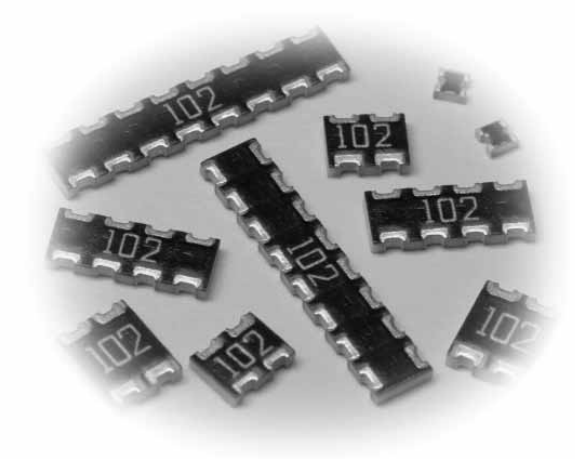
Jameco Part Number 1851317

KOA SPEER ELECTRONICS, INC.

CN

concave termination with square corners resistor array

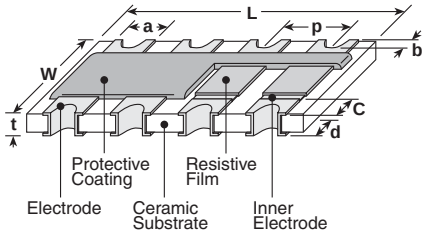


EU RoHS COMPLIANT

features

- Manufactured to type RK73 standards
- Less board space than individual chips
- Isolated resistor elements
- Marking: Marked with resistance value
- Products with lead-free terminations meet EU RoHS requirements. Pb located in glass material, electrode and resistor element is exempt per Annex 1, exemption 5 of EU directive 2005/95/EC

dimensions and construction



Size Code	Dimensions inches (mm)								
	L	W	C	d	t	a (top)	a (bot.)	b	p (ref.)
1J2	.063±.006 (1.6±0.15)	.063±.006 (1.6±0.15)	.012±.006 (0.3±0.15)	.016±.006 (0.4±0.15)	.024±.004 (0.6±0.1)	.020±.006 (0.5±0.15)	.016±.006 (0.4±0.15)	.006 (0.15)	.031 (0.8)
1J4	.126±.008 (3.2±0.2)								
1J8	.252±.008 (6.4±0.2)								
2A2	0.1±.008 (2.54±0.2)	.079±.008 (2.0±0.2)	.016±.008 (0.4±0.2)	.022±.006 (0.55±0.15)		.031 (0.8)	.030±.006 (0.75±0.15)		.050 (1.27)
2A4	0.2±.008 (5.08±0.2)								
2A8	0.4±.008 (10.16±0.2)								
2B2	0.1±.008 (2.54±0.2)	.126±.008 (3.2±0.2)	.020±.012 (0.5±0.3)						
2B4	0.2±.008 (5.08±0.2)								
2B8	0.4±.008 (10.16±0.2)								

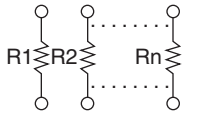
ordering information

New Part #

CN	1J	4	T	TD	101	J
Type	Size	Elements	Termination Material	Packaging	Nominal Resistance	Tolerance
	1J 2A 2B	2 4 8	T: Sn (Other termination styles may be available, please contact factory for options)	TE: 7" embossed plastic TD: 7" paper tape TED: 10" embossed plastic TDD: 10" paper tape	2 significant figures + 1 multiplier for ±2 & ±5% 3 significant figures + 1 multiplier for ±1%	F: ±1% G: ±2% J: ±5%

For further information on packaging, please refer to Appendix A.

circuit schematic



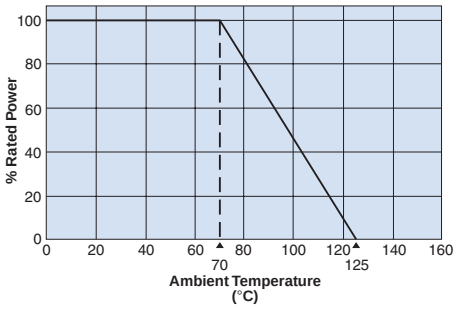
R1 = R2 = . . . = Rn
(n = 2, 4 or 8)

applications and ratings

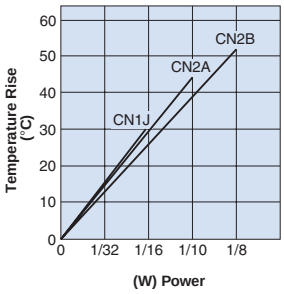
Part Designation	Power Rating @ 70°C (Per Element)	T.C.R. (ppm/°C) Max.	Resistance Range (Ω)			Absolute Maximum Working Voltage	Maximum Overload Voltage (5 Secs. Max.)	Operating Temperature Range
			E-24, E-96 (F:±1%)	E-24 (G:±2%)	E-24 (J:±5%)			
CN1J2	1/16W (.063W)	±200: R≥10Ω ±400: R<10Ω	10 - 1M	10 - 1M	10 - 1M	50V	100V	-55°C to +125°C
CN1J4					1 - 1M			
CN1J8					10 - 1M			
CN2A2	1/10W (.100W)		10 - 1M			100V	200V	
CN2A4								
CN2A8			—					
CN2B2	1/8W (.125W)		10 - 1M			200V	400V	
CN2B4								
CN2B8			—					

environmental applications

Derating Curve



Surface Temperature Rise



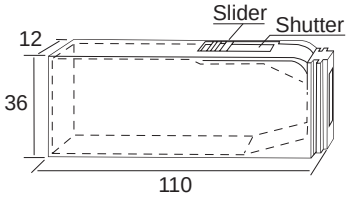
Performance Characteristics

Parameter	Maximum Δ R	Test Method
Thermal Shock	±(1.0% + 0.1Ω)	MIL-STD-202, Method 107, -55°C to +125°C, 5 cycles
Low Temperature Operation		MIL-R-55342 π 4.7.4, 1 hour @ -55°C followed by 45 minutes of RCWV*
High Temperature Exposure		MIL-R-55342 π 4.7.6, 100 hours @ 125°C
Short Time Overload	±(2.0% + 0.05Ω)	MIL-R-55342 π 4.7.5, 2.5 x RCWV for 5 seconds
Resistance to Solder Heat	±(1.0% + 0.1Ω)	MIL-R-55342 π 4.7.7, 260°C for 10 seconds
Terminal Strength-Push		1.2 Kg for 1 minute
Terminal Strength-Bend	±(0.5% + 0.05Ω)	5mm deflection in either direction for 10 seconds
Moisture Resistance	±5.0%	MIL-STD-202, Method 103, 40°C, 90 - 95% RH, 1000 hours
Life		MIL-STD-202, Method 108, 70°C, 1000 hours @ RCWV, 1.5 hr ON, 0.5 hr OFF
Pulse		2.5 x RCWV, not exceeding max. overload voltage, 1 sec. ON, 25 sec. OFF, 10,000 cycles
Temperature Cycling	±1.0%	30 min. @ -55°C, 15 min. @ +25°C, 30 min. @ +125°C, 15 min. @ +25°C, 5 cycles
Terminal Adhesion	15 Grams Minimum	Axial pull, one terminal at a time
Dielectric Withstanding Voltage CN1J, CN2A, CN2B	100V, 400V, 400V	1 minute minimum MIL-STD-202, Method 301
Insulation Resistance	1,000 MΩ Minimum	—

* RCWV = Rated Continuous Working Voltage.

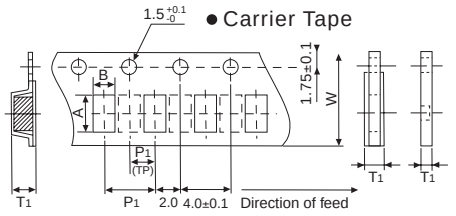
Type		Component Size (mm)			Carrier Tape	Quantity/ Reel (Pieces)	Taping (mm)					Reel Size
		L	W	T			A	B	W	P1	T1	
RK73B RK73H RK73-RT RK73G RK73A RK73Z SG73 RK73N SR73 RF73 UR73 RN73 LT73 HV73 RN73H SG73P SG73S SG73-RT	1F	0.4	0.2	0.12	TB	10000	0.45±0.03	0.25±0.03	8.0±0.2	2±0.05	0.31+0.2/-0	178
	1H	0.6	0.3	0.23	TC	10000	0.67±0.05	0.37±0.05	8.0±0.2	2±0.05	0.42+0.2/-0	178
	1E	1	0.5	0.35	TP	10000	1.15±0.1	0.65±0.1	8.0±0.2	2±0.05	0.45+0.2/-0	178
	1J	1.6	0.8	0.45	TP	10000	1.9±0.1	1.1±0.1	8.0±0.2	2±0.05	0.6+0.2/-0	178
					TD	5000	1.9±0.1	1.1±0.08	8.0±0.2	4.0±0.1	0.6+0.2/-0	178
					TDD	10000	1.9±0.1	1.1±0.1	8.0±0.2	4.0±0.1	0.6+0.2/-0	255
	2A	2	1.25	0.5	TP	10000	2.4±0.2	1.65±0.2	8.0±0.2	2±0.05	0.75+0.2/-0	178
					TD	5000	2.4±0.2	1.65±0.2	8.0±0.2	4.0±0.1	0.75+0.2/-0	178
					TE	4000	2.4±0.2	1.6±0.2	8.0±0.2	4.0±0.1	0.9±0.1	178
					TDD	10000	2.4±0.1	1.65±0.1	8.0±0.2	4.0±0.1	0.75+0.2/-0	255
					TED	10000	2.4±0.2	1.45±0.15	8.0±0.2	4.0±0.1	0.65±0.1	255
	2B	3.2	1.6	0.6	TD	5000	3.5±0.2	2±0.2	8.0±0.2	4.0±0.1	0.75+0.2/-0	178
					TE	4000	3.5±0.2	1.9±0.2	8.0±0.2	4.0±0.1	1.0±0.1	178
					TDD	10000	3.5±0.1	1.9±0.1	8.0±0.2	4.0±0.1	0.75+0.2/-0	255
					TED	10000	3.5±0.1	1.9±0.2	8.0±0.2	4.0±0.1	1.0±0.1	255
	2E	3.2	2.6	0.6	TD	5000	3.5±0.2	2.85±0.2	8.0±0.2	4.0±0.1	0.75+0.2/-0	178
					TE	4000	3.5±0.2	2.85±0.2	8.0±0.2	4.0±0.1	1.0±0.15	178
					TDD	10000	3.5±0.1	2.8±0.1	8.0±0.2	4.0±0.1	0.75+0.2/-0	255
					TED	10000	3.6±0.15	2.9±0.15	8.0±0.2	4.0±0.1	1.0±0.1	255
	2H	5	2.5	0.6	TE	4000	5.35±0.2	2.9±0.2	12.0±0.1	4.0±0.1	1.0±0.15	178
					TED	10000	5.4±0.2	2.9±0.2	12.0±0.1	4.0±0.1	0.85±0.1	255
	3A	6.3	3.1	0.6	TE	4000	6.65±0.2	3.44±0.2	12.0±0.1	4.0±0.1	1.0±0.15	178
					TED	10000	6.9±0.2	3.6±0.2	12.0±0.1	4.0±0.1	0.85±0.1	255
WK73	2H	2.5	5.0	0.4	TE	4000	5.35±0.5	2.9±0.2	12.0±0.3	4.0±0.1	1±0.15	178
	2J	3.1	4.6	0.4	TE	4000	4.85±0.2	3.35±0.2	12.0±0.3	4.0±0.1	1±0.15	178
	3A	3.1	6.4	0.45	TE	4000	6.65±0.2	3.44±0.2	12.0±0.3	4.0±0.1	1±0.15	178
CND	2B10	6.40	3.1	0.6	TE	4000	6.6±0.2	3.4±0.2	12.0±0.1	4.0±0.1	1±0.15	178
	1J10	3.20	1.6	0.55	TD	5000	3.5±0.1	2.0±0.1	8.0±0.2	4.0±0.1	0.75+0.2/-0	178
	2A10	4.00	2.1	0.6	TE	4000	4.45±0.2	2.5±0.2	12.0±0.1	4.0±0.1	1±0.15	178
CNB	2B5Z	3.2	2.5	0.6	TE	4000	3.5±0.2	3.0±0.2	8.0±0.2	4.0±0.1	1±0.15	178
	2E9Z	6.40	3.2		TE	4000	6.7±0.2	3.5±0.2	12.0±0.1	4.0±0.1	1±0.15	178

Bulk Case (RK73 1E, 1J, 2A, 2B) Packaging Designation: BK

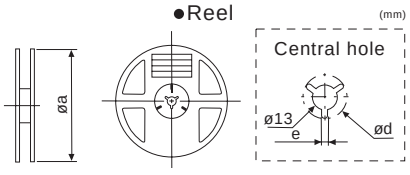


Style	Packaging Quantity
1E	50,000 pieces/case
1J	25,000 pieces/case
2A	10,000 pieces/case
2B	5,000 pieces/case

Packaging specifications



(Notes) Dotted lines are applicable to only "TP" and "TB."



(Notes) Reel holes, shapes and design are examples

Type	ød (mm)	e (mm)
All	21	2
RCU, RCT, RCS, RCW	27	3

Appendix A

packaging - surface mount components

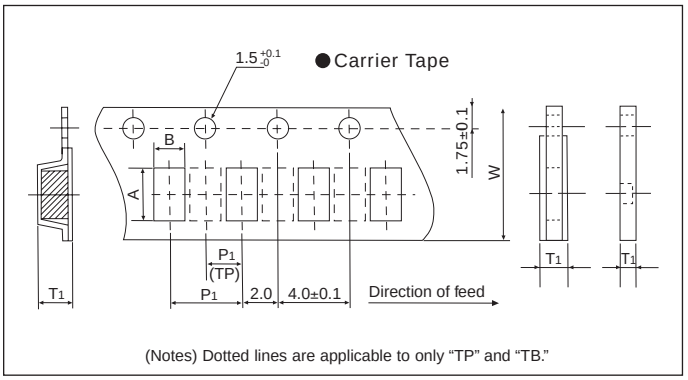
Type		Component Size (mm)			Carrier Tape	Quantity/ Reel (Pieces)	Taping (mm)					Reel Size
		L	W	T			A	B	W	P1	T1	
CN CN_A CN_K/N CNZ CNN	1F8	3.8±0.1	1.6±0.2	0.44±0.1	TP	5000	4.0±0.1	1.8±0.1	8.0±0.2	2.0±0.05	0.55±0.1	178
	1E2K	1.00	1	0.35	TP	10000	1.2±0.1	1.2±0.1	8.0±0.2	2.0±0.05	0.45±0.1	178
	1E4/1E4K	1.60	1.6	0.6/0.5	TP	10000	2.2±0.1	1.2±0.1	8.0±0.2	2.0±0.5	0.45±0.1	178
	1J2/1J2K				TD	5000	1.9±0.1	1.9±0.1	8.0±0.2	4.0±0.1	0.6+0.2/-0 0.75+0.2/-0/	178
					TDD	10000	1.9±0.1	1.1±0.1	8.0±0.2	4.0±0.1	0.6+0.2/-0 0.75+0.2/-0/	255
	1J4/1J4KA	3.20		0.6/0.5	TD	5000	3.5±0.1	2.0±0.1	8.0±0.2	4.0±0.1	0.75+0.2/-0/	178
					TDD	10000	1.9±0.1	1.1±0.1	8.0±0.2	4.0±0.1	0.75+0.2/-0/ 0.6+0.2/-0	255
	1J8	6.40		0.6	TE	4000	6.9±0.2	2.0±0.2	12.0±0.1	4.0±0.1	0.9±0.1	178
					TED	10000	6.9±0.2	2.0±0.2	12.0±0.1	4.0±0.1	0.9±0.1	255
	2A2	2.54	2	0.6	TE	4000	2.9±0.2	2.4±0.2	8.0±0.2	4.0±0.1	1±0.15	178
					TED	10000	2.9±0.2	2.4±0.2	8.0±0.2	4.0±0.1	1±0.15	255
	2A4	5.08			TE	4000	5.4±0.2	2.3±0.2	12.0±0.1	4.0±0.1	1±0.15	178
					TED	10000	5.4±0.2	2.3±0.2	12.0±0.1	4.0±0.1	1±0.15	255
	2A8	10.16			TE	4000	10.6±0.2	2.45±0.2	16	4.0±0.1	1±0.15	178
					TED	10000	10.6±0.2	2.45±0.2	16	4.0±0.1	1±0.15	255
	2B2	2.54	3.2		TE	4000	3.5±0.2	2.85±0.2	8.0±0.2	4.0±0.1	1±0.15	178
					TED	10000	3.5±0.2	2.85±0.2	8.0±0.2	4.0±0.1	1±0.15	255
	2B4	5.08			TE	4000	5.4±0.2	3.4±0.2	12.0±0.1	4.0±0.1	1±0.15	178
					TED	10000	5.4±0.2	3.4±0.2	12.0±0.1	4.0±0.1	1±0.15	255
	2B8	10.16			TE	2000	10.55±0.2	3.6±0.2	16	4.0±0.1	1±0.15	178
					TED	5000	10.55±0.2	3.6±0.2	16	4.0±0.1	1±0.15	255
RD41B RN41 RM41 MLT CC	2A	2	1.25	-	TE	3000	2.4±0.2	1.5±0.2	8.0±0.2	4.0±0.1	1.45±0.2	178
					TED	10000	2.4±0.2	1.5±0.2	8.0±0.2	4.0±0.1	1.45±0.2	255
	2B	3.5	1.45	-	TE	3000	3.7±0.2	1.7±0.2	8.0±0.2	4.0±0.1	1.7±0.2	178
					TED	10000	3.7±0.2	1.7±0.2	8.0±0.2	4.0±0.1	1.7±0.2	255
	2D	3.2	1.55	-	TE	2000	3.7±0.2	1.7±0.2	8.0±0.2	4.0±0.1	1.7±0.2	178
	2E, 2H, 3AS	5.9	2.2	-	TE	1500	6.2±0.2	2.4±0.2	12.0±0.1	4.0±0.1	2.6±0.2	178
					TED	10000	6.2±0.2	2.4±0.2	12.0±0.1	4.0±0.1	2.6±0.2	255
NT73 LA73 LT73	1E	1	0.5	0.35	TP	10000	1.15±0.1	0.65±0.1	8.0±0.2	2.0±0.05	0.45+0.1/-0	178
	1J	1.6	0.8	0.45	TD	5000	1.9±0.1	1.1±0.1	8.0±0.2	4.0±0.1	0.6+0.2/-0	178
	2A	2	1.25	0.5	TD	5000	2.4±0.2	1.65±0.2	8.0±0.2	4.0±0.1	0.75+0.2/-0	178
	2B	3.2	1.6	0.6	TD	5000	3.5±0.2	2±0.2	8.0±0.2	4.0±0.1	0.75+0.2/-0	178
PT72	2A	2	1.25	1	TE	3000	2.25±0.1	1.45±0.1	8.0±0.2	4.0±0.1	1.5±0.15	178
	2B	3.2	1.6		TE	3000	3.5±0.2	1.9±0.2	8.0±0.2	4.0±0.1	1.5±0.15	178
SDT73H SDT73V	2B	3.2	1.6	0.5	TE	5000	3.6±0.1	2.0±0.1	8.0±0.2	4.0±0.1	0.85+0.05/-0.1	178
LP73	1J	1.6	0.8	0.5	TE	5000	1.9±0.1	1.1±0.1	8.0±0.2	4.0±0.1	0.6±0.1	178
	2A	2.0	1.25	0.5	TE	5000	2.4±0.1	1.6±0.1	8.0±0.2	4.0±0.1	0.85±0.1	178
	2B	3.2	1.6	0.5	TE	5000	3.6±0.1	2.0±0.2	8.0±0.2	4.0±0.1	0.85±0.1	178
RCU		1.60	0.8	1.15	TE	2000	1.85±0.16	1.05±0.15	8.0±0.2	4.0±0.1	1.25±0.1	178
					TED	5000	1.85±0.16	1.05±0.15	8.0±0.2	4.0±0.1	1.25±0.1	255
RCT		2.00	1.25	1.45	TE	2000	2.45±0.15	1.65±0.1/	8.0±0.2	4.0±0.1 -0.2	1.70±0.1	178
					TED	5000	2.45±0.15	1.65±0.1/	8.0±0.2	4.0±0.1 -0.2	1.70±0.1	255
RCS		3.20	1.6	1.25	TE	2000	3.6±0.2	2.0±0.2	8.0±0.2	4.0±0.1	1.45±0.15	178
					TED	5000	3.6±0.2	2.0±0.2	8.0±0.2	4.0±0.1	1.45±0.15	255
RCW		3.2	1.6	2	TE	2000	3.4±0.1/ -0.05	1.95±0.1/ -0.05	8.0±0.2	4.0±0.1	2.2±.01	178
KL32		3.2	2.5	2.2	TE	2000	3.55±0.1	2.70±0.1	8.0±0.1	4.00±0.1	2.7±0.5	178
KL73	1H	0.6	0.3	0.23	TB	10000	0.67±0.05	0.37±0.05	8.0	2.0	0.42+0.2/-0	178
	1E	1	0.5	0.35	TP	10000	1.15±0.1	0.65±0.1	8.0±0.2	2.0±0.05	0.45±0.2	180
	1J	1.6	0.8	0.5	TE	4000	1.9±0.1	1.1±0.1	8.0±0.2	4.0±0.1	0.9±0.15	180
	2A	2	1.25	0.5	TE	4000	2.4±0.2	1.6±0.2	8.0±0.2	4.0±0.1	1.0±0.15	180
	2B	3.2	1.6	10.6	TE	4000	3.5±0.2	1.9±0.2	8.0±0.2	4.0±0.1	1.0±0.15	180
KQ KQC KQT	0402	1.10	0.5	0.5	TD	2000	1.22±0.05	0.73±0.05	8.0±0.2	4.0±0.1	0.65±0.1	180
	0603	1.60	1	0.9	TE	2000	1.72±0.05	1.07±0.05	8.0±0.2	4.0±0.1	1.2±0.1	180
	0805	2.00	1.5	1.3	TE	2000	2.22±0.1	1.6±0.1	8.0±0.2	4.0±0.1	1.65±0.1	180
	1008	2.50	2.2	1.8	TE	2000	2.7±0.1	2.35±0.1	8.0±0.2	4.0±0.1	2.2±0.1	180
LPC	4045	4.50	4	4.5	TED	1000	4.158±0.2	4.75±0.2	12.0±0.1	8.0±0.2	5±0.2	380
	4235	4.5	4.2	3.5	TE	2000	4.4±0.2	4.75±0.2	12.0±0.1	8.0±0.1	4.0±0.2	330
	9040N	9.00	10.2	4.9	TED	500	Ø9.4±0.2		16±.01	12±.01	7.5±0.2	380
	12065	12.40	12	7.5	TED	300	12.5±0.2	13±0.2	24±.01	16±.02	8.2±0.2	380
	10065	10.40	10	7.5	TED	300	11±0.2	111.5±0.2	24±.01	16±.02	8.2±0.2	380
SDR	0604	5.6	—	4.5	TE	1500	—	—	12	4.0±0.1	5.0	330
	0805	7.8	—	5.3	TE	1000	—	—	—	12.0	6.2	380
	1006	9.8	—	5.8	TE	800	—	—	—	12.0	6.7	380

Type		Component Size (mm)			Carrier Tape	Quantity/ Reel (Pieces)	Taping (mm)					Reel Size
		L	W	T			A	B	W	P1	T1	
SL	1	6.3	3.1	1.9	TE	1000	6.8±0.1	3.6±0.1	12.0±0.1	8.2±0.2	2.35±0.1	180
	2/3	11.5	7	2.5	TED	1000	12.2±0.1	7.7±0.1	24	12.0±0.1	3.1±0.1	255
SLN	2	11.5	7	2.5	TE	1000	12.2±0.1	7.7±0.1	12.0±0.1	12±0.2	3.1±0.1	225
TLR	3A, 3AW	6.4	3.2	0.6	TE	2000	6.75±0.2	3.55±0.1	12.0±0.1	8.0±0.2	1.0±0.1	180
	2B, 2BN	3.2	1.6	0.6	TD	5000	3.5±0.2	2.0±0.2	8.0±0.2	4.0±0.1	0.75+0.2/-0	180
	2H	5.0	2.5	0.6	TE	4000	5.35±0.2	2.9±0.1	12.0±0.1	4.0±0.1	1.0±0.15	180
PS	I	10.0	5.2	1.6	TEB	3000	10.4±0.1	5.6±0.1	24	8	2.0±0.1	329
	E	6.4	6.4	0.65	TE	2000	6.8±0.1	6.8±0.1	12	8	1.0±0.1	178
TSL	1	6.3	3.1	1	TE	3000	6.6±0.1	3.4±0.1	12.0±0.1	4.0±0.1	1.3±0.1	180
NPR	1	7.5	4.5	2	TE	1000	7.9±0.1	4.8±0.1	16	8.2±0.2	2.45±0.1	178
	2	12	8	4	TEB	1000	13±0.1	9±0.1	24	102	4.35±0.1	330
CSR	1	10.8	6.2	2.1	TE	1000	11.1±0.14	6.7±0.1	24	12.0±0.1	2.6±0.1	255
	2	12.8±0.5	8.2±0.3	3.1±0.2	TE	1000	13.0±0.1	9.0±0.15	24	12.0±0.1	4.35±0.1	330
CZB CZP MCL	1E	1.0±0.1	0.5±0.1	0.5±0.1	TP	10000	1.17±0.1	0.65±0.1	8.0±0.22	2.0±0.23	0.63±0.1	178
	1J	1.6±0.15	0.8±0.15	0.8±0.15	TD	4000	1.8±0.1	1.1±0.1	8.1±0.1	4.0±0.1	1.1±0.1	178
	2A	2.0±0.2	1.25±0.2	0.9±0.2	TD TE	2000/4000* 3000*	2.4±0.1	1.6±0.1	8.1±0.1	4.0±0.1	1.2±0.1	178
	2B	3.2±0.2	1.6±0.2	0.51±0.25	TE	3000	3.5±0.1	1.8±0.1	8.1±0.1	4.0±0.1	1.8±0.1	178
MHL	1E	1.0±0.1	0.5±0.1	0.5±0.1	TP	10000	1.17±0.1	0.67±0.1	8.0±0.22	2.0±0.23	0.63±0.1	178
	1J	1.6±0.15	0.8±0.15	0.8±0.15	TD	4000	1.85±0.1	1.15±0.1	8.0±0.1	4.0±0.1	1.1±0.1	178
MCA	1E4	2.0±0.15	1.25±0.15	0.6±0.1	TE	4000	2.2±0.1	1.45±0.1	8.0±0.2	4.0±0.1	2.0±0.1	180
	1J4	3.2±0.15	1.6±0.15	0.8±0.1	TD	4000	3.5±0.15	1.9±0.15	8.0±0.2	4.0±0.1	2.5±0.1	180
KGM	0603	1.6±0.2	0.8±0.2	0.6±0.2	TE	4000	1.9±0.05	1.1±0.05	8.0±0.1	4.0±0.1	2.5 max.	178
	0805	2.0±0.2	1.25±0.2	0.8±0.2	TE	4000	2.2±0.1	1.5±0.1	8.0±0.3	4.0±0.1	2.5 max.	178
	1206	3.2±0.2	1.6±0.2	0.8±0.2	TE	2000	3.5±0.1	2.0±0.1	8.0±0.3	4.0±0.1	2.5 max.	178
	1812	4.5±0.3	3.2±0.3	1.0±0.2	TE	1000	4.9±0.1	3.5±0.2	12.0±0.3	4.0±0.1	2.5 max.	178
FBA	1J	3.2±0.2	1.6±0.2	0.8±0.2	TE	3000	3.5±0.1	1.8±0.1	8.1±0.1	4.0±0.1	1.2±0.1	178
NV73 NV73DL	1H	0.6	0.3	0.3	TBM	15000	0.68±0.02	0.38±0.02	8.0±0.2	4.0±0.2	1.75 max.	180
	1E	1.0±0.1	0.5±0.1	0.25±0.15	TP	10000	1.15±0.1	0.65±0.1	8.0±0.2	4.0±0.1	0.6+0.2	180
	1J	1.6±0.15	0.8±0.15	0.8±0.15	TE	2500	1.9±0.1	1.2±0.1	8.0±0.2	4.0±0.1	1.75 max.	180
	2A	2.0±0.2	1.25±0.2	1.3 max.	TE	2500	2.4±0.1	1.6±0.1	8.0±0.2	4.0±0.1	1.75 max.	180
	2B	3.2±0.2	1.6±0.2	1.65 max.	TE	2500	3.6±0.1	2.0±0.1	8.0±0.2	4.0±0.1	1.75 max.	180
	2E	3.2	2.5	1.5 max.	TE	2000	3.5±0.1	2.85±0.1	8.0±0.2	4.0±0.2	1.55 max.	180
	2J	4.5	3.2	2.0 max.	TE	1000	4.9±0.1	3.6±0.1	12.0±0.2	8.0±0.2	2.05 max.	180
	2L	5.7	5.0	2.5 max.	TE	1000	6.0±0.1	5.4±0.1	12.0±0.2	8.0±0.2	2.60 max.	180
LR72	A	10±0.2	5.2	2	TED	2000	1.45±0.2	5.7±0.2	2.0±0.05	8.0±0.10	2.3±0.2	255
	B	10±0.2	3	2	TED	2000	1.45±0.2	3.4±0.2	2.0±0.05	8.0±0.10	2.5±0.2	255
	C	11.2±0.4	3.2±0.4	3.5±0.4	TEB	1500	1.17±0.1	4.3±0.1	24±0.2	8.0±0.1	4.4±0.15	330
HFC	1005	1.0±0.15	0.5±0.1	0.5±0.1	T	10000	1.15±0.03	0.65±0.03	8.0±0.10	2.0±0.05	0.60±0.05	178
	1410	1.4±0.15	1.0±0.1	1.0±0.1	TE	3000	1.60±0.05	1.20±0.05	8.0±0.20	4.0±0.10	1.20±0.10	178
	1608	1.6±0.15	0.8±0.1	0.7±0.2	TE	4000	1.80±0.05	1.00±0.05	8.0±0.20	4.0±0.10	0.75 or 0.95±0.10	178
	1610	1.6±0.15	1.0±0.1	0.85±0.25	TE	3000	1.80±0.05	1.20±0.05	8.0±0.20	4.0±0.10	0.80 or 1.00 or 1.20±0.10	178
	1612	1.6±0.15	1.2±0.1	1.1±0.2	TE	3000	1.80±0.05	1.40±0.05	8.0±0.20	4.0±0.10	1.40±0.10	178
KC	1J	1.6±0.2	0.8±0.2	0.6±0.2	TD	4000	1.9±0.05	1.1±0.05	8.0±0.1	4.0±0.1	0.75±0.04	178
	2AF	2.0±0.2	1.25±0.2	0.8±0.2	TD	4000	2.3±0.1	1.55±0.1	8.0±0.2	4.0±0.1	N/A	178
	2A	2.0±0.2	1.25±0.2	1.6±0.2	TE	2000	2.3±0.1	1.55±0.1	8.0±0.2	4.0±0.1	1.9±0.1	178
	2B	3.2±0.3	1.6±0.3	2.5±0.3	TE	1500	3.5±0.1	2.0±0.1	8.0±0.2	4.0±0.1	2.7±0.1	178
KCR	1206	3.2±0.2	1.6±0.2	0.8±0.2	TE	2000	3.5±0.1	2.0±0.1	8.0±0.3	4.0±0.1	2.5 max.	178
TF	10	1.00	0.5	0.45	TB	10000	1.15±0.05	0.65±0.05	8.0±0.2	4.0±0.1	0.6+0.2/-0	178
	16	1.60	0.8	0.6	TD	5000	1.9±0.1	1.1±0.1	8.0±0.3	4.0±0.1	0.9±0.1	180
CCP	2B	3.20	1.6	1.2	TE	3000	3.5±0.1	1.9±0.1	8.0±0.3	4.0±0.1	1.5±0.1	178
	2E		2.5	2.2	TE	2000	3.5±0.1	2.8±0.1	8.0±0.3	4.0±0.1	2.4±0.1	178
CCF	1N,1F	6.0	2.5	2.5	TE	1000	6.4±0.2	2.7±0.2	12.0±0.3	4.0±0.1	2.9±0.2	178
CR	1J10	3.2±0.1	1.6±0.1	0.65±0.1	TE	4000	3.5±0.1	2.0±0.1	8.0±0.2	4.0±0.1	0.75+0.2/-0.1	178
	2A10	4.0±0.2	2.1±0.2	0.7±0.1			4.4±0.2	2.5±0.2	12.0±0.2	4.0±0.1	1.15±0.2	178
MRGF16	–	11	7.7	2.2	TEB	2000	11.7±0.2	8.2±0.2	24	12	2.4±0.1	330
PGD	1E	1.1	0.75	0.75	TE	4000	3.5±0.1	1.2±0.1	8.0±0.3	4.0±0.1	0.9±0.05	180
	1J	1.6	0.8	0.75	TE	4000	3.5±0.1	1.0±0.1	8.0±0.3	4.0±0.1	0.9±0.05	180
PGE	322	2.5	1.25	1.7	TE	3000	3.3±0.1	1.6±0.1	8.0±0.3	4.0±0.1	1.1±0.05	178
BR	27A	9.0	3.0	1.15	TEB	4000	9.3±0.1	3.3±0.1	24.0±0.3	8.0±0.1	1.8±0.2	330
	36S	9.0	4.0	1.15	TEB	4000	9.3±0.1	3.3±0.1	24.0±0.3	8.0±0.1	1.8±0.2	330
PL	2520	2.5	2.0	0.5	TE	4000	2.9±0.2	2.4±0.2	8.0±0.3	4.0±0.1	1.0±0.15	180
	3225	3.2	2.5	0.5	TE	4000	3.5±0.2	3.0±0.2	8.0±0.3	4.0±0.1	1.0±0.15	180
SF	45	4.5	3.2	0.5	TE	2000	5.0±0.1	3.6±0.1	12	8	1.06±0.1	178

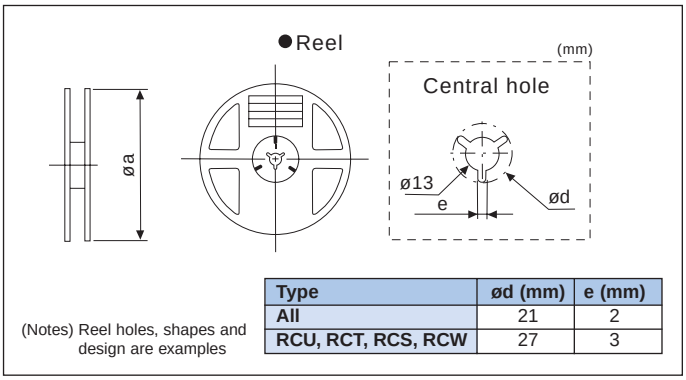
* MCL2A: 0.047µH ~ 2.2µH = TD: 4,000 pcs/reel; 2.7µH ~ 10µH = TE: 3,000 pcs/reel
CZB2A: <2200Ω=TD:4,000; 2200Ω=TD: 2,000 pcs/reel

Type		Component Size (mm)			Carrier Tape	Quantity/ Reel (Pieces)	Taping (mm)					Reel Size
		L	W	T			A	B	W	P1	T1	
AA(X) AC(X) AP(X) CTX DNA DN(X) EA(X) ED(X) RD(X) R(X)A RT(X) TF(X) US(X)	T16	5.0	6.4	1.0	TEB	2500	5.4±0.1	6.8±0.1	16	8	1.5±0.2	330
	T20	6.5	6.4	1.0	TEB	2500	7.1±0.1	6.95±0.1	16	8	1.5±0.2	330
	T24	7.8	6.4	1.0	TEB	2500	8.3±0.1	6.95±0.1	16	8	1.5±0.2	330
	Q16	4.9	5.99	1.6	TEB	2500	5.3±0.1	6.5±0.1	12	8	2.5±0.2	330
	Q20	8.66	5.99	1.6	TEB	2500	9.0±0.1	6.5±0.1	16	8	2.5±0.2	330
	Q24	8.66	5.99	1.6	TEB	2500	9.0±0.1	6.5±0.1	16	8	2.5±0.2	330
	Q28	10.0	5.99	1.6	TEB	2500	3.5±0.1	6.5±0.1	16	8	2.5±0.2	330
	N08	4.83	5.99	1.6	TEB	2500	5.3±0.1	6.5±0.1	12	8	2.5±0.2	330
	N14	8.66	5.99	1.6	TEB	2500	9.0±0.1	6.5±0.1	16	8	2.5±0.2	330
	N16	9.91	5.99	1.6	TEB	2500	10.3±0.1	6.5±0.1	16	8	2.5±0.2	330
	W16	10.44	10.36	2.4	TEB	1000	10.7±0.1	10.9±0.1	16	12	2.9±0.2	330
	W20	12.7	10.36	2.4	TEB	1000	13.3±0.1	10.9±0.1	24	12	2.9±0.2	330
	S03	2.92	2.30	0.95	TE	3000	2.77±0.1	3.15±0.1	8	4	1.3±0.2	180
	S14	2.92	2.30	0.95	TE	3000	3.5±0.1	3.15±0.1	8	4	1.3±0.2	180
	S05	2.90	2.80	1.0	TE	3000	3.5±0.1	3.4±0.1	8	4	1.3±0.2	180
	S06	2.90	2.80	1.0	TE	3000	3.5±0.1	3.4±0.1	8	4	1.3±0.2	180

Packaging specifications



(Notes) Dotted lines are applicable to only "TP" and "TB."



(Notes) Reel holes, shapes and design are examples

Type	ød (mm)	e (mm)
All	21	2
RCU, RCT, RCS, RCW	27	3

KOA SPEER ELECTRONICS, INC.

Appendix D

marking and standard values

marking

KSE Part Designation		Color		Marking Type
		Body	Marking	
RK73B	1F (01005)	Black	None	None
	1H (0201)	Black	None	None
	1E (0402)	Black	None	None
	1J (0603)	Black	White	3 Digits
	2A (0805)	Black	White	3 Digits
	2B (1206)	Black	White	3 Digits
	2E (1210)	Black	White	3 Digits
	2H (2010)	Black	White	3 Digits
	3A (2512)	Black	White	3 Digits
RK73Z	1H (0201)	Green	None	None
	1E (0402)	Green	None	None
	1J (0603)	Black	White	0
	2A (0805)	Black	White	000
	2B (1206)	Black	White	000
	2E (1210)	Black	White	000
	2H (2010)	Black	White	000
	3A (2512)	Black	White	000
RK73H	1H (0201)	Black	None	None
	1E (0402)	Blue	None	None
	1J (0603)	Blue	Black	E-24 3 Digits, E-96 None
	2A (0805)	Blue	Black	4 Digits
	2B (1206)	Blue	Black	4 Digits
	2E (1210)	Blue	Black	4 Digits
	2H (2010)	Blue	Black	4 Digits
	3A (2512)	Blue	Black	4 Digits
RK73G	1H (0201)	Black	None	None
	1E (0402)	Black	None	None
	1J (0603)	Dark Blue	Black	E-24 3 Digits E-96 None
	2A (0805)	Dark Blue	Black	4 Digits
	2B (1206)	Dark Blue	Black	4 Digits
RK73A	1J (0603)	Black	Light Blue	3 Digits
	2A (0805)	Black	Light Blue	3 Digits
	2B (1206)	Black	Light Blue	3 Digits
RK73N	1E (0402)	Black	None	None
	1J (0603)	Black	None	None
	2A (0805)	Black	None	None
	2B (1206)	Black	None	None
	2E (1210)	Black	None	None
	2H (2010)	Black	None	None
	3A (2512)	Black	None	None
RN73	1E (0402)	Black	None	None
	1J (0603)	Green	Distinctive Colors	E-24 3 digits E-96 None
	2A (0805)	Green	Distinctive Colors	4 Digits
	2B (1206)	Green	Distinctive Colors	4 Digits
	2H (2010)	Green	Distinctive Colors	4 Digits
RN73H/ RN73S	—	Black	Distinctive Colors	4 Digits
HV73	—	Black	White	3 Digits
WK73	—	Black	White	3 Digits
UR73	(D) 1E	Indigo	None	None
	1J	Indigo	White	4 Digits
	(D) 3A	Indigo	White	4 Digits
	(D) 2A	Indigo	White	4 Digits
	(D) 2B	Indigo	White	4 Digits
	(D) 2H	Indigo	White	4 Digits
SG73	—	Red Wine	White	3 Digits
SG73P	—	Green	White	3 Digits
CN	—	Black	White	3 Digits
CN_A	—	Black	White	3 Digits
CN_K	1F, 1H	Black	None	None
	1E	Black	None	None
	1J	Black	White	3 Digits
CNB	—	Black	White	3 Digits + pin number
CND	—	Black	White	3 Digits
CNZ	—	Black	None	None
CNN	—	Green	White	2 Digits
SR73	1E (0402)	Indigo	None	None
	1J (0603)	Indigo	White	1%=4 Digits 2%, 5%=3 Digits
	2A (0805)	Indigo	White	1%=4 Digits 2%, 5%=3 Digits
	2B (1206)	Indigo	White	1%=4 Digits 2%, 5%=3 Digits
	2E (1210)	Indigo	White	1%=4 Digits 2%, 5%=3 Digits
	2H (2010)	Indigo	White	1%=4 Digits 2%, 5%=3 Digits
	3A (2512)	Indigo	White	1%=4 Digits 2%, 5%=3 Digits
SL1-3	—	Black	White	4 Digits
TSL	—	Black	White	4 Digits
TLR	—	Black	White	4 Digits
LR72	—	Silver	None	3 Digits
NPR	—	Black	Teal	1%=4 Digits 5%, 10%=3 Digits
CSR	—	Black	White	3 Digits
RD41B	—	Ivory	3 color band	None
RN41	—	Blue	3 color band	None
RM41	—	Green	3 color band	None
MLT	—	Gray	3 color band	None
CC	—	Brown	None	None
CPCN	—	Gray	None	None
RKC	—	Black	White	1%=4 Digits 2%, 5%=3 Digits
RKH	—	Black	White	1%=4 Digits 2%, 5%=3 Digits
RKL	—	Black	White	1%=4 Digits 2%, 5%=3 Digits
MRP	—	Black	White	Alphanumeric
MRS	—	Black	White	Alphanumeric
LT73	—	Bronze	Black	4 Digits
LA73	—	Orange	Black	3 Digits
NT	1J	Pink	—	—
	2A, 2B	Pink	Black	3 Digits

marking (continued)

KSE Part Designation		Color		Marking Type
		Body	Marking	
PT72	70°C	Black	None	None
	80°C	Brown	None	None
	100°C	Blue	None	None
RF73	—	Brown	Black	3 Digits
CCP	—	Black	Yellow	2 Digits
CCF	—	White	Black	Alphanumeric
TF	—	Black	White	Letter Designation
NV73	—	Black	None	None
NV73A	—	Black	None	None
NV73D	—	Black	None	None
NVD	—	Green	Black	Alphanumeric
KL73	1H (0201)	Green	White	Direction Only
	1E (0402)	Dark Blue	Yellow	Direction Only
	1J (0602)	Dark Blue	Yellow	Alphanumeric
	2A (0805)	Dark Blue	Yellow	
	2B (1206)	Dark Blue	Yellow	
SDR	0604	Black	Black	3 Digits
	0805	Black	Black	3 Digits
	1006	Black	Black	3 Digits
MCL	—	Black	None	None
MHL	1E	Brown	None	None
	1J	White	Black Stripe	None
KL32	—	Black	White	3 Digits
KQ	0603	Black	White	3 Digits
	0805	Black	White	3 Digits
	1008	Black	White	3 Digits
KQ(T)	0402	White	None	None
KQC	0402/0403	White	None	None
	0603	Black	None	None
LP73	—	Black	White	Alphanumeric
PL	—	Black	White	3 Digits
SDS	—	Black	Black	3 Digits
MRGF	—	Black	White	Alphanumeric
BR	—	Black	White	Alphanumeric
PGD	—	Black	Black	Letter Designation
LPC	—	Black	None	None
HFC	—	Brown	None	None
MCA	—	Tan	None	None
CZB/CZP	—	Black	None	None
KGM	—	Black	None	None
KCR	—	Black	None	None
KC	2A	White/Black	None	None
	1J, 2AF	Brown/Black	None	None
	2B	White/Black	Black	2 Digit
CR	1J	Green	Yellow	3 Digit
	2A	Green	Yellow	3 Digit
FBA	—	Black	None	None
SF	45	Green	White	K + Value

significant figures of nominal resistance

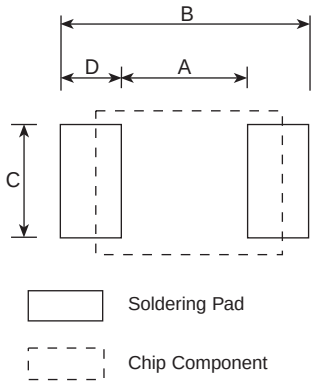
E-12 Decade Values					
10	12	15	18	22	27
33	39	47	56	68	82
E-24 Decade Values					
10	11	12	13	15	16
18	20	22	24	27	30
33	36	39	43	47	51
56	62	68	75	82	91
E-96 Decade Values					
100	102	105	107	110	113
115	118	121	124	127	130
133	137	140	143	147	150
154	158	162	165	169	174
178	182	187	191	196	200
205	210	215	221	226	232
237	243	249	255	261	267
274	280	287	294	301	309
316	324	332	340	348	357
365	374	383	392	402	412
422	432	442	453	464	475
487	499	511	523	536	549
562	576	590	604	619	634
649	665	681	698	715	732
750	768	787	806	825	845
866	887	909	931	953	976
E-192 Decade Values					
100	101	102	104	105	106
107	109	110	111	113	114
115	117	118	120	121	123
124	126	127	129	130	132
133	135	137	138	140	142
143	145	147	149	150	152
154	156	158	160	162	164
165	167	169	172	174	176
178	180	182	184	187	189
191	193	196	198	200	203
205	208	210	213	215	218
221	223	226	229	232	234
237	240	243	246	249	252
255	258	261	264	267	271
274	277	280	284	287	291
294	298	301	305	309	312
316	320	324	328	332	336
340	344	348	352	357	361
365	370	374	379	383	388
392	397	402	407	412	417
422	427	432	437	442	448
453	459	464	470	475	481
487	493	499	505	511	517
523	530	536	542	549	556
562	569	576	583	590	597
604	612	619	626	634	642
649	657	665	673	681	690
698	706	715	723	732	741
750	759	768	777	787	796
806	816	825	835	845	856
866	876	887	898	909	920
931	942	953	965	976	988

standard soldering pad dimensions

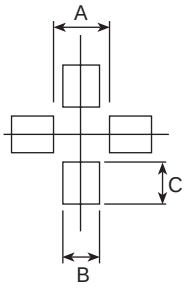
The optimum soldering pad dimensions may differ depending on soldering conditions, however, the following land dimensions are generally recommended.

Type	Style	Dimensions millimeters				
		Component Size	A	B	C	D
WK73	2H	2.5 X 5.0	1.0	35	5.0	1.25
	2J	3.1 X 4.6	1.6	3.9	4.75	1.15
	3A	3.1 X 6.4	1.6	3.9	6.4	1.15
RK73 SG73 RN73 RN73H SR73 LT73 NT73 PT72 LA73 RF73 KL73 HV73 LP73 SDT73	1F	0.4 X 0.2	0.12	0.48	0.18	0.18
	1H	0.6 X 0.3	0.25	0.7	0.3	0.225
	1E	1.0 X 0.5	0.5	1.3	0.3	0.4
	1J	1.6 X 0.8	1.0	2.0	0.6	0.5
	2A	2.0 X 1.25	1.3	2.5	1.05	0.6
	2B	3.2 X 1.6	2.2	4.0	1.4	0.9
	2E	3.2 X 2.5	2.2	4.0	2.3	0.9
	2H	5.0 X 2.5	3.3	6.1	2.3	1.4
	3A	6.4 X 3.2	4.6	8.0	3.0	1.7
SL/TSL	1	6.3 X 3.1	3.4	8.0	3.0	2.3
	2-3	11.5 X 7.0	5.4	15.0	5.0	4.8
SLN	2	11.5 X 7.0	5.0	15.0	6.0	5.0
NPR	1	7.5 X 4.5	4.0	10.0	3.0	3.0
	2	12.0 X 8.0	8.0	15.0	4.0	3.5
CCP	2E	3.2 X 2.5	2.2	5.0	2.0	1.4
	2B	3.2 x 1.6	2.2	5.0	1.4	1.4
CCF	1N	6.0 X 2.5	3.0	7.2	2.8	2.1
	1F	6.0 X 2.5	3.2	8.8	5.0	2.8
LPC	4045	4.5 X 4.0	1.5	5.1	3.5	1.8
	4325	4.5 X 4.2	1.9	5.5	2.6	1.8
	9040N	9.0 X 4.8	4.0	2.6	3.0	—
	10065	10.0 X 10.4	5.0	13.0	6.0	4.0
	12065	12 X 12.4	5.0	15.0	7.5	5.0
KL	32	3.2 X 2.5	2.2	5.0	2.0	1.4
KQT	0402	1.0 X 0.5	0.46	1.18	0.66	0.36
KQ KQC	0603	1.6 X 1.0	0.64	1.92	1.02	0.64
	0805	2.0 X 1.5	0.76	2.8	1.78	1.02
	1008	2.5 X 2.2	1.27	3.31	2.54	1.02
CZB CZP MHL MCL	1E	0.50 X 0.10	0.4	1.6	0.6	—
	1J	0.80 X 1.6	0.55	2.6	0.94	—
	2A	1.25 X 2.0	0.66	3.0	1.45	—
	2B	1.6 X 3.2	1.5	4.4	1.8	—
SDR	0604	5.6 X 4.5	1.7	6.0	5.8	—
	0805	7.5 X 7.5	2.4	7.8	8.0	2.7
	1006	9.5 X 9.5	2.8	10.0	10.0	3.6
TF	10	1.0 X 0.5	0.5	1.3	0.3	0.4
	16	1.6 X 0.8	1.0	2.0	0.6	0.5

Flat Type Components



LPC 9040N



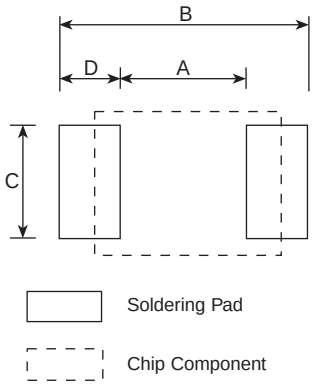
Type	Style	Dimensions millimeters				
		Component Size	A	B	C	D
TLR	2BN, 2B	3.2 X 1.6	1.4	4.0	1.8	1.3
	2H(1mΩ)	5.0 X 2.5	1.0	6.1	3.0	2.55
	2H (2mΩ~6mΩ)	5.0 X 2.5	1.3	6.1	3.0	2.4
	2H (7mΩ~8mΩ)	5.0 X 2.5	3.3	6.1	3.0	1.4
	3A(1mΩ)	6.35 X 3.18	1.45	7.55	3.83	3.05
	3A(2mΩ)	6.35 X 3.18	3.45	7.55	3.83	2.05
	3A(3mΩ)	6.35 X 3.18	2.45	7.55	3.83	2.70
	3A(4mΩ)	6.35 X 3.18	3.45	7.55	3.83	2.05
	3AW (1mΩ~4mΩ)	6.35 X 3.18	1.45	7.55	3.83	3.05
	3AW (5mΩ~8mΩ)	6.35 X 3.18	3.45	7.55	3.83	2.05
	3AW (9mΩ-10mΩ)	6.35 X 3.18	4.40	7.55	3.83	1.575
UR73	2A	2.0 X 1.25	1.3	3.1	1.25	0.9
	2B	3.2 X 1.6	2.2	4.4	1.6	1.1
UR73D	1E	1.0 X 0.5	0.5	1.8	0.5	0.65
	1J	1.6 X 0.8	0.5	2.5	0.9	1.0
	2A	2.0 X 1.25	0.8	3.4	1.3	1.3
	2B	3.2 X 1.6	1.2	4.6	1.8	1.7
	2H (10m~30mΩ)	5.0 X 2.5	1.8	6.1	2.6	2.5
	2H (33m~100mΩ)	5.0 X 2.5	3.3	6.1	2.5	1.4
	3A (10m~30mΩ)	6.4 X 3.2	2.3	8.0	3.3	1.7
	3A (33m~100mΩ)	6.4 X 3.2	4.6	8.0	3.0	1.7

standard soldering pad dimensions (continued)

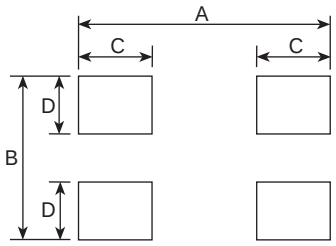
The optimum soldering pad dimensions may differ depending on soldering conditions, however, the following land dimensions are generally recommended.

Type	Style	Dimensions millimeters				
		Component Size	A	B	C	D
NV73 NV73DL	1H	0.6 X 0.3	0.25-0.35	0.65-0.95	0.25-0.35	0.2-0.3
	1E	1.0 X 0.5	0.51	1.73	0.51	0.61
	1J	1.6 X 0.8	1.0	3.0	1.2	1.0
	2A	2.0 X 1.25	1.2	4.0	1.0	1.4
	2B	3.2 X 1.6	2.2	5.0	1.3	1.4
	2E	3.2 X 2.5	2.2	5.0	2.2	1.4
	2J	4.5 X 3.2	3.0	5.8	2.9	1.4
	2L	5.7 X 5.0	4.5	7.5	4.7	1.5
PL	2520	2.5 X 2.0	1.3	3.3	1.8	1.0
	3225	3.2 X 2.5	2.2	4.0	2.3	0.9
SDS	0804	8.0 X 10.5	5.7	10.5	2.2	2.4
	0805	8.0 X 10.5	5.7	10.5	2.2	2.4
	1003	10.0 X 12.7	7.3	13.3	2.8	3.0
	1005	10.0 X 12.7	7.3	13.3	2.8	3.0
	0908	9.5 X 10.5	10.3	14.7	9.0	2.2
	1205	12.7 X 12.7	6.0	14.0	7.0	4.0
	1206	12.7 X 12.7	6.0	14.0	7.0	4.0
	1208	12.7 X 12.7	6.0	14.0	7.0	4.0
PGD	1E	—	0.016	0.016	0.020	0.052
	1J	—	0.024	0.022	0.020	0.064
PS	I	10.0 X 5.2	5.6	11.0	6.2	2.7
	E	6.4 X 6.4	1.4	7.6	7.0	3.1
SLF	0905	—	9.5	3.74	2.0	1.2

Flat Type Components



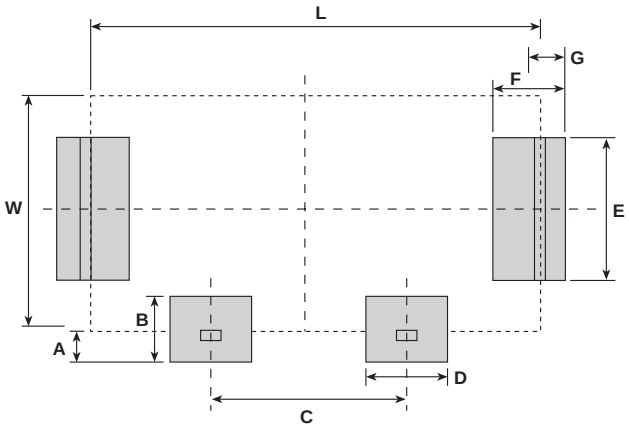
SLF



current sense resistor—CSR

Dimensions inches (mm)									
Type	L	W	A	B	C	D	E	F	G
CSR1	.393 (10.0)	.236 (6.0)	.039 (1.0)	.078 (2.0)	.196 (5.0)	.062 (1.6)	.118 (3.0)	.078 (2.0)	.039 (1.0)
CSR2	.472 (12.0)	.314 (8.0)	.062 (1.6)	.125 (3.2)	.236 (6.0)	.086 (2.2)	.208 (5.3)	.090 (2.3)	.045 (1.15)

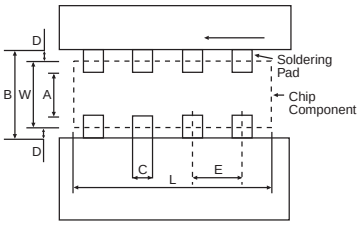
CSR



resistor arrays—CN

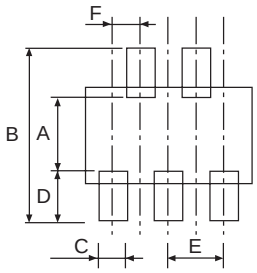
Type	Style	Dimensions						
		Component Size		A	B	C	D	E
		L	W					
CN	1E2K	0.5 X n	1.0	0.5	1.5	0.4	0.25	0.67
	1E4K					0.3	0.25	0.5
	1F8K	3.8	1.6	1.0	2.6	0.3	0.5	0.5
	1JA/K	0.8 X n	1.6	1.0	2.6	0.6	0.5	0.8
	2B4A	5.1	3.1	2.1	4.1	0.9	0.5	1.27
	1J	0.8 X n	1.6	0.8	2.6	0.4	0.5	0.8
	2A	1.27 X n	2.0	1.0	3.0	0.65	0.5	1.27
	2B		3.2	2.2	4.2	0.65	0.5	1.27
CND	1J10K	3.2	1.6	0.9	2.6	0.4	0.5	0.64
	2B10	6.4	3.1	2.1	4.1	0.6	0.5	1.27
CNN	2A	2.54	2.0	1.2	2.8	0.6	0.4	1.27

Chip Networks

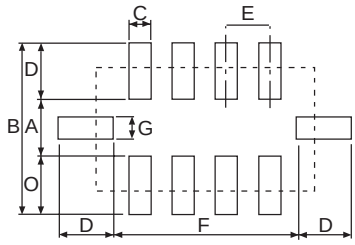


Type	Style	Dimensions							
		Component Size	A	B	C	D	E	F	G
CND	1J10Y	3.2 X 1.6	0.9	2.3	0.3	0.7	0.635	2.45	0.4
CND	2A10Y	4.0 X 2.1	1.0	3.0	0.4	1.0	0.8	3.4	0.4
CNB	2E5Z	3.2 X 2.5	1.7	3.9	0.5	1.1	1.0	0.5	—
CNB	2B9Z	6.4 X 3.2	2.4	4.6	0.5	1.1	1.3	0.65	—

CNB2E5Z, CNB2B9Z

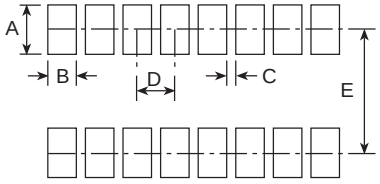


CND1J10Y, CND2A10Y



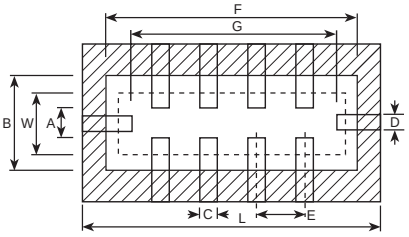
thick film resistor—MRGF

Type	Dimensions					
	Component Size	A	B	C	D	E
MRGF16	11.0 X 7.7	1.27	0.76	0.51	1.27	7.62



chip resistor array—CR

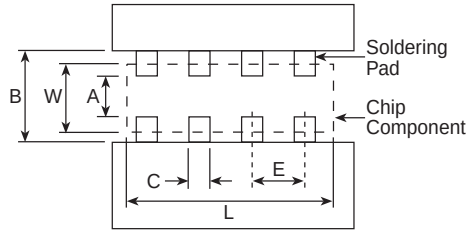
Dimensions inches *(mm)*								
L	W	A	B	C	D	E	F	G
1.6	.08	.07	.12	.02	.02	.03	.2	.14
4.0	*2.1*	*1.7*	*3.1*	*0.4*	*0.4*	*0.8*	*5.1*	*3.5*



(unit: mm)

ferrite bead array—FBA

Chip Size	Dimensions inches *(mm)*					
	Component Size		A	B	C	E
	L	W				
1206 (3216)	.126 *(3.2)*	.063 *(1.6)*	.030 *(0.762)*	.120 *(3.048)*	.016 *(0.406)*	.031 *(0.787)*

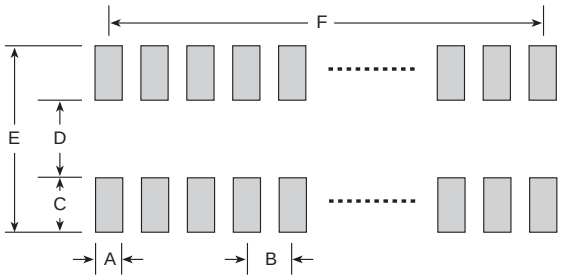


7/11/07

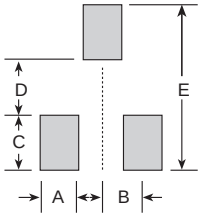
integrated passive devices—SOIC, TSSOP, QSOP & SOT23

Chip Size	Dimensions inches (mm)					
	A	B	C	D	E	F
N08	.028 (0.7)	.050 (1.27)	.094 (2.4)	.098 (2.5)	.287 (7.3)	.150 (3.81)
N14	.028 (0.7)	.050 (1.27)	.094 (2.4)	.098 (2.5)	.287 (7.3)	.300 (7.62)
N16	.028 (0.7)	.050 (1.27)	.094 (2.4)	.098 (2.5)	.287 (7.3)	.350 (8.89)
W16	.028 (0.7)	.050 (1.27)	.094 (2.4)	.272 (6.9)	.461 (11.7)	.350 (8.89)
W20	.028 (0.7)	.050 (1.27)	.094 (2.4)	.272 (6.9)	.461 (11.7)	.450 (11.43)
Q16	.012 (0.3)	.025 (0.63)	.050 (1.27)	.180 (4.56)	.280 (7.1)	.175 (4.45)
Q20	.012 (0.3)	.025 (0.63)	.050 (1.27)	.180 (4.56)	.280 (7.1)	.225 (5.72)
Q24	.012 (0.3)	.025 (0.63)	.050 (1.27)	.180 (4.56)	.280 (7.1)	.275 (6.99)
Q28	.012 (0.3)	.025 (0.63)	.050 (1.27)	.180 (4.56)	.280 (7.1)	.325 (8.26)
SOT23	.035 (0.9)	.037 (0.95)	.055 (1.4)	.031 (0.8)	.141 (3.6)	—
S05	.028 (0.7)	.038 (0.97)	.043 (1.1)	.055 (1.4)	.141 (3.6)	—
S06	.028 (0.7)	.038 (0.97)	.043 (1.1)	.063 (1.6)	.141 (3.6)	.076 (1.9)
S14	.028 (0.7)	—	.055 (1.4)	.031 (0.81)	.141 (3.6)	—

SOIC, TSSOP, QSOP

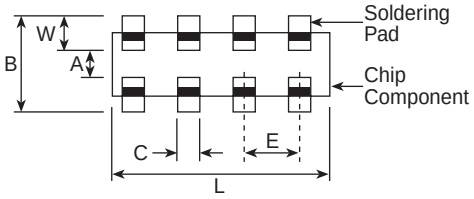


SOT23



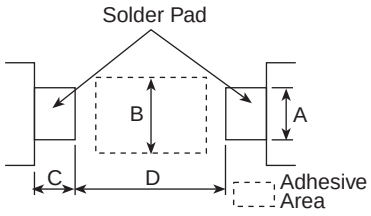
capacitor arrays—MCA

Chip Size	Dimensions inches (mm)				
	Size W	A	B	C	E
0402	.012 (0.31 ± 0.10)	—	.062 (1.59 ± 0.15)	.011 (0.28 ± 0.10)	.019 (0.50 ± 0.10)
0603	.035 (0.89 ± 0.10)	.030 (0.76 ± 0.10)	.099 (2.54 ± 0.15)	.020 (0.45 ± 0.10)	.031 (0.80 ± 0.10)

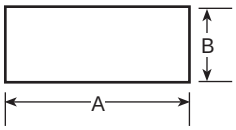


melf type components—RD41, RN41, RM41, MLT, CC

Type	Style	Dimensions millimeters				
		Component Size	A	B	C	D
RD41 RN41 RM41 MLT CC	2A 10	2.0 X 1.25	1.3	1.3	2.0	1.3
	2B,2E 12	3.5 X 1.45	1.5	2.2	1.5	2.0
	2D 20	3.2 X 1.55	1.5	2.2	1.5	2.0
	2E,2H 25	5.9 X 2.2	2.0	3.0	3.0	4.0



other chips—RCS, RCT, RCU, RCW

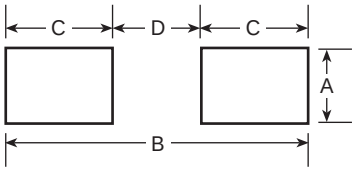


Type	Dimensions millimeters	
	A	B
RCS	4.1-4.3	1.4-1.6
RCT	2.9-3.1	1.05-1.25
RCU	2.5-2.7	0.6-0.8
RCW	4.1-4.3	1.4-1.6

ceramic chip capacitors

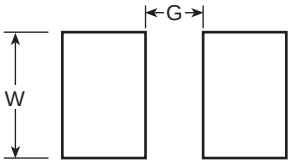
Component pads should be designed to achieve good solder filets and minimize component movement during reflow soldering.
Pad dimensions are given below for multilayer ceramic capacitors for both reflow and wave soldering. The basis for these designs is:

- Pad width equal to component width. It is permissible to decrease this to as low as 85% of component width but it is not advisable to go below this.
- Pad overlap 0.5mm beneath component
- Pad extension 0.5mm beyond components for reflow and 1.0mm for wave soldering



Case Size	Dimensions inches (mm)			
	A	B	C	D
0402	0.02 (0.50)	0.07 (1.70)	0.02 (0.60)	0.02 (0.50)
0603	0.03 (0.75)	0.09 (2.30)	0.03 (0.80)	0.03 (0.70)
0805	0.05 (1.25)	0.12 (3.00)	0.04 (1.00)	0.04 (1.00)
1206	0.06 (1.60)	0.16 (4.00)	0.04 (1.00)	0.09 (2.00)
1210	0.10 (2.50)	0.16 (4.00)	0.04 (1.00)	0.09 (2.00)

ceramic chip capacitors—HFC

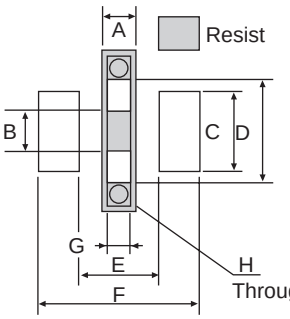


Type	Part	Dimensions inches (mm)	
		G	W
HFC	1005	0.015 (0.40)	0.020 (0.50)
	1410	0.031 (0.80)	0.039 (1.00)
	1608	0.039 (1.00)	0.031 (0.80)
	1610	0.039 (1.00)	0.039 (1.00)
	1612	0.039 (1.00)	0.047 (1.20)

three-terminal inductor/capacitor—KC

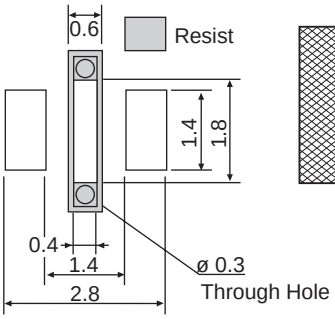
Chip Mounting Side

1J, 2AF, 2B

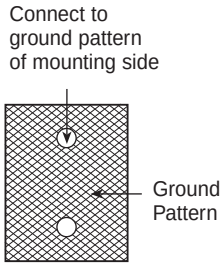


Chip Size	Dimensions inches (mm)							
	A	B	C	D	E	F	G	H
1J	.024 (0.6)	.020 (0.5)	.039 (1.0)	.055 (1.4)	.047 (1.2)	.094 (2.4)	.016 (0.4)	.012 (0.3)
2AF	.024 (0.6)	.028 (0.7)	.055 (1.4)	.071 (1.8)	.055 (1.4)	.110 (2.8)	.016 (0.4)	.012 (0.3)
2B	.040 (1.0)	.055 (1.4)	.071 (1.8)	.110 (2.8)	.087 (2.2)	.157 (4.0)	.031 (0.8)	.020 (0.5)

2A

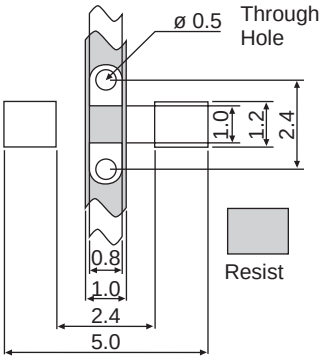


Back Side

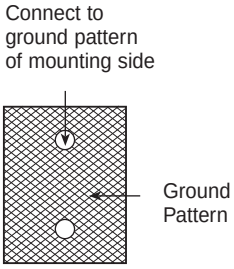


three-terminal capacitor/resistor—KCR

Chip Mounting Side

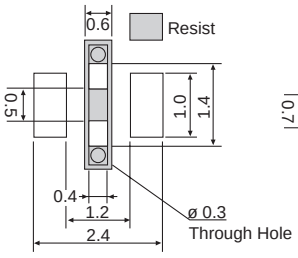


Back Side

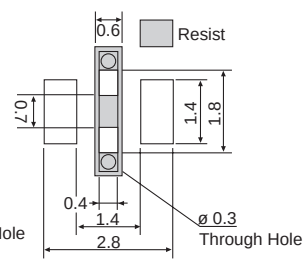


three-terminal capacitor—KGM

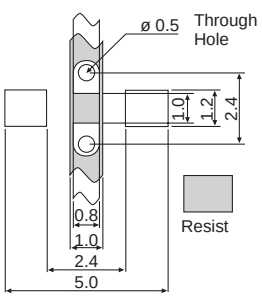
0603 Chip Mounting Side



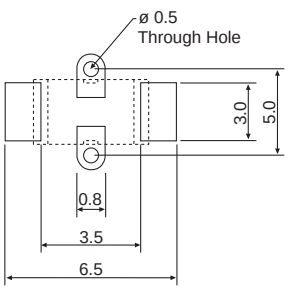
0805 Chip Mounting Side



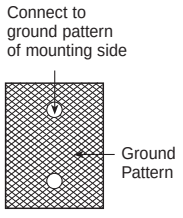
1206 Chip Mounting Side



1812 Chip Mounting Side



0603, 0805, 1206, 1812 Back Side



(unit: mm)