

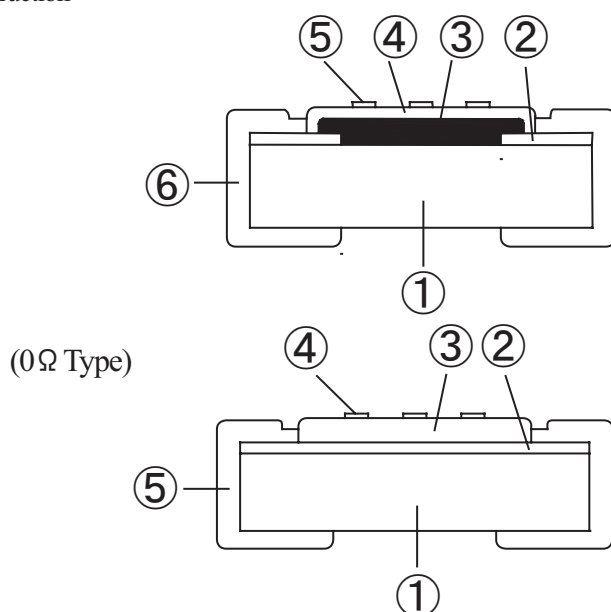


Flat Chip Resistors

*1 Model No.	CR04 (CR1/32)	CR06 (CR1/20)	CR10 (CR1/16S)	CR16 (CR1/16)	CR20 (CR1/10)	CR32 (CR1/8)	CR35 (CR1/4)	CR50 (CR1/2)	CR64 (CR1)
Size Code inch	01005	0201	0402	0603	0805	1206	1210	2010	2512
Size Code mm	0402	0603	1005	1608	2012	3216	3225	5025	6432

*1 ():Conventional Model No.

Construction



Symbol	Material List
①	Alumina substrate
②	Conductor
③	Resistive film
④	Over coat
⑤	Marking *2
⑥	Side termination

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①	Alumina substrate
②	Conductor
③	Over coat
④	Marking*2
⑤	Side termination

*2 No marking on CR04, CR06, CR10, CR16 (E-96 Series)

Model Designation

Conventional Model No.

CR1/16	102	J	V
①	②	③	④

Model No.

CR16	—	102	J	V
①		②	③	④

Model No. for user who requires it.

CR16	—	102	J	V	G
①		②	③	④	⑤

①Model No.	② Resistance
CR04(CR1/32)	3 or 4 digit
CR06(CR1/20)	(Resistance) (Marking)
CR10(CR1/16S)	0Ω → 000
CR16(CR1/16)	4.7Ω → 4R7
CR20(CR1/10)	1kΩ → 102
CR32(CR1/8)	1.02kΩ → 1021
CR35(CR1/4)	
CR50(CR1/2)	
CR64(CR1)	

③Tolerance (%)	
Symbol	Tolerance
D	± 0.5
F	± 1.0
G	± 2.0
J	± 5.0
K	± 10.0

0Ω type is no marking

④Packaging	
Symbol	Packaging
B	Bulk
V	Paper taping
E	Embossed taping
C	Bulk case

⑤TCR	
Symbol	TCR(ppm/°C)
G	± 50
H	± 100
K	± 250
M	± 500



Rating

*1 Model No.	Rated Wattage (W)	Tolerance		Resistance Range	T.C.R.	Max. Working Voltage (V)	Max. Overload Voltage (V)	0Ω Type	
		(%)		E-24 Series Standard (Ω)	(ppm/°C)			Rated Current (A)	Resistance (Ω)
CR04 (CR1/32)	0.03	F	±1	10 ~ 1M	±250	15	30	0.3	Max. 50mΩ
		G	±2	10 ~ 1M	±250				
		J	±5	10 ~ 1M	±250				
CR06 (CR1/20)	0.050	F	±1	10 ~ 1M	±200	25	50	0.5	
		G	±2	10 ~ 1M	±200				
		J	±5	10 ~ 10M 1 ~ 9.1	±200 ±400				
CR10 (CR1/16S)	0.063	D	±0.5	100 ~ 1M	±50	50	100	1.0	
		D	±0.5	10 ~ 91	±100				
		F	±1	10 ~ 1M	±100				
		G	±2	10 ~ 1M	±200				
		J	±5	10 ~ 10M 1 ~ 9.1	±200 ±300				
CR16 (CR1/16)	0.063	D	±0.5	1k ~ 100k	±50	50	100	1.0	
	0.100	D	±0.5	100 ~ 976	±100				
		F	±1	10 ~ 1M	±100				
		G	±2	10 ~ 1M	±200				
		J	±5	1 ~ 4.3 4.7 ~ 3.3M 3.6M ~ 10M	-100 ~ +600 ±200 ±300				
		D	±0.5	100 ~ 100k	±100				150
F	±1	10 ~ 1M	±100						
G	±2	10 ~ 1M	±200						
J	±5	1 ~ 4.3 4.7 ~ 3.3M 3.6M ~ 10M	-100 ~ +600 ±200 ±300						
K	±10	11M ~ 22M	±300						
CR20 (CR1/10)	0.100	D	±0.5	100 ~ 100k	±100	150	200	1.5	
	0.125	F	±1	10 ~ 1M	±100				
		G	±2	10 ~ 1M	±200				
		J	±5	1 ~ 4.3 4.7 ~ 3.3M 3.6M ~ 10M	-100 ~ +600 ±200 ±300				
		K	±10	11M ~ 22M	±300				
CR32 (CR1/8)	0.125	D	±0.5	100 ~ 100k	±100	200	400	2.0	
	0.250	F	±1	10 ~ 1M	±100				
		G	±2	10 ~ 1M	±200				
		J	±5	1 ~ 4.3 4.7 ~ 3.3M 3.6M ~ 10M	-100 ~ +600 ±200 ±300				
		K	±10	11M ~ 22M	±300				
CR35 (CR1/4)	0.250	F	±1	10 ~ 1M	±100	200	400	2.0	
		G	±2	10 ~ 1M	±200				
		J	±5	1 ~ 4.3 4.7 ~ 3.3M 3.6M ~ 10M	-100 ~ +600 ±200 ±300				
CR50 (CR1/2)	0.500	G	±2	10 ~ 1M	±300	200	400	2.0	
		J	±5	1 ~ 1M	±500				
CR64 (CR1)	1.000	J	±5	1 ~ 9.1 10 ~ 1M	±500 ±300	200	400	2.0	

*1 (): Conventional Model No.

★ Operating temperature range CR10~CR64: -55°C ~ +155°C
CR04, CR06: -55°C ~ +125°C

★ E-96 series resistance values are available for D class F class.

★ Please apply the rated voltage or lower.

Rated voltage is calculated by $E = \sqrt{PR}$

E = Rated Voltage (V)

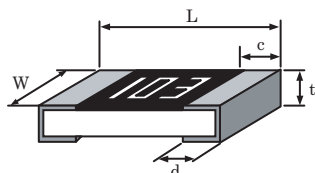
P = Rated Power (W)

R = Resistance (Ω)

★ In case rated voltage calculation is excess of maximum working voltage, maximum or lower voltage be applied.

■ Dimension : A spec.

(mm)

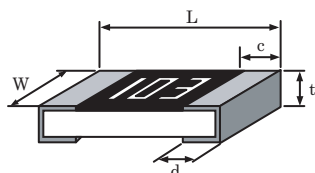


Model No. *1	L	W	c	d	t
CR04 (CR1/32)	0.40 ± 0.02	0.20 ± 0.02	0.10 ± 0.03	0.10 ± 0.03	0.12 ± 0.02
CR06 (CR1/20)	0.60 ± 0.03	0.30 ± 0.03	0.12 ± 0.05	0.15 ± 0.05	0.23 ± 0.03
CR10 (CR1/16S), LCR10 (LCR1/16S) CRS10, LCRS10	1.00 ± 0.05	0.50 ± 0.05	0.20 ± 0.10	0.25 ± 0.10	0.35 ± 0.05
CR16 (CR1/16), LCR16 (LCR1/16) FCR16 (FCR1/16), CRS16, LCRS16, SCR16	1.60 ± 0.15	0.80 ^{+0.20} _{-0.10}	0.25 ± 0.20	0.25 ± 0.20	0.50 ^{+0.15} _{-0.05}
CR20 (CR1/10), LCR20 (LCR1/10) UCR20 (UCR1/10), FCR20 (FCR1/10) CRS20, LCRS20, SCR20	2.00 ^{+0.20} _{-0.10}	1.25 ^{+0.20} _{-0.10}	0.40 ± 0.20	0.40 ± 0.20	0.50 ^{+0.15} _{-0.05}
CR32 (CR1/8), LCR32 (LCR1/8) ECR32, FCR32 (FCR1/8) CRS32, LCRS32, SCR32, WCR32	3.20 ^{+0.10} _{-0.15}	1.60 ^{+0.10} _{-0.15}	0.50 ± 0.20	0.50 ± 0.20	0.55 ^{+0.15} _{-0.05}
CR35 (CR1/4), LCR35 (LCR1/4) FCR35 (FCR1/4), CRS35, LCRS35, SCR35	3.20 ^{+0.10} _{-0.15}	2.60 ^{+0.10} _{-0.15}	0.50 ± 0.20	0.50 ± 0.20	0.55 ^{+0.15} _{-0.05}
CR50 (CR1/2), LCR50 (LCR1/2) ECR50, FCR50 (FCR1/2) CRS50, LCRS50, SCR50, WCR50	5.00 ± 0.15	2.50 ± 0.20	0.60 ± 0.25	0.60 ± 0.25	0.56 ± 0.15
CR64 (CR1) LCR64 (LCR1), SCR64	6.30 ± 0.15	3.20 ± 0.20	0.60 ± 0.25	0.60 ± 0.25	0.56 ± 0.15

*1 (): Conventional Model No.

■ Dimension : B spec.

(mm)



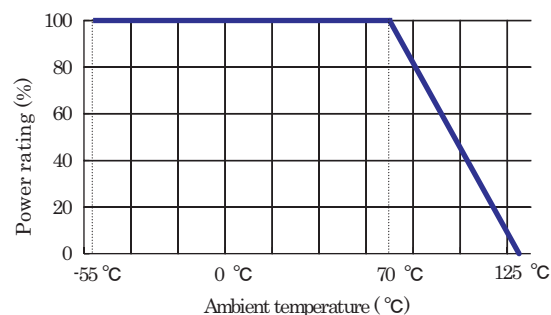
Model No. *1	L	W	c	d	t
CR04 (CR1/32)	0.40 ± 0.02	0.20 ± 0.02	0.10 ± 0.03	0.10 ± 0.03	0.12 ± 0.02
CR06 (CR1/20)	0.60 ± 0.03	0.30 ± 0.03	0.12 ± 0.05	0.15 ± 0.05	0.23 ± 0.03
CR10 (CR1/16S), LCR10 (LCR1/16S) CRS10, LCRS10	1.00 ± 0.05	0.50 ± 0.05	0.20 ± 0.10	0.25 ± 0.10	0.35 ± 0.05
CR16 (CR1/16), LCR16 (LCR1/16) FCR16 (FCR1/16), CRS16, LCRS16, SCR16	1.60 ± 0.15	0.80 ± 0.15	0.30 ± 0.20	0.30 ± 0.20	0.45 ± 0.10
CR20 (CR1/10), LCR20 (LCR1/10) UCR20 (UCR1/10), FCR20 (FCR1/10) CRS20, LCRS20, SCR20	2.00 ± 0.20	1.25 ± 0.10	0.40 ± 0.20	0.40 ± 0.20	0.50 ± 0.10
CR32 (CR1/8), LCR32 (LCR1/8) ECR32, FCR32 (FCR1/8) CRS32, LCRS32, SCR32, WCR32	3.20 ^{+0.10} _{-0.15}	1.60 ^{+0.10} _{-0.15}	0.50 ± 0.20	0.50 ± 0.20	0.55 ^{+0.15} _{-0.05}
CR35 (CR1/4), LCR35 (LCR1/4) FCR35 (FCR1/4), CRS35, LCRS35, SCR35	3.20 ^{+0.10} _{-0.15}	2.60 ^{+0.10} _{-0.15}	0.50 ± 0.20	0.50 ± 0.20	0.55 ^{+0.15} _{-0.05}
CR50 (CR1/2), LCR50 (LCR1/2) ECR50, FCR50 (FCR1/2) CRS50, LCRS50, SCR50, WCR50	5.00 ± 0.15	2.50 ± 0.20	0.60 ± 0.25	0.60 ± 0.25	0.56 ± 0.15
CR64 (CR1) LCR64 (LCR1), SCR64	6.30 ± 0.15	3.20 ± 0.20	0.60 ± 0.25	0.60 ± 0.25	0.56 ± 0.15

*1 (): Conventional Model No.

*There is no difference of manufacturing method, construction method, etc. on outline dimension between A spec and B spec.

■ Power rating

For resistors operated in ambient temperature above 70 °C, power rating must be derated in accordance with the derating curve.



■ Surface temperature

Surface temperature rise is shown in this figure.

Please notice that CR50 and CR64 have high temperature rise when Loaded 100%.

