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# AHC

## High voltage 1/4" x 1-1/4" fast-acting ceramic tube fuse



### Product features

- High voltage ceramic tube fuse
- Compact 3AB footprint:
  ¼" x 1 ¼" (6.3 x 32 mm)
- Fast-acting performance
- 600 Vac rating
- Cartridge and axial lead versions available
- Very high interrupting ratings to help safely protect against dangerous high fault currents
- Fuse accessories (cartridge version):
  HVP Panel mount fuse holder (480V)
  HVI In-line fuse holder (600V)
  S-8000 Panel mount fuse block (600V)
  1Axxxx (up to 600V) fuse clips

### Agency information

- cURus recognition file number:
  E19180 Guide JDYX2 and JDYX8

### Applications

- Industrial control panels
- Motor control - UL 508A panels
- Uninterruptible power supplies (UPS)
- Variable frequency drives
- Energy storage and battery systems
- High voltage power conversion

### Environmental compliance

Pb HALOGEN HF FREE RoHS

### Ordering part number

**BK-AHC-V-5-R**

- Packaging prefix
- Family name
- Option code (V = leaded)
- Ampere rating
- RoHS compliance

### Packaging prefix

- **Blank**
  5 pieces in tin case for AHC-XXX-R, 4 pieces in tin case for AHC-V-XXX-R
- **BK1-**
  1000 pieces in polybag for AHC-XXX-R
- **BK-**
  100 pieces in carton for AHC-XXX-R, AHC-V-XXX-R or AHC-V2-XXX-R
- **TR-**
  500 pieces on reel for AHC-V-XXX-R

### Option code

- **-V**
  Axial leads with 38.1 mm length – copper tinned wire with nickel plated brass over caps
- **-V2**
  Axial leads with 50.8 mm length – copper tinned wire with nickel plated brass over caps

## Electrical characteristics

| Amp Rating | 1.0 In minimum | 2.5 In maximum |
|---|---|---|
| 1 A - 10 A | 4 hours | 120 seconds |

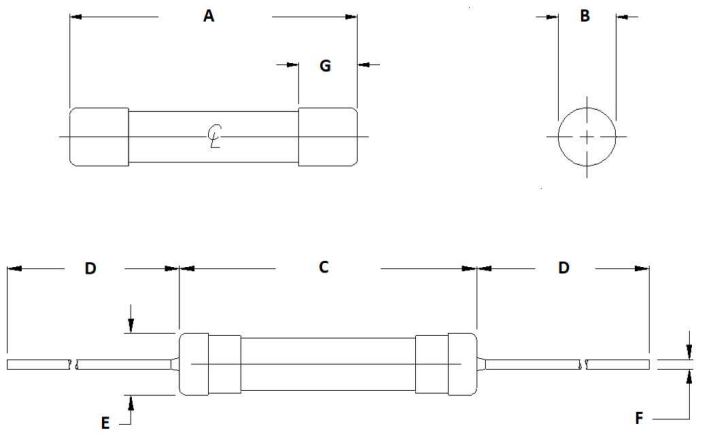
## Product specifications

| Part number | Current rating (A) | Voltage rating (Vac) | Interrupting rating @ rated voltage (A) Vac | Typical resistance[1] (mΩ) | Typical voltage drop[3] (mV) | Typical melting[2] $I^2t$ ($A^2s$) |
|---|---|---|---|---|---|---|
| AHC-1(-V)-R | 1.0 | 600 | 10,000 | 360 | 425 | 0.3 |
| AHC-1-5(-V)-R | 1.5 | 600 | 10,000 | 250 | 550 | 0.5 |
| AHC-1-6(-V)-R | 1.6 | 600 | 10,000 | 196 | 425 | 0.8 |
| AHC-2(-V)-R | 2.0 | 600 | 10,000 | 162 | 500 | 1.0 |
| AHC-2-5(-V)-R | 2.5 | 600 | 10,000 | 119 | 475 | 2.0 |
| AHC-3(-V)-R | 3.0 | 600 | 10,000 | 95 | 450 | 3.0 |
| AHC-3-15(-V)-R | 3.15 | 600 | 10,000 | 83 | 400 | 4.0 |
| AHC-4(-V)-R | 4.0 | 600 | 10,000 | 53.8 | 350 | 9.0 |
| AHC-5(-V)-R | 5.0 | 600 | 10,000 | 42.5 | 350 | 10.0 |
| AHC-6(-V)-R | 6.0 | 600 | 10,000 | 30.3 | 250 | 24.0 |
| AHC-8(-V)-R | 8.0 | 600 | 10,000 | 23 | 300 | 35.0 |
| AHC-10(-V)-R | 10 | 600 | 10,000 | 16.5 | 300 | 66.0 |

1. Typical resistance measured at <10% of rated current at +23 °C
2. Typical melting $I^2t$ measured at 10x of rated current
3. Typical voltage drop measured at +23 °C and rated current

## Dimensions- mm

Drawing not to scale



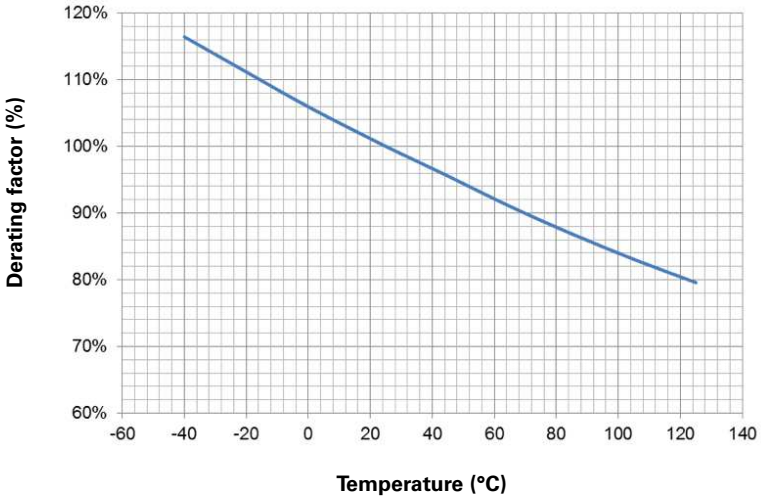

| Dimension | Value (mm) |
|---|---|
| A | 31.75 ± 0.8 |
| B | 6.35 ± 0.1 |
| C | 32.72 ± 0.8 |
| E | 6.98 ± 0.3 |
| F | 0.8 ± 0.05 |
| G | 4.8 +0.4/-0.0 |

| Part number | Dimension D |
|---|---|
| AHC-V-XXX-R | 38.1 mm (REF) |
| BK-AHC-V-XXX-R | 38.1 mm (REF) |
| BK-AHC-V2-XXX-R | 50.8 mm (REF) |
| TR-AHC-V-XXX-R | 20 mm (REF) |

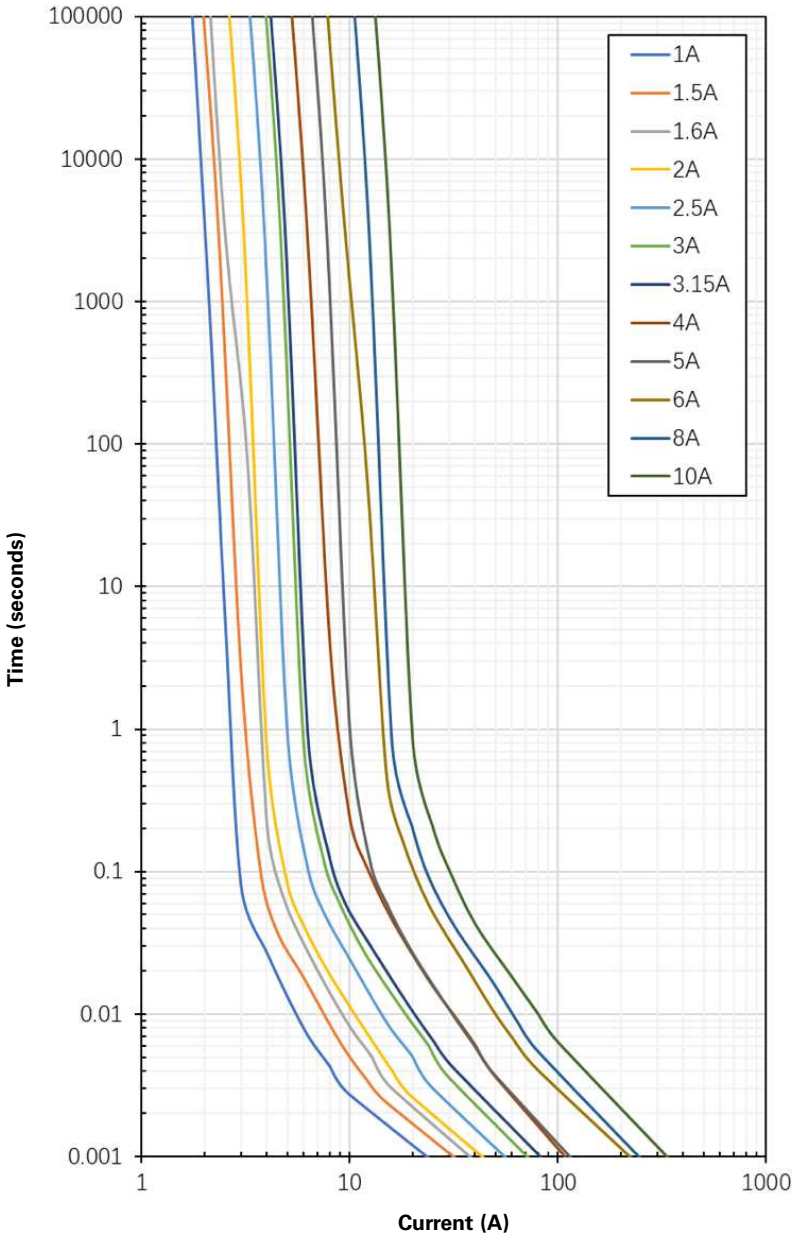
## General specifications

| |
|---|
| Operating temperature: -55 °C to +125 °C with proper correction factor applied |
| Terminal strength: MIL-STD-202G, Method 211A, Test condition A, Pull force 10N/10S |
| Thermal shock: MIL-STD-202, Method 107G: -65 °C to +125 °C, 5 cycles |
| Mechanical shock: MIL-STD-202 Method 213. Condition A: Half-sine shock pulse, peak=50 g's, 11 ms, total 18 shocks |
| Vibration: According to IEC60068-2-6: The specimens shall be subjected to a simple harmonic motion having an amplitude of 0.03 inch (0.06 inch maximum total excursion), the frequency being varied uniformly between the approximate limits of 10 and 55 hertz (Hz). The entire frequency range, from 10 to 55 Hz and return to 10 Hz, shall be traversed in approximately 1 minute. |
| Humidity: MIL-STD-202G, Method 103B, Test condition A: 95% RH, +40 °C, 240 hours |
| Solderability: IEC-60127-2, A.3.3: No steam ageing. Immersion conditions: +250 °C +/-3 °C, 3s +/-0.3s |

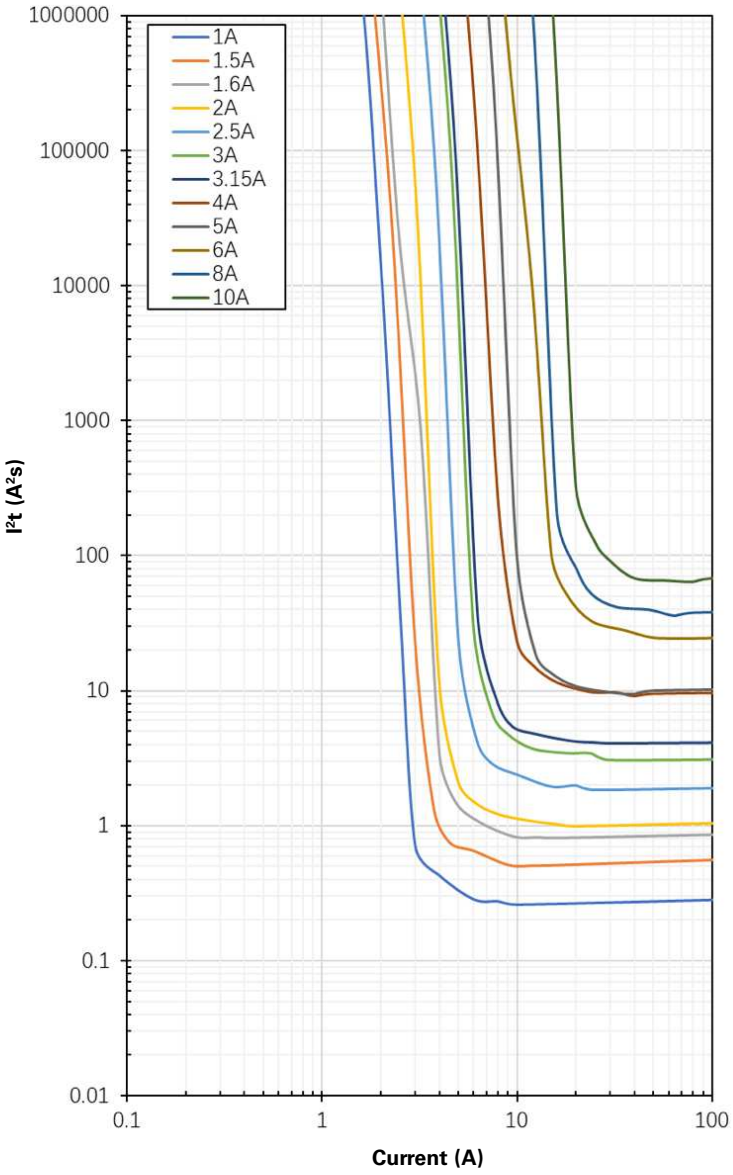
## Temperature derating curve



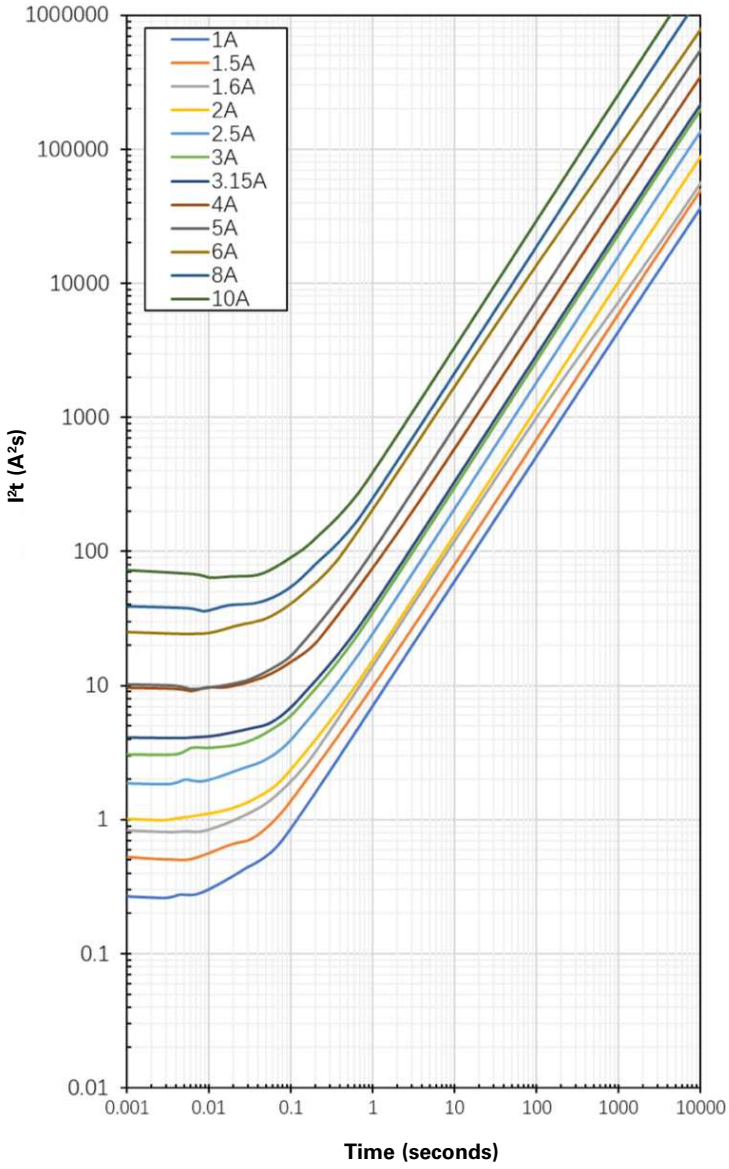
**Time vs. current curve**



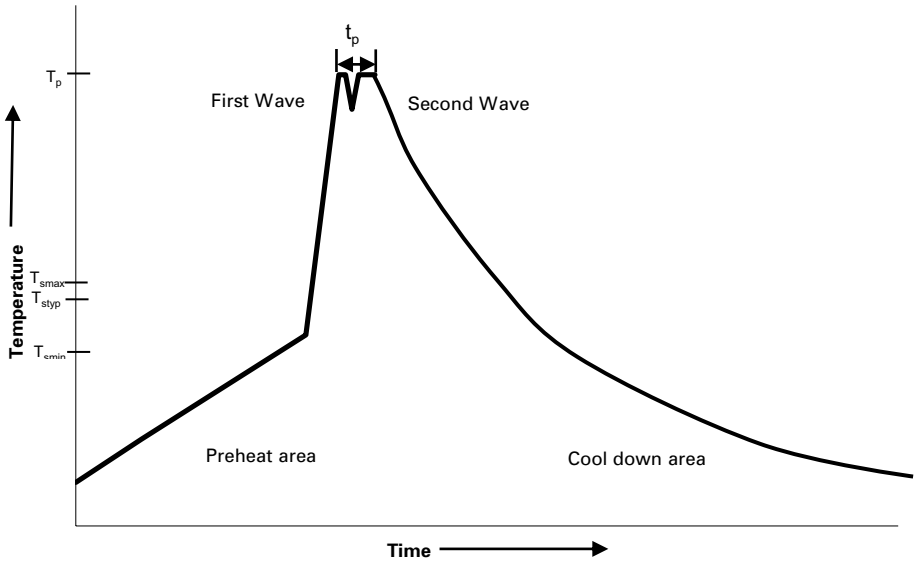
**I²t vs. current**




**I²t vs. time curve**



**Wave solder profile** (Axial lead only)




## Reference EN 61760-1:2006

| Profile feature | | Standard SnPb solder | Lead (Pb) free solder |
|---|---|---|---|
| Preheat | • Temperature min. ($T_{smin}$) | 100 °C | 100 °C |
| | • Temperature typ. ($T_{styp}$) | 120 °C | 120 °C |
| | • Temperature max. ($T_{smax}$) | 130 °C | 130 °C |
| | • Time ($T_{smin}$ to $T_{smax}$) ($t_s$) | 70 seconds | 70 seconds |
| $\Delta$ preheat to max Temperature | | 150 °C max. | 150 °C max. |
| Peak temperature ($T_P$)* | | 235 °C – 260 °C | 250 °C – 260 °C |
| Time at peak temperature ($t_p$) | | 10 seconds max<br>5 seconds max each wave | 10 seconds max<br>5 seconds max each wave |
| Ramp-down rate | | ~ 2 K/s min<br>~3.5 K/s typ<br>~5 K/s max | ~ 2 K/s min<br>~3.5 K/s typ<br>~5 K/s max |
| Time 25 °C to 25 °C | | 4 minutes | 4 minutes |

## Manual solder

+350 °C (4-5 seconds by soldering iron), generally manual/hand soldering is not recommended.

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**Eaton**
**Electronics Division**
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com/electronics

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Printed in USA
Publication No. ELX1121 BU-ELX21129
December 2021

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