AirMatrix® Surface Mount Fuses

QA1206G Series (Automotive Grade, 1206 Size)

Features:

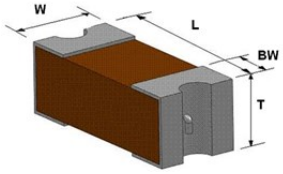
- Automotive grade with AEC-Q200 Rev.E qualification
- Excellent inrush current withstanding capability
- Extremely thin body for space saving
- Fiberglass enforced epoxy fuse body
- Copper or copper alloy composite fuse link
- Copper termination with nickel and tin plating

Clearing Time Characteristics:

% of current rating	Clearing time at 25°C	
	Min.	Max.
100%	4 hours	-
250%	-	5 seconds

Shape and Dimensions:

Unit	Inch	mm
L	0.126 ± 0.008	3.20 ± 0.20
W	0.067 ± 0.008	1.70 ± 0.20
T	0.042 ± 0.006	1.08 ± 0.15
BW	0.033 ± 0.012	0.85 ± 0.30



Applications:

- Communications & Networks
- BMS & Battery pack
- Infotainment systems
- Under-the-hood applications

Agency Approval:

- Recognized Under the Components Program of Underwriters Laboratories.
- Certification #: UL-E232989.

Ordering Information:

Part Number	Current Rating (A)	Voltage Rating (V DC)	Interrupting Ratings	Nominal DCR (Ω)[1]	Nominal I^2t (A^2s)[2]	Marking[3]
QA1206G0A50T	0.5	125	50A @125V DC	0.250	0.048	C
QA1206G0A63T	0.63			0.185	0.10	S
QA1206G0A75T	0.75			0.152	0.13	D
QA1206G1A00T	1			0.105	0.30	E
QA1206G1A25T	1.25	100	50A @100V DC	0.072	0.55	F
QA1206G1A50T	1.5			0.064	0.75	G
QA1206G2A00T	2			0.046	1.50	I

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

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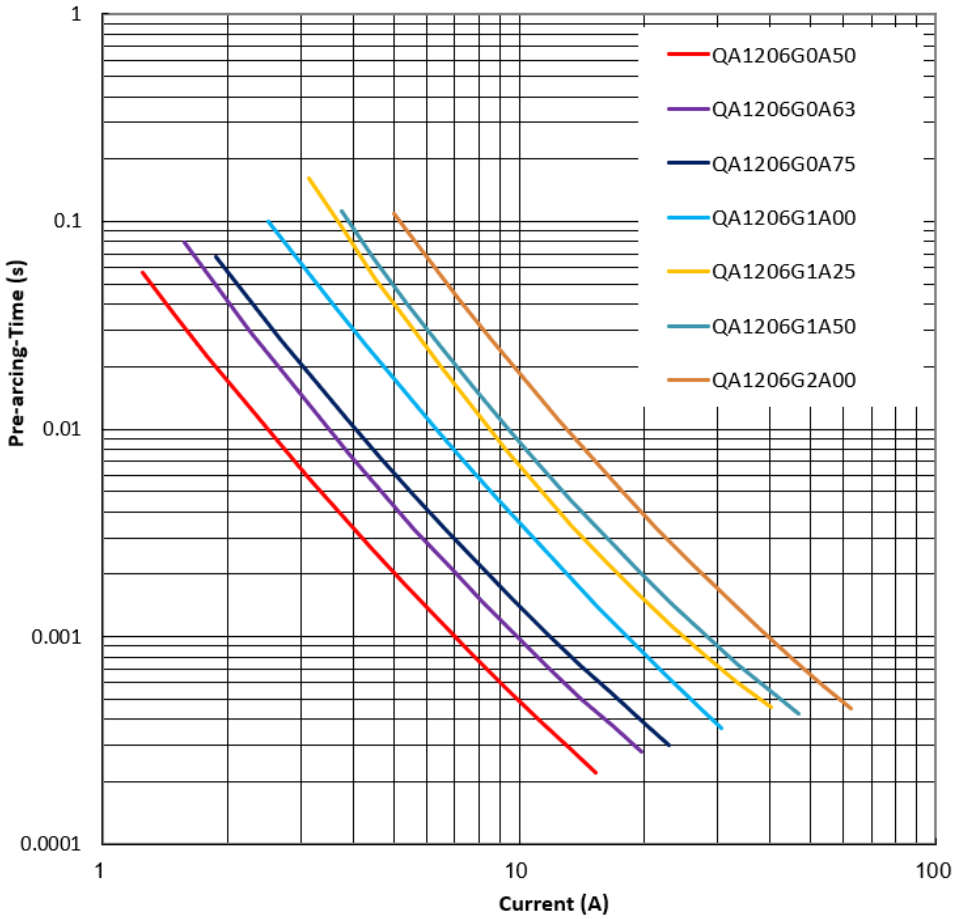
Average Pre-arcing Time Curves:



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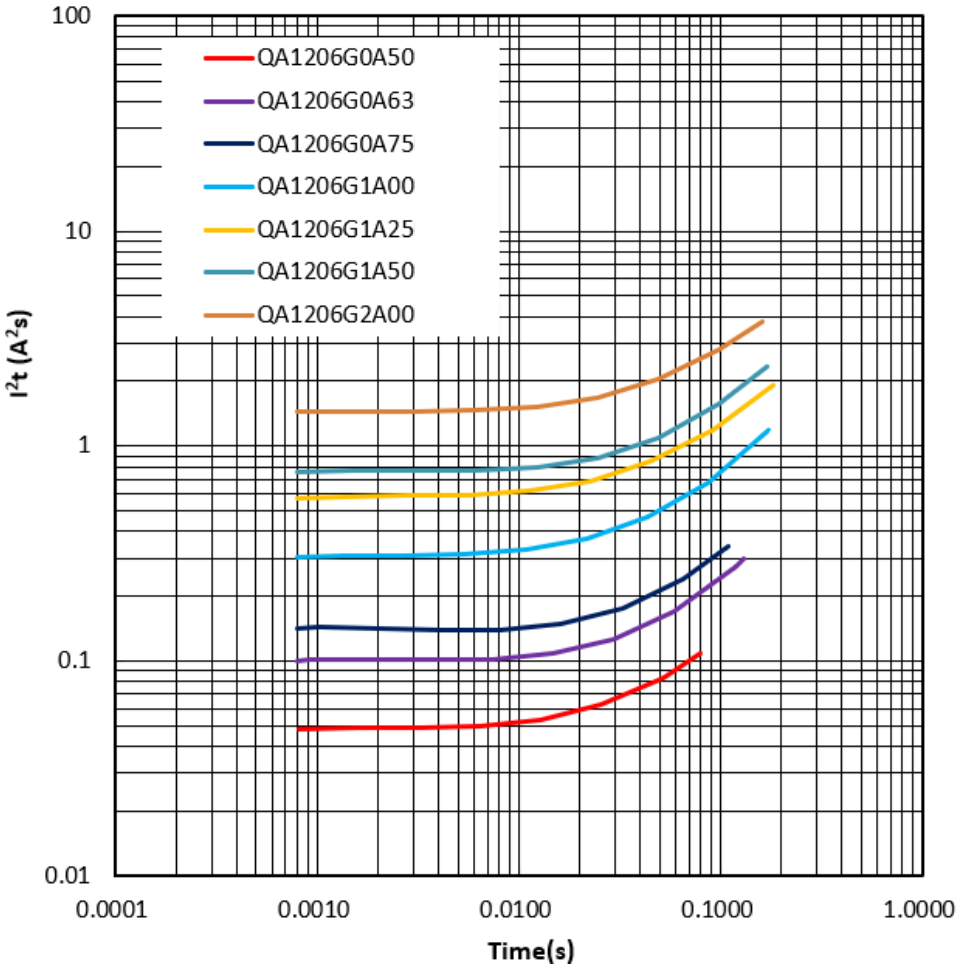
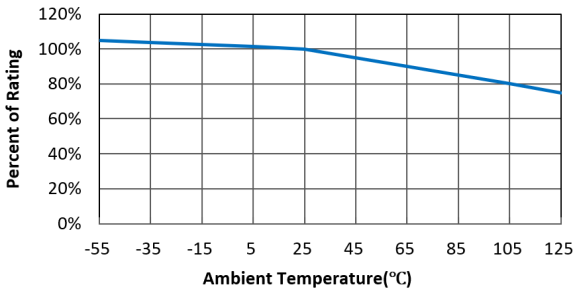
Average I^2t vs. t Curves:



Temperature De-rating:

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" according to the de-rating curve.



Operating Temperature Range:

-55°C ~+125°C (with de-rating)

Product Identification:

QA 1206 G 1A00 T

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

(1) Series Code: QA - Automotive Grade AirMatrix Chip Fuse

(2) Size Code: L x W (inch), the first two digits - L (length), the last two digits - W (width)

(3) Characteristic Code: G – Fast acting and High inrush withstanding

(4) Current Rating Code: 1A00 - 1.0A

(5) Package Code: T - Tape & Reel, B - Bulk

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Reliability Tests:

No.	Item	Test Condition	Criteria
1	High temperature storage	Subject fuses to +125°C for 1000 hours	DCR change within ±10%, no damage
2	Low temperature storage	Subject fuses to -65°C for 1000 hours	DCR change within ±10%, no damage,
3	Temperature Cycling	Subject fuses to 1000 temperature cycles 30min at -65°C lowest temp and 30min at +125°C highest temp	DCR change within ±10%, no damage
4	Biased Humidity	Subject fuses to +85°C/85%RH with 10% rated current for 1000 hours	DCR change within ±10%, no excessive corrosion
5	High Temperature Operating Life	+125°C for 1000 hours. Load setting : 75%(current de-rating) *75%(temp. de-rating per series) * Rated current	DCR change within ±10%, no damage
6	Mechanical Vibration	0.4" D.A. or 30G between 5 and 3000 Hz, along 3 mutually perpendicular axes for a total of 12 hours	DCR change within ±10%, no mechanical damage
7	Mechanical Shock	1500G, 0.5 ms, half sine shocks in 6 major directions along 3 mutually perpendicular axes	DCR change within ±10%, no mechanical damage
8	Resistance to Soldering Heat	One dip at 260°C,10 seconds.	DCR change within ±20% of > 1A or ±10% of ≤ 1A, no damage, new solder coverage ≥ 75%
9	Salt spray	5% salt solution, 48 hours exposure	DCR change within ±10%, no excessive corrosion
10	Solderability	245°C , 5 seconds	New solder coverage ≥ 95%
11	Terminal Strength	Apply 17.7N (1.8kg) force gradually to the side of the fuse, this force shall be applied for 60 seconds	DCR change within ±10%, no mechanical damage
12	Board Flex	Apply a force that will bend the board distance of x=6mm, and the duration of the applied forces shall be 60 seconds	DCR change within ±10% , no mechanical damage

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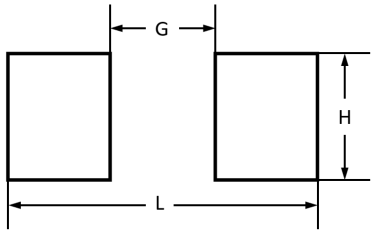
Recommended Land Pattern:

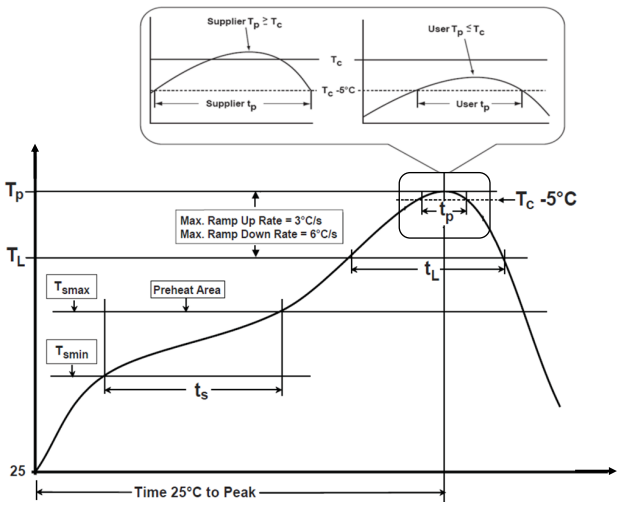
Chip Size	1206 (3216)	Unit
L	0.173 (4.40)	Inch (mm)
G	0.059 (1.50)	Inch (mm)
H	0.071 (1.80)	Inch (mm)



Recommended Temperature Profile:

Profile Feature	Pb-Free Assembly
Preheat/Soak Temperature Min (T_{smin}) Temperature Max (T_{smax}) Time (t_s) from (T_{smin} to T_{smax})	 150°C 200°C 60~120 seconds
Ramp-uprate (T_L to T_p)	3°C/second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L	217°C 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 *
Ramp-down rate (T_p to T_L)	6°C/second max.
Time 25°C to peak temperature	8 minutes max.
* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum	

* Recommended Temperature Profile for Reflow Soldering



Recommended conditions for hand soldering:

1. Appropriate temperature (max.) of soldering iron tip/soldering time (max.): 280°C /10 s or 350°C / 3 s
2. Using hot air rework station with tip that can melt the solder on both terminations at the same time is strongly recommended. Do not directly contact the chip termination with the tip of soldering iron.

Storage:

1. The maximum ambient temperature shall not exceed 35°C . Storage temperatures higher than 35°C could result in the deformation of packaging materials.
2. 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.
3. The products shall not be stored in areas where harmful gases containing sulfur or chlorine are present.
4. MSL=1

Packaging:

Chip Size	Parts on 7 inch (178 mm) Reel
1206 (3216)	3,500

Disclaimer

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