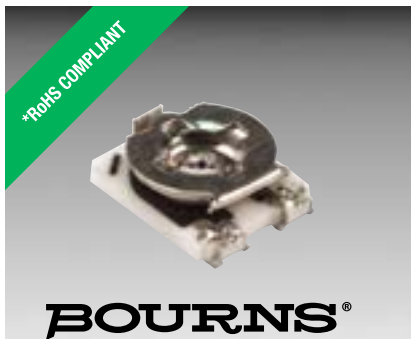




Features

- Recommended for reflow soldering
- Rotor design compatible with pick and place and automatic adjustment equipment
- 3 mm size meets EIA/EIAJ standard trimmer footprint
- RoHS compliant*

- For trimmer applications/processing guidelines, [click here](#)

TC33 - 3 mm SMD Trimpot® Trimming Potentiometer

Electrical Characteristics

Standard Resistance Range 100 ohms to 1 megohm
(see standard resistance table)
Resistance Tolerance $\pm 25\%$ std.
Absolute Minimum Resistance
≤ 1 K Ohms 20 ohms max.
> 1 K Ohms 2 % max. of TR
Contact Resistance Variation 5 % max.
Resolution Essentially infinite
Adjustment Angle $270^\circ \pm 20^\circ$

Environmental Characteristics

Power Rating (50 VDC max.)
70 °C 0.15 watt
Temperature Range -40 °C to +100 °C
Temperature Coefficient ± 250 ppm/°C
Humidity +40 °C $\pm 2^\circ$ C, 90-95 % RH
TRS max. $\pm 5\%$
Load Life
..... @ 70 °C rated power 1000 hours
TRS $\pm 5\%$

Rotational Cycling
..... 20 cycles, TRS $\pm 10\%$

Physical Characteristics

Torque 0.98-11.76 mN-m max.
Mechanical Angle Continuous rotation
for Model TC33X-1
Marking Part marking code
Standard Packaging ... 2500 pcs./7" reel
Adjustment Tool See note⁽¹⁾
Pushing Static Force <4.9 N

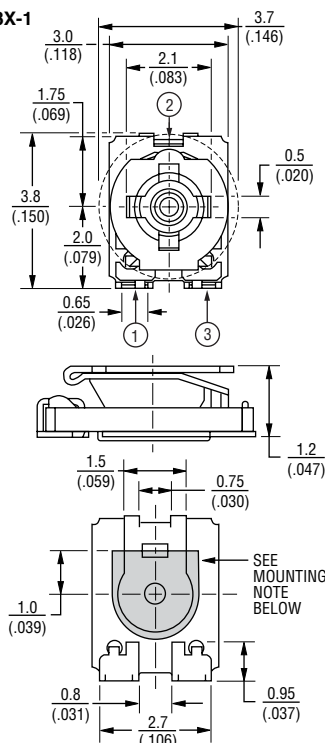
- ⁽¹⁾ Use an adjustment tool with the following recommended measurements:
1.7 mm (.067 in.) cross slot
The recommended adjustment tool size is not available from Bourns. Please contact a Bourns representative for further information.

Cautions

- Aqueous cleaning not recommended
- Flow soldering not recommended; use reflow soldering
- Model TC33 is not designed to be used with flux - use care with flux when soldering
- It is not recommended to adjust the Model TC33X-1 past the effective rotary angle.
- If an excessive force is applied to the sliding part (the operating shaft) when adjusting the resistance value, the sliding part may be deformed or broken.

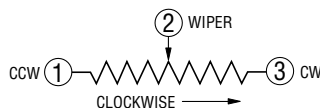
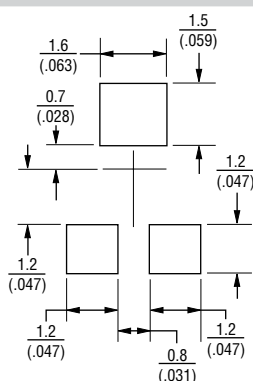
Product Dimensions

TC33X-1

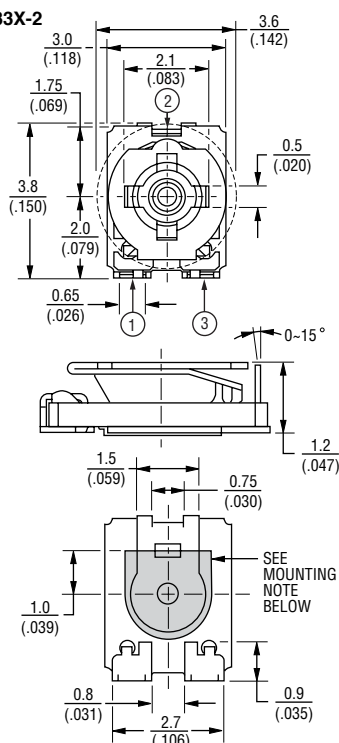


Mounting Note:
The gray area can be used to apply cement to hold the unit in place during board processing, if required.

Recommended Land Pattern

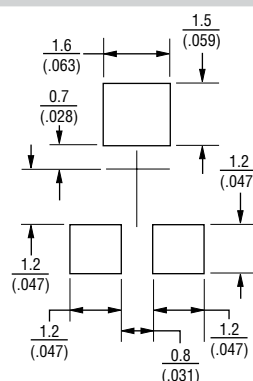


TC33X-2



Mounting Note:
The gray area can be used to apply cement to hold the unit in place during board processing, if required.

Recommended Land Pattern



DIMENSIONS: MM
(INCHES)

TOLERANCES: ± 0.3
(.010) EXCEPT WHERE NOTED



WARNING Cancer and Reproductive Harm
www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar. 31, 2015 and Annex
"Trimpot" is a trademark of Bourns, Inc.

Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

TC33 - 3 mm SMD Trimpot® Trimming Potentiometer

BOURNS®

Standard Resistance Table

Resistance (Ohms)	Resistance Code
100	101
200	201
500	501
1,000	102
2,000	202
5,000	502
10,000	103
20,000	203
50,000	503
100,000	104
200,000	204
500,000	504
1,000,000	105

Popular distribution resistance values listed in boldface.

How To Order

TC33 X - 1 - 103 E

Model _____
 Style _____
 Standard Product Indicator _____
 -1 = Continuous Rotation
 -2 = Rotational Stop
 Resistance Code _____
 Embossed Tape Designator _____
 E = 2500 pcs./7" Reel
 G = 9000 pcs./13" Reel

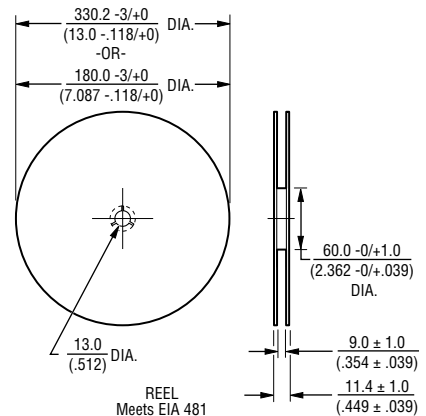
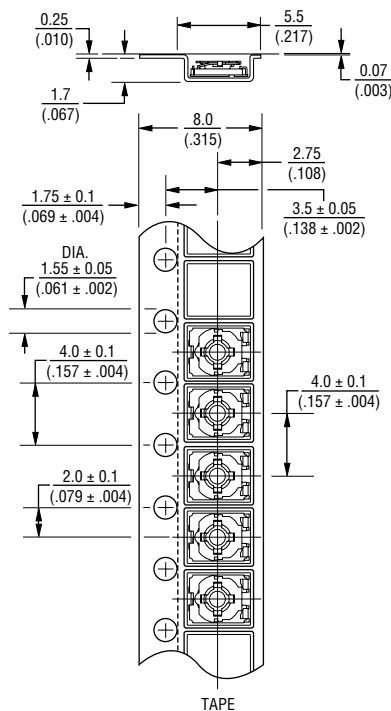
Tape and reel material meets Antistatic ANSI/ESD 5541-2003 packaging standards.

Recommended Storage Conditions

Temperature +5 °C to +35 °C
 Humidity..... 45 % to 85 % RH

Packaging Specifications

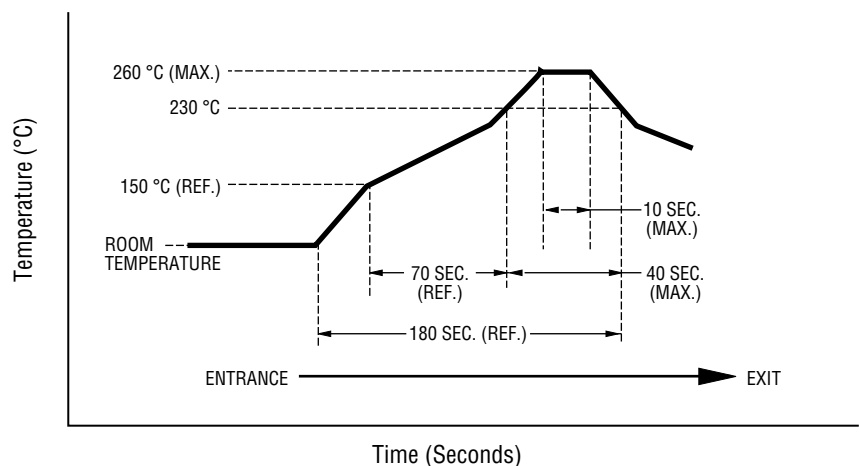
TC33X-1, -2



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

TOLERANCES: $\pm \frac{0.3}{(.012)}$ EXCEPT WHERE NOTED

Recommended Reflow Solder Profile



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REV. 08/19

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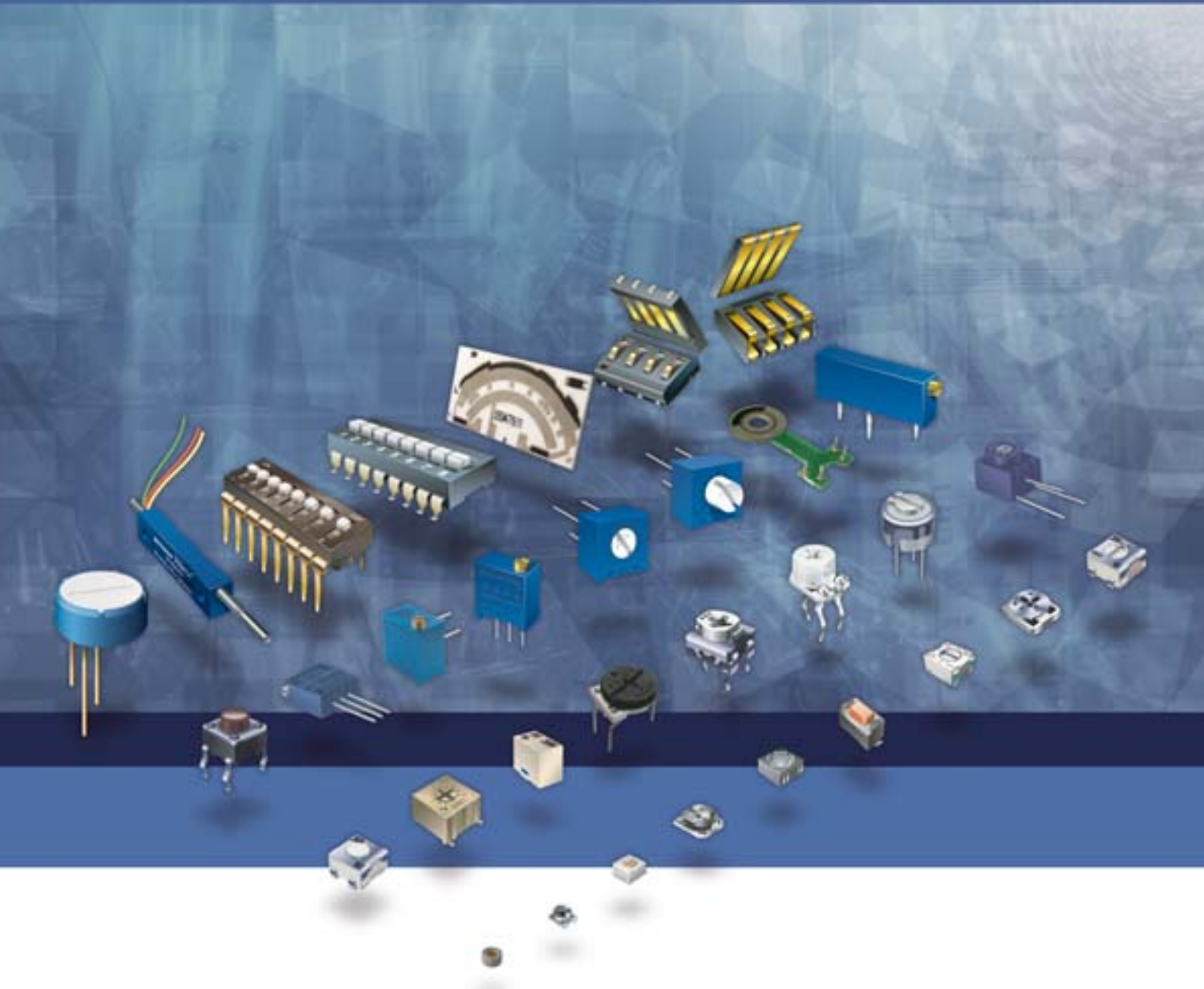
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PDF: <http://www.bourns.com/docs/Legal/disclaimer.pdf>

Bourns®

Trimpot® Product Catalog



Reliable Electronic Solutions

Table of Contents

Introduction	4
--------------------	---

Custom Solutions

Fuel Card Applications.....	8
3-D MID Devices.....	11
Thick-Film Cermet Devices.....	12
Polymer Thick-Film (PTF) Devices.....	13
Trimmer Special Offerings.....	14
Linear Motion Potentiometer Special Offerings	15
Modular Contact Special Offerings	15
Switch Special Offerings	15

Selection Guides

RoHS Compliant Selection Guide.....	17
SMT Selection Guide	18
Commercial/Industrial Selection Guide	19
Consumer/Open Frame Selection Guide.....	20
Application Specific Selection Guide.....	20
Military Product Selection Guide.....	20

Optional Products.....	21
------------------------	----

Trimmer Data Sheets

3005.....	24
3006.....	25
3009.....	26
3057.....	27
3059.....	28
3214.....	29
3223.....	31
3224.....	32
3250.....	34
3252.....	35
3260.....	36
3262.....	37
3266.....	38
3269.....	40
3290.....	42
3292.....	43
3296.....	44
3296-LC2.....	48
3296-OT1	49
3299.....	50
3302.....	52
3303.....	53
3306.....	55

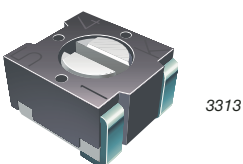
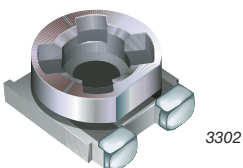
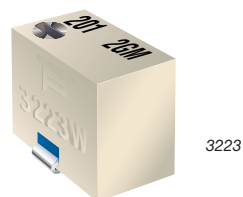
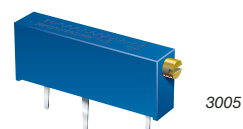


Table of Contents

Trimmer Data Sheets (continued)

3309.....	53
3313.....	55
3314.....	57
3318PSGB	62
3318FK	66
3319.....	68
3329.....	70
3339.....	72
3342.....	73
3345.....	75
3352.....	76
3360.....	77
3361.....	79
3362.....	81
3364.....	83
3386.....	85
3386-HV2	88
3386-HV3	88
3386-OT1	89
TC03	90
TC22	91
TC33	92
TC73	93
TC86	94
TC89	96

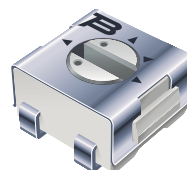
Mil-Spec Numbering System – Defined	98
---	----

Military Trimmer Data Sheets

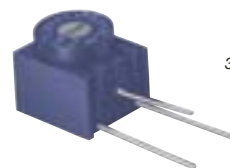
RT12	103
RT/RTR22.....	104
RT/RTR24.....	105
RT26	106
RJ12	107
RJ22	108
RJ/RJR24.....	109
RJ/RJR26.....	110
RJ/RJR50.....	111

Linear Motion Potentiometers

3046	114
3048	115



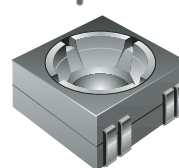
3314



3339



3352



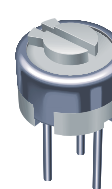
TC73



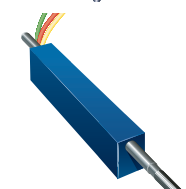
TC86



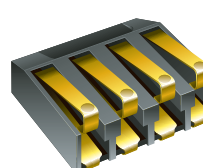
RT/RTR24



RJ/RJR50



3046



70AAM

Table of Contents

Modular Contacts

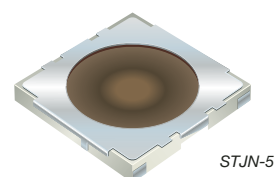
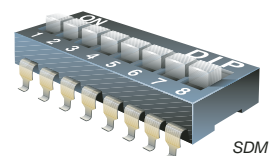
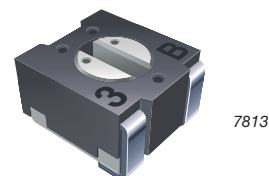
70AAF	118
70AAM.....	119
70ADF	121
70ADM.....	122

Switches

7813	124
7814	126
7829	128
7914	129
SDHH.....	131
SDM.....	133
SDT	134
SDTM.....	137
SND	139
ST(H,M,J)W	141
STJN-4.....	143
STJN-5.....	144
STSM	145

Technical Guides

Applications/Processing Guide – Standard and Lead Free	148
Lead Free Solder Reflow Profile	155
Standard Soldering and Cleaning Process	156
Factory Installed Panel Mount	160
Customer Installed Panel Mount	162
Hardware for Special Mounting Applications	164
H-90/H-91/H-92-1 Adjustment Tools	165
Bourns® Trimpot® Design Kits.....	166



Selection Guides

Selections

Selections Guide Selections Guide Selections Guide

RoHS Compliant Selection Guide

Cermet/Carbon Models listed below are only available with lead free terminals.

Model	RoHS Compliant	Plating
3214	Yes	100 % Sn
3223	Yes	100 % Sn
3224	Yes	100 % Sn
3302	Yes	100 % Sn
3303	Yes	100 % Sn
3306	Yes	100 % Sn
3309	Yes	100 % Sn
3313	Yes	100 % Sn
3314	Yes	100 % Sn
3318PSGB	Yes	100 % Sn
3318FK	Yes	100 % Sn
3319	Yes	100 % Sn
3342	Yes	100 % Sn
3364	Yes	100 % Sn
TC03	Yes	100 % Sn
TC22	Yes	100 % Sn
TC33	Yes	100 % Sn
TC73	Yes	100 % Sn
TC86	Yes	100 % Sn
TC89	Yes	100 % Sn

Cermet Models listed below are only available with tin-lead terminals. Military trimmers are governed by DSCC.

Model	RoHS Compliant	Plating
RJ12	No	90/10 Sn/Pb
RJ22	No	90/10 Sn/Pb
RJ24	No	90/10 Sn/Pb
RJR24	No	90/10 Sn/Pb
RJ26	No	90/10 Sn/Pb
RJR26	No	90/10 Sn/Pb
RJ50	No	90/10 Sn/Pb
RJR50	No	90/10 Sn/Pb

Wirewound Models listed below are only available with lead free terminals. Military trimmers are governed by DSCC.

Model	RoHS Compliant	Plating
RT12	Yes	100 % Au
RT22	Yes	100 % Au
RTR22	Yes	100 % Au
RT24	Yes	100 % Au
RTR24	Yes	100 % Au
RT26	Yes	100 % Au

Cermet Models listed below will be offered in both lead free and tin-lead terminals. Tin-lead terminal part numbers (below left) will not change. Lead free product (below right) requires an LF suffix.

Tin-lead part numbers

Model	RoHS Compliant	Plating
20	No	90/10 Sn/Pb
3006	No	90/10 Sn/Pb
3009	No	90/10 Sn/Pb
3059	No	90/10 Sn/Pb
3082	No	90/10 Sn/Pb
3252	No	90/10 Sn/Pb
3262	No	90/10 Sn/Pb
3266	No	90/10 Sn/Pb
3269	No	90/10 Sn/Pb
3292	No	90/10 Sn/Pb
3296	No	90/10 Sn/Pb
3299	No	90/10 Sn/Pb
3329	No	90/10 Sn/Pb
3339	No	90/10 Sn/Pb
3352	No	90/10 Sn/Pb
3360	No	90/10 Sn/Pb
3361	No	90/10 Sn/Pb
3362	No	90/10 Sn/Pb
3386	No	90/10 Sn/Pb

Lead free part numbers

Model	RoHS Compliant	Plating
20(LF)	Yes	100 % Sn
3006(LF)	Yes	100 % Sn
3009(LF)	Yes	100 % Sn
3059(LF)	Yes	100 % Sn
3082(LF)	Yes	100 % Sn
3252(LF)	Yes	100 % Sn
3262(LF)	Yes	100 % Sn
3266(LF)	Yes	100 % Sn
3269(LF)	Yes	100 % Sn
3292(LF)	Yes	100 % Sn
3296(LF)	Yes	100 % Sn
3299(LF)	Yes	100 % Sn
3329(LF)	Yes	100 % Sn
3339(LF)	Yes	100 % Sn
3352(LF)	Yes	100 % Sn
3360(LF)	Yes	100 % Sn
3361(LF)	Yes	100 % Sn
3362(LF)	Yes	100 % Sn
3386(LF)	Yes	100 % Sn

Wirewound Models listed below are only available with lead free terminals.

Model	RoHS Compliant	Plating
3005	Yes	100 % Au
3057	Yes	100 % Au
3250	Yes	100 % Au
3260	Yes	100 % Au
3290	Yes	100 % Au
3345	Yes	100 % Au

Modular Contacts

Model	RoHS Compliant	Plating
70AAF	Yes	100 % Sn
70AAM	Yes	100 % Sn
70ADF	Yes	100 % Sn
70ADM	Yes	100 % Sn

Switches

Model	RoHS Compliant	Plating
7813	Yes	100 % Sn
7814	Yes	100 % Sn
7829	Yes	100 % Sn
7914	Yes	100 % Sn
SDHH	Yes	100 % Sn
SDM	Yes	100 % Sn
SDT	Yes	100 % Sn
SDTM	Yes	100 % Sn
SND	Yes	100 % Sn
STW	Yes	100 % Sn
STJN-4	Yes	100 % Sn
STJN-5	Yes	100 % Sn
STSM	Yes	100 % Sn

Linear Motion Potentiometers

Model	RoHS Compliant	Plating
3046	Yes	Cu wire
3048	Yes	Cu wire

SMT Trimmers

Model Number	Element Technology		Number of Turns		Sealed/Opened		Size				Packaging Options	Adjust	Page No.
	Cermet	Carbon	Single	Multi	Sealed	Opened	2 mm	3 mm	4 mm	1/4 "	See Note 1	See Note 2	
3214	◆			◆	◆				◆		E, G	T, S	29
3223	◆			◆	◆			◆			E	T	31
3224	◆			◆	◆				◆		E, G	T, S	32
3269	◆			◆	◆					◆	G, T	T, S	40
3302	◆		◆			◆	◆				E	T	49
3303	◆		◆			◆		◆			E	T, B	50
3313	◆		◆		◆			◆			E	T, S	55
3314	◆		◆		◆				◆		E, G, T	T, S, B	57
3342	◆		◆		◆		◆				E	T	73
3361	◆		◆		◆					◆	G	T, S	79
3364	◆		◆			◆			◆		E	T	83
TC03	◆		◆			◆		◆			E	T	90
TC22	◆		◆			◆	◆				E	T	91
TC33	◆		◆			◆		◆			E	T	92
TC73		◆	◆			◆		◆			E	T	93

Note 1: Standard packaging; some options may require alternate packaging. Consult factory.

E = 7 " Reel, G = 13 " Reel, T = Tubes

Note 2: T = Top Adjust, S = Side Adjust, B = Bottom Adjust

See page 155 for processing information on lead free surface mount trimmers.

Commercial Trimmers

Model Number	Element Technology		Number of Turns		Size							Packaging Options	Adjust	Page No.
	Cermet	W/W	Single	Multi	1/4 "	5/16 "	3/8 "	1/2 "	20 mm	3/4 "	1-1/4 "	See Note 1	See Note 2	
20	◆			◆					◆			T	S	22
3005		◆		◆						◆		T	S	24
3006	◆			◆						◆		T	S	25
3009	◆			◆						◆		T, B	S	26
3057		◆		◆							◆	T, B	S	27
3059	◆			◆							◆	T, B	S	28
3082	◆			◆				◆				T	S	22
3250		◆		◆				◆				T, B	T, S	34
3252	◆			◆				◆				T, B	T, S	35
3260		◆		◆	◆							T	T, S	36
3262	◆			◆	◆							T	T, S	37
3266	◆			◆	◆							T, R	T, S	38
3290		◆		◆			◆					T	T, S	42
3292	◆			◆			◆					T	T, S	43
3296	◆			◆			◆					T, R	T, S	44
3299	◆			◆			◆					T, R	T, S	48
3329	◆		◆		◆							T, R	T, S	70
3339	◆		◆			◆						T	T, S	72
3345		◆	◆					◆				B	T, S	75
3352	◆		◆				◆						T, S	76
3362	◆		◆		◆							T, R	T, S	81
3386	◆		◆				◆					T, R	T, S	85

Note 1: Standard packaging; some options may require alternate packaging. Consult factory.

T = Tubes, B = Bulk, R = Tape and Reel

Note 2: T = Top Adjust, S = Side Adjust

Consumer / Open Frame Trimmers

Model Number	Element Technology		Mounting Type		Size						Packaging Options	Adjust	Page No.
	Cermet	Carbon	SMT	Leaded	2 mm	3 mm	4 mm	6 mm	9 mm	3/8 "	See Note 1	See Note 2	
3302	◆		◆		◆						E	T	49
3303	◆		◆			◆					E	T, B	50
3306	◆			◆				◆			B	T, S	52
3309	◆			◆					◆		B	T, S, B	53
3318PSGB		◆		◆				◆			B	T, S, B	62
3318FK		◆		◆				◆			B	T, S, B	66
3319		◆		◆					◆		B	T, S	68
3352	◆			◆						◆	B	T, S	76
3364	◆		◆				◆				E	T	83
TC03	◆		◆			◆					E	T	90
TC22	◆		◆		◆						E	T	91
TC33	◆		◆			◆					E	T	92
TC73		◆	◆			◆					E	T	93
TC86	◆			◆				◆			B	T, S	94
TC89	◆			◆					◆		B	T, S, B	96

Note 1: Standard packaging; some options may require alternate packaging. Consult factory.

E = 7 " Reel, B = Bulk

Note 2: T = Top Adjust, S = Side Adjust, B = Bottom Adjust

Military Trimmers

Model Number	Element Technology		Size				Packaging Options	Adjust	Page No.
	Cermet	Carbon	1/4 "	3/8 "	1/2 "	1-1/4 "	See Note 1	See Note 2	
RT12		◆				◆	T, B	S	103
RT/RTR22		◆			◆		T	T, S	104
RT/RTR24		◆		◆			T	T, S	105
RT26		◆	◆				T	T, S	106
RJ12	◆					◆	T, B	S	107
RJ22	◆				◆		T	T, S	108
RJ/RJR24	◆			◆			T	T, S	109
RJ/RJR26	◆		◆				T	T, S	110
RJ/RJR50	◆		◆				T	T	111

Note 1: Standard packaging; some options may require alternate packaging. Consult factory.

T = Tube, B = Bulk

Note 2: T = Top Adjust, S = Side Adjust

Application Specific Products

Model Number	Element Technology		Number of Turns		Application	Packaging Options	Adjust	Page No.
	Cermet	WW	Single	Multi		See Note 1	See Note 2	
3296-LC2*	◆			◆	Low Current <50 uA	T	T, S	46
3296-OT1*	◆			◆	Operational Amplifier Voltage Adjustment	T	T, S	47
3386-HV2	◆		◆		High Voltage 1K VDC Max.	T	T, S	88
3386-HV3	◆		◆		High Voltage 600 VDC Max.	T	T, S	88
3386-OT1*	◆		◆		Operational Amplifier Voltage Adjustment	T, B	T	89

Note 1: Standard packaging; some options may require alternate packaging. Consult factory.

T = Tubes, B = Bulk

Note 2: T = Top Adjust, S = Side Adjust

*Indicates patented models