

INDIVIDUAL SPECIFICATION SHEET

Product Name: 1206 Fast Acting SMD Fuses

Part Number: F12F Series

Revision: A



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| Rev. | Effective Date | Changed Contents |
|------|----------------|------------------|
| A | 2020-8-12 | New Release |
| | | |
| | | |

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Description

F12F Series are the fuses set the industry standard for performance, reliability and quality. The solder-free design provides excellent on-off and temperature cycling characteristics during use and also makes our SMD fuses more heat and shock tolerant than typical subminiature fuses.



| Electrical Characteristics | | | |
|----------------------------|-------------|------------|------------|
| Rated Current | 1.0In | 2.5In | 3.5In |
| 250mA~5A | 4 hour min. | 5 sec max. | - |
| 6A~40A | | - | 5 sec max. |

Features

- AEC-Q200 Automotive Grade Certified
- Rapid interruption of excessive current
- Compatible with reflow and wave solder
- Ceramic and glass construction
- One time positive disconnect
- Lead Free and Halogen free material

Specifications

| Specification | | | | | | | |
|---------------|--------------------------|-------------------|--|--|---------------------------|---|---------------|
| Part No. | Rated Voltage DC | Rated Current (A) | Breaking Capacity(A) ¹ | Typical Cold Resistance (mOhms) ² | Typical Voltage Drop (mV) | Typical Pre-Arcing I ² t (A ² Sec) ³ | Alpha Marking |
| F12F0.25 | 72V 63V 32V 24V | 250mA | 50A@72Vdc 50A@63Vdc 150A@32Vdc 300A@24Vdc | 3608 | 1407 | 0.0004 | .25 |
| F12F0.375 | | 375mA | | 1882 | 718 | 0.0008 | E |
| F12F0.5 | | 500mA | | 1028 | 650 | 0.0022 | 0.5 |
| F12F0.75 | | 750mA | | 601 | 616 | 0.0057 | .75 |
| F12F1 | | 1A | | 490 | 510 | 0.10 | H |
| F12F1.5 | | 1.5A | | 240 | 367 | 0.15 | K |
| F12F2 | | 2A | | 132 | 316 | 0.41 | N |
| F12F2.5 | | 2.5A | | 77 | 240 | 0.65 | O |
| F12F3 | | 3A | | 48 | 187 | 1.39 | P |
| F12F3.5 | | 3.5A | | 40 | 180 | 1.68 | R |
| F12F4 | | 4A | | 35 | 173 | 1.73 | S |
| F12F4.5 | 32V | 4.5A | 150A@32Vdc 300A@24Vdc | 30 | 164 | 2.62 | X |
| F12F5 | | 5A | | 25 | 141 | 2.89 | T |
| F12F6 | | 6A | | 16.5 | 142 | 11 | F |
| F12F7 | | 7A | | 12 | 140 | 12.5 | 7 |
| F12F8 | 24V | 8A | 150A@32Vdc 300A@24Vdc | 8.5 | 110 | 14 | M |
| F12F10 | | 10A | | 6.8 | 100 | 20 | U |
| F12F12 | | 12A | | 5 | 85 | 11.5 | 12 |
| F12F15 | | 15A | | 3.9 | 78 | 16.5 | 15 |
| F12F20 | | 20A | | 1.8 | 60 | 47.17 | 20 |
| F12F25 | | 25A | | 1.5 | 57 | 32 | 25 |
| F12F30 | | 30A | | 1.25 | 68 | 43 | 30 |
| F12F40 | | 32V 24V | | 40A | 200A@32Vdc 200A@24Vdc | 0.85 | 95 |

1. DC Interrupting Rating (Measured at rated voltage, time constant of less than 50 microseconds, battery source)

2. DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25°C

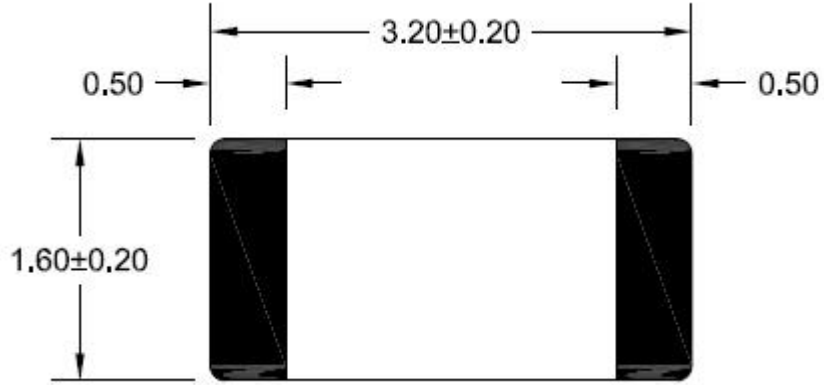
3. Typical Pre-arcing I²t are measured at 10In Current

Specifications are subject to change without notice. Application testing is strongly recommended.

Dimension

Drawing not to scale (Unit: mm) Top

view

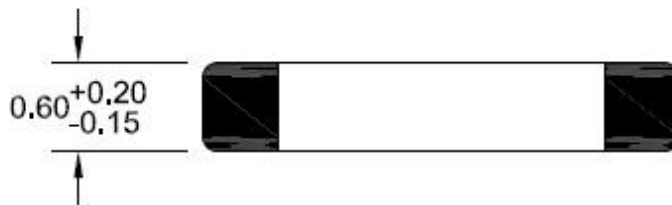


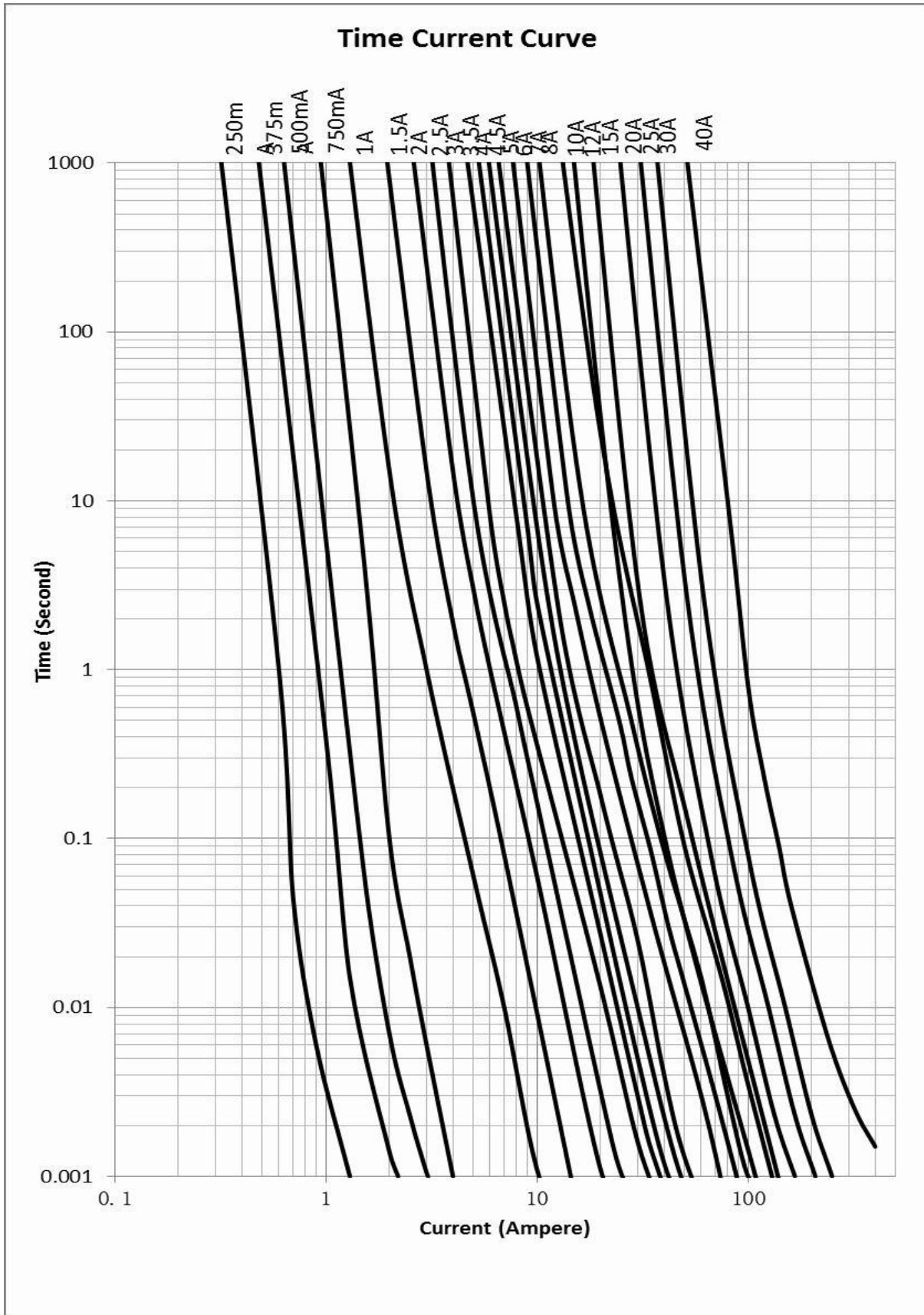
Side view:

250mA~750mA/20A~40A

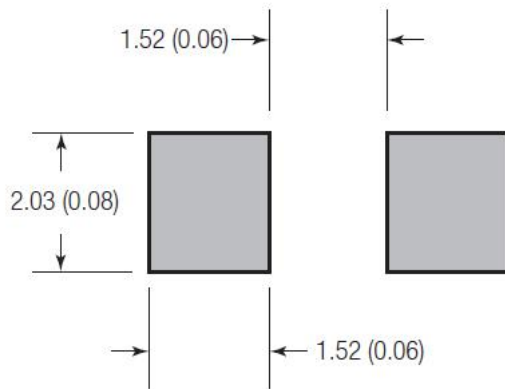


1A~15A





Recommended land pattern

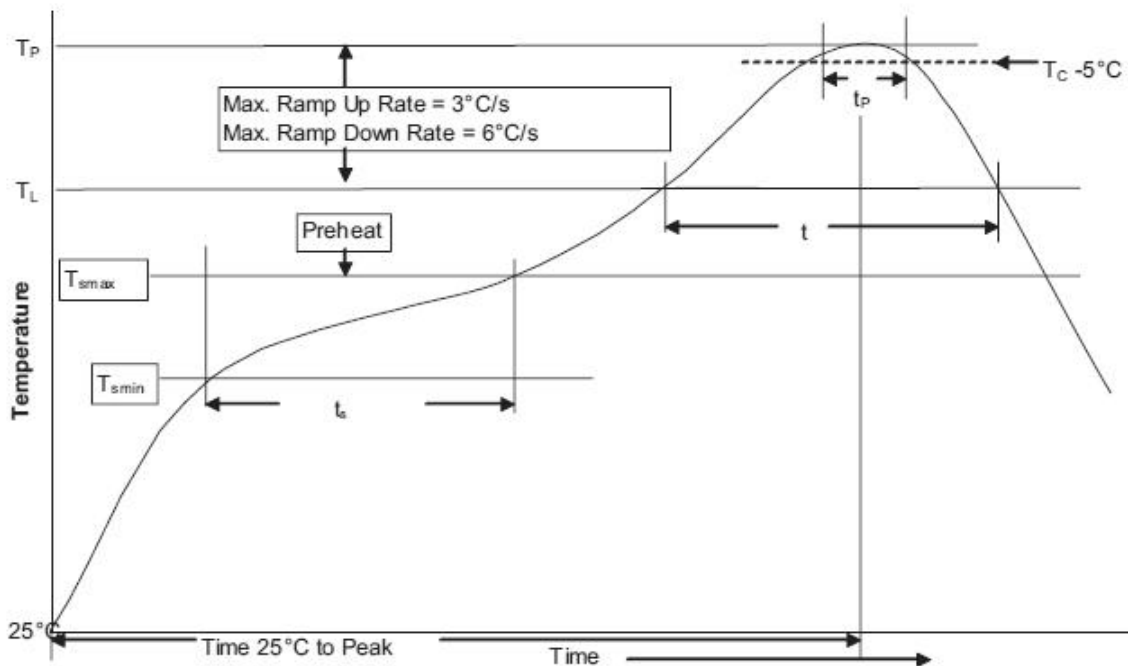


Unit: mm(inch)

Soldering method

- Wave solder
 - Reservoir temperature: 260°C
 - Time in reservoir: 10 seconds maximum
- Infrared reflow
 - Temperature: 260°C
 - Time: 30 seconds maximum

Solder reflow profile



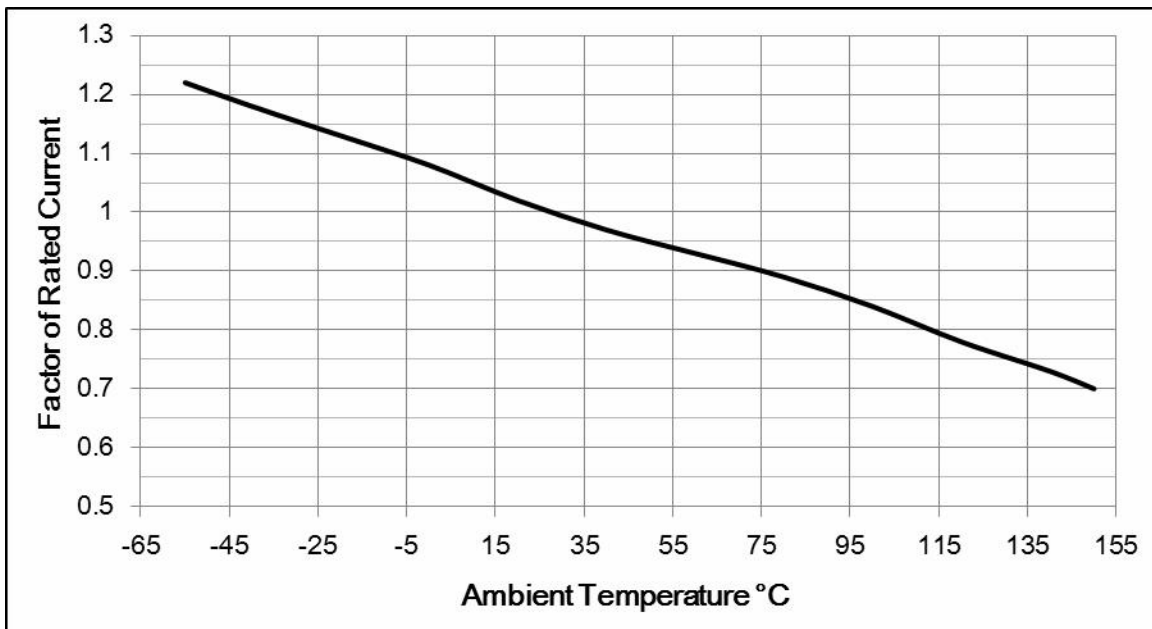
| Profile Feature | | Lead(Pb) free solder |
|------------------|---|----------------------|
| Preheat and soak | • Temperature min.(T_{smin}) | 150°C |
| | • Temperature max. (T_{smax}) | 200°C |
| | • Time (T_{smin} to T_{smax}) (t_s) | 60 - 120 Seconds |

| | |
|---|-------------------|
| Average ramp up rate T_{smax} to T_p | 3°C / Second Max. |
| Liquidous temperature (T_L) | 217°C |
| Time at liquidous (t_L) | 60 - 150 Seconds |
| Peak package body temperature (T_P) | 260°C |
| Time (t_P) within 5°C of the specified classification temperature (T_C) | 30 Seconds |
| Average ramp-down rate (T_P to T_{smax}) | 6°C / Second Max. |
| Time (25°C to Peak Temperature) | 8 Minutes Max. |

Temperature Derating Curve

Normal ambient temperature: 23+/-3°C

Operating temperature: -55 ~ 125°C, with proper correction factor applied



Package

3000 fuses on 8mm tape-and-reel on a 7 inch (178mm) reel per EIA Standard 481.

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