



KOA's INTEGRATED PASSIVE COMPONENTS

THICK FILM
CN

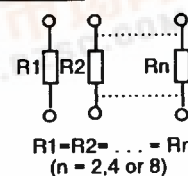
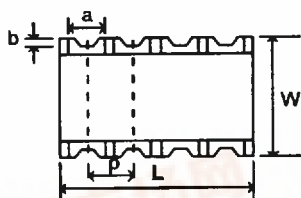
FLAT CHIP RESISTOR ARRAY

- Manufactured to Type RM Standards
- Marked with Resistance Value
- Less Board Space than Individual Chips
- Isolated Resistor Elements



SIZE CODE	L	W	C	d	t	a (ref.)	b (ref.)	p (ref.)		
1E2	$\frac{0.039 \pm 0.004}{1.0 \pm 0.1}$	$\frac{0.039 \pm 0.004}{1.0 \pm 0.1}$	$\frac{0.006 \pm 0.004}{0.15 \pm 0.1}$	$\frac{0.012}{0.33} \text{max}$	$\frac{0.014 \pm 0.004}{0.35 \pm 0.1}$	$\frac{0.020}{0.5}$	$\frac{0.006}{0.15}$	$\frac{0.026}{0.65}$		
1J4	$\frac{0.126 \pm 0.008}{3.2 \pm 0.2}$	$\frac{0.063 \pm 0.008}{1.6 \pm 0.2}$	$\frac{0.012 \pm 0.008}{0.3 \pm 0.2}$	$\frac{0.016 \pm 0.006}{0.4 \pm 0.15}$	$\frac{0.024 \pm 0.004}{0.6 \pm 0.1}$			$\frac{0.031}{0.8}$	$\frac{0.050}{1.27}$	$\frac{0.031}{0.8}$
1J8	$\frac{0.252 \pm 0.008}{6.4 \pm 0.2}$									
2A4	$\frac{0.2 \pm 0.008}{5.08 \pm 0.2}$	$\frac{0.079 \pm 0.008}{2.0 \pm 0.2}$	$\frac{0.016 \pm 0.012}{0.4 \pm 0.3}$	$\frac{0.022 \pm 0.006}{0.55 \pm 0.15}$						
2A8	$\frac{0.4 \pm 0.008}{10.16 \pm 0.2}$									
2B4	$\frac{0.2 \pm 0.008}{5.08 \pm 0.2}$	$\frac{0.126 \pm 0.008}{3.2 \pm 0.2}$	$\frac{0.020 \pm 0.012}{0.5 \pm 0.3}$							
2B8	$\frac{0.4 \pm 0.008}{10.16 \pm 0.2}$									

CIRCUIT CONSTRUCTION



STANDARD APPLICATIONS

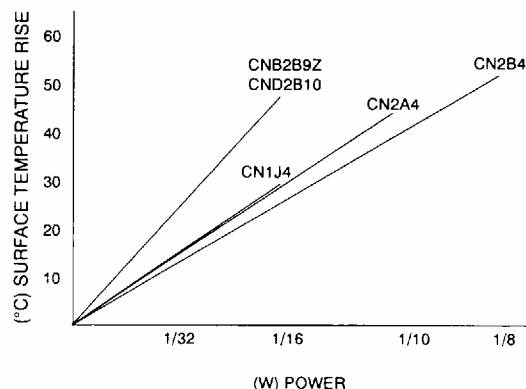
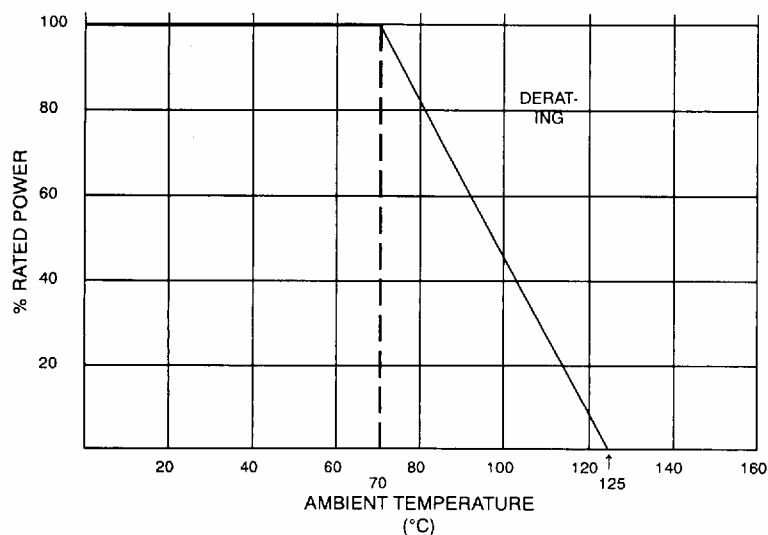
TYPE	Power Rating @ 70°C (per element)	TCR (ppm/°C) max.	Resistance Range (E-24 values)	Resistance Tolerance	Absolute Maximum Working Voltage	Maximum Overload Voltage (5 secs. max.)	Operating Temperature Range
CN1E	63mW	±300	10 Ω - 1 MΩ	J (±5%)	25V	50V	-55 - +125°C
CN1J					50V	100V	-55 - +125°C
CN2A	100mW				100V	200V	
CN2B	125mW				200V	400V	

ORDERING & SPECIFYING INFORMATION

CN	2A	4	TE	101	J
TYPE	SIZE CODE	NUMBER OF RESISTORS	PACKAGING	NOMINAL RESISTANCE	TOLERANCE
CN	(See Above) 1E 1J 2A 2B	2, 4 or 8	See pages 25 & 26 for details. TE: Embossed Plastic Tape T: Paper Tape (1E2, 1J2 & 1J4 only)	2 Significant Figures & 1 Multiplier	J±5%



PACKAGING SPECIFICATIONS



PARAMETER	MAXIMUM DELTA R	TEST METHOD
Thermal Shock	$\pm(1\% \pm 0.1\Omega)$	MIL-STD-202F, Method 107D -55°C ~ +125°C, 5 cycles
Low Temperature Operation	$\pm(1\% + 0.1\Omega)$	MIL - R - 55342D π 4.7.4 1 Hour @ -55°C followed by 45 minutes of RCWV**
High Temperature Exposure	$\pm(1\% + 0.1\Omega)$	MIL - R - 55342D π 4.7.6 100 Hours @ 125°C
Short Time Overload	$\pm(2.0\% + 0.05\Omega)$	MIL - R - 55342D π 4.7.5 2.5 X RCWV* for 5 seconds
Resistance to Solder Heat	$\pm(1\% + 0.1\Omega)$	MIL - R - 55342D π 4.7.7 260°C for 10 seconds
Terminal Strength-Push	$\pm(1\% + 0.1 \Omega)$	1.2 Kg for 1 minute
Terminal Strength-Bend	$\pm(0.5\% + 0.05 \Omega)$	5mm Deflection in Either Direction for 10 Seconds
Moisture Resistance	$\pm 5\%$	MIL - STD - 202F, Method 106E 10 Cycles, 240 Hours
Life	$\pm 5\%$	MIL - STD - 202F, Method 108A 70°C, 1000 Hours @ RCWV*, 1.5 Hr ON, 0.5 Hr OFF
Pulse	$\pm 5\%$	2.5 X RCWV*, Not Exceeding Maximum Overload Voltage, 1 Second ON, 25 seconds OFF 10,000 Cycles
Temperature Cycling	$\pm 1.0\%$	30 Minutes @ -55°C; 15 Minutes at +25°C, 30 Minutes at +125°C, 15 Minutes at +25°C, 5 Cycles
Terminal Adhesion	15 Grams, Minimum	Axial Pull, One Terminal at a Time
Dielectric Withstanding Voltage CN1J CN2A CN2B CNB & CND	100V 200V 400V 100V	
Insulation Resistance	10,000 Meg Ohm	

*RCWV = Rated Continuous Working Voltage



KOA'S INTEGRATED PASSIVE COMPONENTS PACKAGING

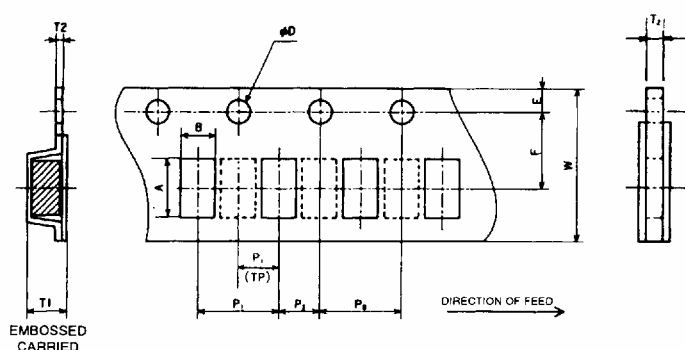
PACKING SPECIFICATIONS

PART	TD: PUNCHED PAPER	TE: EMBOSSSED PLASTC	BULK	STICK PACK
CR2B	5000/10000	4000/10000	1000	-----
CN1J2	5000	-----	-----	-----
CNAJ4	5000	-----	-----	-----
CN1J8	-----	4000	-----	-----
CN2A2	-----	4000	-----	-----
CN2A4	-----	4000	-----	-----
CN2A8	-----	4000	-----	-----
CN2B2	-----	4000*	-----	-----
CN2B4	-----	2000	-----	-----
CN2B8	-----	2000	-----	-----
CNB2E5Z	-----	4000	-----	-----
CNB2B9Z	-----	4000	-----	-----
CND2B10	-----	4000	-----	-----
HM16	-----	2000	-----	50
HN16	-----	2000	-----	50

*Also available on 330mm (13") reel with 7500 pcs.

PACKAGING SPECIFICATIONS

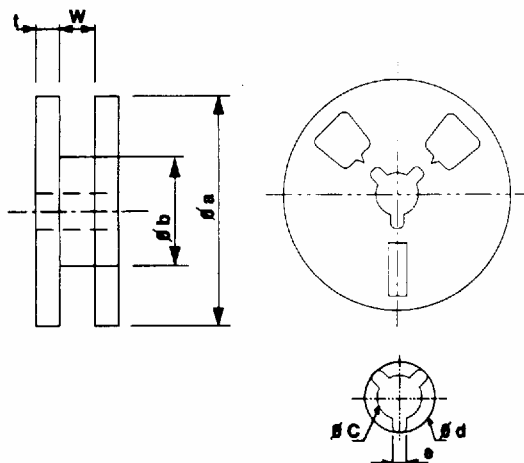
CARRIER TAPE



DIMENSIONS (mm)

PACKAGING	SIZE CODE	A	B	W	E	F	T1	T2	P0	P1	P2	ØD
(T)	CR2B	3.5±0.1	1.9±0.1	8.0±0.2	1.75±0.1	3.5±0.05	----	0.45±0.1	4.0±0.1	2.0±0.05	2.0±0.05	1.5±0.1 -0
PAPER	CN1J2	1.9±0.1	"	"	"	"	----	0.6±0.05	"	----	"	"
TAPE	CN1J4	3.5±0.1	"	"	"	"	----	0.75±0.1	"	4.0±0.1	"	"
(TE) EMBOSSED PLASTIC	CR2B	3.5±0.1	1.9±0.2	12.0±0.3	"	"	1.0±0.1	"	"	"	"	"
	CN1J8	6.9±0.1	2.0±0.1	"	"	5.5±0.05	1.0 MAX	0.30±0.1	"	4.0±0.1	2.0±0.05	"
	CN2A2	2.95±0.1	2.4±0.1	8.0±0.2	"	3.5±0.05	"	"	"	"	"	"
	CN2A4	5.4±0.1	"	12.0±0.3	"	5.5±0.05	"	"	"	"	"	"
	CN2A8	10.5±0.1	"	16.0±0.3	"	7.5±0.1	"	0.25±0.1	"	"	2.0±0.1	"
	CN2B2	2.95±0.1	3.6±0.1	8.0±0.2	"	3.5±0.05	"	"	"	8.0±0.1	2.0±0.05	"
	CN2B4	5.45±0.1	"	12.0±0.3	"	5.5±0.05	"	0.3±0.1	"	"	"	"
	CN2B8	10.5±0.1	"	16.0±0.3	"	7.5±0.1	"	"	"	"	2.0±0.1	"
	HM16 HN16	11.6±0.1	8.2±0.1	24.0±0.3	"	11.5±0.1	2.6±0.1	0.4±0.05	"	12.0±0.1	----	"

REEL SPECIFICATIONS



SIZE CODE	DIMENSION (mm)					
	Øa	Øb	w	t	Øc	Ød e
CR2B CN1J2 CN1J4 CN2A2 CN2B2	178±2.0	80±2.0	10±1.0	1.5±.05	13±0.5	27±20 3.0±0.5
CN1J8 CN2A4 CN2B4	"	"	14±1.0	"	"	" "
CN2A8 CN2B8	"	60±2.0	16.4 $\begin{smallmatrix} +2 \\ -0 \end{smallmatrix}$	"	"	21±2.0 2.0 $\begin{smallmatrix} +0.5 \\ -0 \end{smallmatrix}$
HM16 HN16	330±2.0	"	25.5±1.0	"	"	23±1.0 2.0 $\begin{smallmatrix} +0.5 \\ -0 \end{smallmatrix}$