



昆貿電子股份有限公司
QUEEN MAO ELECTRONIC Co., LTD.

Fixed Thick Film Chip Resistors
Rectangular Type & High Voltage
Specifications
(RVC Series)

Approved by:

Frank Kao

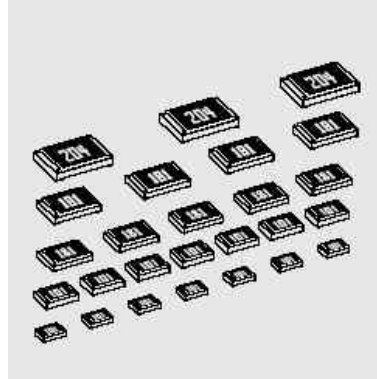
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Scope

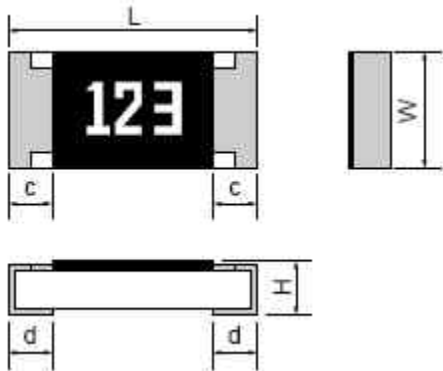
This Specification applies to our products of Fixed Thick Film Chip Resistors; Rectangular Type & High Voltage (RVC).



Features

- Maximum Working Voltage is more than twice that of our Thick Film Chip Resistors (CR) Series.
- Available in 5 Body sizes: From 0603 to 2512.
- Stability class: 5%.

Dimensions



- Rated resistance is marked with 3-digit (E24 series) or 4-digit (E96 series) on the over coating.
- RVC16 4-digit marking is not available.

Unit: mm

Style	Inch	Metric	L	W	H	c	d	*Unit Weight/PC
RVC16	1608	0603	1.60±0.10	0.80 +0.15/-0.05	0.45±0.10	0.30±0.10	0.30±0.10	2 mg
RVC20	2012	0805	2.00±0.10	1.25±0.10	0.55±0.10	0.40±0.20	0.40±0.20	5 mg
RVC32	3216	1206	3.20±0.15	1.60±0.15	0.55±0.10	0.50±0.25	0.50±0.25	9 mg
RVC50	5025	2010	5.00±0.15	2.50±0.15	0.55±0.15	0.60±0.20	0.60±0.20	25 mg
RVC63	6332	2512	6.30±0.15	3.20±0.15	0.55±0.15	0.60±0.20	0.60±0.20	40 mg

Values for reference.



Ratings

Style	Size Inch (Metric)	Rate Power at 70 (W)	Limiting Element Voltage (V)	Temperature Coefficient of Resistance		Combinations of Rated Resistance Range & Tolerance on Rated Resistance		Preferred Number Series for Resistors	Isolation Voltage (V)	Category Temperature Range ()				
				Code	10 ⁻⁶ /	F (±1%), G (±2%)	J (±5%), K (±10%)							
RVC16	0603 (1608)	0.1	200	K	±100	470Ω~10MΩ		F (±1%) G (±2%) E96 Series E24 Series J (±5%) K (±10%) E24 Series	100					
				-	±200	47Ω~464Ω								
RVC20	0805 (2012)	0.125	300	K	±100	100Ω~10MΩ	100Ω~51MΩ		500					
				-	±200	47Ω~97.6Ω								
RVC32	1206 (3216)	0.25	400	K	±100	100Ω~10MΩ	100Ω~51MΩ		500					
				-	±200	47Ω~97.6Ω								
RVC50	2010 (5025)	0.5	500	K	±100	470Ω~20MΩ	470Ω~51MΩ		500					
				-	±200	47Ω~464Ω								
RVC63	6332 (2512)	1.0	800	-	±100	560Ω~20MΩ	560Ω~51MΩ		500					
				-	±200	100Ω~549Ω								
				-	±500 ~ -200	47Ω~97.6Ω								

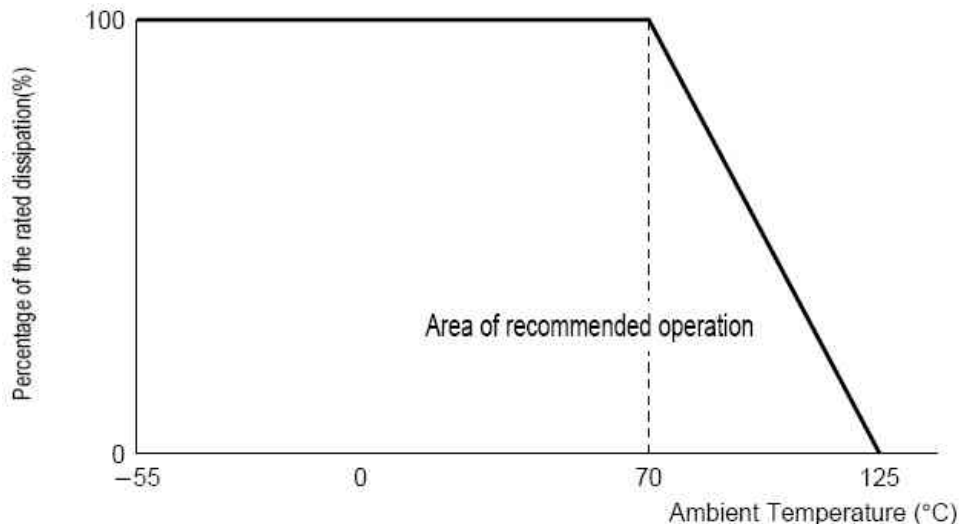
Note:

Rated Voltage = $\sqrt{(\text{Rated Dissipation}) \times (\text{Rated Resistance})}$. (d. c. or a. c. r. m. s. Voltage)

Limiting Element Voltage can only be applied to resistors when the resistance value is equal to or higher than critical resistance value

Derating Curve

The derated values of dissipation for temperatures in excess of 70 shall be indicated by the following curve.





Climatic Category

55/125/56

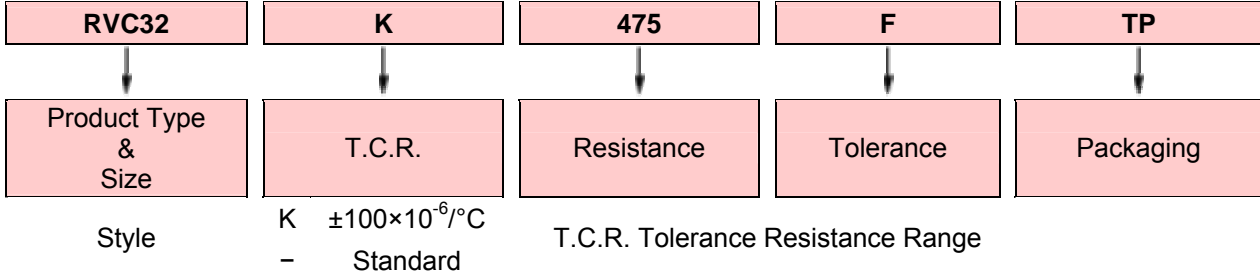
- Lower Category Temperature: -55
- Upper Category Temperature: +125
- Duration of the Damp Heat, Steady-State Test: 56 Days.

Performance Characteristics (JIS C 5201-1 : 1998)

Description	Requirements	Test Methods
Voltage proof	No breakdown or flashover $R \geq 1G$ ohm	Clause 4.7 RVC16 100Va.c., 60s RVC20~RVC63 500Va.c., 60s
Variation of resistance with temperature	See Rating Table	Clause 4.8 Measuring temperature: +20 /-55 /+20 /-125 /+20
Overload	$\Delta R \leq \pm(1\%+0.05 \text{ ohm})$ No visible damage, legible marking	Clause 4.13 The applied voltage shall be 2.5 times of the rated voltage or twice of the limiting element voltage, whichever is the less severe, 2s.
Solderability	In accordance with Clause 4.17.4.5	Clause 4.17 235 , 2s
Resistance to soldering heat	$\Delta R \leq \pm(1\%+0.05 \text{ ohm})$	Clause 4.18 After immersion into the flux, the immersion into solder shall be carried out in Solder bath at 260 for 5s.
Rapid change of temperature	$\Delta R \leq \pm(1\%+0.05 \text{ ohm})$, No visible damage	Clause 4.19 5 cycles between -55 and +125 .
Climatic sequence	$\Delta R \leq \pm(5\%+0.10 \text{ ohm})$, No visible damage	Clause 4.23 Dry/Damp heat (12+12h cycle), first cycle./ Cold/Damp heat (12+12h cycle), remaining cycle./D.C. Load.
Damp test, steady state	$\Delta R \leq \pm(5\%+0.10 \text{ ohm})$, No visible damage, legible marking	Clause 4.24 40 , 95%R.H., 56 days, test a.) and b.) of Clause 4.24.2.1.
Endurance at 70	$\Delta R \leq \pm(5\%+0.10 \text{ ohm})$, No visible damage	Clause 4.25.1 Rated voltage, 1.5h "ON", 0.5h "OFF", 70 , 1,000h.
Endurance at the upper category temperature	$\Delta R \leq \pm(5\%+0.10 \text{ ohm})$, No visible damage	Clause 4.25.3 125 , no-load, 1,000h.
Adhesion	No visible damage	Clause 4.32 5N, 10s.
Bend strength of the face plating	$\Delta R \leq \pm(1\%+0.05 \text{ ohm})$	Clause 4.33 RVC20~RVC63 Amount of bend: 3 mm. RVC50, 63 Amount of bend: 1 mm.



How to Order (Part Number Description)



T.C.R. Tolerance Resistance Range

[Ohm]	47	100	470	560	10M	20M	51M
RVC16		FGJK	FGJK				
RVC20		FGJK	FGJK		JK		
RVC32		FGJK	FGJK		JK		
RVC50		FGJK	FGJK		JK		
RVC63		FGJK	FGJK	FGJK	JK		

Tolerance	T.C.R. (10 ⁻⁶ /deg.C)
F +/- 1%	+/- 100
G +/- 2%	+/- 200
J +/- 5%	+500/-200
K +/- 10%	