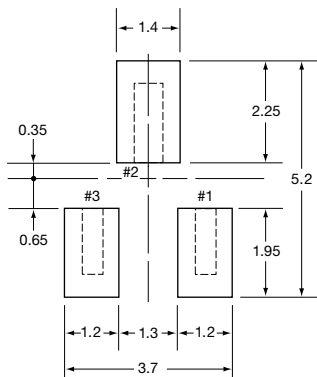
Flow Soldering Method

G43SA



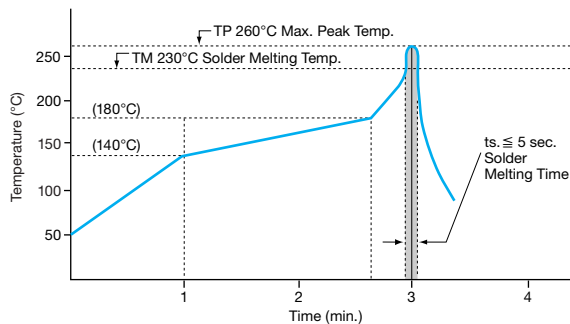
Reflow Soldering Method

G43SA

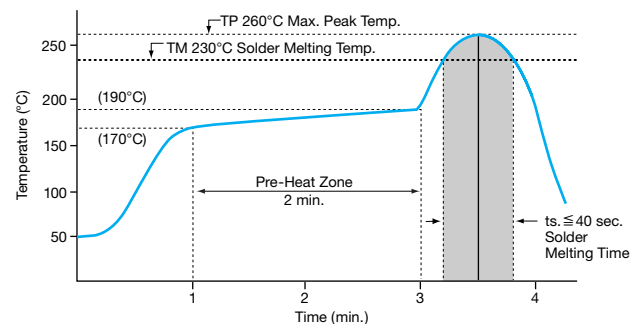


Recommended Soldering Profiles

Flow Soldering Profile



Reflow Soldering Profile



G43 Series

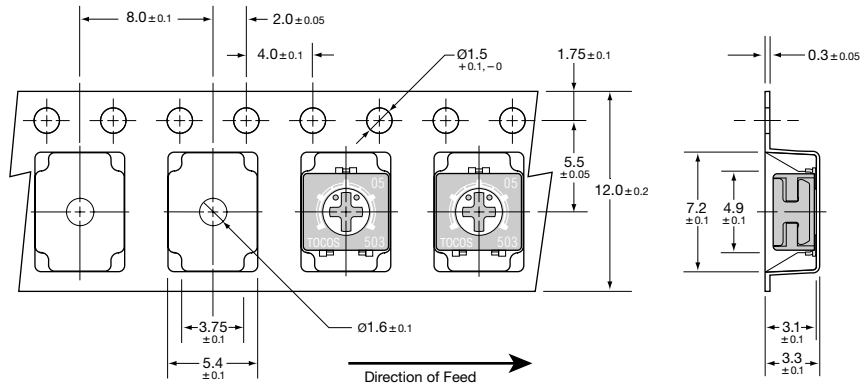
Tape & Reel Specifications

Embossed Tape Dimensions

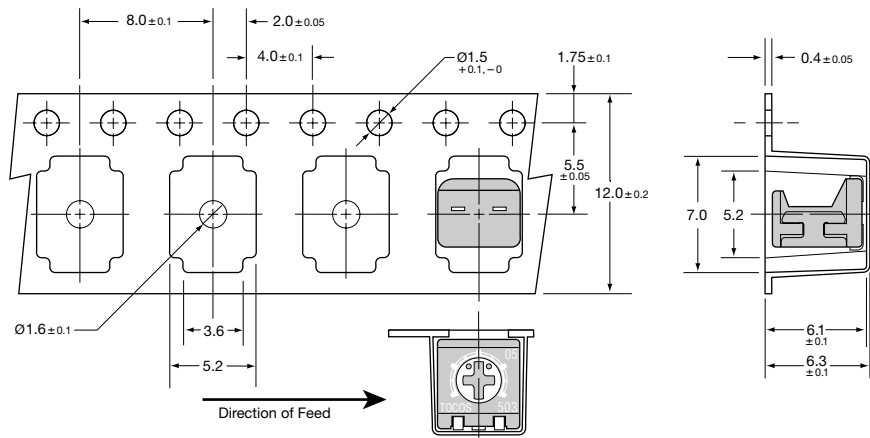
Conforms to EIA-481, JIS-C-0806 and EIAJ-RC-1009B

Unit: mm

G43AT, G43DT, G43BT, G43ET



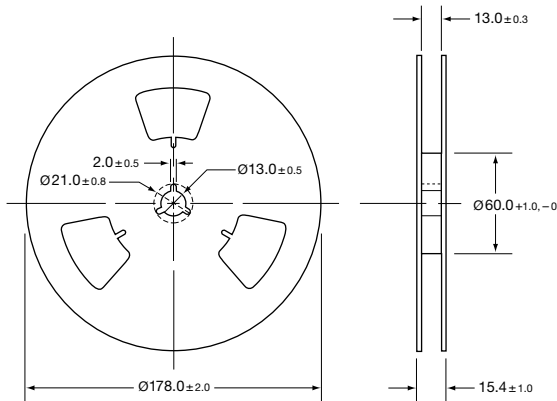
G43SAT1



Reel Dimensions

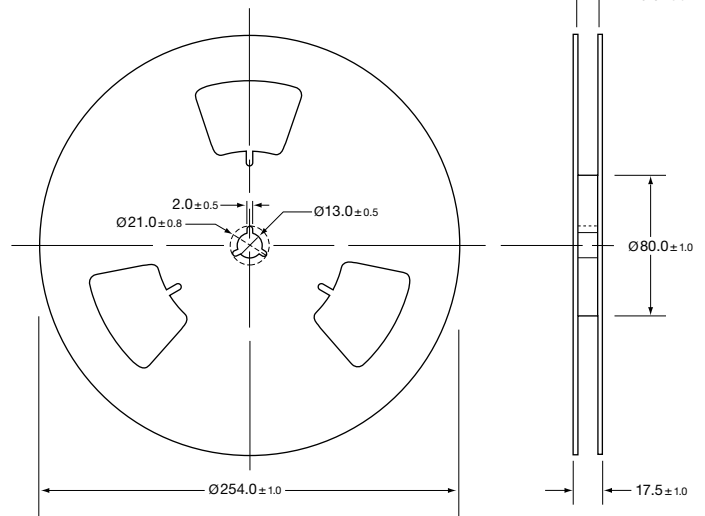
Conforms to EIA-481, JIS-C-0806 and EIAJ-RC-1009B

G43AT, G43DT, G43BT, G43ET



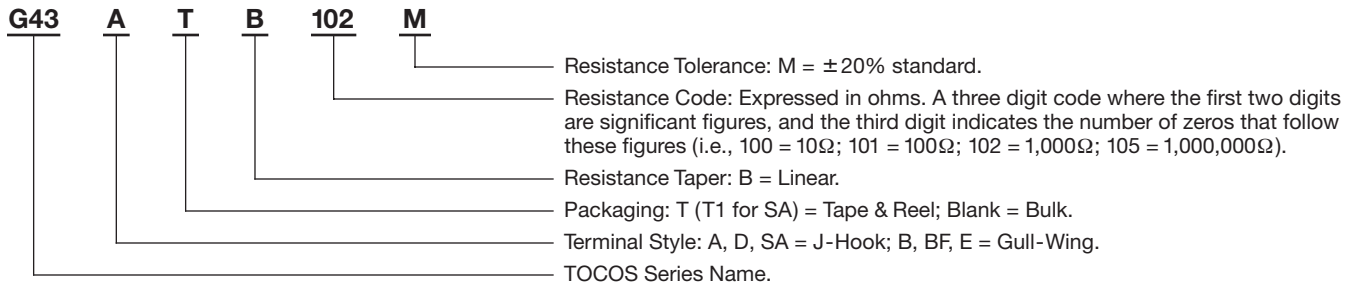
500 Pieces Per 7" Reel

G43SAT1



750 Pieces Per 10" Reel

G43 Series Part Numbering System




Part Numbers

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

G43A J-Hook, Top Adjust


Nominal Resistance	Code	Catalog No. Tape & Reel	Catalog No. Bulk
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

Nominal Resistance	Code	Catalog No. Tape & Reel	Catalog No. Bulk
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 (Ω)	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 (Ω)	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 & 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.