



CR(CHIP Resistor)

Extremely Thin and Light

Highly Reliable Multilayer Electrode Construction

Compatible with all Soldering process

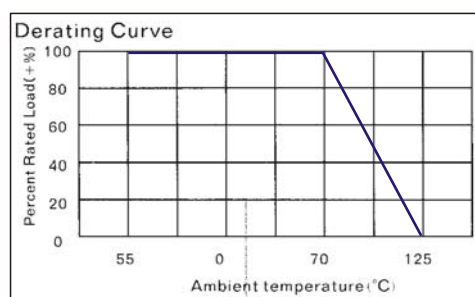
Highly Stable in Auto-Placement Surface Mount Applications

Barrier Layer End Termination

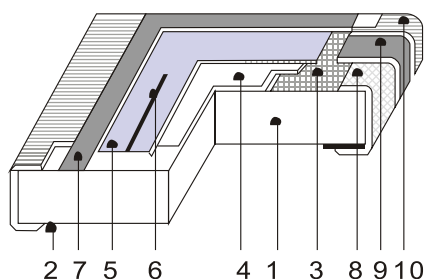
Zero Ohm jumper is Available

Available in 8mm Tape&Reel per EIA Rs481

POWER RATING

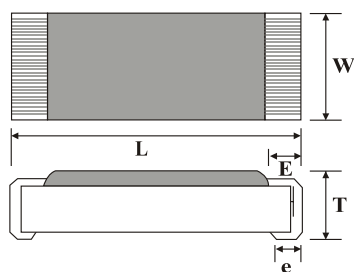


STRUCTURE



1	Ceramic substrate	2	Outer termination(Ag)	3	Inner termination(Ag)
4	Resistor layer	5	Glass layer	6	Trimming cut
7	Protective coat	8	Inner electrode	9	Secondary electrode(Ni)
10	External electrode(Sn100%)				

DIMENSIONS



Note :

Unit: mm

Type	L	W	T	E	e
CR0402	1.00±0.05	0.50±0.05	0.35±0.05	0.15±0.10	0.20±0.10
CR0603	1.60±0.15	0.80±0.10	0.45±0.10	0.25±0.20	0.30±0.20
CR0805	2.00±0.15	1.25±0.15	0.50±0.10	0.35±0.20	0.40±0.20
CR1206	3.10±0.15	1.60±0.15	0.55±0.10	0.45±0.25	0.40±0.25
CR1210	3.10±0.15	2.50±0.15	0.55±0.15	0.35±0.25	0.60±0.25
CR2010	5.00±0.20	2.50±0.20	0.55±0.15	0.65±0.25	0.50±0.25
CR2512	6.25±0.20	3.10±0.20	0.55±0.15	0.85±0.25	0.95±0.25



ELECTRICAL CHARACTERISTICS

Type	Power Rating at 70°C	Max. RCWV	Max. Overload Voltage	Resistance Range(1%)	Resistance Range(5%)	Thermal Coefficient (PPM)	ZERO RESISTOR MAX CURRENT
CR0402	1/16W	50V	100V	$100 \leq R \leq 2.2M$	$10 < R \leq 2.2M$ $1.0 \leq R \leq 10$	± 100 ± 200 $+500 \sim -250$	0.63
CR0603	1/10W	50V	100V	$10 < R < 10M$	$10 < R < 10M$ $1.0 \leq R \leq 10$	± 100 ± 200 $+500 \sim -250$	1
CR0805	1/8W	150V	300V	$10 < R < 10M$	$10 < R < 10M$ $1.0 \leq R \leq 10$	± 100 ± 200 $+500 \sim -250$	1.5
CR1206	1/4W	200V	300V	$10 < R < 10M$	$10 < R < 10M$ $1.0 \leq R \leq 10$	± 100 ± 200 $+500 \sim -250$	1.9
CR1210	1/2W	200V	400V	$10 < R < 10M$	$10 < R < 10M$ $1.0 \leq R \leq 10$	± 100 ± 200 $+500 \sim -250$	2.2
CR2010	3/4W	200V	400V	$10 < R < 10M$	$10 < R < 10M$ $1.0 \leq R \leq 10$	± 100 ± 200 $+500 \sim -250$	3
CR2512	1W	200V	400V	$10 < R < 10M$	$10 < R < 10M$ $1.0 \leq R \leq 10$	± 100 ± 200 $+500 \sim -250$	3

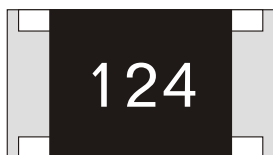
*ZERO OHM JUMPER < 0.05OHM

ENVIRONMENTAL CHARACTERISTICS

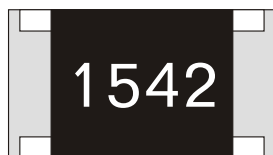
PERFORMANCE TEST	TEST METHOD	1%TOL	5%TOL
Temperature Coefficient	MIL-STD-202F, Method 304	-55°C to +125°C	by Type
Thermal Shock	MIL-STD-202F, Method 107	5 Cycles, -55°C to +125°C (AIR to AIR)	by Type
Low Temperature Operation	MIL-R-55342D, para. 4.7.4	One Hour at -65°C Followed by 45 Minutes RCWV	by Type
Short Time Overload	MIL-R-55342D, para. 4.7.5	2.5 Times RCWV for 5 Seconds	by Type
Insulation Resistance	MIL-STD-202F, Method 302	RCOV for 1 Minute	by Type
Dielectric Withstand Voltage	MIL-STD-202F, Method 301	R.M.S for 1 Minute	by Type
Resistance to Soldering Heat	MIL-STD-202F, Method 301C	Soldered to Test Board at 260°C for 10 seconds	by Type
Moisture Resistance	MIL-STD-202F, Method 106F	42 Cycles, Total 1000 Hours	by Type
Life	MIL-STD-202F, Method 108A	1000 Hours at 70°C RCWV Intermittent	by Type
Solderability	MIL-STD-202F, Method 208G	235°C for 2 Seconds	by Type
Bending Strength	JIS-C-5202, Para. 6.1.4	Unit Mounted in Center of 90mm Board Length, Deflected 5mm in Either Direction for 5 Seconds	by Type



CHIP RESISTOR R VALUE DESC



3digit marking
for E24(J)
1R0~1Ω
122~1.2KΩ
473~47KΩ
105~1MΩ
*0402 No Marking



4 digit marking
for E96(F)
22R1~22.1Ω
1020~102Ω
1542~15.4KΩ



(ONLY FOR CR0603)



3digit marking
for E 96(F)
02C
 $102 \times 10^2 = 10.2K\Omega$
15E
 $140 \times 10^4 = 1.4M\Omega$

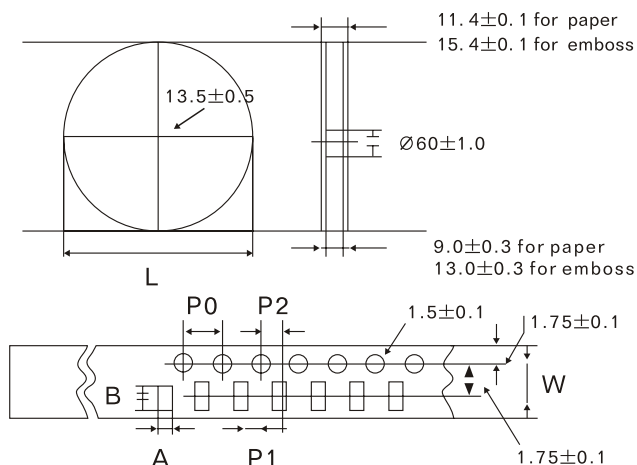
EXPLANATION OF PART NUMBER FOR 0603,±1% EIA-96 Marking

Code R Value	Code R Value	Code R Value	Code R Value	Code R Value	Code R Value	Code R Value	Code R Value
01 100	13 133	25 178	37 237	49 316	61 422	73 562	85 750
02 102	14 137	26 182	38 243	50 324	62 432	74 576	86 768
03 105	15 140	27 187	39 249	51 332	63 442	75 590	87 787
04 107	16 143	28 191	40 255	52 340	64 453	76 604	88 806
05 110	17 147	29 196	41 261	53 348	65 464	77 619	89 825
06 113	18 150	30 200	42 267	54 357	66 475	78 634	90 845
07 115	19 154	31 205	43 274	55 365	67 487	79 649	91 866
08 118	20 158	32 210	44 280	56 374	68 499	80 665	92 887
09 121	21 162	33 215	45 287	57 383	69 511	81 681	93 909
10 124	22 165	34 221	46 294	58 392	70 523	82 698	94 931
11 127	23 169	35 226	47 301	59 402	71 536	83 715	95 953
12 130	24 174	36 232	48 309	60 412	72 549	84 732	96 976

This table shows the first two digits for the three-digit EIA-96 part marking scheme the third character is a letter multiplier:

Y=10⁻², X=10⁻¹, A=10⁰, B=10¹, C=10², D=10³, E=10⁴, F=10⁵

TAPING SPECIFICATION



The plastic reel design follow the RS 481.
Paper tape or PE tape.
All the recyclable material.

L	Component/Reel(Paper)		Component/Reel(EMBOSED)
	CR0402;CA022A CA024A	CR0603/CR0805/CR1206/ CA034A/CA028L,R CR1210	CR2010/CR2512
178.0±2.0 7" in	10,000	5,000	4,000

Unit: mm

TYPE	A	B	W	P0	P1	P2
CR0402	0.65±0.10	1.15±0.10	8±0.20	4.00±0.10	2.00±0.10	2.00±0.05
CR0603	1.10±0.10	1.90±0.10	8±0.20	4.00±0.10	4.00±0.10	2.00±0.05
CR0805	1.65±0.20	2.40±0.20	8±0.20	4.00±0.10	4.00±0.10	2.00±0.05
CR1206	2.00±0.20	3.60±0.20	8±0.20	4.00±0.10	4.00±0.10	2.00±0.05
CR1210	2.80±0.10	3.50±0.10	8±0.50	4.00±0.10	4.00±0.10	2.00±0.05
CR2010	2.90±0.20	5.40±0.20	12±0.10	4.00±0.10	4.00±0.10	2.00±0.05
CR2512	3.60±0.20	6.90±0.20	12±0.10	4.00±0.10	4.00±0.10	2.00±0.05
CA028R	1.90±0.20	3.60±0.20	8±0.20	4.00±0.10	4.00±0.10	2.00±0.05
CA034A	1.90±0.15	2.40±0.20	8±0.20	4.00±0.10	4.00±0.10	2.00±0.05
CA024A	1.20±0.10	2.20±0.10	8±0.20	4.00±0.10	2.00±0.10	2.00±0.05
CA022A	1.15±0.20	1.15±0.20	8±0.20	4.00±0.10	2.00±0.10	2.00±0.05