



SYNTON-TECH CORPORATION

ANTI-BURST FUSIBLE RESISTOR

RFB series

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3. RATING

3.1 Ratings are shown at fig 1. Ratings

TYPE	RFB-25	RFB-50	RFB-100	RFB-200
Rated wattage	1/4W	1/2W	1W	2W
Maximum operational voltage	250V		350V	350V
Maximum overload voltage	500V		600V	700V
Dielectric withstanding voltage	1,000V			
Rated ambient temperature	70 °C			
Operating temperature range	-40°C~+155°C			
Resistance tolerance	J (±5%)			
Resistance range	0.1~1.5KΩ	0.12~3.6KΩ	0.18~6.8KΩ	

Rated wattage is the maximum continuous power applicable at ambient temperature from -40 °C ~70 °C

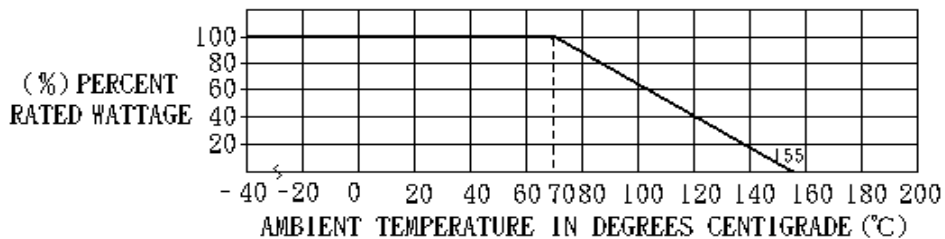


Fig.1 de-rating curve

3.2 Rated voltage

Rated voltage is the D.C. or rms A.C. maximum applied voltage at ambient temperature from -40°C to 70°C. Rated voltage shall be determined from the following formula. If Rated voltage is over maximum operational voltage, then rated voltage is equal to maximum operational voltage on Fig. 1.

$$E = \sqrt{P(W) \times R(\Omega)}$$

E : Rated voltage (V)

P : Rated wattage (W)

R : Nominal resistance (Ω)



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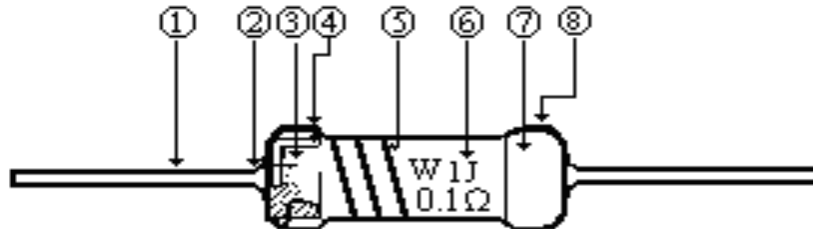
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4. DIMENSIONS AND CONSTRUCTIONS

4.1 Construction



No.	Parts	Material
1	lead wire	solder plated copper wire
2	contact of cap and lead wire	welding
3	ceramic base	alumina ceramic of the kind
4	cap	tin plated iron base
5	Wire wound	Ni-Cu or Ni-Cr Alloy
6	marking	UV ink
7	insulation coat	silicon paint of the kind flame proof (worth UL94-V0)
8	Ceramic case	silica

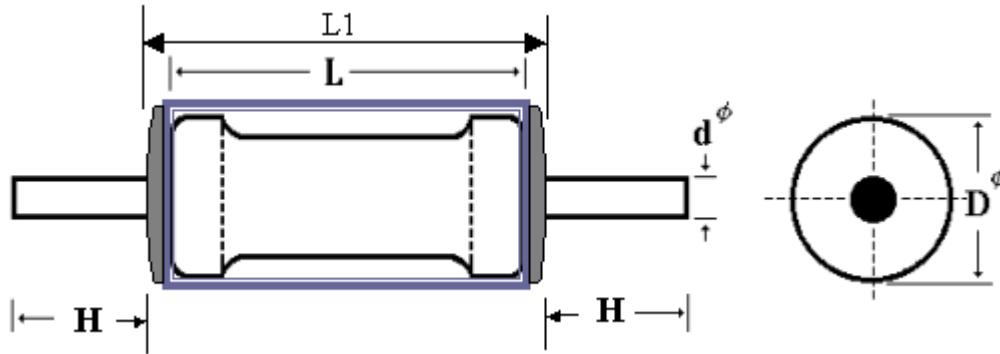
Fig.2



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4.2 Dimensions



Unit:mm

RATED POWER		L	L1	D ϕ	H	d ϕ
RFB-25	1/4W	7 \pm 0.5	7.6 \pm 0.8	3.6 \pm 0.5	26 \pm 2	0.6 \pm 0.1
RFB-50	1/2W	9.5 \pm 0.5	10.5 \pm 0.8	4.3 \pm 0.5	26 \pm 2	0.6 \pm 0.1
RFB-100	1W					
RFB-200	2W	11.5 \pm 0.5	12.5 \pm 0.8	5.5 \pm 0.5	35 \pm 2	0.8 \pm 0.1

Fig.3



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5. CHARACTERISTICS

No.	Items	Characteristics	Test methods
1	Resistance value	class J ($\pm 5\%$)	JIS C 5201 1 (4.5) classification of applied A
2	Temperature coefficient of resistance	$\pm 300\text{ppm}/^\circ\text{C}$	JIS C 5201 1 measured at room temperature and room temperature+100 $^\circ\text{C}$
3	Short-time overload	resistance change within $\pm(1\% + 0.05\Omega)$	JIS C 5201 1 (4.13) (rated voltage $\times 2$ 5 s)
4	Endurance (under damp and load)	resistance change within $\pm(5\% + 0.1\Omega)$	JIS C 5201 1 (4.24) 40 $^\circ\text{C} \pm 2^\circ\text{C}$ 90%-95 %RH,1,000 hours 1.5 hours on / 0.5 hours off cycle.
5	Endurance (rated load)	resistance change within $\pm(5\% + 0.1\Omega)$	JIS C 5201 1 (4.25.1) 1) test temperature 70 $^\circ\text{C} \pm 3^\circ\text{C}$ 2) duration 1,000 hours
6	Resistance to soldering heat	resistance change within $\pm(1\% + 0.05\Omega)$	JIS C-5201-1 (4.18) 1)temp. of solder 350 $^\circ\text{C} \pm 10^\circ\text{C}$ 2)duration of immersion 3.5 s ± 0.5 s
7	Solder ability	95 % (min) coverage(JIS C-5201-1 (4.17) 1)temp. of solder 245 $^\circ\text{C} \pm 5^\circ\text{C}$ 2)duration of immersion 3 s ± 0.5 s 3)preparation not applicable
8	Temperature cycling	resistance change within $\pm(1\% + 0.05\Omega)$	JIS C-5201-1(4.19) 1) Test temp. -25 $^\circ\text{C} \sim +85^\circ\text{C}$ 2) number of 5 cycles
9	Dielectric withstanding voltage	Flash over, burning, insulation damage should not be observed	JIS C 5201 1 (4.7) 1) V-Block 2) test voltage : see table 1 3) duration time 60 s
10	Flameproof	No evidence of flaming or arcing	JIS C 5201 1 (4.23.4) AC voltage of,16 times the power rating for 1min. (V ≤ 4 times max. working voltage)



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11	Resistance to damp heat	resistance change within $\pm(1\% + 0.05\Omega)$	JIS C 5201 1 1) test temp. $40^\circ\text{C} \pm 2^\circ\text{C}$ 2) relative humidity 90 % to 95 % 3) duration 240 hours
12	Insulation resistance	more than $1,000\text{M}\Omega$	JIS C 5201 1 (4.6.1) test voltage DC : 500V
13	Tensile strength	Neither breakage of the lead wire nor loosening of termination resistance change within $\pm(1\% + 0.05\Omega)$	JIS C 5201 1 (4.16) 10N; $10\text{s} \pm 1\text{s}$
14	Bending strength	Neither breakage of the lead wire nor loosening of termination resistance change within $\pm(1\% + 0.05\Omega)$	JIS C 5201 1 (4.16) 360° Round-trip ; 3cycle

F Fusing characteristics : Residual resistance ≥ 100 times nominal resistance

15	RFB1/4W RFB1/2W	MAGNIFICATION OF POWER RATING	FUSING TIME
		$\sqrt{32\text{PR}}$	10s ~ 10,000s
		$\sqrt{36\text{PR}}$	3s ~ 60s
		$\sqrt{40\text{PR}}$	2s ~ 30s
		$\sqrt{42\text{PR}}$	1s ~ 15s
	RFB1W	$\sqrt{24\text{PR}}$	$\leq 60\text{s}$
	RFB 2W	$\sqrt{40\text{PR}}$	$\leq 30\text{s}$

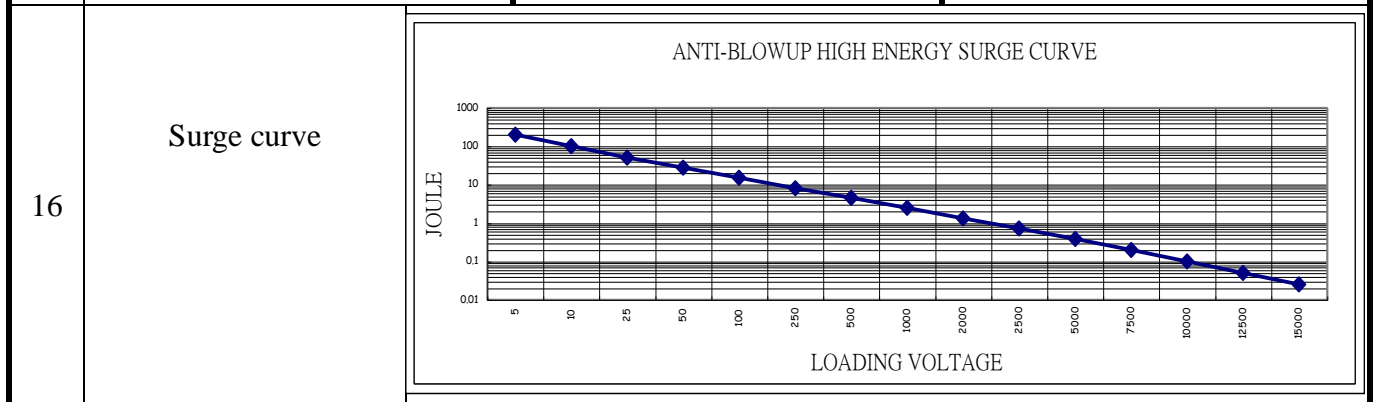


Fig.4



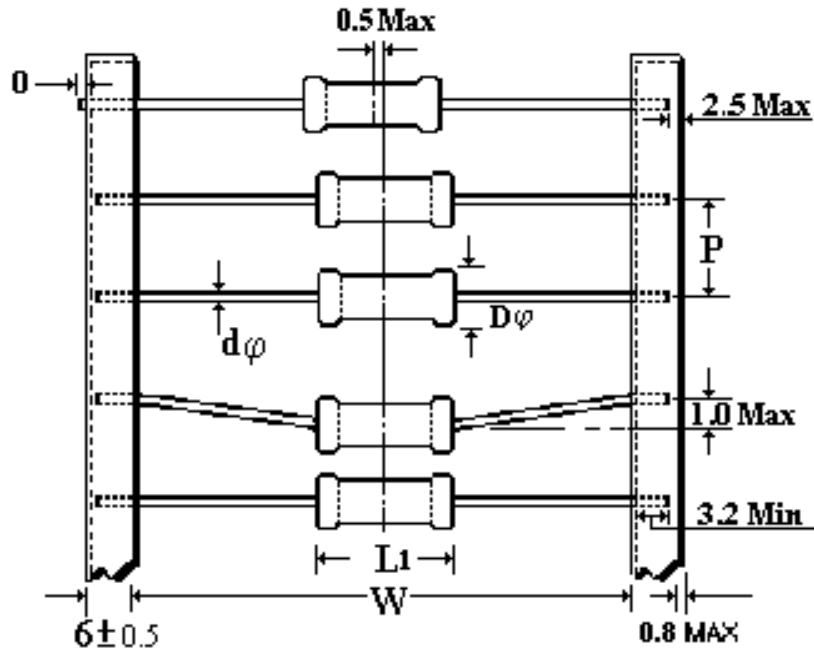
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6. TAPING



Unit::mm

Rated Power		W	L1	D φ	P	d φ	BOX (pcs)
RFB-25	1/4W	52±1	7.6 ±0.8	3.6 ±0.5	5 ±0.5	0.60 ±0.1	2,500
RFB-50	1/2W	52±1	10.5 ±0.8	4.3 ±0.5	5 ±0.5	0.60 ±0.1	2,500
RFB100	1W	52±1	10.5 ±0.8	4.3 ±0.5	5 ±0.5	0.60 ±0.1	1,000
RFB200	2W	63±1	12.5 ±0.8	5.5 ±0.5	10 ±0.5	0.80 ±0.1	500

Fig.5