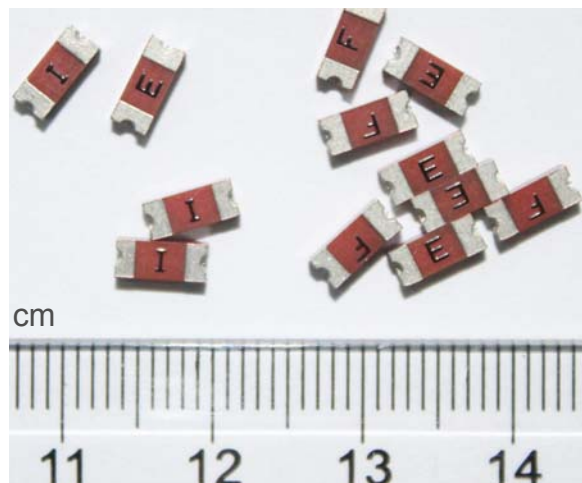


## 250V UMF for AC Applications: MF2410



### Features:

- Extremely small size with 250 VAC rating
- Surface mount fuses in AC applications
- Excellent inrush current withstanding capability
- Operating temperature range: -55°C to +125 °C (with de-rating)
- Complying with IEC 60127-4
- Fiberglass enforced epoxy fuse body
- Copper termination with nickel and tin plating
- Halogen free, RoHS compliant
- 100% lead-free



### Interrupting Ratings:

100 A @ 250 VAC; 50 A @ 125 VDC

### Time/Current Characteristics:

| % of Current Rating | Clearing Time at 25°C |              |
|---------------------|-----------------------|--------------|
|                     | Min.                  | Max.         |
| 125%                | 1 hour                |              |
| 200%                |                       | 120 seconds  |
| 1000%               | 0.001 seconds         | 0.01 seconds |

### Agency Approval:

| Agency | File No.            |
|--------|---------------------|
| UL     | E232989             |
| CQC    | CQC11012065956      |
| KC     | SU05038-12001/12002 |
| PSE    | PSE12020434         |
| VDE    | 40034853            |

### Ordering Information:

| Part Number    | Current Rating (A) | Marking ( Black ) | Voltage Rating (VAC) | Nominal DCR (Ω) | Voltage Drop Max. (mV) | Nominal I <sup>2</sup> t (A <sup>2</sup> s) |
|----------------|--------------------|-------------------|----------------------|-----------------|------------------------|---|
| MF2410F0.500TM | 0.50               | C                 | 250                  | 0.206           | 166                    | 0.11  |
| MF2410F0.630TM | 0.63               | S                 | 250                  | 0.148           | 144                    | 0.20  |
| MF2410F0.800TM | 0.80               | H                 | 250                  | 0.109           | 139                    | 0.35  |
| MF2410F1.000TM | 1.00               | E                 | 250                  | 0.084           | 129                    | 0.62  |
| MF2410F1.250TM | 1.25               | F                 | 250                  | 0.065           | 128                    | 1.00  |
| MF2410F1.600TM | 1.60               | T                 | 250                  | 0.049           | 127                    | 1.80  |
| MF2410F2.000TM | 2.00               | I                 | 250                  | 0.038           | 123                    | 3.00  |

#### Notes:

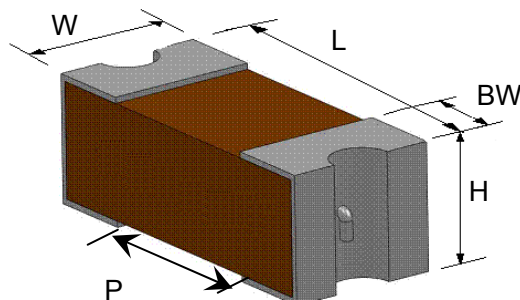
- Resistance is measured at ≤10% of rated current and 25°C ambient.
- Voltage drop is measured at 100% of rated current.
- Melting I<sup>2</sup>t is calculated at 0.001 second pre-arcing time.

# 250V UMF for AC Applications: MF2410



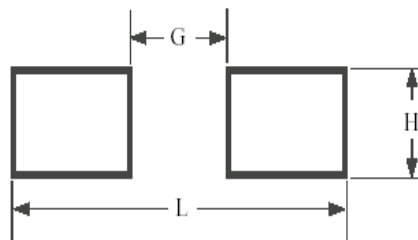
## Shape and Dimensions:

|    | Inch              | mm              |
|----|-------------------|-----------------|
| L  | $0.240 \pm 0.006$ | $6.10 \pm 0.15$ |
| W  | $0.098 \pm 0.006$ | $2.49 \pm 0.15$ |
| H  | $0.085 \pm 0.008$ | $2.16 \pm 0.20$ |
| BW | $0.053 \pm 0.015$ | $1.35 \pm 0.38$ |
| P  | $\geq 0.118$      | $\geq 3.00$     |



## Recommended Land Pattern:

|   | Inch  | mm   |
|---|-------|------|
| L | 0.338 | 8.60 |
| G | 0.118 | 3.00 |
| H | 0.110 | 2.80 |



## Product Identification:

MF 2410 F 1.000 T M

(1) (2) (3) (4) (5) (6)

- (1) Series code: MF
- (2) Size code: 2410
- (3) Time/current characteristics: F
- (4) Current rating code: 1.000 - 1 A
- (5) Package code:
  - T - Tape & Reel
  - B - Bulk
- (6) Marking code: M - with mark

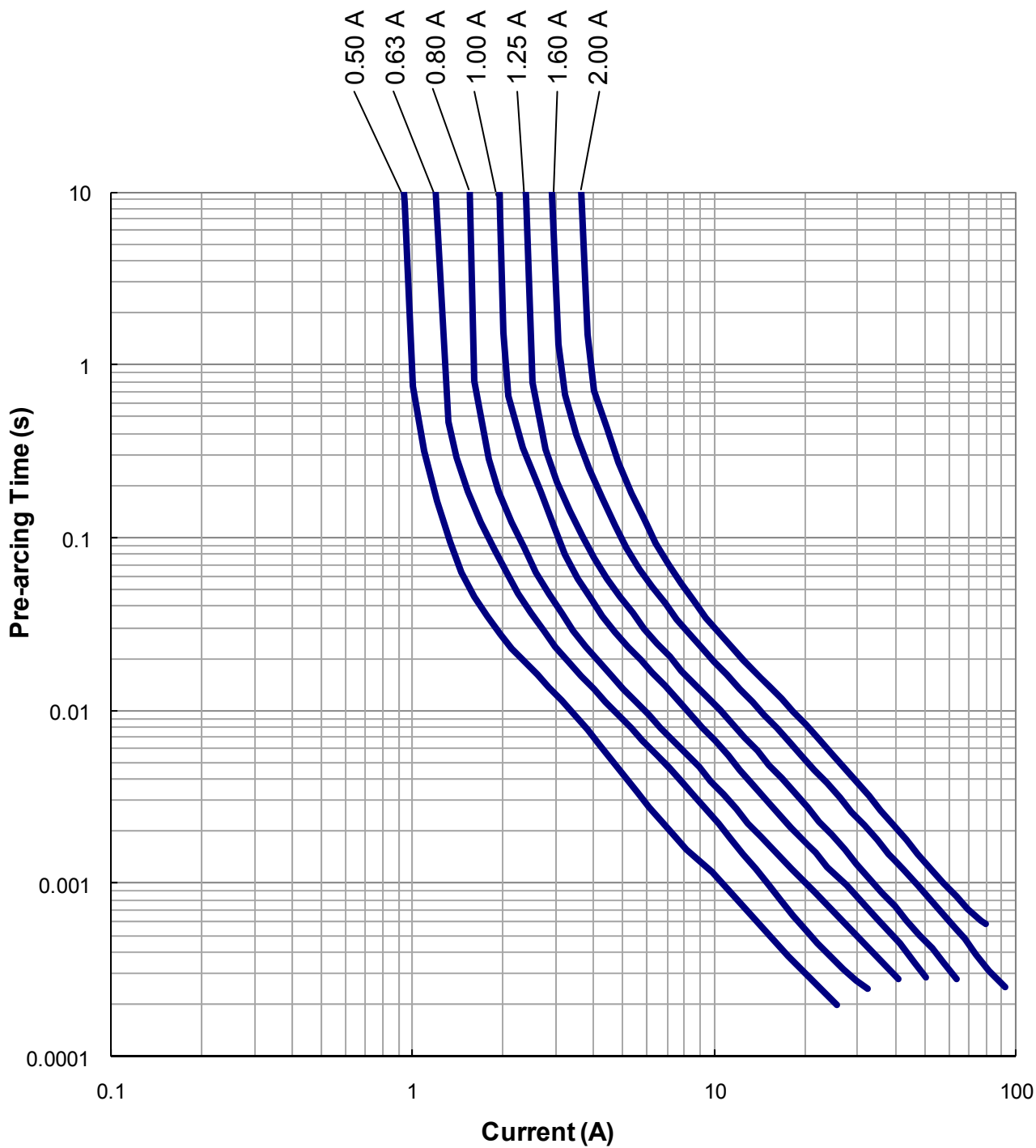
## Typical Applications:

- Lighting: Ballast, LED Drivers
- Power: Chargers, Adapters, Power Boards
- Medical Equipment
- Industrial Equipment
- White Goods

# 250V UMF for AC Applications: MF2410



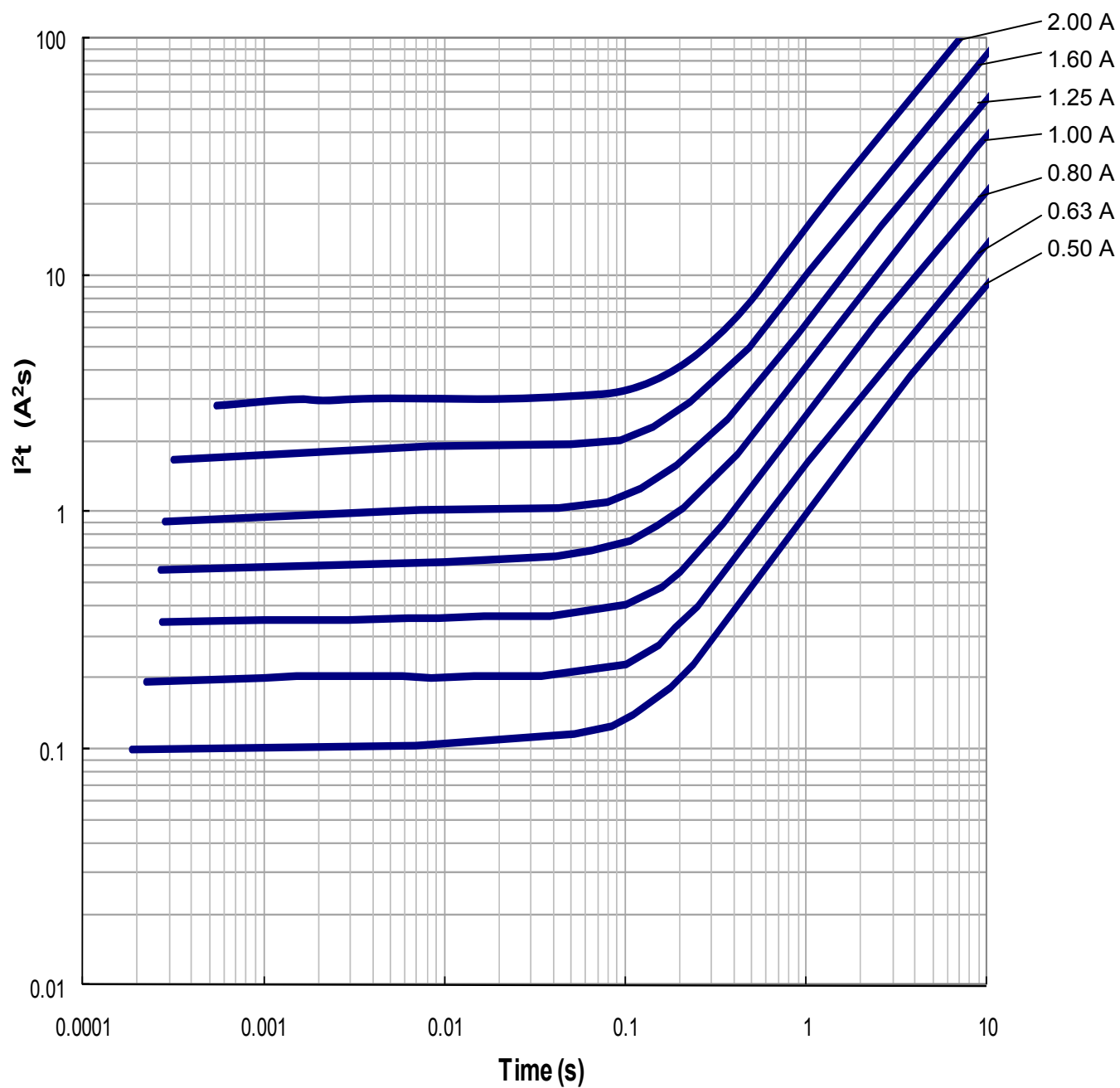
## Average Time/Current Curves



250V UMF for AC Applications: MF2410 



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



## 250V UMF for AC Applications: MF2410



### Electrical Specification: (Reference to IEC 60127-1/-4)

| Electrical Specification            | Test Condition and Requirement   |
|-------------------------------------|--|
| Voltage Drop                        | 100% rated current, meeting IEC 60127-4 requirements   |
| Time/Current Characteristics        | See short form datasheet   |
| Breaking Capacity                   | 100 A @ 250 VAC; 50 A @ 125 VDC  |
| Insulation Resistance after Opening | Under 200% rated voltage, resistance $\geq 0.1 \text{ M}\Omega$  |
| Endurance Test                      | Reference to IEC 60127-4, voltage drop change $\leq 10\%$ , mark remaining legible, no mechanical damage |
| Temperature Rise                    | $\leq 70 \text{ K}$ , meeting IEC 60127-4 requirements   |

### Environmental Tests:

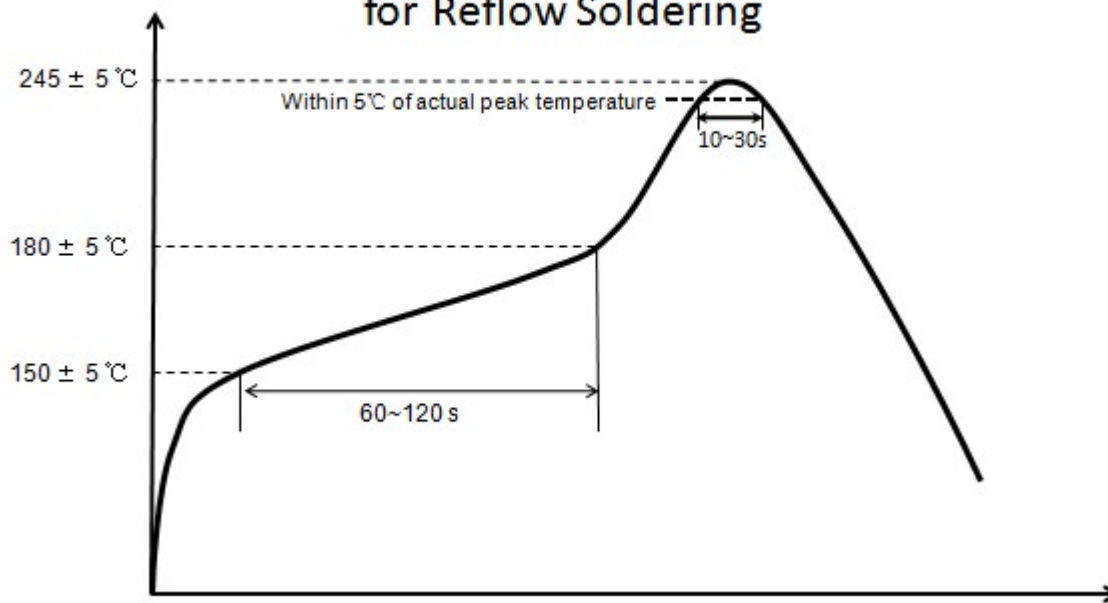
| Reliability Test          | Test Condition and Requirement   | Test Reference                   |
|---------------------------|--|----------------------------------|
| Reflow and Bend           | 3 reflows at 245°C followed by a 2 mm bend, voltage drop meeting IEC 60127-4, no mechanical damage                             | Refer to AEM QIQ 048 and QIQ 034 |
| Solderability             | 245°C , 5~10 seconds, 90% new solder coverage min.   | IEC 60127-4                      |
| Soldering Heat Resistance | 260°C , 10 seconds, voltage drop meeting IEC 60127-4, no mechanical damage, marking remaining legible, no marking color change | IEC 60127-4                      |
| Life                      | 25°C , 2000 hours, 10% voltage drop change max.  | 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 (10 days), 10% DCR change max., no excessive corrosion   | MIL-STD-202 Method 106           |

# 250V UMF for AC Applications: MF2410

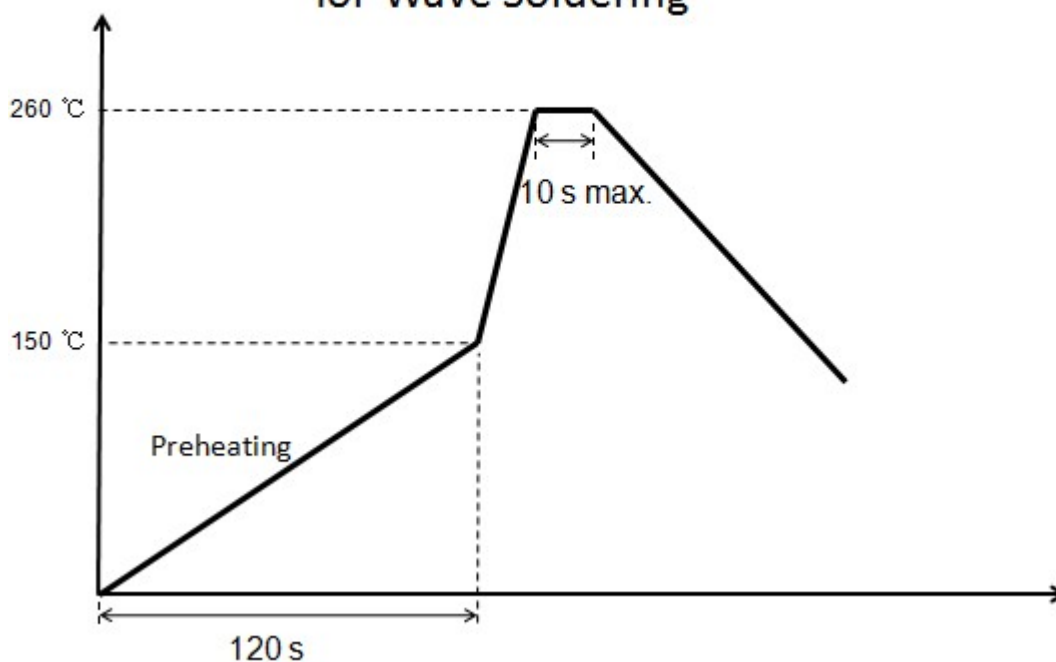


## Soldering Temperature profiles

### Recommended Temperature Profile for Reflow Soldering



### Recommended Temperature Profile for Wave Soldering

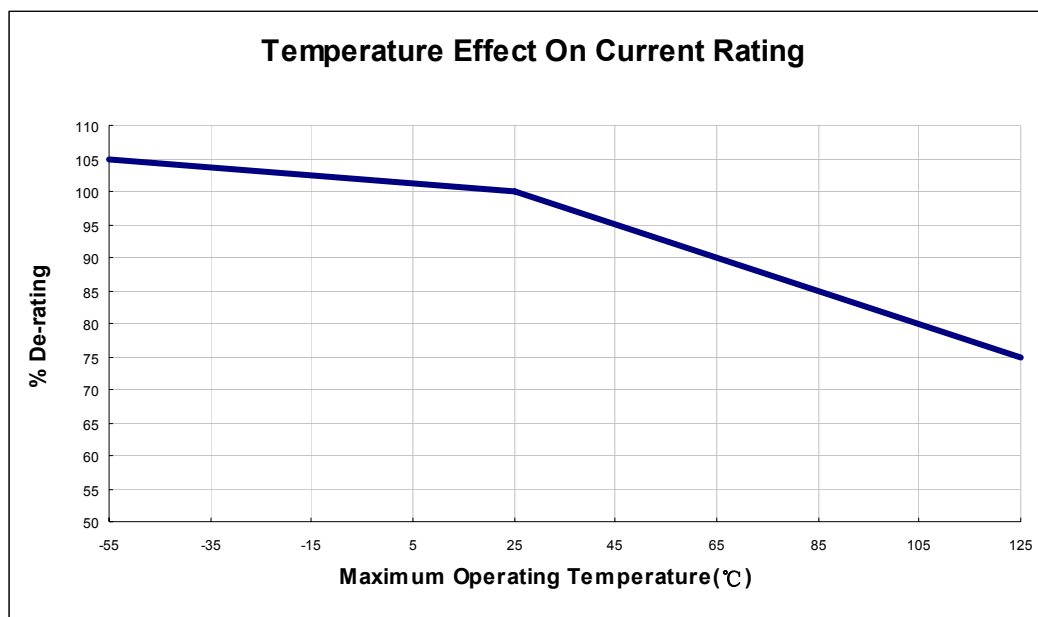


## 250V UMF for AC Applications: MF2410



### 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”.



### Packaging Data

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

### Storage

The maximum ambient temperature shall not exceed 35°C . Storage temperatures higher than 35°C could result in the deformation of packaging materials.

The maximum relative humidity recommended for storage is 75%. High humidity with high temperature can accelerate the oxidation of the solder plating on the termination and reduce the solderability of the components.

Sealed vacuum foil bags with desiccant should only be opened prior to use.

The products should not be stored in areas where harmful gases containing sulfur or chlorine are present.

Specifications and descriptions in this literature are as accurate as known at the time of printing, but are subject to change without notice. For the most updated information, please consult the factory.

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