



**SYNTECH CORPORATION**  
**RATED CURRENT FUSIBLE RESISTOR**  
**RFA TYPE**

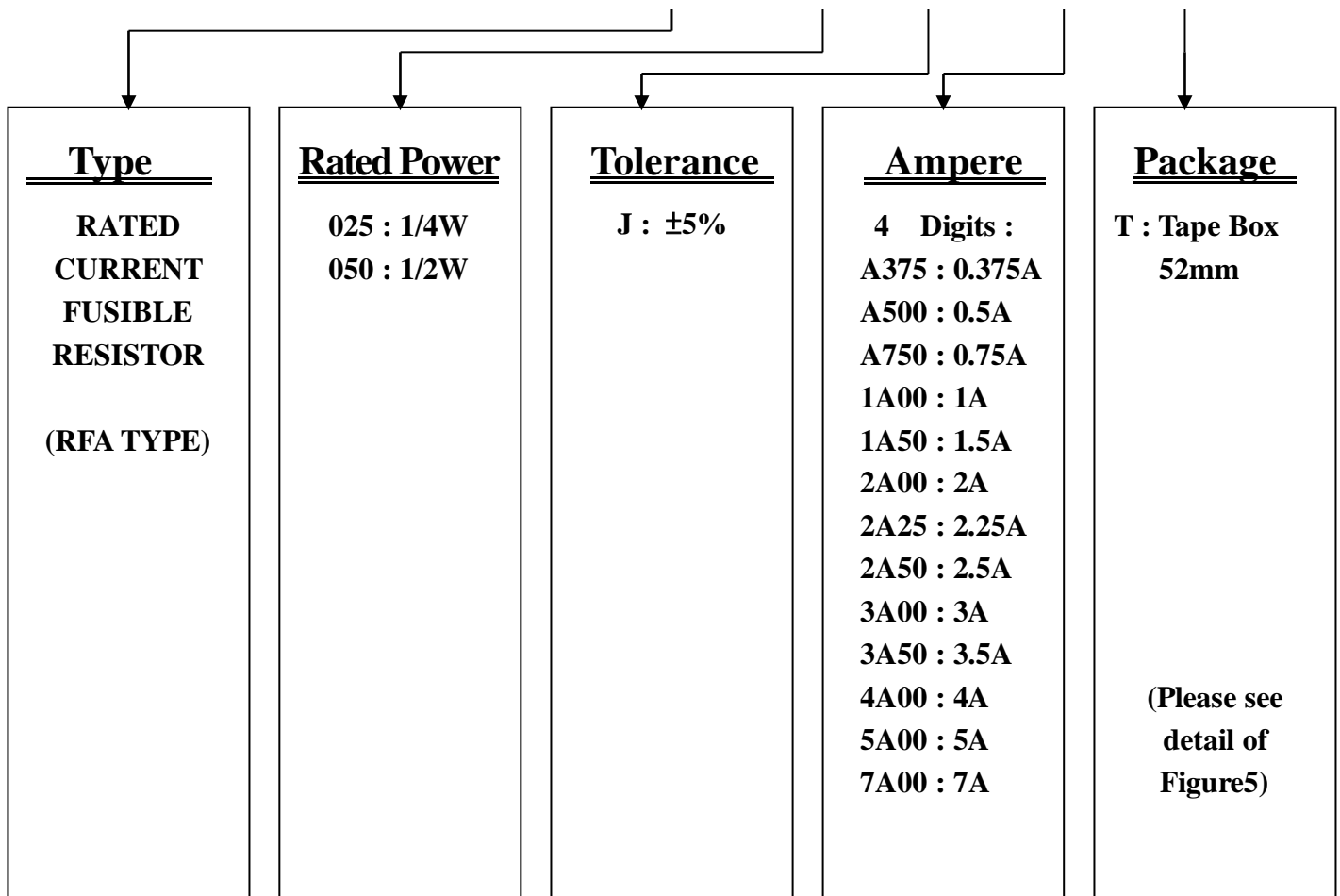
File No.:	RFA-02
Version:	A
Page:	1/8
Date:	2021.01.01

**1. SUBJECT :** This specification applies on the rated current fusible resistor  
 was made by **SYNTECH** Corporation ◦

**2. PART NUMBER :** Part number of the rated current fusible resistor is  
 identified by the type, rated power, tolerance, ampere ◦

**Example :** **DESCRIPTION : RFA 1/4W 5% 0.375A**

**SYNTECH CODE : RFA 025 J A375 T**



APPROVED	CHECKED	DESIGNED	REMARK	DOCUMENT NO
Carol	May	Chen		0201010460



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**RATED CURRENT FUSIBLE RESISTOR**  
**RFA TYPE**

File No.:	RFA-02
Version:	A
Page:	2/8
Date:	2021.01.01

### 3. RATING

3.1 Ratings are shown at fig 1. Ratings

TYPE	RFA
Dielectric withstanding voltage	100V
Operating temperature range	-55°C ~ +130°C
Resistance tolerance	J : ±5%

Rated wattage is the maximum continuous power applicable at ambient temperature from -55 °C ~ 70 °C

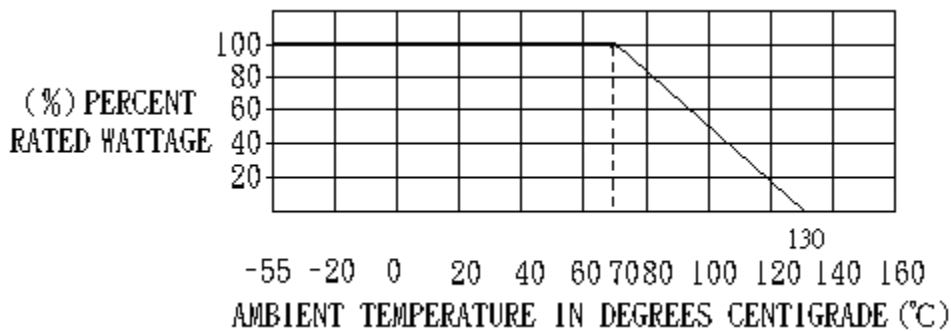


Fig.1 de-rating curve

### 3.2 Rated voltage

Rated voltage is the D.C. or rms A.C. maximum applied voltage at ambient temperature from -55 °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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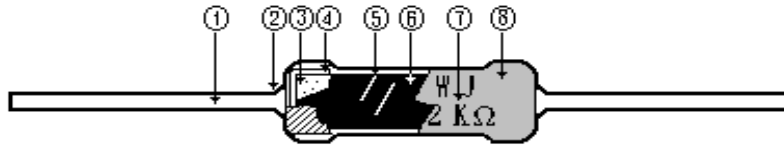
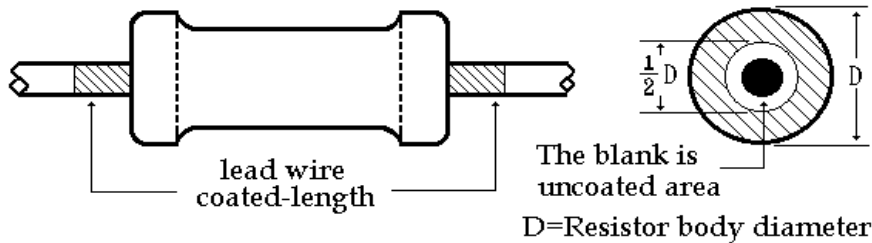
File No.:	RFA-02
Version:	A
Page:	3/8
Date:	2021.01.01

**4. DIMENSIONS AND CONSTRUCTIONS**

4.1 Construction

Painting specification

Welding point, terminal and lead wire, is permissible to be exposed without the outer coated cover. The extent should be within 1/2 of the arc angle.



No.	Parts	Material
1	lead wire	tin 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	helical cutting groove	-----
6	conductive film	fusible film
7	marking	Color Code
8	insulation coat	silicon paint of the kind flame proof ( worth UL94-V0 )

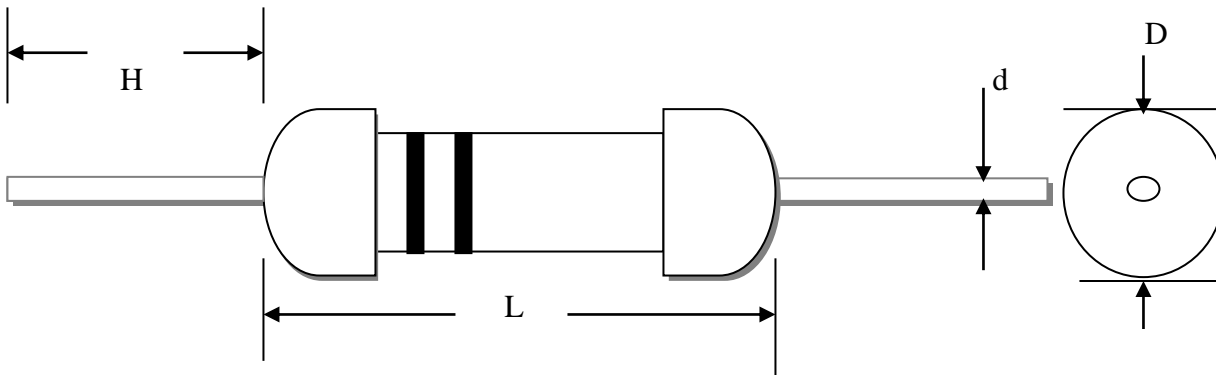
Fig.2



**SYNTON-TECH CORPORATION**  
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**RFA TYPE**

File No.:	RFA-02
Version:	A
Page:	4/8
Date:	2021.01.01

4.2 Dimensions



Unit:mm

AMPERE	L	D	H	d
A375, A500, A750, 1A00, 1A50, 2A00, 2A25, 2A50, 3A00, 3A50	6.0±0.5	2.4±0.3	28±2	0.60±0.1
4A00, 5A00, 7A00	9.0±0.5	3.0±0.5	30±3	0.60±0.1


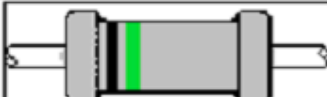











Fig.3



**SYNTECH CORPORATION**  
**RATED CURRENT FUSIBLE RESISTOR**  
**RFA TYPE**

File No.:	RFA-02
Version:	A
Page:	5/8
Date:	2021.01.01

RATED CURRENT FUSIBLE RESISTOR    RFA series    COLOR CODING

No.	Ampere Rating	Color	Ex.	Synton Code
1	0.375A	ORANGE, VIOLET		RFA025JA375T
2	0.5A	BLACK, GREEN		RFA025JA500T
3	0.75A	VIOLET, GREEN		RFA025JA750T
4	1A	BROWN, BLACK		RFA025J1A00T
5	1.5A	BROWN, GREEN		RFA025J1A50T
6	2A	RED, BLACK		RFA025J2A00T
7	2.25A	RED, RED		RFA025J2A25T
8	2.5A	RED, GREEN		RFA025J2A50T
9	3A	ORANGE, BLACK		RFA025J3A00T
10	3.5A	ORANGE, GREEN		RFA025J3A50T
11	4A	YELLOW, BLACK		RFA050J4A00T
12	5A	GREEN, BLACK		RFA050J5A00T
13	7A	VIOLET, BLACK		RFA050J7A00T



**SYNTON-TECH CORPORATION**  
**RATED CURRENT FUSIBLE RESISTOR**  
**RFA TYPE**

File No.:	RFA-02
Version:	A
Page:	6/8
Date:	2021.01.01

**5. CHARACTERISTICS**

No.	Items	Characteristics	Test methods
1	Resistance value	class <b>J</b> ( $\pm 5\%$ )	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 $\pm 0.5$ 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 $\pm 0.5$ 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



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**RFA TYPE**

File No.:	RFA-02
Version:	A
Page:	7/8
Date:	2021.01.01

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. ( $V \leq 4$ times max. working voltage)
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 1,000M $\Omega$	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; $10s \pm 1s$
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
15	Fusing characteristics : Residual resistance $\geq 100$ times nominal resistance		
	Percentage of Ampere Rating		Opening Time
	100%		4Hour Minimum
	200%		1 second~ 60 seconds Max
	300%		0.2 second ~ 3seconds Max
800%		0.02 second ~ 0.2seconds Max	

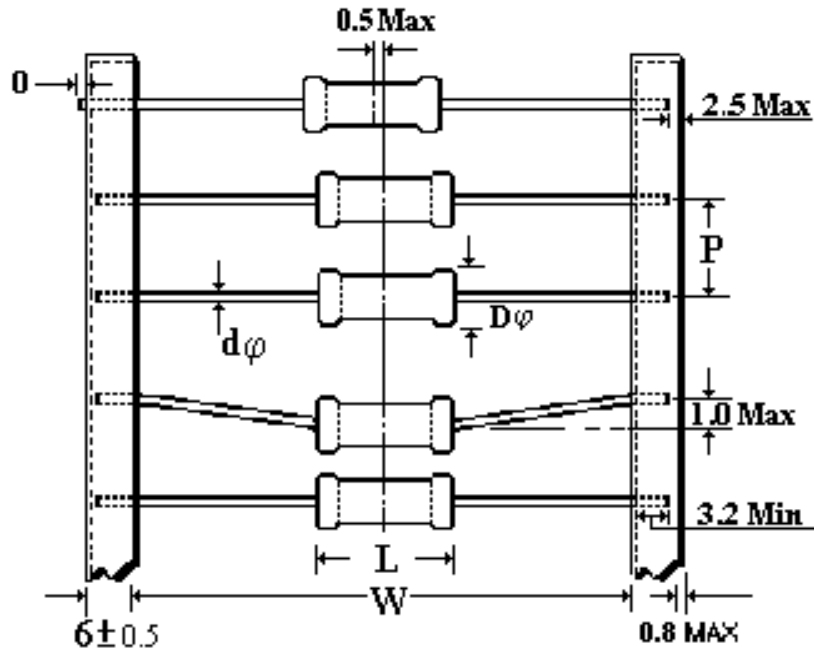
Fig. 4



**SYNTECH CORPORATION**  
**RATED CURRENT FUSIBLE RESISTOR**  
**RFA TYPE**

File No.:	RFA-02
Version:	A
Page:	8/8
Date:	2021.01.01

**6. TAPING**



Unit::mm

AMPERE	W	L	D $\psi$	P	d $\psi$	BOX (pcs)
A375, A500, A750, 1A00, 1A50, 2A00, 2A25, 2A50, 3A00, 3A50	52±1	6.0 ±0.5	2.4 ±0.3	5 ±0.5	0.60 ±0.1	2,500
4A00, 5A00, 7A00	52±1	9.0 ±0.5	3.3 ±0.5	5 ±0.5	0.60 ±0.1	2,500

Fig. 5