

# Type 0697H

## Slow Blow Lead Micro Fuse Series

HF (Pb) 0697H Series

RoHS 6 Compliant

### Description

Subminiature, radial lead, High I<sup>2</sup>t, time-lag design, rated 350VAC, 72 DC, up to 20A, Approved and complied with UL248-14.

### Features

- High I<sup>2</sup>t, High amp ratings to 20A
- Time lag (350 VAC, 72 VDC)
- Meet UL 248-14
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- RoHS 6 compliant
- Halogen Free
- Leadfree

### Applications

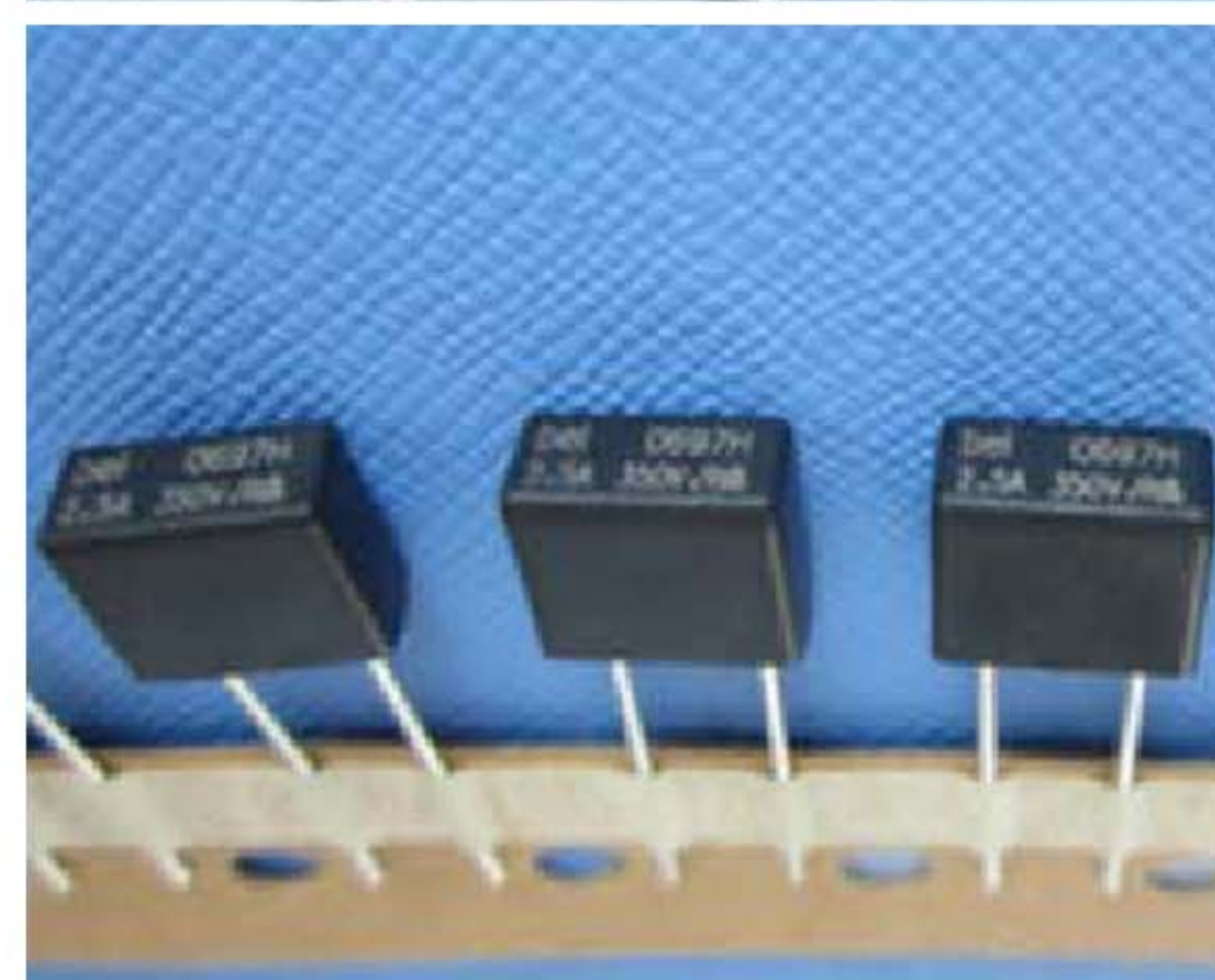
Provide individual protection for components or internal circuits.

- Power supplies
- Battery chargers
- Consumer Electronics
- Adapter
- Industrial Controllers

LEAD FREE = (Pb)  
HALOGEN FREE = (HF)

### Physical Specifications

|           |                                                                                                                    |
|-----------|--------------------------------------------------------------------------------------------------------------------|
| Materials | Base and Cover : Black thermoplastic, UL 94-V0                                                                     |
|           | Pins : 100% Matte Tin Plated Copper                                                                                |
| Marking   | On Fuse :                                                                                                          |
|           | "bel", "0697H", "Current Rating", "350V" & "cULus"                                                                 |
|           | On Label :                                                                                                         |
|           | "bel", "0697H", "Current Rating", "Voltage Rating", "Interrupting Rating", "cULus" and "e" (China RoHS compliant). |



### Electrical Characteristics (UL 248-14)

| Testing Current | Blow Time |         |
|-----------------|-----------|---------|
|                 | Minimum   | Maximum |
| 100%            | 4 Hrs.    | N/A     |
| 200%            | N/A       | 60 Sec. |

### Safety Agency Approvals

| SAFETY AGENCY | SAFETY AGENCY CERTIFICATE NUMBER | VOLTAGE RATING (V)              | AMPERE RANGE / VOLT @ I.R. ABILITY*                                           |
|---------------|----------------------------------|---------------------------------|-------------------------------------------------------------------------------|
| cULus         | E20624                           | 250mA - 3A / 350V ac<br>100V dc | 250mA - 3A / 350V ac @100A<br>277V ac @150A<br>100V dc @ 65A<br>72V dc @ 200A |
|               |                                  | 3.15A - 20A / 350V ac<br>72V dc | 3.15A - 20A / 350V ac @150A<br>72V dc @200A                                   |

\* I.R. = INTERRUPTING RATING = SHORT CIRCUIT RATING (AMPS)

Specifications subject to change without notice



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### Environmental Specifications

|                           |                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------|
| Shock Resistance          | MIL-STD-202G, Method 213B, Test Condition 1 (100 G's peak for 6 milliseconds; Sawtooth waveform) |
| Vibration Resistance      | MIL-STD-202G, Method 201A(10-55 Hz X 3 axis / no load).                                          |
| Salt Spray Resistance     | MIL-STD-202G, Method 101E, Test Condition B(48 hrs).                                             |
| Solderability             | MIL-STD-202G, Method 208H                                                                        |
| Resistance to solder Heat | MIL-STD-202G, Method 210F, Test Condition C. Top Side.(260 °C,20 sec)                            |
| Moisture Resistance       | MIL-STD-202G, Method 202G, Method 106G                                                           |
| Operating Temperature     | -55 °C to +125 °C                                                                                |

### Electrical Specifications

| Part Number  | Ampere Rating | Typical Cold Resistance (ohm) | Volt-drop @100% In (Volt) max. | Voltage and Interrupting Ratings                                                        | Melting I <sup>2</sup> T <10 mSec (A <sup>2</sup> Sec) | Melting I <sup>2</sup> T @10 In (A <sup>2</sup> Sec) | Maximum Power Dissipation (W) | Agency Approvals                                                                      |
|--------------|---------------|-------------------------------|--------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|
|              |               |                               |                                |                                                                                         |                                                        |                                                      |                               |  |
| 0697H0250-XX | 250mA         | 0.800                         | 0.280                          | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 0.18                                                   | 0.26                                                 | 0.070                         | Y                                                                                     |
| 0697H0315-XX | 315mA         | 0.500                         | 0.260                          |                                                                                         | 0.27                                                   | 0.35                                                 | 0.075                         | Y                                                                                     |
| 0697H0400-XX | 400mA         | 0.360                         | 0.220                          |                                                                                         | 0.57                                                   | 1.10                                                 | 0.080                         | Y                                                                                     |
| 0697H0500-XX | 500mA         | 0.260                         | 0.200                          |                                                                                         | 1.1                                                    | 1.5                                                  | 0.09                          | Y                                                                                     |
| 0697H0630-XX | 630mA         | 0.190                         | 0.170                          |                                                                                         | 1.5                                                    | 2.5                                                  | 0.11                          | Y                                                                                     |
| 0697H0800-XX | 800mA         | 0.140                         | 0.150                          |                                                                                         | 3.6                                                    | 4.6                                                  | 0.12                          | Y                                                                                     |
| 0697H1000-XX | 1A            | 0.085                         | 0.130                          |                                                                                         | 6.1                                                    | 8.5                                                  | 0.13                          | Y                                                                                     |
| 0697H1250-XX | 1.25A         | 0.070                         | 0.120                          |                                                                                         | 8                                                      | 11                                                   | 0.15                          | Y                                                                                     |
| 0697H1600-XX | 1.6A          | 0.050                         | 0.100                          |                                                                                         | 13                                                     | 16                                                   | 0.18                          | Y                                                                                     |
| 0697H2000-XX | 2A            | 0.036                         | 0.090                          |                                                                                         | 23                                                     | 29                                                   | 0.20                          | Y                                                                                     |
| 0697H2500-XX | 2.5A          | 0.027                         | 0.087                          |                                                                                         | 35                                                     | 47                                                   | 0.22                          | Y                                                                                     |
| 0697H3000-XX | 3A            | 0.022                         | 0.085                          |                                                                                         | 58                                                     | 64                                                   | 0.27                          | Y                                                                                     |
| 0697H3150-XX | 3.15A         | 0.021                         | 0.083                          |                                                                                         | 58                                                     | 70                                                   | 0.29                          | Y                                                                                     |
| 0697H4000-XX | 4A            | 0.016                         | 0.080                          |                                                                                         | 85                                                     | 95                                                   | 0.33                          | Y                                                                                     |
| 0697H5000-XX | 5A            | 0.013                         | 0.080                          |                                                                                         | 130                                                    | 140                                                  | 0.35                          | Y                                                                                     |
| 0697H6300-XX | 6.3A          | 0.010                         | 0.080                          |                                                                                         | 180                                                    | 185                                                  | 0.51                          | Y                                                                                     |
| 0697H8000-XX | 8A            | 0.007                         | 0.080                          |                                                                                         | 325                                                    | 335                                                  | 0.77                          | Y                                                                                     |
| 0697H9100-XX | 10A           | 0.0055                        | 0.080                          |                                                                                         | 370                                                    | 390                                                  | 0.90                          | Y                                                                                     |
| 0697H9120-XX | 12A           | 0.0047                        | 0.090                          |                                                                                         | 360                                                    | 480                                                  | 0.96                          | Y                                                                                     |
| 0697H9150-XX | 15A           | 0.0035                        | 0.090                          |                                                                                         | 563                                                    | 575                                                  | 1.10                          | Y                                                                                     |
| 0697H9160-XX | 16A           | 0.0033                        | 0.090                          |                                                                                         | 610                                                    | 650                                                  | 1.20                          | Y                                                                                     |
| 0697H9200-XX | 20A           | 0.0026                        | 0.090                          |                                                                                         | 1100                                                   | 1100                                                 | 1.90                          | Y                                                                                     |

Consult manufacturer for other ratings  
XX - Packaging code (see "ordering information")

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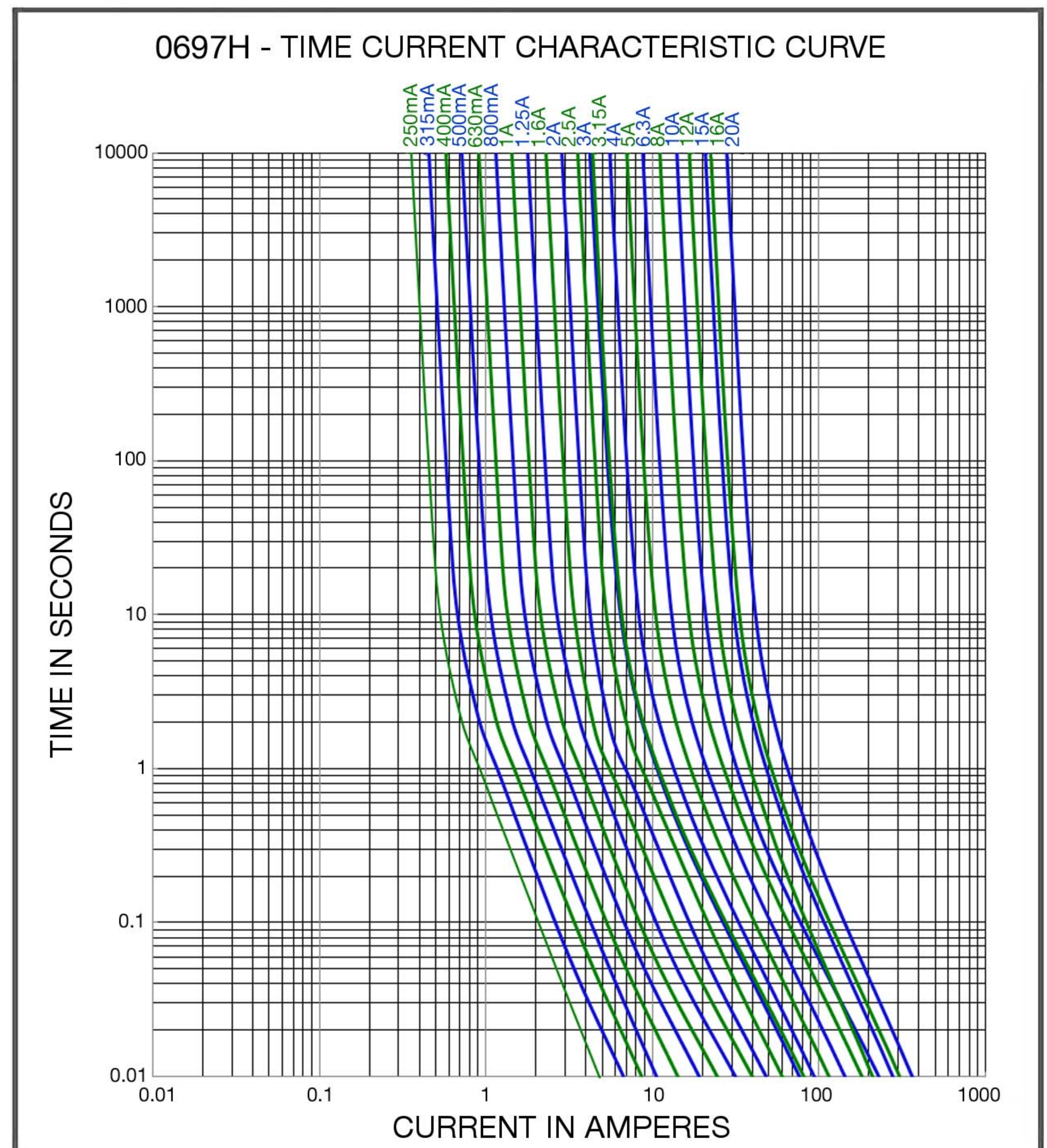
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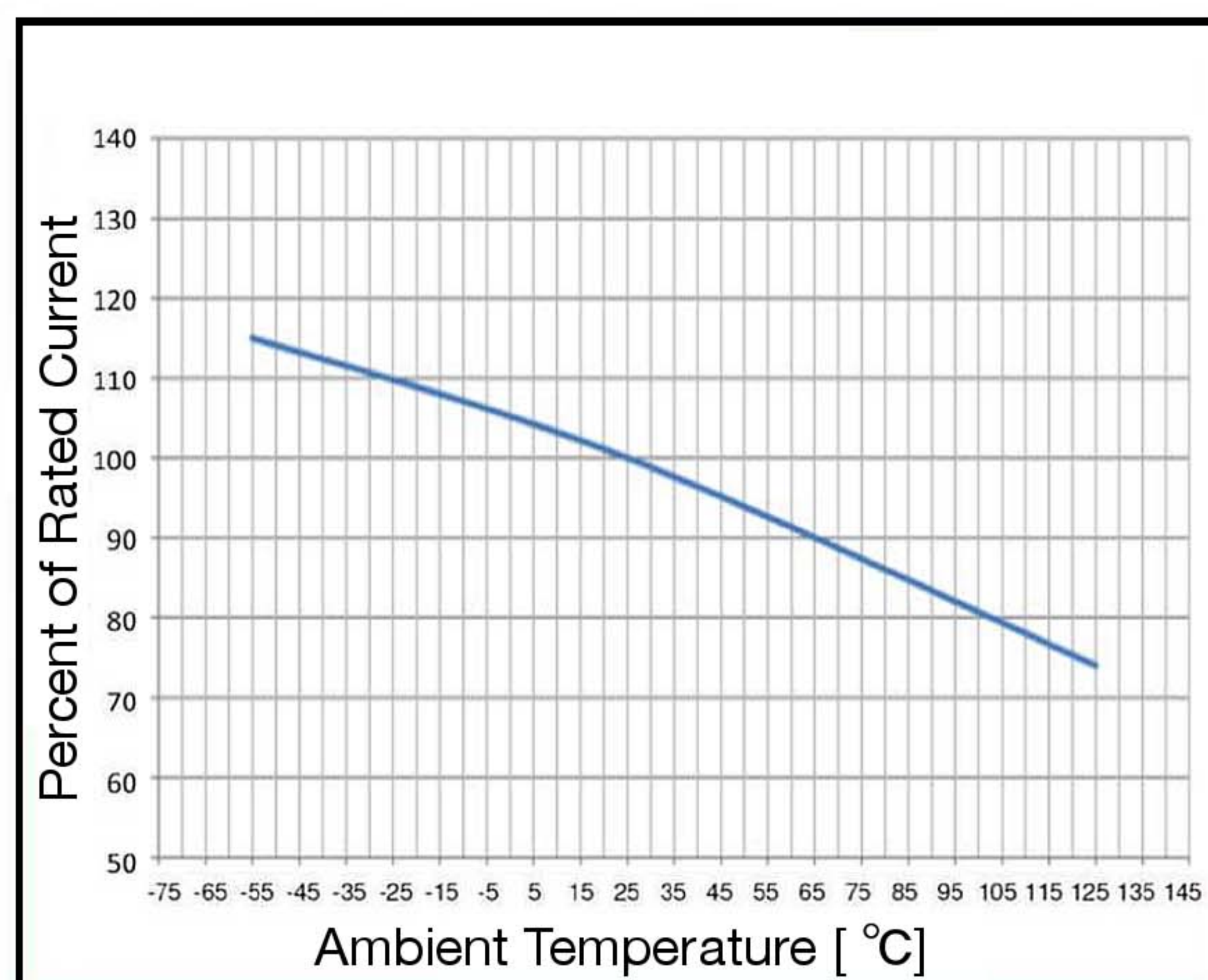
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RoHS 6 Compliant

### Average Time Current Curve

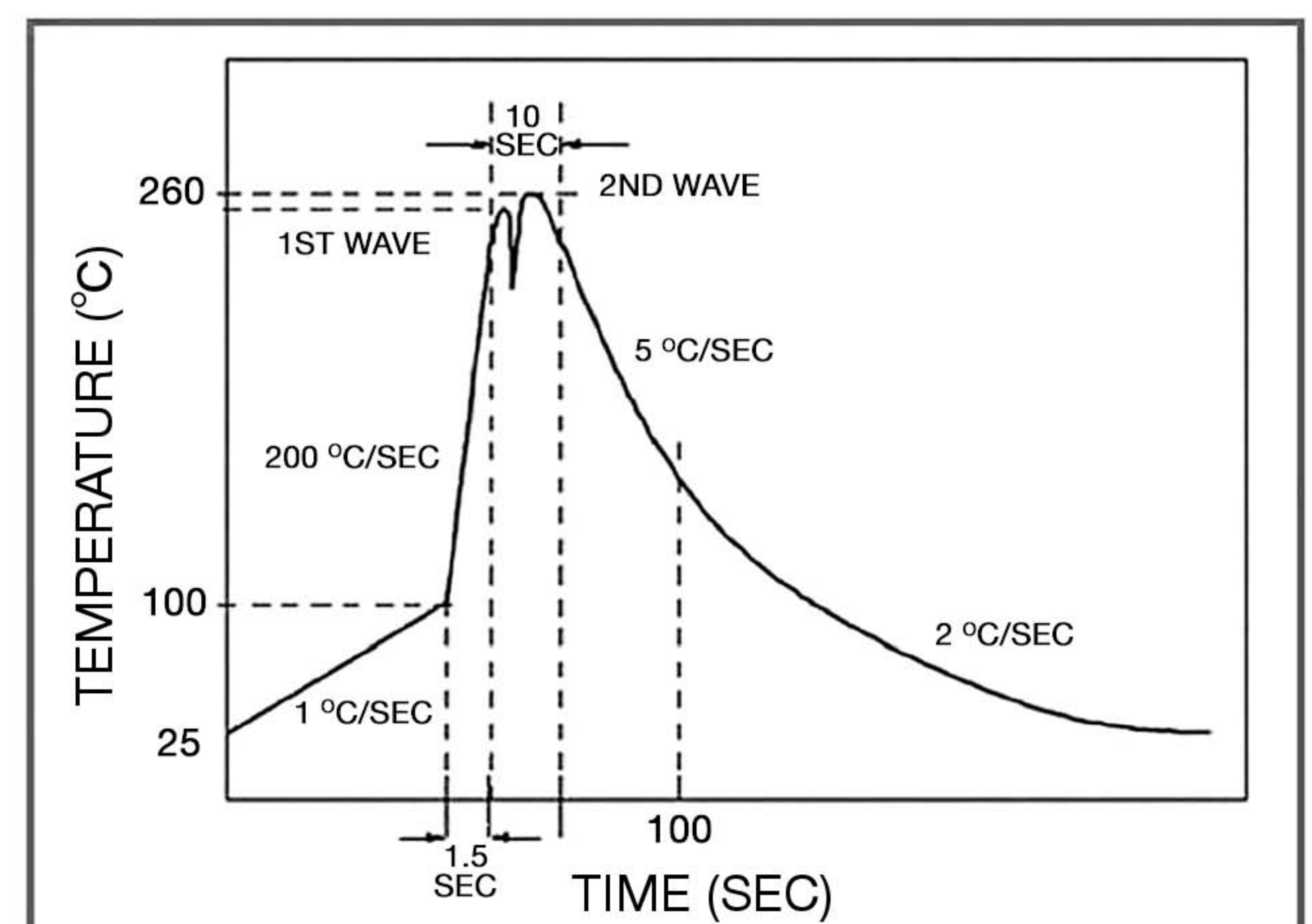


### Temperature Derating Curve



### Soldering Parameters

| Lead-free Wave Soldering Profile                     |                                                |
|------------------------------------------------------|------------------------------------------------|
| Wave Soldering Parameter                             |                                                |
| Average ramp-up rate                                 | 200 °C / second                                |
| Heating rate during preheat                          | typical 1 - 2 °C / second<br>Max 4 °C / second |
| Final preheat temperature                            | within 125 °C of soldering temperature         |
| Peak temperature $T_p$                               | 260 °C                                         |
| Time within +0 °C / -5 °C of actual peak temperature | 10 seconds                                     |
| Ramp-down rate                                       | 5 °C / second max.                             |



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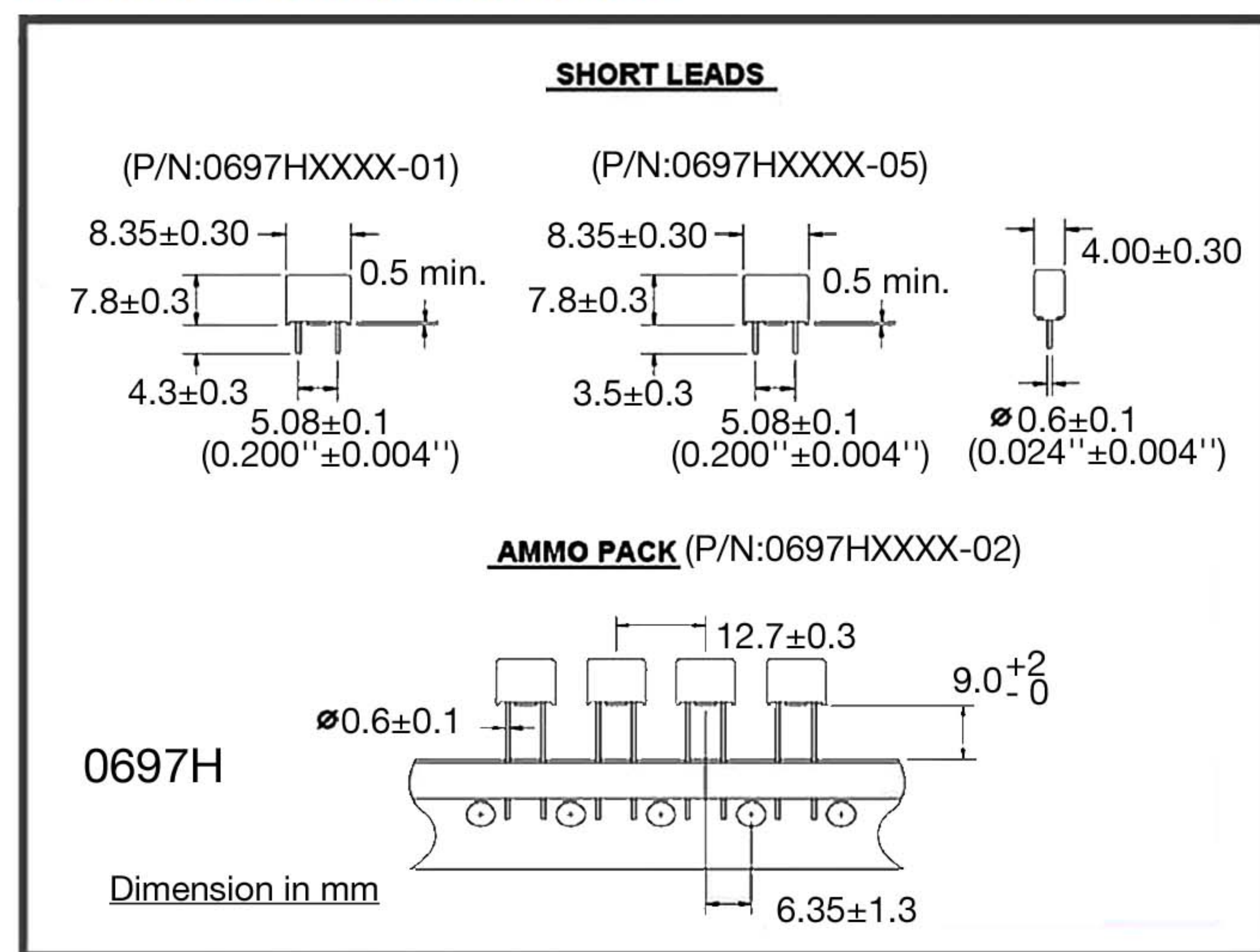
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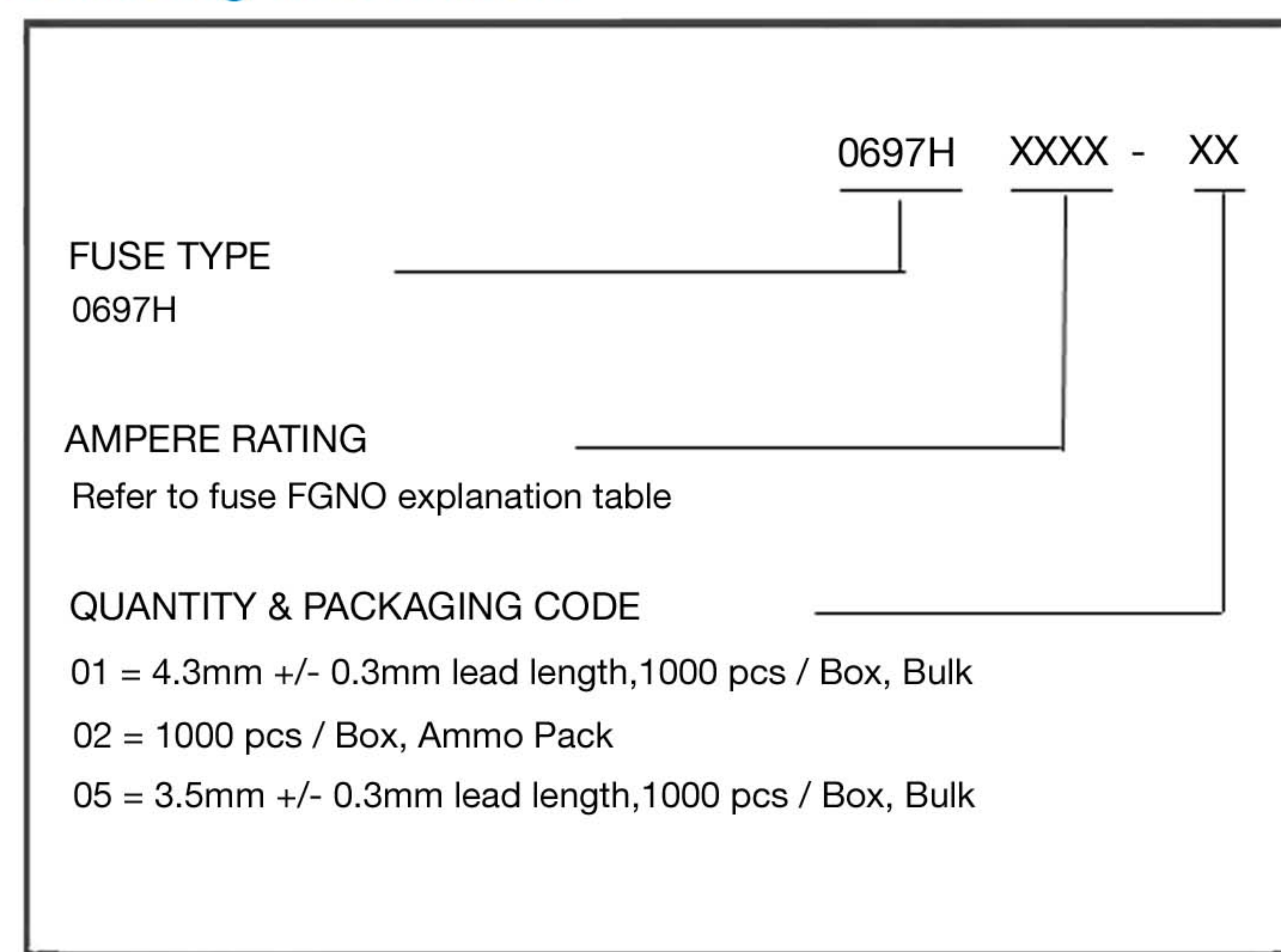
### Fuse FGNO Explanation 06XX X [XXXX] X XX, [XXXX]=Ampere Rating

| Fraction | Decimal | Milliamps | Bel FGNO[XXXX] | Fraction | Decimal | Amps | Bel FGNO[XXXX] |
|----------|---------|-----------|----------------|----------|---------|------|----------------|
| 1/32     | 0.032   | 32        | 0032           | 1.0      | 1.0     | 1    | 1000           |
| 1/25     | .040    | 40        | 0040           | 1-1/4    | 1.25    | 1.25 | 1250           |
| 1/20     | .050    | 50        | 0050           | 1-1/2    | 1.50    | 1.5  | 1500           |
| 1/16     | .063    | 63        | 0063           |          | 1.60    | 1.6  | 1600           |
| 8/100    | .080    | 80        | 0080           |          | 2.0     | 2    | 2000           |
| 1/10     | .100    | 100       | 0100           | 2-1/4    | 2.25    | 2.25 | 2250           |
| 1/8      | .125    | 125       | 0125           | 2-1/2    | 2.5     | 2.5  | 2500           |
| 15/100   | .150    | 150       | 0150           |          | 3.0     | 3    | 3000           |
|          | .160    | 160       | 0160           |          | 3.15    | 3.15 | 3150           |
| 2/10     | .200    | 200       | 0200           | 3-1/2    | 3.5     | 3.5  | 3500           |
| 1/4      | .250    | 250       | 0250           |          | 4.0     | 4    | 4000           |
| 3/10     | .300    | 300       | 0300           |          | 5.0     | 5    | 5000           |
|          | .315    | 315       | 0315           |          | 6.0     | 6    | 6000           |
| 3/8      | .375    | 375       | 0375           |          | 6.3     | 6.3  | 6300           |
| 4/10     | .400    | 400       | 0400           |          | 7.0     | 7    | 7000           |
| 1/2      | .500    | 500       | 0500           | 7-1/2    | 7.5     | 7.5  | 7500           |
| 6/10     | .600    | 600       | 0600           |          | 8.0     | 8    | 8000           |
|          | .630    | 630       | 0630           |          |         | 10   | 9100           |
| 7/10     | .700    | 700       | 0700           |          |         | 12   | 9120           |
| 3/4      | .750    | 750       | 0750           |          |         | 15   | 9150           |
| 8/10     | .800    | 800       | 0800           |          |         | 20   | 9200           |
|          |         |           |                |          |         | 25   | 9250           |
|          |         |           |                |          |         | 30   | 9300           |

### Mechanical Dimensions



### Ordering Information



### Packaging

| Packaging Option             | Packaging Specification | Quantity | Packaging Code |
|------------------------------|-------------------------|----------|----------------|
| Bulk / bag, 1000 / box       | N/A                     | 1000     | 01 , 05        |
| 12.7 mm pitch, On Tape / box | IEC-286-2               | 1000     | 02             |

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| <a href="#"><u>0697H0250-01</u></a> | <a href="#"><u>0697H0250-05</u></a> | <a href="#"><u>0697H8000-02</u></a> | <a href="#"><u>0697H9160-05</u></a> | <a href="#"><u>0697H0800-05</u></a> | <a href="#"><u>0697H8000-01</u></a> | <a href="#"><u>0697H1600-05</u></a> |
| <a href="#"><u>0697H9150-02</u></a> | <a href="#"><u>0697H0630-02</u></a> | <a href="#"><u>0697H9120-01</u></a> | <a href="#"><u>0697H9200-01</u></a> | <a href="#"><u>0697H5000-01</u></a> | <a href="#"><u>0697H4000-05</u></a> | <a href="#"><u>0697H9120-02</u></a> |
| <a href="#"><u>0697H2500-02</u></a> | <a href="#"><u>0697H0315-02</u></a> | <a href="#"><u>0697H9100-02</u></a> | <a href="#"><u>0697H6300-02</u></a> | <a href="#"><u>0697H0315-05</u></a> | <a href="#"><u>0697H9160-02</u></a> | <a href="#"><u>0697H0400-05</u></a> |
| <a href="#"><u>0697H0800-01</u></a> | <a href="#"><u>0697H9200-02</u></a> | <a href="#"><u>0697H9200-05</u></a> | <a href="#"><u>0697H6300-05</u></a> | <a href="#"><u>0697H1000-01</u></a> | <a href="#"><u>0697H3150-02</u></a> | <a href="#"><u>0697H9160-01</u></a> |
| <a href="#"><u>0697H0400-01</u></a> | <a href="#"><u>0697H1250-05</u></a> | <a href="#"><u>0697H0400-02</u></a> | <a href="#"><u>0697H4000-02</u></a> | <a href="#"><u>0697H0500-01</u></a> | <a href="#"><u>0697H9100-05</u></a> | <a href="#"><u>0697H9150-05</u></a> |
| <a href="#"><u>0697H0500-02</u></a> | <a href="#"><u>0697H1000-05</u></a> | <a href="#"><u>0697H0250-02</u></a> | <a href="#"><u>0697H3150-01</u></a> | <a href="#"><u>0697H1000-02</u></a> | <a href="#"><u>0697H9100-01</u></a> | <a href="#"><u>0697H0630-01</u></a> |
| <a href="#"><u>0697H2000-01</u></a> | <a href="#"><u>0697H2000-02</u></a> | <a href="#"><u>0697H0500-05</u></a> | <a href="#"><u>0697H3150-05</u></a> | <a href="#"><u>0697H0630-05</u></a> | <a href="#"><u>0697H5000-05</u></a> | <a href="#"><u>0697H1250-02</u></a> |
| <a href="#"><u>0697H1250-01</u></a> | <a href="#"><u>0697H1600-02</u></a> | <a href="#"><u>0697H2500-01</u></a> | <a href="#"><u>0697H8000-05</u></a> | <a href="#"><u>0697H9150-01</u></a> | <a href="#"><u>0697H0800-02</u></a> | <a href="#"><u>0697H5000-02</u></a> |