High Power Surface Mount Fuse

CM2840H Series (High Inrush, 2840 Size)

Features:

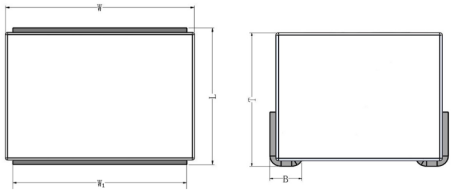
- Ceramic body with superior arc-suppression material as filler
- No interconnection issue with one unit of fuse link and termination
- The most compact design of at 2840 case size in surface mount type of high current fuse up to 200A
- Low DC resistance (DCR) – Minimizes excessive power loss
- High interrupting ratings – for excellent inrush current capability

Clearing Time Characteristics:

% of current rating	Clearing time at 25°C	
	Min.	Max.
100%	4 hours	-
250%	-	60 seconds

Shape and Dimensions:

Unit	Inch	mm
L	0.287 ± 0.012	7.3 ± 0.3
W	0.406 ± 0.008	10.3 ± 0.2
W_1	0.374 ± 0.008	9.5 ± 0.2
T	0.228 ± 0.008	5.8 ± 0.2
B	0.047 ± 0.012	1.2 ± 0.3



Applications:

- Server systems
- Routers & switches
- Telecom DC/DC power
- Drones
- Power tools
- Battery & BMS

Ordering Information:

Part Number	Current Rating (A)	Voltage Rating (V DC)	Interrupting Rating	Nominal DCR (mΩ)[1]	Nominal I^2t (A^2s)[2]	Marking[3]
CM2840H150AT	150	75	1,500A @ 75VDC	0.29	16000	CMH 150A
CM2840H200AT	200			0.20	28000	CMH 200A

1. Measured at ≤10% rated current and 25 °C ambient.
2. Melting I^2t at 1000% of current rating.
3. Laser marking character code.

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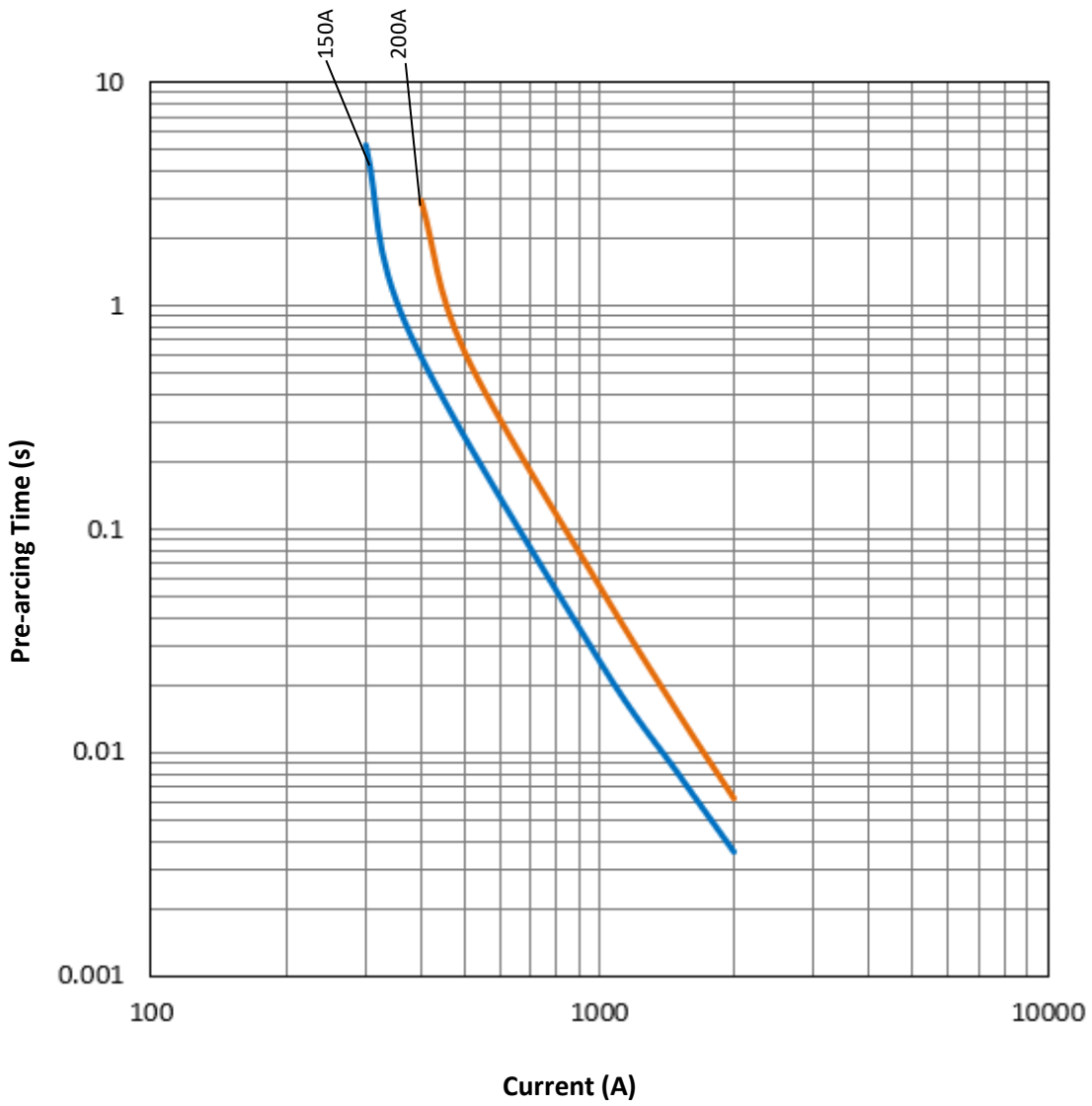
Average Pre-arcing Time Curves:



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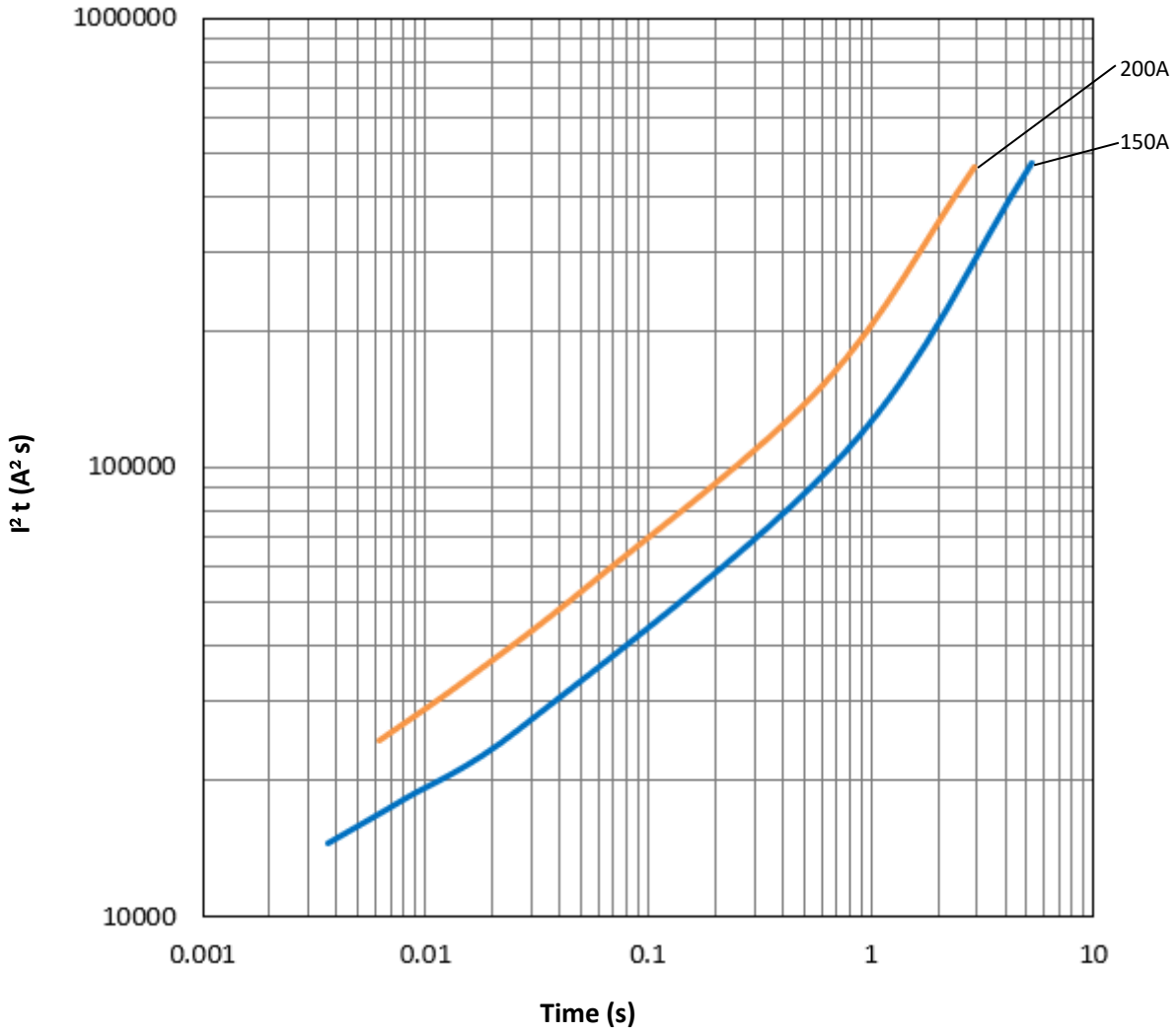
Average I^2t vs. t Curves:



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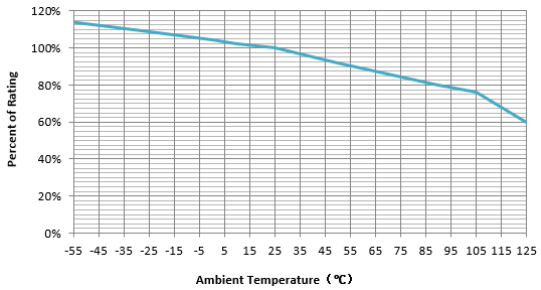
Temperature De-rating:

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.



Product Identification:

CM 2840 H 150A T
(1) (2) (3) (4) (5)

(1) Series Code: CMH Series
(2) Size Code: L x W (inch), the first two digits - L (length), the last two digits - W (width)
(3) Characteristic Code: H - High Inrush
(4) Current Rating Code: 150A - 150A
(5) Package Code: T - Tape & Reel, B - Bulk

Marking:
Top Line: AEM Logo**; CMH:** Series Code
Bottom Line: Current Rating Code

Operating Temperature Range:

- -55°C ~+125°C (with de-rating)

Agency Approval:

- Recognized Under the Components Program of Underwriters Laboratories.
- Certification #: UL-E507943

Reliability Tests:

No.	Item	Condition	Criteria
1	Bend	2 mm bend	DCR change within ±20%, no mechanical damage
2	Solderability	245°C, 5 seconds	New solder coverage ≥95%
3	Soldering Heat Resistance	260°C, 10 seconds	DCR change within ±20%, new solder coverage 75% minimum, no mechanical damage
4	Terminal Strength	Gradually apply 1.8 kg force to the bottom of the part for 60 seconds	DCR change within ±20%, no mechanical damage
5	Life	80% rated current, 2000 hours, ambient temperature +20°C to +30°C	Voltage drop change within ±20%
6	Thermal Shock	-65°C to +125°C, 100 cycles	DCR change within ±20%, no mechanical damage
7	Mechanical Vibration	5 – 3000 Hz, 0.4 inch double amplitude or 30 G peak	DCR change within ±20%, no mechanical damage
8	Mechanical Shock	1500 G, 0.5 milliseconds, half-sine shocks	DCR change within ±20%, no mechanical damage
9	Salt Spray	5% salt solution, 48 hours exposure	DCR change within ±20%, no excessive corrosion
10	Moisture Resistance	10 cycles	DCR change within ±20%, no excessive corrosion

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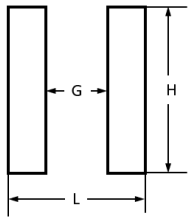
Recommended Land Pattern:

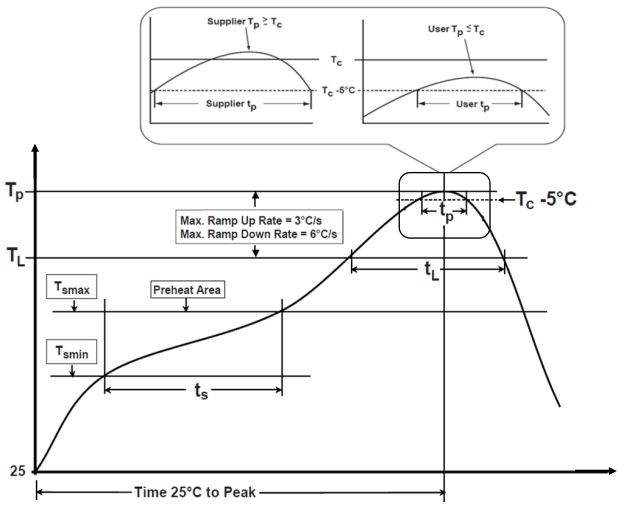
Chip Size	2840	Unit
L	0.386 (9.8)	Inch (mm)
G	0.173 (4.4)	Inch (mm)
H	0.472 (12.0)	Inch (mm)



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 13 inch (330 mm) Reel
2840	600

Disclaimer

Specifications are subject to change without notice. AEM products are designed for specific applications and should not be used for any purpose (including, without limitation, automotive, aerospace, medical, life-saving applications, or any other application which requires especially high reliability for the prevention of such defect as may directly cause damage to the third party's life, body or property) not expressly set forth in applicable AEM product documentation. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Warranties granted by AEM shall be deemed void for products used for any purpose not expressly set forth in applicable AEM product documentation. AEM shall not be liable for any claims or damages arising out of products used in applications not expressly intended by AEM as set forth in applicable AEM product documentation. The sale and use of AEM products is subject to AEM terms and conditions of sale. Please refer to AEM's website for updated catalog and terms and conditions of sale.

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