

# ANTREX Electronics

Electronic Components Sourcing Information

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## Product Reference Information

**Part Number:** 0697H1600-02

**Manufacturer:** Bel Fuse Inc.

**Package:** Cut Tape (CT), Tape & Box (TB)

**Availability:** Please confirm with sales

**Product Page:**

<https://antrexco.com/product/details/bel-fuse-inc/0697h1600-02.html>

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## Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

**Note:**

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

# Type 0697H

## Slow Blow Lead Micro Fuse Series

HF  0697H Series

RoHS Compliant

### Description

Subminiature, radial lead, High  $I^2t$ , time-lag design, rated 350VAC, 72 DC, up to 20A, Approved and complied with UL 248-14.

### Features

- High  $I^2t$ , 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
- AEC-Q Compliant
- Full compliance with EU Directive 2011/65/EU and amending directive 2015/863
- Halogen Free and Lead Free
- Meets Bel automotive qualification\*
- Largely based on internal AEC-Q test plan

### Applications

Provide individual protection for components or internal circuits.

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

LEAD FREE =   
HALOGEN FREE = 

### 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" & "  us"                                                                                                                                                                                                                                                                                                            |
|           | On Label :                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|           | "bel", "0697H", "Current Rating", "Voltage Rating", "Interrupting Rating", "  us" and "  ", "  " (China RoHS compliant). |



UK  
CA  
TUV  
AEC-Q 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                                     | Ampere Rating/ Voltage Rating                                 | Ampere Range / Volt @ I.R. ability*                                              |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------|
|  | E506667                                                       | 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                                          |
|  | R 50404484<br>IEC 60127-1:<br>2006+A1+A2<br>IEC 60127-7: 2016 | 315mA, 10A /350V AC<br>20A /250V AC<br>315mA, 10A, 20A/72V DC | 315mA, 10A /350V AC @150A<br>20A /250V AC @100A<br>315mA, 10A, 20A/72V DC @ 200A |
| *I.R.= Interrupting Rating = Short Circuit Rating(Amps)                             |                                                               |                                                               |                                                                                  |

## 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                                                                                  |

|                              |                                                                            |
|------------------------------|----------------------------------------------------------------------------|
| High temperature storage     | MIL-STD-202 Method 108                                                     |
| Temperature cycling          | JESD22 Method JA-104, Test Condition B                                     |
| Biased humidity              | MIL-STD-202 Method 103, 85°C/85% RH with 10% operating power for 1000 hrs. |
| Operational life             | MIL-STD-202 Method 108, Test Condition D                                   |
| Resistance to solvents       | MIL-STD-202 Method 215                                                     |
| Mechanical shock             | MIL-STD-202 Method 213, Test Condition C                                   |
| Vibration                    | MIL-STD-202 Method 204                                                     |
| Resistance to soldering heat | MIL-STD-202 Method 210, Test condition B                                   |
| Thermal shock                | MIL-STD-202 Method 107                                                     |
| Solderability                | J-STD-002                                                                  |
| Board flex(SMD)              | AEC-Q200-005                                                               |
| Terminal strength            | AEC-Q200-006                                                               |
| Electrical characterization  | 3 temperature electrical                                                   |

## Electrical Specifications

| Part Number  | Ampere Rating | Typical Cold Resistance (ohms) | Volt-drop @100% In (Volt) max. | Voltage and Interrupting Ratings                                                        | Nominal Melting I²T <10 mSec (A² Sec) | Nominal Melting I²T @10 In (A² Sec) | Maximum Power Dissipation (W) | Agency Approvals                                                                    |                                                                                     |
|--------------|---------------|--------------------------------|--------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|              |               |                                |                                |                                                                                         |                                       |                                     |                               |  |  |
| 0697H0250-0X | 250mA         | 0.810                          | 0.280                          | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 0.17                                  | 0.28                                | 0.070                         | Y                                                                                   |                                                                                     |
| 0697H0315-0X | 315mA         | 0.550                          | 0.260                          |                                                                                         | 0.25                                  | 0.36                                | 0.082                         | Y                                                                                   | Y                                                                                   |
| 0697H0400-0X | 400mA         | 0.360                          | 0.220                          |                                                                                         | 0.52                                  | 0.85                                | 0.088                         | Y                                                                                   |                                                                                     |
| 0697H0500-0X | 500mA         | 0.260                          | 0.200                          |                                                                                         | 1.0                                   | 1.3                                 | 0.10                          | Y                                                                                   |                                                                                     |
| 0697H0630-0X | 630mA         | 0.190                          | 0.170                          |                                                                                         | 1.4                                   | 2.0                                 | 0.11                          | Y                                                                                   |                                                                                     |
| 0697H0800-0X | 800mA         | 0.130                          | 0.150                          |                                                                                         | 2.3                                   | 3.1                                 | 0.12                          | Y                                                                                   |                                                                                     |
| 0697H1000-0X | 1A            | 0.085                          | 0.130                          |                                                                                         | 5.9                                   | 7.3                                 | 0.13                          | Y                                                                                   |                                                                                     |
| 0697H1250-0X | 1.25A         | 0.070                          | 0.120                          |                                                                                         | 9                                     | 10                                  | 0.15                          | Y                                                                                   |                                                                                     |
| 0697H1600-0X | 1.6A          | 0.050                          | 0.100                          |                                                                                         | 12                                    | 14                                  | 0.16                          | Y                                                                                   |                                                                                     |
| 0697H2000-0X | 2A            | 0.036                          | 0.090                          |                                                                                         | 23                                    | 27                                  | 0.18                          | Y                                                                                   |                                                                                     |
| 0697H2500-0X | 2.5A          | 0.027                          | 0.090                          |                                                                                         | 38                                    | 43                                  | 0.23                          | Y                                                                                   |                                                                                     |
| 0697H3000-0X | 3A            | 0.022                          | 0.090                          |                                                                                         | 55                                    | 63                                  | 0.27                          | Y                                                                                   |                                                                                     |
| 0697H3150-0X | 3.15A         | 0.021                          | 0.090                          |                                                                                         | 55                                    | 63                                  | 0.28                          | Y                                                                                   |                                                                                     |
| 0697H4000-0X | 4A            | 0.016                          | 0.080                          |                                                                                         | 81                                    | 92                                  | 0.32                          | Y                                                                                   |                                                                                     |
| 0697H5000-0X | 5A            | 0.013                          | 0.080                          |                                                                                         | 122                                   | 133                                 | 0.40                          | Y                                                                                   |                                                                                     |
| 0697H6300-0X | 6.3A          | 0.010                          | 0.080                          |                                                                                         | 169                                   | 187                                 | 0.50                          | Y                                                                                   |                                                                                     |
| 0697H8000-0X | 8A            | 0.007                          | 0.080                          |                                                                                         | 273                                   | 303                                 | 0.64                          | Y                                                                                   |                                                                                     |
| 0697H9100-0X | 10A           | 0.0055                         | 0.080                          |                                                                                         | 398                                   | 458                                 | 0.80                          | Y                                                                                   |                                                                                     |
| 0697H9100-12 |               |                                |                                |                                                                                         |                                       |                                     | Y                             | Y                                                                                   |                                                                                     |
| 0697H9120-0X | 12A           | 0.0047                         | 0.090                          |                                                                                         | 303                                   | 457                                 | 1.08                          | Y                                                                                   |                                                                                     |
| 0697H9150-0X | 15A           | 0.0035                         | 0.090                          |                                                                                         | 382                                   | 464                                 | 1.35                          | Y                                                                                   |                                                                                     |
| 0697H9160-0X | 16A           | 0.0033                         | 0.090                          |                                                                                         | 545                                   | 627                                 | 1.44                          | Y                                                                                   |                                                                                     |
| 0697H9200-0X | 20A           | 0.0026                         | 0.090                          |                                                                                         | 937                                   | 1048                                | 1.80                          | Y                                                                                   |                                                                                     |
| 0697H9200-12 |               |                                |                                |                                                                                         |                                       |                                     | Y                             | Y                                                                                   |                                                                                     |

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

Temperature Derating Curve



Average Time Current 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 Tp                                | 260°C                                        |
| Time within +0°C / -5°C of actual peak temperature | 10 seconds                                   |
| Ramp-down rate                                     | 5°C / second max.                            |



# Type 0697H

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## Fuse FGNO Explanation

0697 H [XXXX] X XX

0697H=0697H; [XXXX]=Ampere Rating; XX=See Ordering Information as below

| Fraction | Decimal | Milliamps | Bel FGNO[XXXX] |
|----------|---------|-----------|----------------|
| 1/4      | 0.250   | 250       | 0250           |
|          | .315    | 315       | 0315           |
| 4/10     | .400    | 400       | 0400           |
| 1/2      | .500    | 500       | 0500           |
|          | .630    | 630       | 0630           |
| 8/10     | .800    | 800       | 0800           |
|          |         |           |                |
|          |         |           |                |
|          |         |           |                |
|          |         |           |                |
|          |         |           |                |

| Fraction | Decimal | Amps | Bel FGNO[XXXX] |
|----------|---------|------|----------------|
|          | 1.0     | 1    | 1000           |
| 1-1/4    | 1.25    | 1.25 | 1250           |
|          | 1.60    | 1.6  | 1600           |
|          | 2.0     | 2    | 2000           |
| 2-1/2    | 2.5     | 2.5  | 2500           |
|          | 3.0     | 3    | 3000           |
|          | 3.15    | 3.15 | 3150           |
|          | 4.0     | 4    | 4000           |
|          | 5.0     | 5    | 5000           |
|          | 6.3     | 6.3  | 6300           |
|          | 8.0     | 8    | 8000           |
|          |         | 10   | 9100           |
|          |         | 12   | 9120           |
|          |         | 15   | 9150           |
|          |         | 16   | 9160           |
|          |         | 20   | 9200           |

## 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 , 12        |



Specifications subject to change without notice

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