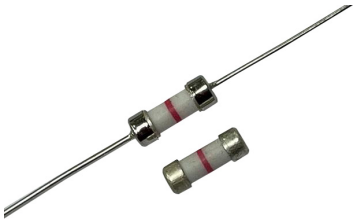
Cartridge Fuses

RoHS Compliant



Description

This Series fuse is designed for barrier circuits in intrinsic safety applications relating to Hazardous Locations. Ranging from 40mA to 250mA, the Series provides overcurrent protection solutions to fit many Hazardous Location barrier applications.

Features

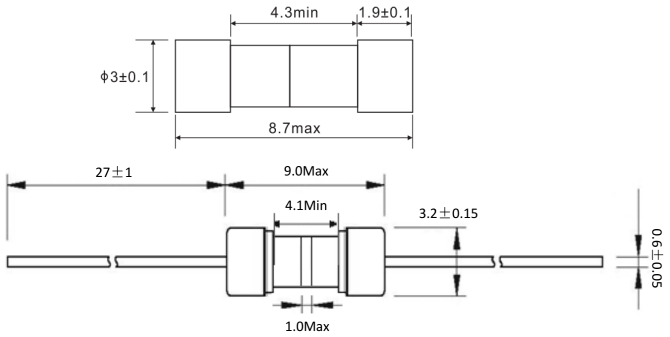
- Meets electrical performance specifications for intrinsically safe (EN60079-11) applications.
- Fast-acting, high interrupting rating of 4000A at 250V AC/DC.
- Ceramic tube, silver plated brass end cap construction.

Specifications

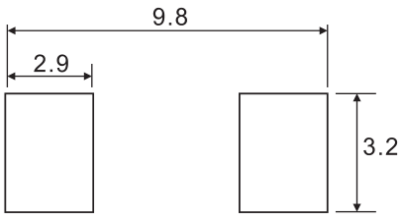
Operating Temperature	: -55°C to 125°C
Storage Conditions	: +10°C to +60°C
Relative humidity	: ≤ 75% yearly average without dew, maximum 30 days at 95%
Vibration Resistance	: 120 cycles in 1 direction at 1 min. each 10-55Hz, 3 directions (X, Y, Z) in total According to MIL-STD-202 Method 201A

Mechanical Specifications

Dimensions



Recommended Land Pattern



Dimensions : Millimetres

Electrical Specifications

Time vs Current Characteristics Table

(measured with constant current power supply)

Rated Current	110 %	300%	1000%
40mA~250mA	>4h	<10s	<2ms

Electrical characteristics

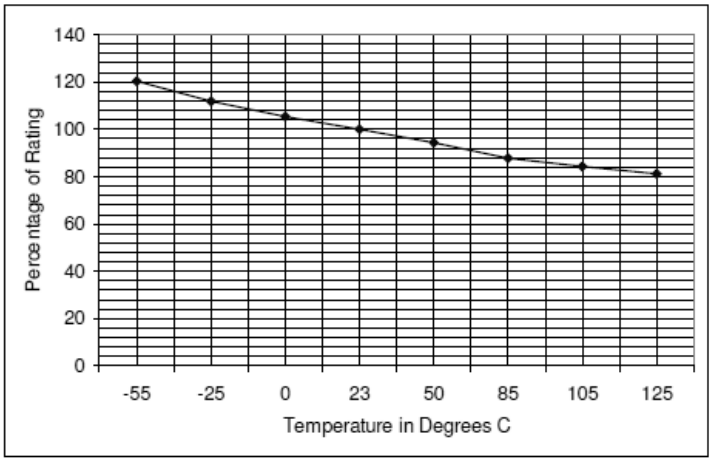
Electrical Characteristics at 25°C						
Amp Code	**Rated Current**	**Max Voltage**	**Breaking Capacity**	**Typical Melting I²t (A²sec)**	**Typical Cold Resistance (mΩ)**	**Color Code**
MP014098	40mA	250V AC 250V DC	4000A@250V AC 4000A@250V DC	0.00006	14.2	Grey
MP014099	50mA			0.00010	9.4	Red
MP014100	63mA			0.00012	8.8	Pink
MP014101	80mA			0.00018	5.1	Green
MP014102	100mA			0.00087	2.87	Yellow
MP014103	125mA			0.00134	2.2	Orange
MP014104	160mA			0.00166	2.05	Violet
MP014105	200mA			0.00237	1.01	Brown
MP014106	250mA			0.00530	0.71	Black

Notes: (1) DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25°C
(2) Typical Pre-arcing I2t are measured at 10In current.

Temperature Derating Curve

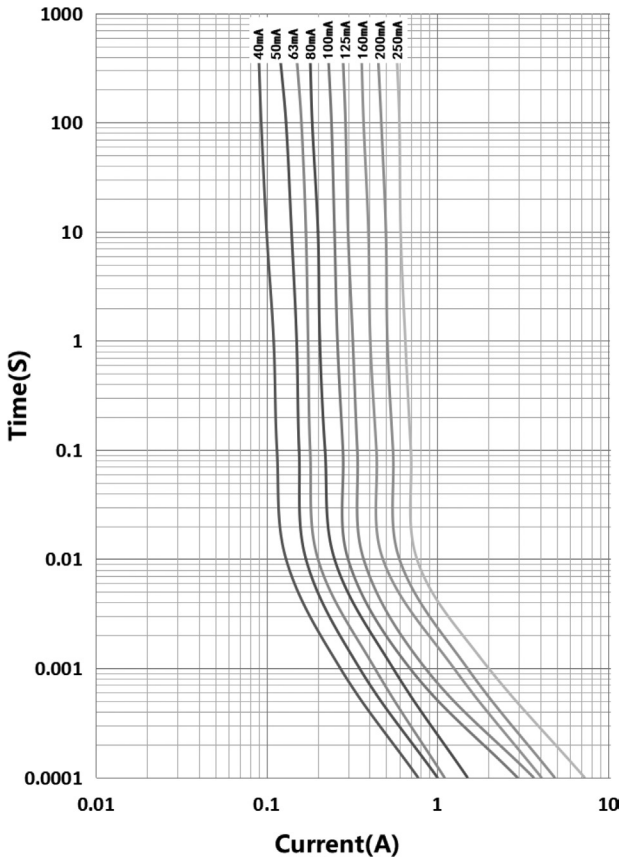
Normal ambient temperature: 23 ±3°C

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



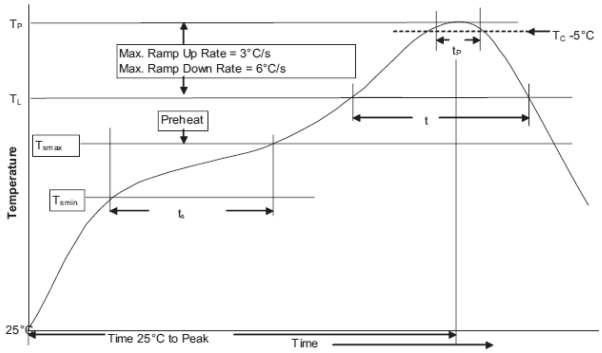
$$\text{Calculation for ideal fuse selection} = \frac{\text{Operating Current (A)}}{\text{Rating (\%} \times 0.75)}$$

Average Time Current (I-T) Curves



Soldering Parameters

1.Infrared Reflow:
Temperature:260°C
Time:30sec Max.
Recommend reflow profile
2.Wave Soldering Reservoir
Temperature:260°C
Time in Reservoir:10sec Max.



Profile Feature		Lead (Pb)free solder
Average Ramp-UP Rate (Tsmax to Tp)		3°C/s Max.
Preheat and soak	Temperature min.(Tsmin)	150°C
	Temperature max.(Tsmax)	200°C
	Time (Tsmin to Tsmax)(ts)	60~120s
Liquidous temperature(TL) Time at liquidous(tL)		217°C 60~150s
Peak package body temperature(Tp)		260°C
Time (tP) within 5°C of the specified classification temperature (Tc)		30s
Average ramp-down rate (Tp to Tsmax)		6°C/s Max.
Time (25°C to Peak Temperature)		8 Minutes Max.

Part Number Table

Description	Part Number
Surface Mount Barrier Network Fuses, 40mA, 250V AC/DC	MP014098
Surface Mount Barrier Network Fuses, 50mA, 250V AC/DC	MP014099
Surface Mount Barrier Network Fuses, 63mA, 250V AC/DC	MP014100
Surface Mount Barrier Network Fuses, 80mA, 250V AC/DC	MP014101
Surface Mount Barrier Network Fuses, 100mA, 250V AC/DC	MP014102
Surface Mount Barrier Network Fuses, 125mA, 250V AC/DC	MP014103
Surface Mount Barrier Network Fuses, 160mA, 250V AC/DC	MP014104
Surface Mount Barrier Network Fuses, 200mA, 250V AC/DC	MP014105
Surface Mount Barrier Network Fuses, 250mA, 250V AC/DC	MP014106