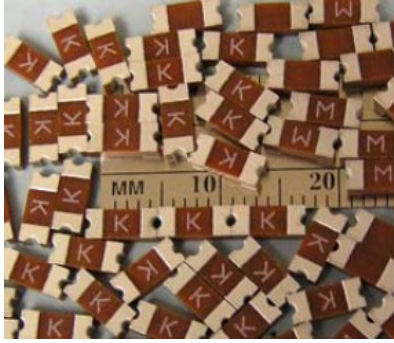


# AirMatrix® Surface Mount Fuses

## AF Series, 2410 Size



### Features:

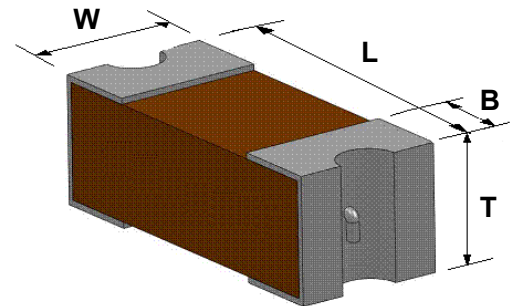
- Fast acting at 200% overload current level
- Excellent inrush current withstanding capability
- Fiberglass enforced epoxy fuse body
- Copper or copper alloy composite fuse link
- Copper termination with nickel and tin plating
- Halogen free, RoHS compliant and 100% lead-free
- Operating temperature range: -55°C to +125°C (with de-rating)

### Application Fields:

- Power Supply, e.g. DC/DC converters, DC/AC inverters, Backlight drivers , etc.
- Consumer Electronics, e.g. LCD TVs, PDP, DVDs, PCM , etc.
- Communication Technology, e.g. Telecom systems, Networking, Modems, Routers, Changers, Base stations , etc.
- Office Automation Electronics
- IT Products, e.g. LCD monitors, Notebooks, PC servers, etc.

### Shape and Dimensions:

| Unit | Inch          | mm          |
|------|---------------|-------------|
| L    | 0.240 ± 0.006 | 6.10 ± 0.15 |
| W    | 0.098 ± 0.006 | 2.49 ± 0.15 |
| T    | 0.085 ± 0.008 | 2.16 ± 0.20 |
| B    | 0.053 ± 0.015 | 1.35 ± 0.38 |



### Clearing Time Characteristics:

| % of Current Rating | Clearing Time at 25°C |                 |
|---------------------|-----------------------|-----------------|
| 100%                | 4 hours min.          |                 |
| 200%(0.50~10.0 A)   | 0.01 seconds min.     | 5 seconds max.  |
| 200%(12.0~20.0 A)   | 0.01 seconds min.     | 20 seconds max. |

### Agency Approval:

- Recognized Under the Components Program of Underwriters Laboratories. File Number: E232989
- PSE Certificate No: NBK180711-JP13710
- TUV File Number: 50209083
- CQC No.: CQC11012065955

### Patents:

Patent numbers "ZL200810092353.3", "ZL200910007157.6", "ZL201120450579.3", "ZL201120536307.5", "ZL201220063222.4", "ZL201110123326.X".

# AirMatrix® Surface Mount Fuses

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### Ordering Information:

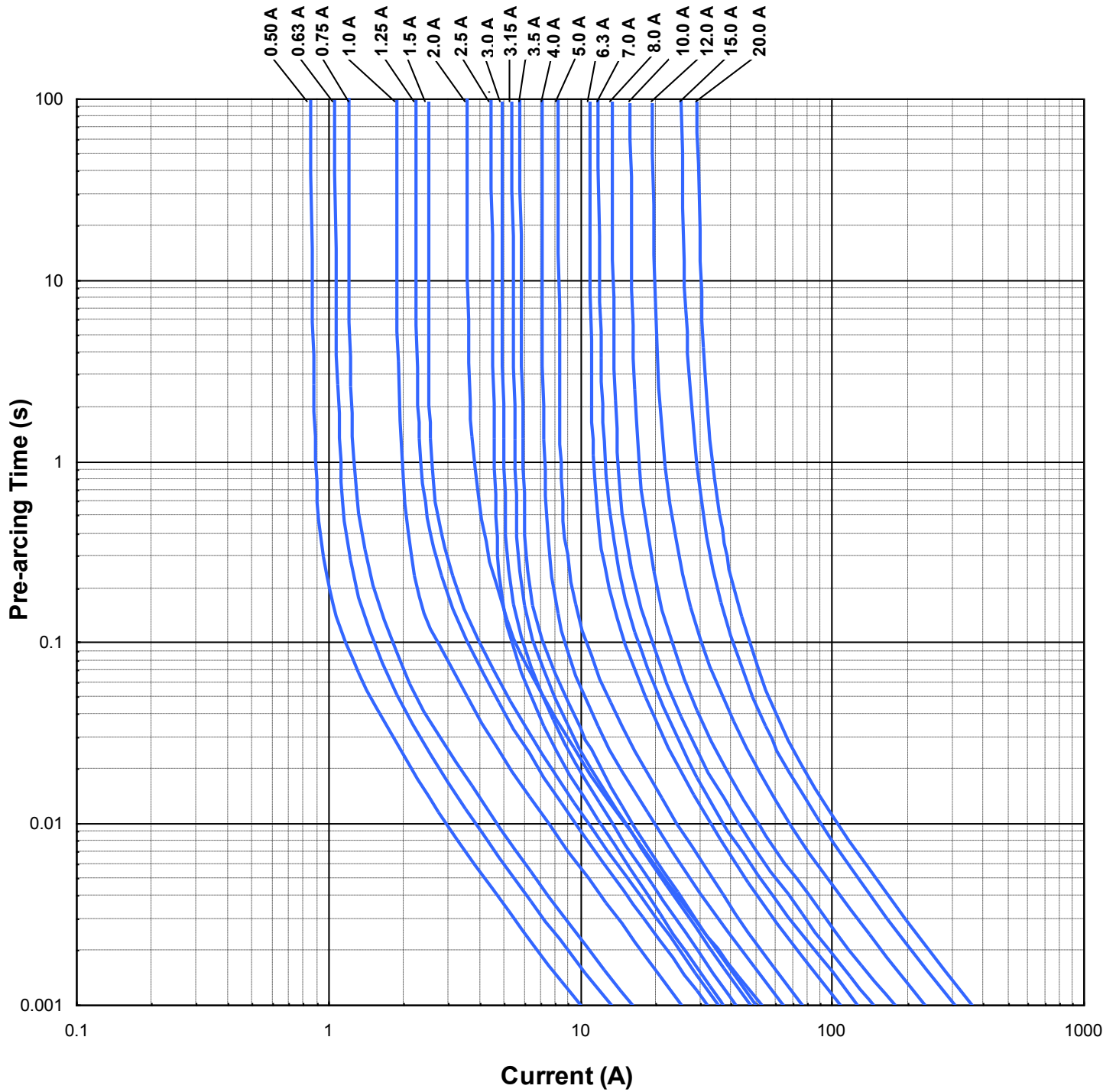
| Part Number    | Current Rating (A) | Voltage Rating (V) |       | Interrupting Rating   | Nominal Cold DCR ( $\Omega$ ) <sup>1</sup> | Nominal $I^2t$ ( $A^2s$ ) <sup>2</sup> | Agency Approval  |        |      |     | Marking (Optional) <sup>3</sup> |
|----------------|--------------------|--------------------|-------|---|--|--|--|--------|------|-----|---------------------------------|
|                |                    | AC                 | DC    |   |  |  | UL   | PSE    | TUV  | CQC |                                 |
| AF2-0.50V125TM | 0.5                | 250                |       | <b>TUV:</b><br>0.5 ~ 2 A<br>100 A @ 250 VAC<br>50 A @ 125 VDC       | 0.231                                      | 0.10                                   | ✓  |        | ✓    | ✓   | C                               |
| AF2-0.63V125TM | 0.63               |                    |       |   | 0.174                                      | 0.16                                   | ✓  |        | ✓    |     | S                               |
| AF2-0.75V125TM | 0.75               |                    |       |   | 0.148                                      | 0.23                                   | ✓  |        |      |     | D                               |
| AF2-1.00V125TM | 1.0                |                    |       |   | 0.093                                      | 0.59                                   | ✓  | ✓      | ✓    | ✓   | E                               |
| AF2-1.25V125TM | 1.25               |                    |       |   | 0.07                                       | 0.96                                   | ✓  | ✓      | ✓    |     | F                               |
| AF2-1.50V125TM | 1.5                |                    |       |   | 0.062                                      | 1.19                                   | ✓  | ✓      |      |     | G                               |
| AF2-2.00V125TM | 2.0                |                    |       |   | 0.042                                      | 2.75                                   | ✓  | ✓      | ✓    | ✓   | I                               |
| AF2-2.50V125TM | 2.5                |                    |       |   | 0.031                                      | 1.21                                   | ✓  | ✓      |      |     | J                               |
| AF2-3.00V125TM | 3.0                |                    |       |   | 0.0249                                     | 1.73                                   | ✓  | ✓      |      |     | K                               |
| AF2-3.15V125TM | 3.15               |                    |       |   | 0.0232                                     | 2.2                                    | ✓  | ✓      |      |     | V                               |
| AF2-3.50V125TM | 3.5                | 125                |       | <b>CQC:</b><br>0.5 A, 1 A, 2 A<br>100 A @ 250 VAC<br>50 A @ 125 VDC | 0.022                                      | 2.5                                    | ✓  | ✓      |      |     | L                               |
| AF2-4.00V125TM | 4.0                |                    |       |   | 0.0172                                     | 4.1                                    | ✓  | ✓      |      |     | M                               |
| AF2-5.00V125TM | 5.0                |                    |       |   | 0.0143                                     | 5.9                                    | ✓  | ✓      |      |     | N                               |
| AF2-6.30V125TM | 6.3                |                    |       |   | 0.01                                       | 12.5                                   | ✓  |        |      |     | O                               |
| AF2-7.00V125TM | 7.0                |                    |       |   | 0.0094                                     | 14.2                                   | ✓  |        |      |     | P                               |
| AF2-8.00V125TM | 8.0                |                    |       |   | 0.0086                                     | 20.3                                   | ✓  |        |      |     | R                               |
| AF2-10.0V125TM | 10.0               |                    |       |   | 0.0066                                     | 29.2                                   | ✓  |        |      |     | Q                               |
| AF2-12.0V065TM | 12.0               |                    |       |   | 65   | 65                                     | <b>UL:</b><br>0.5 ~ 2 A<br>100A @ 250VAC<br>1.5 ~ 8 A<br>50A @ 125VAC<br>0.5 ~ 8 A<br>50 A @ 125 VDC<br>300 A @ 32 VDC | 0.0053 | 49.2 | ✓   |                                 |
| AF2-15.0V065TM | 15.0               | 0.0038             | 102.5 | ✓   |  |  |  |        |      |     | Y                               |
| AF2-20.0V065TM | 20.0               | 0.0034             | 126.2 | ✓   |  |  |  |        |      |     | Z                               |

1. Measured at  $\leq 10\%$  rated current and 25°C ambient.  
 2. Melting  $I^2t$  at 0.001 second pre-arcing time.  
 3. White Marking Character Code.

# AirMatrix<sup>®</sup> Surface Mount Fuses

## AF Series, 2410 Size

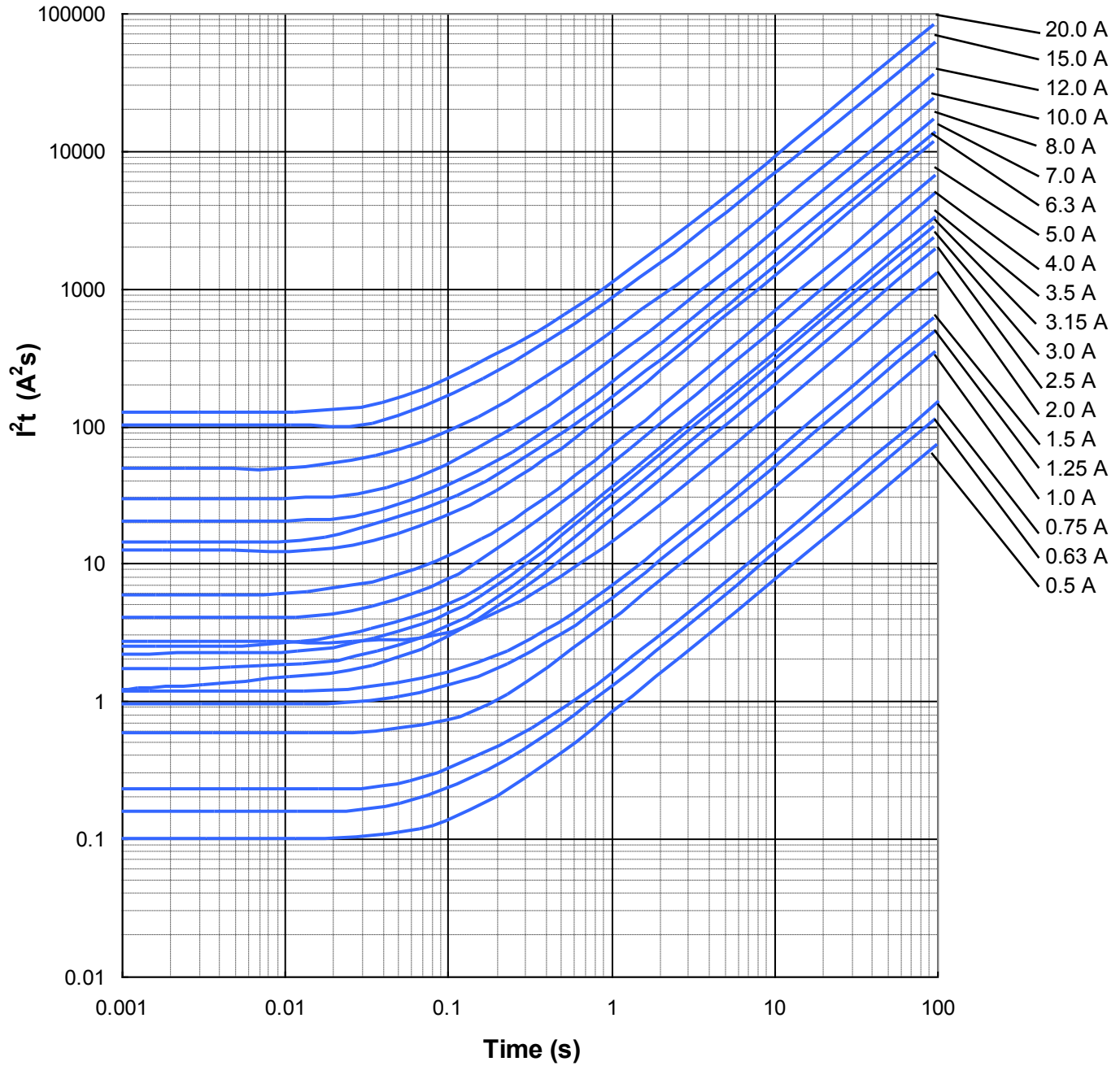
### Average Pre-arcing Time Curves:



# AirMatrix<sup>®</sup> Surface Mount Fuses

## AF Series, 2410 Size

### Average $I^2t$ vs. $t$ Curves:



## AirMatrix® Surface Mount Fuses

### AF Series, 2410 Size

#### Product Identification:

AF2 1.00 V125 T M

(1) (2) (3) (4) (5)

(1) Series code: AF2

(2) Current rating code: 1.00 - 1.00 A

(3) Voltage rating code: V125 - 125 VDC

(4) Package code:

T - Tape & Reel

B - Bulk

(5) Marking code: M - with mark

#### Environmental Tests:

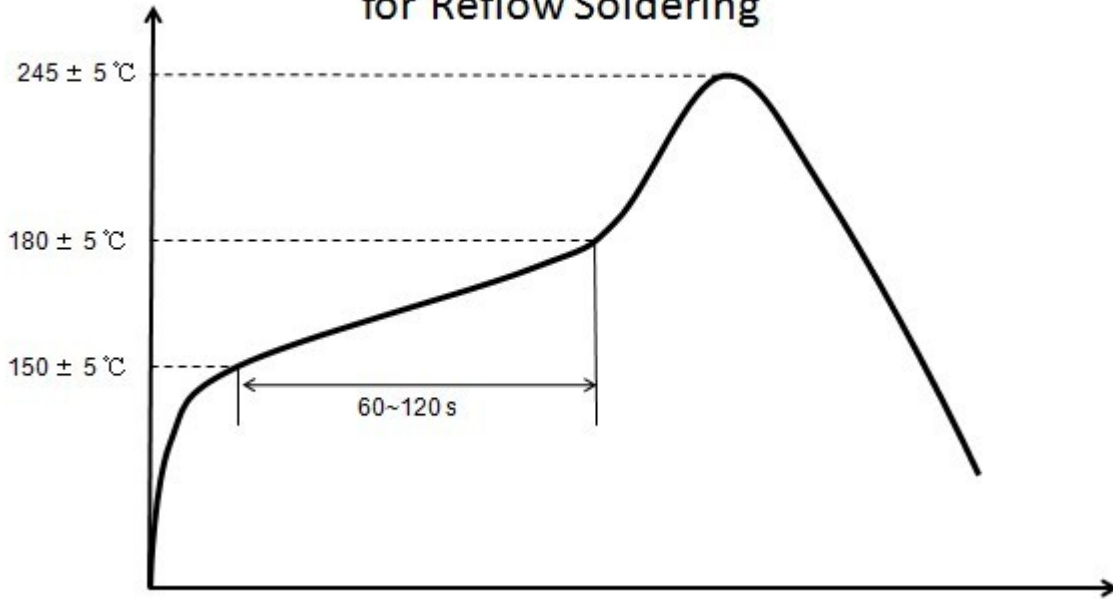
| Reliability Test          | Test Condition and Requirement   | Test Reference                            |
|---------------------------|--|---|
| Reflow & Bend             | 3 reflows at 245°C followed by a 2 mm bend, 20% DCR change max. (10% for $\leq 1$ A), no mechanical damage | Refer to AEM QIQ034 ,QIQ048 IEC60068-2-21 |
| Solderability             | 245°C, 5 seconds, new solder coverage 90% minimum  | MIL-STD-202 Method 208                    |
| Soldering Heat Resistance | 260°C, 10 seconds, 20% DCR change max. (10% for $\leq 1$ A), new solder coverage 75% minimum               | MIL-STD-202 Method 210                    |
| Life                      | 25°C, 2000 hours, 80% rated current (75% for $< 1$ A), voltage drop change $\leq \pm 20\%$                 | Refer to AEM QIQ106                       |
| Thermal Shock             | -65°C to +125°C, 100 cycles, 10% DCR change max., no mechanical damage                                     | MIL-STD-202 Method 107                    |
| Mechanical Vibration      | 5 – 3000 Hz, 0.4 inch double amplitude or 30 G peak, 10% DCR change max., no mechanical damage             | MIL-STD-202 Method 204                    |
| Mechanical Shock          | 1500 G, 0.5 milliseconds, half-sine shocks, 10% DCR change max., no mechanical damage                      | MIL-STD-202 Method 213                    |
| Salt Spray                | 5% salt solution, 48 hour exposure, 10% DCR change max., no excessive corrosion                            | MIL-STD-202 Method 101                    |
| Moisture Resistance       | 10 cycles, 15% DCR change max., no excessive corrosion   | MIL-STD-202 Method 106                    |

# AirMatrix<sup>®</sup> Surface Mount Fuses

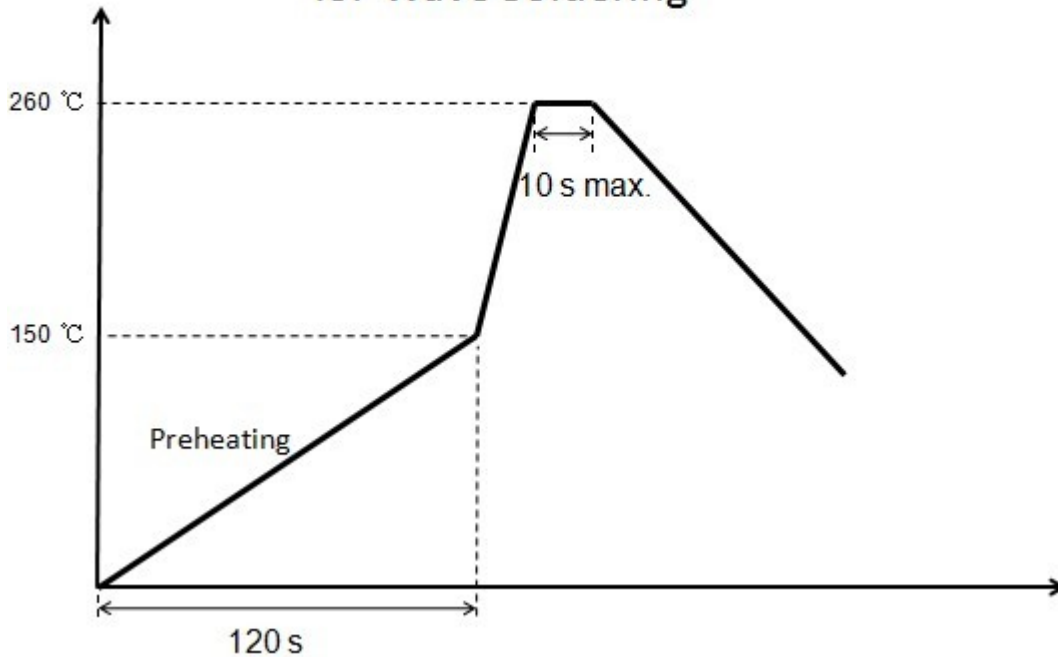
## AF Series, 2410 Size

### Soldering Temperature Profile:

Recommended Temperature Profile for Reflow Soldering



Recommended Temperature Profile for Wave Soldering



## AirMatrix<sup>®</sup> Surface Mount Fuses

### AF Series, 2410 Size

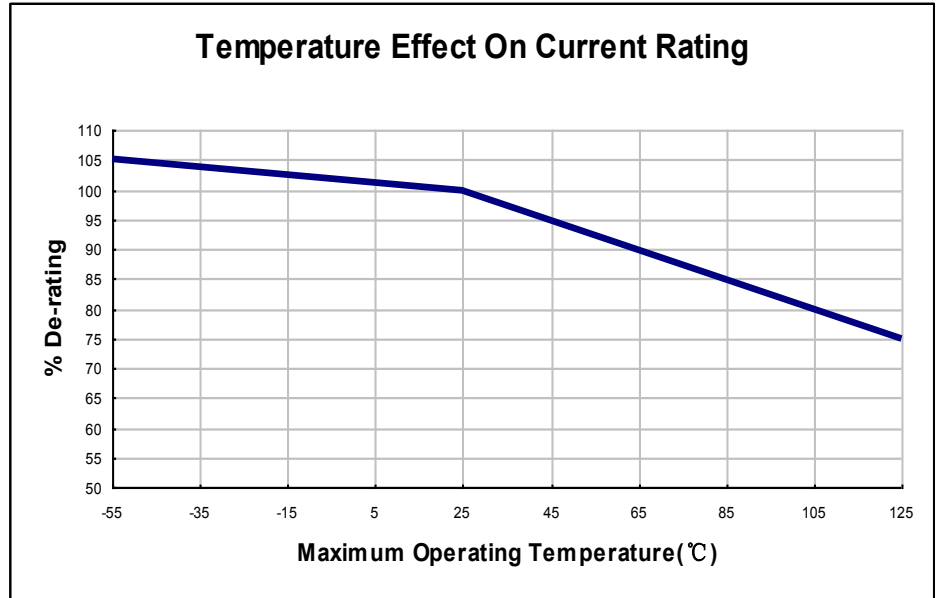
#### Fuse Selection and Temperature De-rating Guideline:

The ambient temperature affects the current carrying capacity of fuses. When a fuse is operating at a temperature higher than 25°C, the fuse shall be “de-rated”.

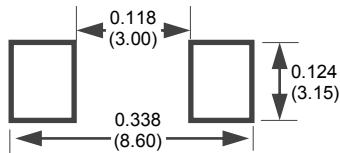
To select a fuse from the catalog, the following rule may be followed:

Catalog Fuse Current Rating = Nominal Operating Current / 0.75 / % De-rating at the maximum operating temperature.

Example: At maximum operating temperature of 65°C, % De-rating is 90%. The nominal operating current is 4 A. The current rating for fuse selected from the catalog shall be:  
 $4 / 0.75 / 90\% = 5.9$  or 6.3 A.



#### Recommended Land Pattern:



Inch (mm)

#### Packaging:

| Chip Size   | Parts on 7 inch (178 mm) Reel |
|-------------|-------------------------------|
| 2410 (6125) | 2,000                         |