Resistors

Metal film resistors

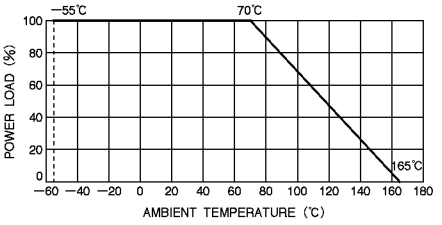
CRB25 (6.0 × 2.4 ϕ size: 1 / 4W)

CRB25 resistors are the same size as our small carbon film resistors and are coated with a nickel–chromium film. The resistive material is applied by means of vacuum deposition, which ensures high stability and reliability. ROHM resistors have approved ISO–9001 certification.
Design and specifications are subject to change without notice. Carefully check the specification sheet supplied with the product before using or ordering it.

●Features

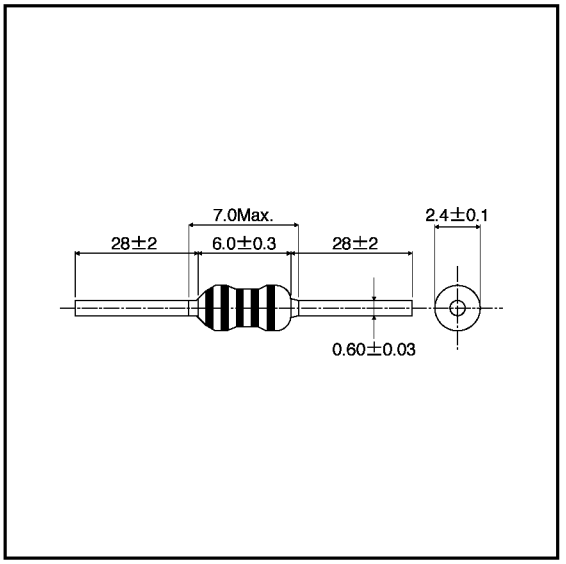
1) Competitively priced for use in consumer goods.
2) Of the same dimensions as our small carbon film resistors. Superb space economy.
3) Long used by the biggest manufacturers in Europe and America. Renowned in the market for reliability.
4) Current noise filter not required. Complete detection of noise level provided by third harmonic distortion meter (which offers greater accuracy than a current noise filter).
5) Temperature coefficient marked on each resistor individually to facilitate use in products requiring high precision.

●Ratings

Item		CRB25
Rated power (70℃)		1 / 4W(0.25W)
	Power derating curve	 Power must be derated according to the power derating curve in the accompanying figure when ambient temperature exceeds 70°C.
Rated voltage		Rated voltage is equal to the lesser of 1) the value obtained by the formula or $\sqrt{\text{rated power} \times \text{nominal resistance}}$ 2) maximum operating temperature
Maximum voltage		300V
Resistance	Resistance tolerance	F (±1%)
	Resistance temperature coefficient	Y(±50ppm / ℃)
	Resistance range	10Ω to 1.0MΩ
	Nominal resistance	F: E24, E96 series
	Maximum overload voltage	600V
	Operating temperature	−55℃ to +165℃
	Weight	230mg

Note: This product meets the specifications given in this specification sheet, but it is influenced by the applied voltage and ambient conditions. For this reason, if the product is to be used in equipment that must be extremely reliable, pay careful consideration to the load rate on the component when designing the equipment. In cases such as this, we recommend that you design the circuit so that the voltage on the component is no more than half of its rated value. In particular, when the component is used in AC circuits, take steps to ensure that the peak voltage applied to the component is less than the maximum operating voltage.

●External dimensions (Units: mm)



●Structure and materials

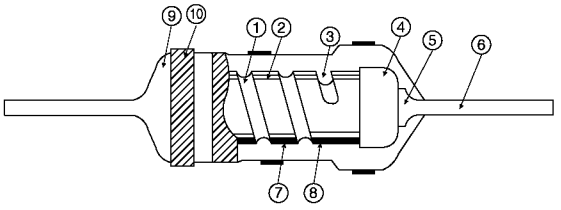


Fig.1

(1) Substrate: Alumina magnetic rod
Alumina is superior to regular mullite or forsterite with respect to mechanical strength, thermal conductivity, and thermal stability.

(2) Resistive elements
Nickel and nickel–chromium film of high uniformity and reliability.

(3) Cutting groove
The groove is cut to a uniform depth and width across the whole element, and there are no chips or cracks in the finished product.

(4) Terminals: Tin–plated copper, steel cap
This material provides a solid physical and electrical connection.

(5) Connections: Spot–welded
Spot welding ensures a solid, durable connection between the terminal and the terminal wire.

(6) Terminal wires: Solder–plated copper wire
Can be soldered effectively even after a long time.

(7) Protective film
For resistors of 10 ohms or more, a special inorganic material guarantees the long–term stability of the dielectric film.

(8) Under coating: Phenolic resin
The dielectric film is protected by a coat of high–purity phenolic resin.

(9) Outer coating: Epoxy resin (color: light brown)
This coating offers superior resistance to heat, the elements, and solvents, and is a good insulator. It is also very safe, meeting the UL94V–0 standard for nonflammability.

(10) Markings: Color coding using thermo–hardened paint
Markings offer outstanding resistance to solvents and chemicals, and do not fade.

●Resistance temperature coefficient marking
(except for CRB20)

Fig.2

Resistance temperature coefficient	Marking
Y (±50ppm / ℃)	Red dot

* Not applicable to all products.

●Reference standards
· JIS C 5202
Regulations on test methods for fixed resistors
· JIS C 5003
Regulations on test methods for malfunction rates

●Other reference standards

CRB25

· MIL–R–10509 RN55
Resistors, fixed, film (high stability)

· MIL–R–55182 RNR55
Resistors, fixed, film, established reliability

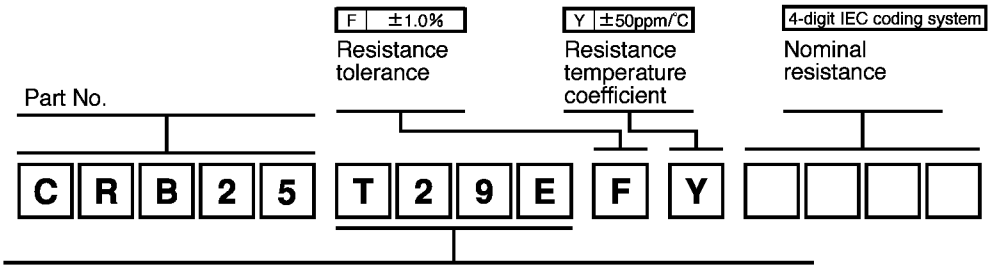
· MIL–R–22684 RL07
Resistors, fixed, film, insulated

· MIL–R–39017 RLR07
Resistors, fixed, film, established reliability

· EIA–RS–196
Fixed film resistors—precision and semi–precision

· DIN–44061–0207
Resistors, fixed, lacquered, metal film, high stability, with low temperature coefficient, with axial leads

●Product designation



Packaging specifications (carbon film resistors)

Part No.	Code	Package style	Inner tape width	Case	Standard ordering unit(pcs)	Shipped to
CRB25	T29E	Axial taping	52mm	Ammo box	2000	EUROPE (except UK), BRAZIL
	T68E	Axial taping	52mm	Reel	5000	USA only

●Electrical characteristics

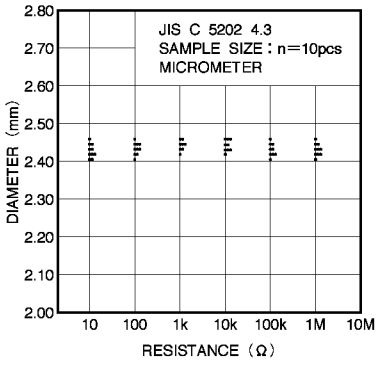


Fig.3 Dimensions (diameter)

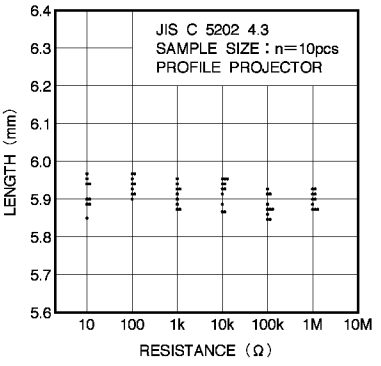


Fig.4 Dimensions (length)

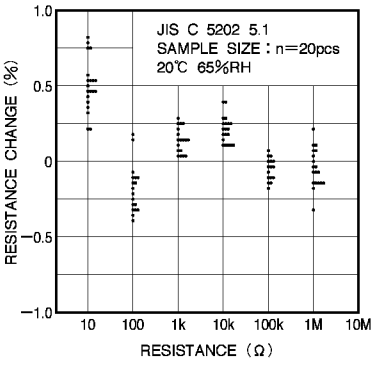


Fig.5 DC resistance