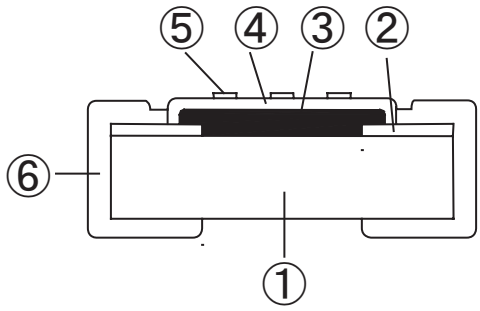
Flat Chip Resistors

*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

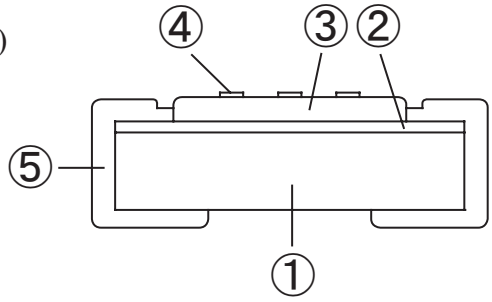
*1 ( ):Conventional Model No.

■Construction



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

(0Ω Type)



Symbol	Material List
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.
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(CR 1)

②Resistance		
3 or 4 digit		
(Resistance)		(Marking)
0Ω	→	000
4.7Ω	→	4R7
1kΩ	→	102
1.02kΩ	→	1021

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/℃)
G	±50
H	±100
K	±250
M	±500

Flat Chip Resistors

■Rating

*1 Model No.	Rated Wattage (W)	Tolerance (%)		Resistance Range E-24 Series Standard (Ω)	T.C.R. (ppm/℃)	Max. Working Voltage (V)	Max. Overload Voltage (V)	0Ω Type Rated Current (A)	0Ω Type 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	±200				
				1 ～ 9.1	±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	±200				
				1 ～ 9.1	±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	-100～+600				
				4.7 ～ 3.3M	±200				
				3.6M ～ 10M	±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	-100～+600				
				4.7 ～ 3.3M	±200				
				3.6M ～ 10M	±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	-100～+600				
				4.7 ～ 3.3M	±200				
				3.6M ～ 10M	±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	-100～+600				
				4.7 ～ 3.3M	±200				
				3.6M ～ 10M	±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	±500	200	400	2.0	
				10 ～ 1M	±300				

*1 ( ):Conventional Model No.

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

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

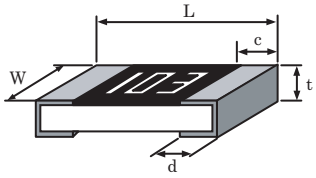
★Please apply the rated voltage or lower.

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.

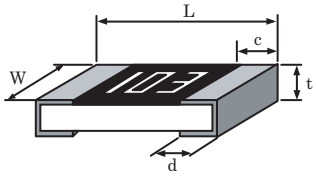


(mm)

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 ± 015	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)

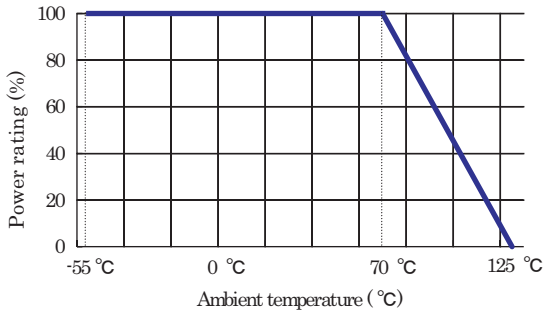
Model No. *1	L	W	c	d	t
CR04 (CR1/32)	0.40 ± 0.02	0.20 ± 0.02	0.10 ± 0.03	0.10 ± 0.03	0.12 ± 0.02
CR06 (CR1/20)	0.60 ± 0.03	0.30 ± 0.03	0.12 ± 0.05	0.15 ± 0.05	0.23 ± 0.03
CR10 (CR1/16S), LCR10 (LCR1/16S) CRS10, LCRS10	1.00 ± 0.05	0.50 ± 0.05	0.20 ± 0.10	0.25 ± 0.10	0.35 ± 0.05
CR16 (CR1/16), LCR16 (LCR1/16) 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 ± 015	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 ℃,
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%.