phone: **800 767 0081**
fax: **805 922 3643**

web: **www.garrettelec.com**
email: **sales@garrettelec.com**

Garrett
Electronics Corp.

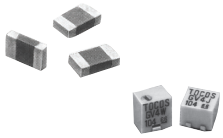
Certified
ISO-9001:2000

veteran owned
small business

Resistive Products

Surface Mount

- Arrays
- Low ohm current sense
- Test points
- Thick film
- Thin film
- Trimming Potentiometers



Leaded

- Carbon Film
- Metal Film

Value Added Services

- Exact-count continuous cut tape with or without leaders
- Exact-count production ready reels with leads and tails
- Engineering design kits, standard or customized

Same Day
Shipping

RoHS
Compliant

Authorized Distributor

KOA SPEER ELECTRONICS, INC.

VISHAY Dale

TOCOS® AMERICA INC.

1320 W. McCoy Lane,
Santa Maria, CA 93454

VISA · American Express · MasterCard · Discover

Resistive Product Index

Garrett's value-added services

Packaging Options

Component Packaging Options

Exact-count partial reels with leads & tails, pick & place ready 

Exact count tape with or without leaders 

Full factory reels 

Bulk parts stripped from tape and double bagged 

**** Each package includes a bar coded label with:*** manufacturer's part and lot numbers, date code, description, quantities, your internal reference and PO numbers.

Free Reeling or Leaders for surface mount products

500 units or more free reeling for:	resistors, resistor arrays, ceramic capacitors, inductors, ferrite beads, diodes, transistors, fuses, thermistors, varistors
250 units or more free reeling for:	trimming potentiometers,tantalum capacitors, niobium oxide capacitors, MosFETS

Engineering Design Kits

Choose a kit to fit your needs

- Stock Kits contain all standard values in a series
- Prime Value Kits contain commonly used values in a series
- Custom Kits contain only the values you choose within a series
- Project Kits contain any mix of standard components

Kits Packaging Options

Parts are provided in plastic boxes or baggies, in bulk or cut tape form

Components are stored in sturdy plastic cases, convenient notebooks or cabinets with drawers

Reel kits are available for quantities of 100 pieces or more and stored in bins

Garrett Electronics Corp.

800 767 0081

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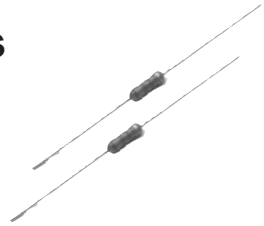
web: **www.garrettelec.com**
email: **sales@garrettelec.com**

KOA SPEER ELECTRONICS, INC.

Leaded Resistors

CF1/4 & MF1/4 Series Specifications



- Carbon or Metal film
- Wide range of value in stock
- RoHS compliant

Metal Film	Carbon Film
Tolerance: 1%	**Tolerance: 5%**
Value Range: 10Ω - 1MΩ	**Value Range: 00Ω - 22MΩ**
Power Rating: 1/4 W	**Power Rating: 1/4 W**
Series: MF1/4D	**Series: CF1/4**

Part Number Determination

CF1/4C103J							
MF1/4DC1002F							
CF	**1/4**		**C**			**103**	**J**
MF	**1/4**	**D**	**C**			**1002**	**F**
SERIES	POWER RATING	TEMPERATURE COEFFICIENT	TERMINATION	TAPING & FORMING	PACKAGING	RESISTANCE	TOLERANCE
CF=Carbon Film Leaded Resistor MF=Precision Metal Film Leaded Resistor	For CF: S1/4=1/4W 1/4=1/4W 1/2=1/2W S1/2=1/2W For MF: 1/4=1/4W 1/2=1/2W 1=1W	For CF: Blank For MF: E=±25ppm/°C C=±50ppm/°C D=±100ppm/°C L=±200ppm/°C	L=SnPb C=SnCu	Blank=Straight leads, Bulk T52-Straight leads, 52mm end-to end, Tape	Blank=Bulk A=Ammo R=Reel	For CF: 2 Significant digits + 1 multiplier For MF: 3 Significant digits + 1 multiplier	B=±0.1% C=±0.25% D=±0.5% F=±1% G=±2% J=±5%

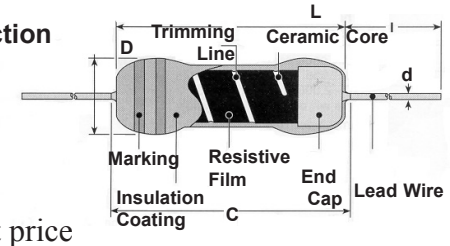
Electrical Characteristics

Series	Power Rating @ 70°C	Minimum Dielectric Withstanding Voltage	T.C.R. (ppm/°C)	Resistance Range E-24	Resistance Range E-96	Absolute Maximum Working Voltage	Absolute Maximum Overload Voltage
CF1/4	1/4W	500V	+350 to -450 0 to -700 0 to -1000 0 to -1300	1.0 - 100K 110K - 330K 360K - 1M 1.1M - 5.1M		300V	600V
MF1/4			±100		10-1M	250V	500V

Package Dimensions (in/mm)

Series	L	C (max.)	D	d (nom.)	l
CF1/4	.240±0.2 6.1±0.5	.280 7.1	0.91±0.12 2.3±0.3	.024 0.6	.787 min 20.0 min
MF1/4	.374 9.5	.437 11.1	.138±0.16 3.5±0.4		1.18±.118 30.0±3.0

Construction



See price list booklet for current price

Leaded Resistors

KOA CF1/4 Series: 000Ω (Z25YC BULK) through 22MΩ (CF1/4C226J BULK)

KOA MF1/4 Series: 10.0Ω (MF1/4DC10R0F TAPE) through 1MΩ (MF1/4DC1004F TAPE)

Engineering Design Kits Available
See Garrett Kit Catalog

Garrett Electronics Corp.

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Surface Mount Low Ohm Current Sense Resistors



	Power	Lo-Ohm Thick Film	Metal Alloy
KOA SPEER ELECTRONICS, INC.	Power rating: 1W, 2W, 3W Resistance range: .005Ω - 1Ω Tolerance: 1% Series: SL	Power rating: 3/4W:2010, 1W:2512 Resistance range: 0.10Ω - 0.75Ω Tolerance: 1% Series: SR73	Power rating: 1/2W:1206, 1W:2010, 1W:2512, 2W:2512 Resistance range: .001Ω - 0.01Ω Tolerance: 1% Series: TLR
Description	Ideal for power applications: • Motor application • Instrumentation and battery packs • Power supplies	Designed for current sensing applications: • Computer • HDD • Cellular and motor circuit • Power supplies	Suitable for large detecting current: • Current detecting for CPU • DC/DC dividers • Inventer power supply

	Power Metal Strip
VISHAY Dale	Power rating: 1/4W:1206, 1/2W:2010, 1W:2512 Resistance range: .002Ω - 0.5Ω Tolerance: 1% Series: WSL
Description	Ideal for all types of power current sensing, voltage division and pulse applications: • Switching and linear power supplies • Instrumentation • Power amplifiers

See price list booklet for current price

Surface Mount Low Ohm Current Sense Resistors

KOA SL Series: .005Ω (SL1LTE5L00F) through 0.332Ω (SL3LTER332F)

KOA SR73 Series: .1Ω (SR732HTTER100F) through 0.75Ω (SR732HTTER750F)

KOA TLR Series: .002Ω (TLR2BDTD2L00F75) through .01Ω (TLR3AWDTE10L0F)

VISHAY-DALE WSL Series: .005Ω (WSL12065L00FEB) through 0.5Ω (WSL2512R5000FEB)

Engineering Design Kits Available
See Garrett Kit Catalog

VISHAY Dale

WSL Series Surface Mount Current Sense Resistors

Specifications

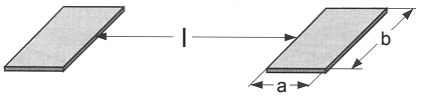
Part Number Determination

WSL2010.01FR79				
WSL	**2010**	**.01**	**F**	**R79**
SERIES	**SIZE**	**RESISTANCE**	**TOLERANCE**	**PACKAGING**
Power Metal Strip Resistors, Low Ohmic Value	0805 1206 2010 2512	.005=005ohm .01=01ohm .50=.5ohm	D=±0.5% F=±1% J=±5%	B43=Bulk R79=1000/Reel R86=4000/Reel RT1=5000/Reel

WSL2010R0100FEB				
WSL	**2010**	**R0100**	**F**	**EB**
SERIES	**SIZE**	**RESISTANCE**	**TOLERANCE**	**LEAD FREE PACKAGING**
Power Metal Strip Resistors, Low Ohmic Value	0805 1206 2010 2512	L=Miliohm R=Decimal 1L000=0.001ohm R0100=0.01ohm	D=±0.5% F=±1% J=±5%	EA=Lead (Pb)-Free, Tape & Reel EB=Lead (Pb) Free, 1K tape & Reel EK=Lead (Pb)-Free, Bulk TA=Tin/Lead, Tape & Reel (R86) TG=Tin/Lead, Tape & Reel (RT1) BA=Tin/Lead, Bulk (B43)

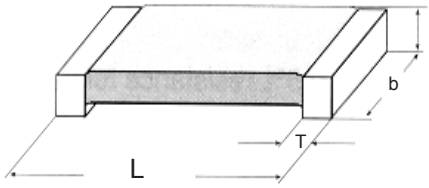
Land Pattern (in/mm)

Series	a	b	l
WSL-1206	0.050 1.27	0.070 1.78	0.055 1.40
WSL-2010	0.055 1.40	0.120 3.05	0.130 3.30
WSL-2512	0.065 1.65	0.145 3.68	0.160 4.06



Package Dimensions (in/mm)

Series	L	W	H	T
WSL-1206	0.126±.0.101 3.2±0.254	0.063±0.01 1.6±0.254	0.025±0.010 0.635±0.254	0.020±0.01 0.508±0.254
WSL-2010	0.200±0.010 5.08±0.254	0.100±0.010 2.54±0.254	0.025±0.010 0.635±0.254	0.020±0.010 0.508±0.254
WSL-2512	0.250±0.010 6.35±0.254	0.125±0.010 3.18±0.254	0.025±0.010 0.635±0.254	0.030±0.010 0.762±0.254



KOA SPEER ELECTRONICS, INC.

SL Series Surface Mount Molded Current Sense Resistors

Specifications

Part Number Determination

SL1LTE20L0F					
SL	**1**	**L**	**TE**	**20L0**	**F**
Type	Size	Termination	Packaging	Nominal Resistance	Tolerance
SL	1=1 Watt 2=2 Watt 3=3 Watt	L: SnPb T: Sn	SL1 TE: 7" embossed plastic SL2, SL3 TE: 10" embossed plastic (1,000 pieces/reel)	±5%: 2 significant figures + 1 multiplier "R" indicates decimal on value <10Ω ±1%: 3 significant figures + 1 multiplier "R" indicates decimal on value <100Ω All values less than 0.1Ω (100mΩ) are expressed in mΩ with "L" as decimal Example: 20mΩ, 1% = 20L0	D: ±0.5% F: ±1% G: ±2% J: ±5%

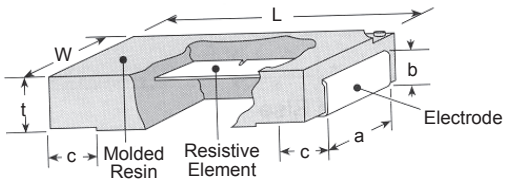
Electrical Characteristics

Series	Power Rating	T.C.R. (ppm/°C) Max.	Resistance Range	Resistance Tolerance	Absolute Maximum Working Voltage	Absolute Maximum Overload Voltage	Operating Temperature Range
SL1	1W	±180: R=<14.7mΩ ±100: R=>15mΩ	5mΩ - 1MΩ	E-96 (F:±1%)	200V	400V	-55°C ~ +180°C
SL2	2W	±180: R=<10.7mΩ ±100: R=>11mΩ	5mΩ - 1MΩ	E-96 (F:±1%)	500V	1000V	
SL3	3W	±180: R=<10.7mΩ ±100: R=>11mΩ	5mΩ - 100mΩ	E-96 (F:±1%)	√ P•R	√ P•R	

Package Dimensions (in/mm)

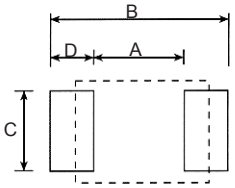
Series	L	W	t	a	b	c
SL1	.248±.012 (6.3±0.3)	.122±.008 (3.1±0.2)	.075±.008 (1.9±0.2)	.094±.008 (2.4±0.2)	.047±.012 (1.2±0.3)	.047±.012 (1.2±0.3)
SL2	.453±.012 (11.5±0.3)	.276±.008 (7.0±0.2)	.098±.008 (2.5±0.2)	.197±.008 (5.0±0.2)	.067±.02 (1.7±0.5)	.102±.02 (2.6±0.5)
SL3	.453±.012 (11.5±0.3)	.276±.008 (7.0±0.2)	.098±.008 (2.5±0.2)	.197±.008 (5.0±0.2)	.067±.02 (1.7±0.5)	.102±.02 (2.6±0.5)

Construction



Land Pattern (mm)

Series	A	B	C	D
SL1	4.6	8.0	3.0	1.7
SL2, SL3	8.0	15.0	4.0	3.5



KOA SPEER ELECTRONICS, INC.

SR73 Series Surface Mount Thick Film Current Sense Resistors

Specifications

Part Number Determination

SR732HTTER100F					
SR73	2H	T	TE	R100	F
Type	Power Rating	Termination	Packaging	Nominal Resistance	Tolerance
SR73	1E=1/16W 1J=1/10W 2A=1/8W 2B=1/4W 2E=1/2W 2H=3/4W 3A=1W	L: SnPb (3A) T: Sn	TP: 2mm pitch punched paper (1E, 1J) TD: 7" paper tape (1J, 2A, 2B, 2E) TDD: 10" paper tape (1J, 2A, 2B, 2E) TE: 7" punched plastic (2A, 2B, 2E, 2H, 3A) TED: 10" punched plastic (2A, 2B, 2E, 2H, 3A)	±5%: 2 significant figures + 1 multiplier "R" indicates decimal on value <10Ω ±1%: 3 significant figures + 1 multiplier "R" indicates decimal on value <100Ω All values less than 0.1Ω (100mΩ) are expressed in mΩ with "L" as decimal Example: 20mΩ, 1% = 20L0	D: ±0.5% F: ±1% G: ±2% J: ±5%

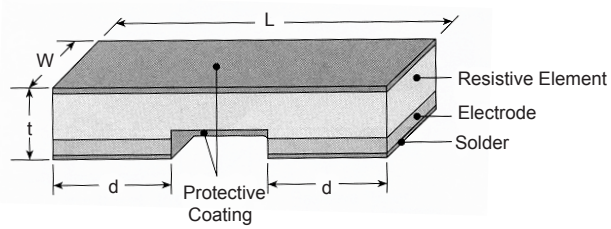
Electrical Characteristics

Series	T.C.R. (ppm/°C) Max.	Resistance Range	Absolute Maximum Working Voltage	Maximum Overload Votage (5 Secs. Max)	Operating Temperature Range
SR732H	±100	0.1Ω - 10Ω	2.73V	6.84V	-55°C ~ +180°C
SR733A	±100	0.1Ω - 10Ω	3.16V	7.90V	

Package Dimensions (in/mm)

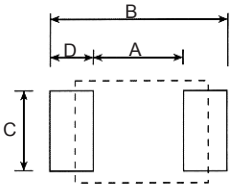
Series	L	W	c	d	t
2H (2010)	0.197±0.008 (5.0±0.2)	0.098±0.008 (2.5±0.2)	0.02±0.012 (0.5±0.3)	0.016 $^{+0.008}_{-0.004}$ (0.40 $^{+0.200}_{-0.100}$)	0.24±0.004 (0.6±0.1)
3A (2512)	0.248±0.008 (6.3±0.2)	0.122±0.008 (3.1±0.2)			

Construction



Land Pattern (mm)

Series	Size	A	B	C	D
SR732H	2010	3.5	6.3	2.3	1.4
SR733A	2512	4.6	8.0	3.0	1.7



KOA SPEER ELECTRONICS, INC.

TLR Series Surface Mount Metal Plate Current Sense Resistors

Specifications

Part Number Determination

TLR3ALTE2L00F75						
TLR	3A	L	TE	2L00	F	75
Type	Power Rating	Termination	Packaging	Nominal Resistance	Tolerance	T.C.R.
TLR	2B=0.5W 2H=1W 3A=1W 3AW=2W	L: SnPb (3A) D: SnAgCu (2B, 2H, 3A, 3AW)	TE: 7" 8mm pitch embossed plastic (3A, 3AW: 2,000 pcs/reel) (2H: 4,000 pcs/reel) TD: 4mm pitch punched paper (2B only: 5,000 pcs/reel) BK: Bulk	F: 4 digits J: 3 digits Ex: 2L00: 2mΩ	F: ±1% J: ±5%	75=75ppm/°C Nil=150ppm/°C Nil=200ppm/°C

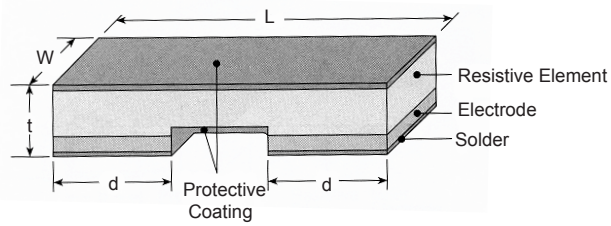
Electrical Characteristics

Series	Power Rating @ 70°C	T.C.R. (ppm/°C) Max.	Standard Resistance	Resistance Tolerance	Absolute Maximum Working Voltage	Rated Ambient Temperature	Operating Temperature Range
TLR2B	1/2W (.5W)	±150	2mΩ - 6mΩ, 8mΩ, 10mΩ - 16mΩ, 18mΩ, 20mΩ	F:±1%, J:±5%	√P•R	+70°C	-65°C ~ +150°C
TLR2H	1W	±150	2mΩ - 8mΩ	F:±1%, J:±5%	√P•R	+70°C	-65°C ~ +150°C
TLR3A	1W	±150	1mΩ, 2mΩ	F:±1%, J:±5%	√P•R	+70°C	-65°C ~ +170°C
		±200	3mΩ, 4mΩ				
TLR3AW	2W	±150	2mΩ - 3mΩ	F:±1%, J:±5%	√P•R	+70°C	-65°C ~ +155°C
			4mΩ - 8mΩ				-65°C ~ +170°C

Package Dimensions (in/mm)

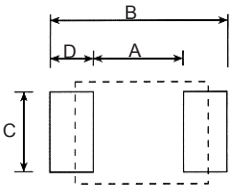
Series	Resistance	L	W	d	t
TLR2B	2mΩ - 6mΩ, 8mΩ, 10mΩ - 16mΩ, 18mΩ, 20mΩ	.126±.008 (3.20±0.20)	.063±.008 (1.60±0.20)	0.20±.008 (0.50±0.20)	.024±.008 (0.60±0.20)
TLR2H	2mΩ - 6mΩ	.200±.008 (5.00±0.20)	.100±.008 (2.50±0.20)	0.60±.008 (1.50±0.20)	.024±.008 (0.60±0.20)
	7mΩ - 8mΩ			0.20±.008 (0.50±0.20)	
TLR3A	1mΩ	0.25±.01 (6.35±0.25)	0.125±.01 (3.18±0.25)	.087±.01 (2.20±0.25)	.024±.01 (0.62±0.25)
	2mΩ			0.47±.01 (1.20±0.25)	
	3mΩ			0.73±.01 (1.85±0.25)	
	4mΩ			0.47±.01 (1.20±0.25)	
TLR3AW	2mΩ - 4mΩ	.25±.01 (6.35±0.25)	.125±.01 (3.18±0.25)	.087±.01 (2.20±0.25)	.024±.01 (0.60±0.25)
	5mΩ - 8mΩ			0.47±.01 (1.20±0.25)	

Construction



Land Pattern (mm)

Series	Resistance	A	B	C	D
TLR2B		1.4	4.0	1.8	1.3
TLR2H	2mΩ - 6mΩ	1.3	6.1	3.0	2.4
	7mΩ, 8mΩ	3.3	6.1	3.0	1.4
TLR3A	1mΩ	1.95	7.55	3.83	3.05
	2mΩ	3.45	7.55	3.83	2.05
	3mΩ	2.15	7.55	3.83	2.70
	4mΩ	3.45	7.55	3.83	2.05
TLR3AW	2mΩ - 4mΩ	1.45	7.55	3.83	3.05
	5mΩ - 8mΩ	3.45	7.55	3.83	2.05



KOA SPEER ELECTRONICS, INC.

Surface Mount Resistor Arrays

- *Less board space than individual resistors*
- *Isolated resistor elements*
- *RoHS compliant*

CN Series Specifications

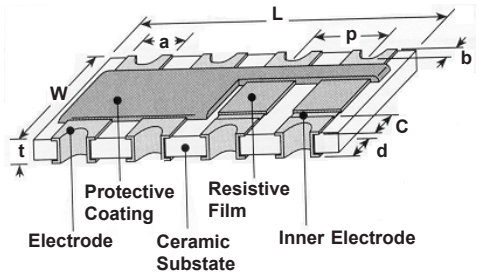
Part Number Determination

CN1J4TTD101J						
CN	**1J**	**4**	**T**	**TD**	**101**	**J**
SERIES	SIZE	ELEMENTS	TERMINATION	PACKAGING	RESISTANCE	TOLERANCE
Resistor Array: Concave Termination with Square Corners	1J=0603 2A=0805 2B=1206	2 4 8	L=SnPb (Tin Lead) T=Sn (100% Tin)	TD=7" paper tape TDD=10" paper tape TE=7" embossed plastic tape TED=10" embossed plastic tape	For 2% / 5%: 2 Significant digits + 1 multiplier For 1%: 3 Significant digits + 1 multiplier	F=±1% G=±2% J=±5%

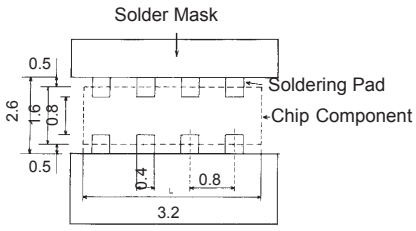
Package Dimensions

	L	W	C	d	t	a	b	p
inches	.126±.008	.063±.006	0.12±.006	0.16±.006	.024±.004	.020±.006	.006	.031
mm	3.2±0.2	1.6±0.15	0.3±0.15	0.4±0.15	0.6±0.1	0.5±0.15	.015	0.8

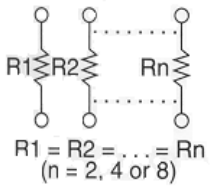
Construction



Land Pattern (mm)



Circuit Schematic



See price list booklet for current price

Surface Mount Resistor Arrays

KOA 00Ω (CNZ1J4TTD) through 1.0MΩ (CN1J4TTD105J)

Engineering Design Kits Available
See Garrett Kit Catalog

Garrett Electronics Corp.

800 767 0081

fax: **805 922 3643**
web: **www.garrettelec.com**
email: **sales@garrettelec.com**

KOA SPEER ELECTRONICS, INC.

Surface Mount Test Points

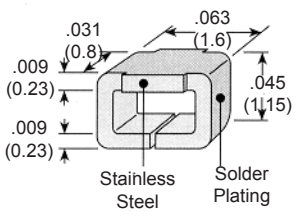
RC Series Specifications

Part Number Determination

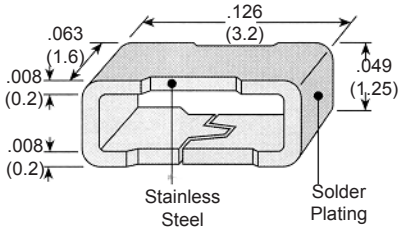
RCUCTE		
RCU	C	TE
TYPE/SIZE	TERMINATION MATERIAL	PACKAGING
RCU=0603 RCT=0805 RCS=1206 RCW=1206	L=SnPb C=SnCu	TE=7" Embossed plastic (2,000/reel) TED=10" Embossed plastic (5,000/reel) RCW not available in TED

Construction and Package Dimensions inches (mm)

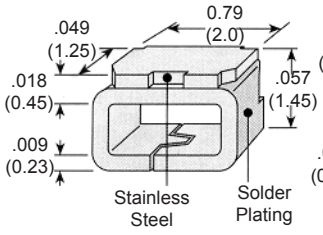
RCU



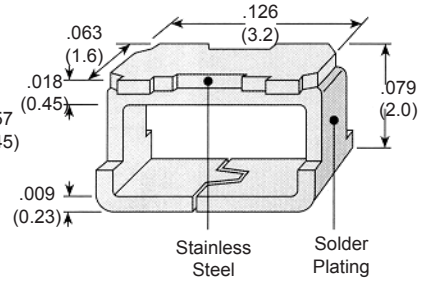
RCS



RCT



RCW



Note: Top surfaces of RCT and RCW are not solderable.

See price list booklet for current price

Surface Mount RC Series Test Points

KOA case size 0603 (RCUCTE) through 1206 (RCWCTE)

Surface Mount Thick Film Resistors

- Case sizes 01005, 0201, 0402, 0603, 0805, 1206, 2512
- 5% and 1% tolerance
- Wide range of value in stock
- RoHS compliant

Case Size	Dale VISHAY	KOA SPEER ELECTRONICS, INC.
01005		Tolerance: 5% Value Range: E24 10Ω - 1MΩ
0201	Tolerance: 1% Value Range: E96 Selected value	Tolerance: 1% Value Range: E96 Selected value Tolerance: 5% Value Range: E24 1Ω - 10MΩ
0402	Tolerance: 1% Value Range: E96 10Ω - 1MΩ Tolerance: 5% Value Range: E24 1Ω - 10MΩ	Tolerance: 1% Value Range: E96 1Ω - 1MΩ Tolerance: 5% Value Range: E24 1Ω - 10MΩ
0603	Tolerance: 1% Value Range: E96 10Ω - 1MΩ Tolerance: 5% Value Range: E24 1Ω - 10MΩ	Tolerance: 1% Value Range: E96 1Ω - 1MΩ Tolerance: 5% Value Range: E24 1Ω - 10MΩ
0805	Tolerance: 1% Value Range: E96 10Ω - 1MΩ Tolerance: 5% Value Range: E24 1Ω - 10MΩ	Tolerance: 1% Value Range: E96 10Ω - 1MΩ Tolerance: 5% Value Range: E24 1Ω - 10MΩ
1206	Tolerance: 1% Value Range: E96 10Ω - 1MΩ Tolerance: 5% Value Range: E24 1Ω - 10MΩ	Tolerance: 1% Value Range: E96 10Ω - 1MΩ Tolerance: 5% Value Range: E24 1Ω - 10MΩ
1210		Tolerance: 1% Value Range: E96 10Ω - 1MΩ
2512		Tolerance: 5% Value Range: E24 1Ω - 10MΩ

Engineering Design Kits Available
See Garrett Kit Catalog

See price list booklet for current price

Surface Mount Thick Film Resistors

Case size 01005 5%

KOA 10Ω (RK73B1FTTC100J) through 1.0MΩ (RK73B1FTTC105J)

Case size 0201 1%

KOA 10Ω (RK73H1HTTC10R0F) through 1.0MΩ (RK73H1HTTC1004F)

VISHAY-DALE 49.9Ω (CRCW020149R9RFKED) through 1.0MΩ (CRCW02011M00FKED)

Case size 0201 5%

KOA 00Ω (RK73Z1HTTC) through 10MΩ (RK73B1HTTC106J)

Case size 0402 1%

KOA 1Ω (RK73H1ETTP1R00F) through 10MΩ (RK73H1ETTP1005F)

VISHAY-DALE 10Ω (CRCW040210R0FKED) through 1.0MΩ (CRCW04021M00FKED)

Case size 0402 5%

KOA 00Ω (RK73Z1ETTP) through 10MΩ (RK73B1ETTP106J)

VISHAY-DALE 00Ω (CRCW04020000Z0ED) through 10MΩ (CRCW040210M0JNED)

Case size 0603 1%

KOA 1Ω (RK73H1JTTD1R00F) through 10MΩ (RK73H1JTTD1005F)

VISHAY-DALE 10Ω (CRCW060310R0FKEA) through 1.0MΩ (CRCW06031M00FKEA)

Case size 0603 5%

KOA 00Ω (RK73Z1JTTD) through 22MΩ (RK73B1JTTD226J)

VISHAY-DALE 00Ω (CRCW06030000Z0EA) through 10MΩ (CRCW060310M0JNEA)

Case size 0805 1%

KOA 1Ω (RK73H2ATTD1R00F) through 10MΩ (RK73H2ATTD1005F)

VISHAY-DALE 10Ω (CRCW080510R0FKEA) through 1.0MΩ (CRCW08051M00FKEA)

Case size 0805 5%

KOA 00Ω (RK73Z2ATTD) through 22MΩ (RK73B2ATTD226J)

VISHAY-DALE 00Ω (CRCW06030000Z0EA) through 10MΩ (CRCW080510M0JNEA)

Case size 1206 1%

KOA 1Ω (RK73H2BTTD1R00F) through 1.0MΩ (RK73H2BTTD1004F)

VISHAY-DALE 10Ω (CRCW120610R0FKEA) through 1.0MΩ (CRCW12061M00FKEA)

Case size 1206 5%

KOA 00Ω (RK73Z2BTTD) through 22MΩ (RK73B2BTTD226J)

VISHAY-DALE 00Ω (CRCW12060000Z0EA) through 10MΩ (CRCW120610M0JNEA)

Case size 1210 1%

KOA 10Ω (RK73H2ETTD10R0F) through 1.0MΩ (RK73H2ETTD1004F)

Case size 2512 5%

KOA 00Ω (RK73Z3ATTE) through 1.0MΩ (RK73B3ATTE105J)

Dale VISHAY

Surface Mount Thick Film Resistors

CRCW Series Specifications

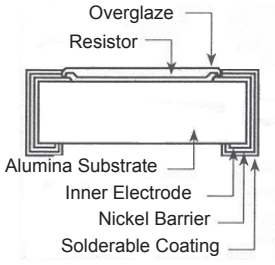
Part Number Determination

CRCW060310K0FKEA					
CRCW	0603	10K0	F	K	EA
SERIES	SIZE	RESISTANCE	TOLERANCE	TEMP COFFICIENT	PACKAGING
Thick Film, Rectangular Chip Resistor	0201 1210 0402 1218 0603 2010 0805 2512 1206	R=Decimal K-Thousand M=Million	F=±1% J=±5%	K=±100ppm N=±200ppm	EA=5K Paper Tape EG=2K Paper Tape EB=10K Paper Tape EH=4K Paper Tape EC=20K Paper Tape EI=5K Paper Tape ED=10K Paper Tape EK=4K Paper Tape EE=50K Paper Tape EL=20K Paper Tape EF=4K Paper Tape EY= Bulk

Electrical Characteristics

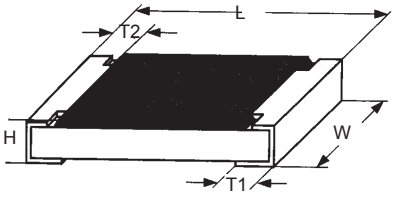
Case Size	Power Rating	Max. Operating Voltage	Resistance	Temperature Coefficient		Zero Ohm Jumper	Marking Code
				100ppm/°C	200ppm/°C		
0201 1%	1/20W	30V	47-1M E24, E96	49.9-1M			Not Marked
0402 5%	1/16W	50V	1.0-10M E24		1.0-10M	.05 ohm Max	Not Marked
0402 1%	1/16W	50V	100-1M E96	10-1M			Not Marked
0603 5%	1/10W	50V	1.0-10M E24		1.0-10M	.05 ohm Max 1 AMP Max	3 digits
0603 1%	1/10W	50V	10-1M E96	10-1M			4 digits
0805 5%	1/8 W	100V	1.0-10M E24		1.0-10M	.05 ohm Max 1 AMP Max	3 digits
0805 1%	1/8 W	100V	10-1M E96	10-1M			4 digits
1206 5%	1/4W	200V	1.0-10M E24		1.0-10M	.05 ohm Max 2AMP Max	3 digits
1206 1%	1/4W	200V	10-1M E96	10-1M			4 digits

Construction



Package Dimensions (mm)

Case Size	L	W	H	T1	T2
0201	0.6±0.05	0.3±0.05	0.23±0.05	0.15±0.05	0.15+0.05-0.10
0402	1.0±0.05	0.5±0.05	0.35±0.05	0.25±0.05	0.2±0.1
0603	1.55+0.10-0.05	.0.85±0.1	0.45±0.05	0.3±0.2	0.3±0.2
0805	2.0+0.20-0.10	1.25±0.15	0.45±0.05	0.3+0.20-0.10	0.3±0.2
1206	3.2+0.10-0.20	1.6±0.15	0.55±0.05	0.45±0.2	0.4±0.2



Land Pattern (mm)

Case Size	a	b	l
0201 Reflow	0.28	0.43	0.23
0402 Reflow	0.4	0.6	0.5
0603 Reflow	0.5	0.9	1.0
0603 Wave	0.9	0.9	1.0
0805 Reflow	0.7	1.3	1.2
0805 Wave	0.9	1.3	1.3
1206 Reflow	0.9	1.7	2.0
1206 Wave	1.1	1.7	2.3

KOA SPEER ELECTRONICS, INC.

Surface Mount Thick Film Resistors

RK73 Series Specifications

Part Number Determination

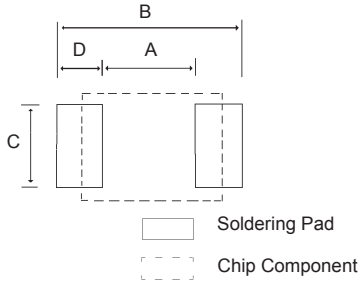
RK73B2BLTD102J					
RK73B	**2B**	**L**	**TD**	**102**	**J**
SERIES	SIZE	TERMINATION	PACKAGING	RESISTANCE	TOLERANCE
RK73B=Genl Purp 2% / 5% Thick Film Resistor RK73H=Precision 0.5% / 1% Thick Film Resistor RK73Z=Zero Ohm Jumper	1F=01005 1H=0201 1E=0402 1J=0603 2A=0805 2B=1206 2E=1210 2H=2010 3A=2512	X=AgPd** G=Au* L=SnPb (Tin/Lead) T=Sn (100% Tin) **=1J, 2A, 2B only *=1E & 1J only	TC=2mm pitch, punched paper (0201) TB=2mm pitch, pressed paper (01005) TP=2mm pitch, punch paper (0402 & 0603) TD=7" paper tape (0805, 1206 & 1210) TDD=10" paper tape TE=7" embossed plastic tape (2010 & 2512) TED=10" embossed plastic tape	For 2%/5%= 2 significant digits + 1 multiplier For 0.5%/1%= 3 significant digits + 1 multiplier For jumper =blank	D=±0.5% F=±1% G=±2% J=±5% For Jumper=Blank

Electrical Characteristics

Series	**RK73B1F (01005)**		**RK73B1H RK73Z (0201)**		**RK73H1E RK73B1E RK73Z (0402)**			**RK73H1J RK73B1J RK73Z (0603)**			**RK73H2A RK73B2A RK73Z (0805)**			**RK73H2B RK73B2B RK73Z (1206)**			**RK73H2E RK73B2E RK73Z (1210)**			**RK73B2H RK73Z (2010)**		**RK73B3A RK73Z (2512)**	
Power Rating @ 70°C	1/32W		1/20W		1/16W			1/10W			1/8W			1/4W			1/2W 1/3W			3/4W		1W	
T.C.R. (ppm/°C) Max.	250	300	400	200	100	200	400	100	200	400	100	200	400	100	200	400	100	200	400	200	400	200	400
Resistance Range E24 5% (Ω)	6.8K-1M	10-6.2K	1.0-9.1	10-10M		1.0-10M			1.0-10M	11M-22M		1.0-1M	1.1M-22M		1.0-5.6M	6.2M-22M		10-5.6M		1.0-5.6M	6.2M-22M	1.0-5.6M	6.2M-22M
Resistance Range E96 1% (Ω)				10-1M	10-1M	1.0-9.76 1.02M-10M		10-1M	1.0-9.76 1.02M-10M		10-1M	1.0-9.76	1.02M-10M	10-1M	1.0-9.76 1.02M -5.6M	5.6M -10M	10-1M	1.0-9.76 1.02M -5.6M	5.62M-10M				
Absolute Max Working Volt	15V		25V		50V						150V			200V									
Absolute Max Overload Volt	30V		50V		100V						300V			400V									
Operating Temp Range	-55 ~ +125°C		-55 ~ +125°C		-55 ~ +155°C																		
Zero ohm Jumper																							
Max Continuous Current @ 70°C	N/A		0.5A		1.0 Amps						2.0 Amps												
Max Surge Current @ 70°C	N/A		1.0A		2 Amp Max for < 1 second						5 Amp Max for < 1 second			10 Amp Max for < 1 second									
Max Resistance	N/A		50MΩ																				
Operating Temp. Range	N/A		-55° ~ +125°C																				

Land Pattern (mm)

Size Code	Component Size	A	B	C	D
1F (01005)	0.4x0.02	0.12	0.48	0.18	0.18
1H (0201)	0.6X0.3	0.25	0.7	0.3	0.225
1E (0402)	1.0X0.5	0.5	1.5	0.6	0.5
1J (0603)	1.6X0.8	1.0	2.0	0.6	0.5
2A (0805)	2.0X1.25	1.3	2.5	1.05	0.6
2B (1206)	3.2X1.6	2.2	4.0	1.4	0.9
2E (1210)	3.2X2.5	2.2	4.0	2.3	0.9
2H (2010)	5.0X2.5	3.3	6.1	2.3	1.4
3A (2512)	6.4X3.2	4.6	8.0	3.0	1.7



Surface Mount Ultra Precision Thin Film Resistors

- Case sizes 0402, 0603, 0805, 1206
- 0.1% tolerance
- Wide range of value in stock
- RoHS compliant

Case Size	BCC VISHAY	DALE VISHAY	KOA SPEER ELECTRONICS, INC.	TFT Thin Film Technology Corp.
0402	Tolerance: 0.1% Value Range: E96 150Ω - 100KΩ Series: MCS0402		Tolerance: 0.1% Value Range: E96 100Ω - 100KΩ Series: RN731E	
0603	Tolerance: 0.1% Value Range: E96 100Ω - 100KΩ Series: 2312-201	Tolerance: 0.1% Value Range: E96 100Ω - 100KΩ Series: TNPW0603	Tolerance: 0.1% Value Range: E96 15Ω - 150KΩ Series: RN731J	
0805	Tolerance: 0.1% Value Range: E96 100Ω - 100KΩ Series: 2312-241	Tolerance: 0.1% Value Range: E96 100Ω - 100KΩ Series: TNPW0805	Tolerance: 0.1% Value Range: E96 15Ω - 1MΩ Series: RN732A	Tolerance: 0.1% Value Range: E96 0.1% - 100Ω - 1MΩ Series: CR0805E
1206		Tolerance: 0.1% Value Range: E96 100Ω - 100KΩ Series: TNPW1206	Tolerance: 0.1% Value Range: E96 15Ω - 1MΩ Series: RN732B	

See price list booklet for current price

Surface Mount Thin Film Resistors

Case size 0402 0.1%

BCC-VISHAY 150Ω (MCS04020D1500BE100) through 100KΩ (MCS04020D1003BE100)
KOA 100Ω (RN731ETTPK1000B25) through 100KΩ (RN731ETTPK1003B25)

Case size 0603 0.1%

BCC-VISHAY 100Ω (2312-201-71001) through 511KΩ (2312-201-75114)
DALE-VISHAY 10Ω (TNPW060310R0BEEN) through 332KΩ (TNPW0603332KBEEN)
KOA 15Ω (RN731JTTDK15R0B25) through 150KΩ (RN731JTTDK1503B25)
THIN FILM TECH 100Ω (CR0603E1000B-T5) through 100KΩ (CR0603E1003B-T5)

Case size 0805 0.1%

BCC-VISHAY 100Ω (2312-241-71001) through 100KΩ (2312-241-71004)
DALE-VISHAY 100Ω (TNPW0805100RBEEN) through 100KΩ (TNPW0805100KBEEN)
KOA 15Ω (RN732ATTDK15R0B25) through 1.0MΩ (RN732ATTDK1004B25)
THIN FILM TECH 100Ω (CR0805E1000B) through 1.0MΩ (CR0805E1004B)

Case size 1206 0.1%

DALE-VISHAY 100Ω (TNPW1206100RBEEN) through 332KΩ (TNPW12063323BT-9)
KOA 100Ω (RN732BTTDK1000B25) through 100KΩ (RN732BTTDK1003B25)

Engineering Design Kits Available
See Garrett Kit Catalog

BCC VISHAY

Surface Mount Thin Film Resistors

2312 Series Specifications

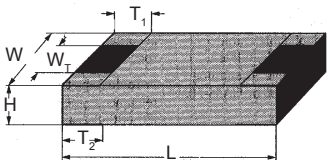
Part Number Determination

2312-241-76193				
2312	**241**	**7**	**619**	**3**
SERIES	SIZE & TEMP COEF	TOLERANCE	RESISTANCE VALUE	RESISTANCE DECADE
Thin Film Resistor	261=0402, 25ppm 262=0402, 15ppm 263=0402, 10ppM 201=0603, 25ppm 202=0603, 15ppm 203=0603, 10ppm 241=0805, 25ppm 242=0805, 15ppm 243=0805, 10ppm	6=±0.25% 7=±0.1%	3 Significant digits	1=100 - 976 2=1K - 9.76K 3=10K - 97.6K 4=100K

MCS04020D1003BE100							
MCS	**0402**	**0**	**D**	**1003**	**B**	**E1**	**00**
SERIES	SIZE	SPECIAL CHARACTER	TC	RESISTANCE VALUE	TOLERANCE	PACKAGING	SPECIAL
MCS MCT MCU MCA	0402 0603 0805 1206	0 = neutral	F=±10 ppm/K E=±15 ppm/K D=±25 ppm/K	3 digits value 1 digit multiplier MULTIPLIER 7=*10^{-3} 2=*10^{2} 8=*10^{-2} 3=*10^{3} 9=*10^{-1} 4=*10^{4} 0=*10^{0} 5=*10^{5} 1=*10^{1} 6=*10^{6}	B=±0.1% C=±0.25%	E1=1K reel E0=10K reel (0402 only) P1=1K reel P5=5K reel PW=20K reel (0603,0805,1206)	up to 2 digits 00 = standard

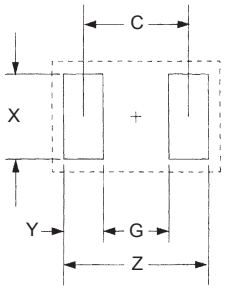
Package Dimensions (mm)

Series		H	L	WT	W	T1	T2	Mass (mg)
2312-261	MCS0402	0.32 ±0.05	1.0 ±0.05	>75% of W	0.5 ±0.05	0.2 +0.1/-0.15	0.2 ±0.1	0.6
2312-201	MCT0603	0.45 +0.1/-0.05	1.55 ±0.05	>75% of W	0.85 ±0.1	0.3 +0.15/-0.2	0.3 +0.15/-0.2	1.9
2312-241	MCU0805	0.45 +0.1/0.05	2.0 ±0.1	>75% of W	1.25 ±0.15	0.4 +0.1/-0.2	0.4 +0.1/-0.2	4.6

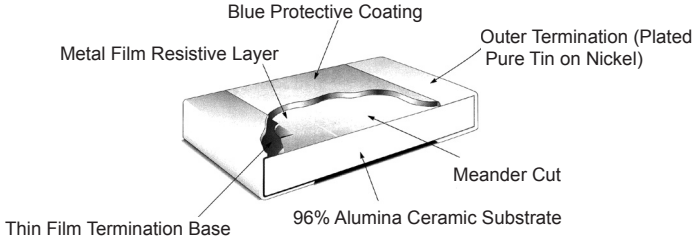


Land Pattern (mm)

Case Size	0603	0805
EIA Size	1608	2012
Z	2.80	3.20
G	0.60	0.60
X	1.00	1.50
Y	1.10	1.30
C	1.70	1.90



Construction



DALE VISHAY

Surface Mount Thin Film Resistors

TNPW Series Specifications

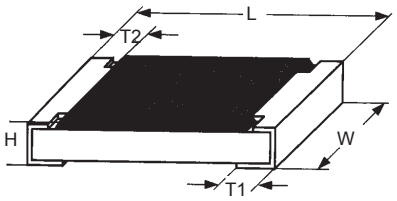
Part Number Determination

TNPW12061002BT-9				
TNPW	**1206**	**1002**	**B**	**T-9**
SERIES	SIZE	RESISTANCE	TOLERANCE	TEMPERATURE COEFFICIENT
Thin Film, Rectangular Chip Resistor	0402 0603 0805 1206 1210 2010 2512	3 Significant digits + 1 multiplier	B=±0.1% C=±0.25% D=±0.5% F=±1%	T1=±100ppm/ºC T2=±50ppm/ºC T9=±25ppm/ºC

TNPW12061K32BEEN					
TNPW	**1206**	**1K32**	**B**	**E**	**EN**
SERIES	SIZE	RESISTANCE	TOLERANCE	TEMPERATURE COEFFICIENT	LEAD FREE PACKAGING
Thin Film, Rectangular Chip Resistor	0402 0603 0805 1206 1210	4 digits R=decimal K=thousand M-million	B=±0.1% D=±0.5% F=±1%	H=±50ppm E=±25ppm X=±15ppm Y=±10ppm	EA=5K Paper Tape EC=20K Paper Tape ED=10K Paper Tape EF=4K Blister Tape EG=2K Blister Tape EN=1K Paper Tape EY=1K Blister Tape

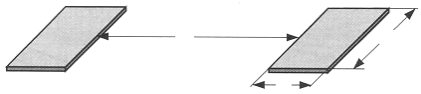
Package Dimensions (mm)

Series	L	W	H	T1	T2
TNPW0603	1.6±0.1	0.85±0.1	0.45±0.1	0.3±0.20	0.3±0.20
TNPW0805	2.0±0.2	1.24±0.2	0.4±0.1	0.4±0.25	0.4±0.25
TNPW1206	3.2±0.15	1.6±0.15	0.61±0.15	0.5±0.25	0.5±0.25



Land Pattern (mm)

Case Size	a	b	l
0603 Reflow	0.5	0.9	1.0
0603 Wave	0.9	0.9	1.0
0805 Reflow	0.7	1.3	1.2
0805 Wave	0.9	1.3	1.3
1206 Reflow	0.9	1.7	2.0
1206 Wave	1.1	1.7	2.3



KOA SPEER ELECTRONICS, INC.

Surface Mount Thin Film Resistors

RN73 Series Specifications

Part Number Determination

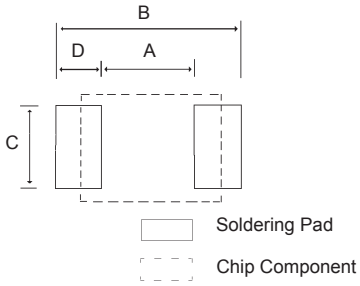
RN732ATTDK1002B25						
RN73	**2A**	**T**	**TDK**	**1002**	**B**	**25**
SERIES	SIZE	TERMINATION	PACKAGING	RESISTANCE	TOLERANCE	TEMPERATURE COEFFICIENT
Ultra Precision Thin Film Resistor	1E=0402 1J=0603 2A=0805 2B=1206 2E=1210	L=SnPb (Tin/Lead) T=Sn (100% Tin)	TP=2mm pitch, punch paper (0402 & 0603 only) TD=7" paper tape (5000/ree1) TDK=7" paper tape (1000/reel) TDD=10" paper tape TE=7" embossed plastic tape TED=10" embossed plastic tape	3 significant digits + 1 multiplier	A=±0.05% B=±0.1% C=±0.25% D=±0.5% F=±1%	05=5ppm/ºC 10=10ppm/ºC 25=25ppm/ºC 50=50ppm/ºC 100=100ppm/ºC

Electrical Characteristics

Part Series Size	Power Rating @ 70ºC	TCR (ppm/ºC)	Resistance Range E-96	Working Voltage max	Overload Voltage max	Operating Temp Range
RN731E (0402)	1/16W	±25	100Ω-100KΩ	25V	50V	-55ºC +125ºC
RN731J (0603)	1/16W		15Ω-150KΩ	50V	100V	
RN732A (0805)	1/10W		15Ω-1MΩ	100V	200V	
RN732B (1206)	1/8W		15Ω-1MΩ	150V	300V	

Land Pattern (mm)

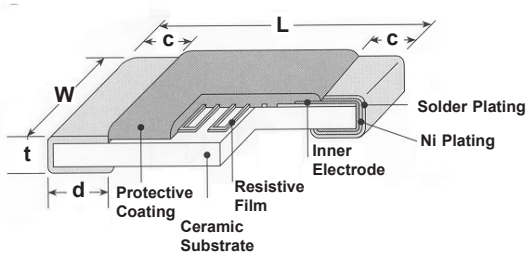
Size Code	Component Size	A	B	C	D
1E (0402)	1.0X0.5	0.5	1.5	0.6	0.5
1J (0603)	1.6X0.8	0.8	2.6	0.8	0.9
2A (0805)	2.0X1.25	1.2	3.0	1.2	0.9
2B (1206)	3.2X1.6	2.2	4.2	1.5	1.0



Package Dimensions (in/mm)

Size Code	L	W	c	d	t
1E (0402)	.039+.004-.002 (1.0+0.1-0.05)	.021±.002 (0.5±0.05)	.008±.004 (0.2±0.1)	.01+.002-.004 (0.25+0.05-0.1)	.014±.002 (0.35±0.05)
1J (0603)	.063±.008 (1.6±.02)	.031±.004 (0.8±0.1)	.012±.004 (0.3±0.1)	.012±.004 (0.3±0.1)	.018±.004 (0.45±0.1)
2A (0805)	.079±.008 (2.0±0.2)	.049±.004 (1.25±0.1)	.016±.008 (0.4±0.2)	.012+.008-.004 (0.3+0.2-0.1)	.02±.004 (0.5±0.1)
2B (1206)	.126±.008 (3.2±0.2)	.063±.008 (1.6±0.2)	.02±.012 (0.5±0.2)	.016+.008-.004 (0.4+0.2-0.1)	.024±.004 (0.6±0.1)

Construction



Thin Film Technology Corp.

Surface Mount Thin Film Resistors

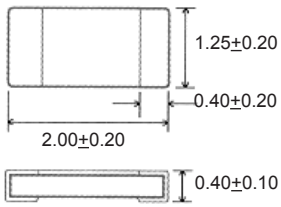
CR Series Specifications

Part Number Determination - 0805 0.1%

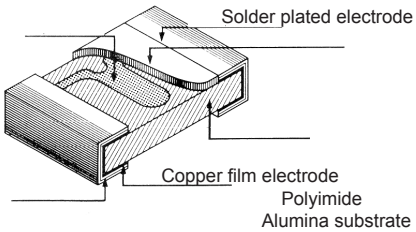
RR1220P1152B - OLD PART NUMBER					
RR	1220	P	1152	B	C
SERIES	CASE SIZE	TEMPERATURE COEFFICIENT	RESISTANCE	TOLERANCE	Termination
RR	0306=0201 0510=0402 0816=0603 1220=0805* 1632=1206 2632=1210 *stock item	P=±25ppm/ºC Q=±50ppm/ºC R=±100ppm/ºC	2 Significant digits + 1 multiplier for E24 values 3 Significant digits + 1 multiplier for E96 values	B=±0.1% D=±0.5	Blank=Std Termination C= Lead Free

CR0805E1152B - NEW PART NUMBER					
CR	0805	E	1152	B	T1
SERIES	CASE SIZE	TEMPERATURE COEFFICIENT	RESISTANCE	TOLERANCE	Packaging
CR	0402 0603 0805 1206	M=±5ppm/ºC Y=±10ppm/ºC E=±25ppm/ºC Q=±50ppm/oC R=±100ppm/ºC	2 Significant digits + 1 multiplier for E24 values 3 Significant digits + 1 multiplier for E96 values	Q=±0.02% A=±0.05% B=±0.1% D=±0.5%	T1=1000 Piece Reel T5=5,000 Piece Reel T10=10,000 Piece Reel

Package Dimensions (mm)



Construction



Garrett Electronics Corp.

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email: sales@garrettelec.com

TOCOS® AMERICA INC.

Surface Mount Trimming Potentiometers

- Sealed cermit trimmers, (sealed to withstand immersion cleaning processes)
- Meets EIA, EIAJ, IPC, VECI standard SMD trimmer design
- Wide range of values and configerations in stock
- RoHS compliant

Series	Size	Turns	Configuration	Page
G32	3mm sq	1	Gull-Wing, J-Hook	
G43	4mm sq	1	Gull-Wing, J-Hook	
GV4	4mm sq	12	J-Hook	

See price list booklet for current price

Surface Mount Trimming Potentiometers
TOCOS G32 Series: 50Ω (G32BTB500M) through 2.0MΩ (G32ATB205M)
TOCOS G43 Series: 100Ω (G43BTB101M) through 2.0MΩ (G43BTB205M)
TOCOS GV4 Series: 10Ω (GV4WTB100-K) through 2.0MΩ (GV4WTB205-K)

Engineering Design Kits Available
See Garrett Kit Catalog

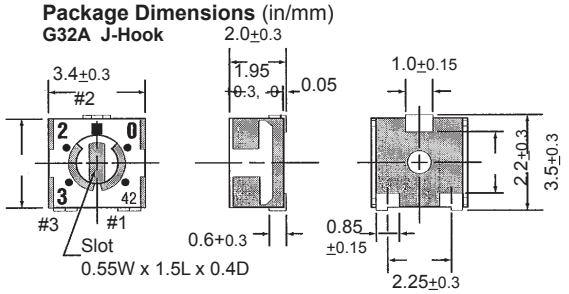
TOCOS® AMERICA INC. Surface Mount Trimming Potentiometers

G32 Series Specifications

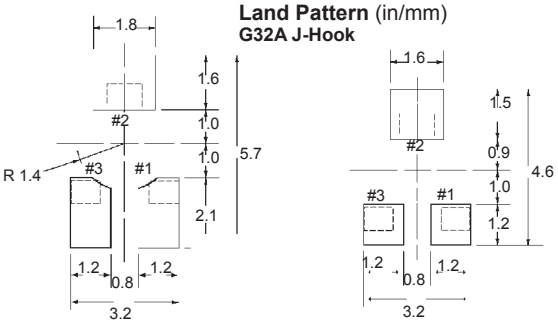
Part Number Determination

G32ATB102M						
G32	**1**	**A**	**T**	**B**	**102**	**M**
SERIES	ADJUSTMENT SLOT	TERMINATION STYLE	PACKAGING	RESISTANCE TAPER	RESISTRANCE	TOLERANCE
G32=3mm Sq. 1-Turn, RoHS Compliant	1=Cross-Slot Automatic Adjust Blank=Single-Slot	A=J-Hook B=Gull-Wing	T=Tape & Reel Blank=Bulk	B=Linear	2 Significant Digits + Multiplier 100=10ohm 102=1Kohm 105=1Mohm	M=±20%

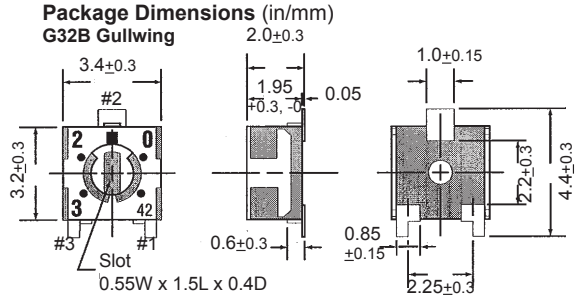
Package Dimensions (in/mm)
G32A J-Hook



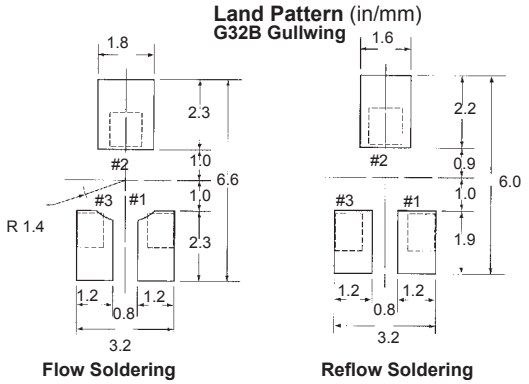
Land Pattern (in/mm)
G32A J-Hook



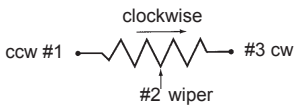
Package Dimensions (in/mm)
G32B Gullwing



Land Pattern (in/mm)
G32B Gullwing



Schematic



Value/ Part Number Code

Value (ohms)	50	100	200	500	1K	2K	5K	10K	20K	50K	100K	200K	500K	1M	2M
Part # code	500	101	201	501	102	202	502	103	203	503	104	204	504	105	205

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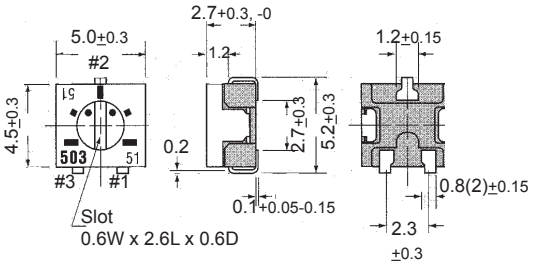
TOCOS® AMERICA INC. Surface Mount Trimming Potentiometers

G43 Series Specifications

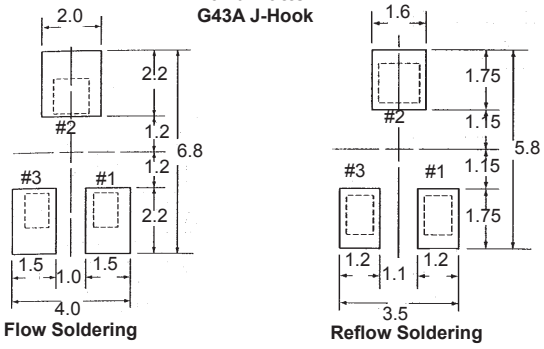
Part Number Determination

G43ATB102M						
G43	**1**	**A**	**T**	**B**	**102**	**M**
SERIES	ADJUSTMENT SLOT	TERMINATION STYLE	PACKAGING	RESISTANCE TAPER	RESISTANCE	TOLERANCE
G43=4mm Sq. 1-Turn, RoHS Compliant	1=Cross-Slot Automatic Adjust Blank=Single-Slot	A=J-Hook B=Gull-Wing	T=Tape & Reel Blank=Bulk	B=Linear	2 Significant Digits + Multiplier 100=10ohm 102=1Kohm 105=1Mohm	M=±20%

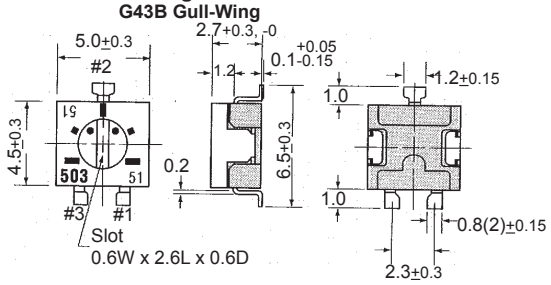
Package Dimensions in/mm
G43A J-Hook



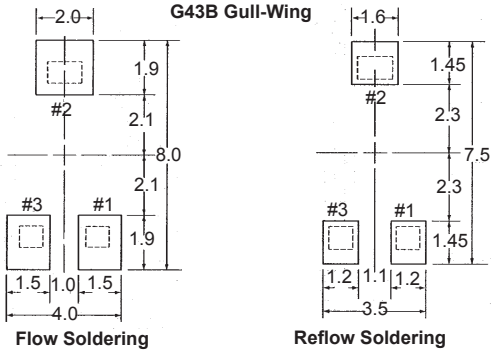
Land Pattern in/mm
G43A J-Hook



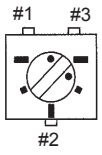
Package Dimensions in/mm
G43B Gull-Wing



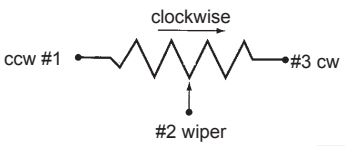
Land Pattern in/mm
G43B Gull-Wing



Standard Markings
Outside Positions



Schematic



Value/ Part Number Code

Value (ohms)	100	200	500	1K	2K	5K	10K	20K	50K	100K	200K	500K	1M	2M
Part # code	101	201	501	102	202	502	103	203	503	104	204	504	105	205

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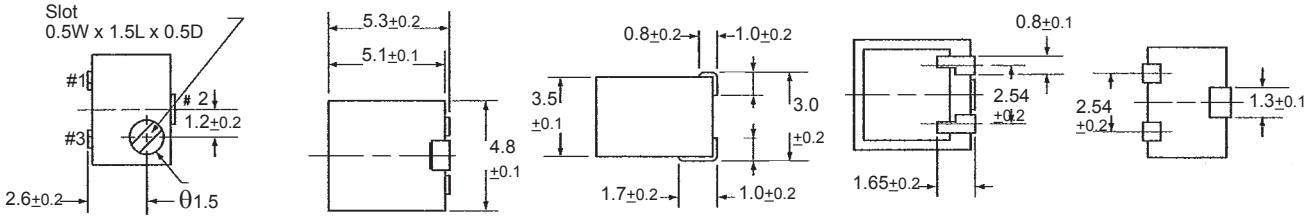
TOCOS® AMERICA INC. Surface Mount Trimming Potentiometers

GV4 Series Specifications

Part Number Determination

GV4WTB102K					
GV4	**W**	**T**	**B**	**102**	**K**
SERIES	TERMINATION STYLE	PACKAGING	RESISTANCE TAPER	RESISTANCE	TOLERANCE
GV4=4mm Sq. Multi-Turn,	W=J-Hook, Top Adjust J=J-Hook, Side Adjust G=Gull-Wing, Side Adjust	T=Tape & Reel Blank=Bulk	B=Linear	2 Significant Digits + Multiplier 100=10ohm 102=1Kohm 105=1Mohm	K=±10%

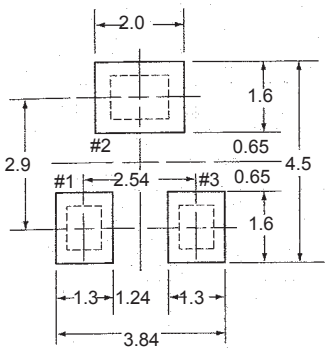
Package Dimensions (in/mm)



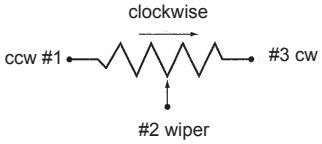
Electrical Characteristics

Part No.	Maximum Input Ratings	
	Maximum Wiper Current	Maximum Input Voltage
GV4WTB100K	100.00	1.00
GV4WTB200K	100.00	2.00
GV4WTB500K	70.7	3.53
GV4WTB101K	50.0	5.00
GV4WTB201K	35.4	7.07
GV4WTB501K	22.4	11.18
GV4WTB102K	15.8	15.80
G4VWTB202K	11.2	22.36
GV4WTB502K	7.07	35.35
GV4WTB103K	5.00	50.00
GV4WTB203K	3.54	70.70
GV4WTB503K	2.24	111.8
GV4WTB104K	1.58	158.11
GV4WTB204K	1.00	223.60
GV4WTB504K	.40	300.00
GV4WTB105K	.20	300.00
GV4WTB205K	.10	300.00

Land Pattern (in/mm)



Schematic



Value/ Part Number Code

Value (ohms)	10	20	50	100	200	500	1K	2K	5K	10K	20K	50K	100K	200K	500K	1M	2M
Part # code	100	200	500	101	201	501	102	202	502	103	203	503	104	204	504	105	205

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