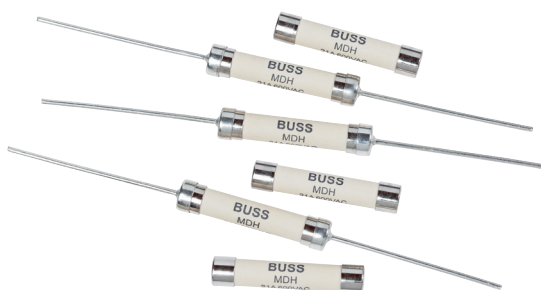


# MDH-R

6.3 mm x 32 mm Ferrule and axial lead, high breaking capacity, high I<sup>2</sup>t ceramic tube fuses



### Product description

- High breaking capacity and I<sup>2</sup>t
- High surge withstand: 20 cycles of 1.2/50  $\mu$ s - 8/20  $\mu$ s, 20 kV/10 kA surge
- UL248-14 compliant
- Ceramic tube, nickel plated brass end cap
- 6.3 mm x 32 mm form factor
- Ferrule and axial lead options
- Halogen free, lead free, RoHS compliant

### Applications

Primary circuit protection:

- Lighting controls
- Surge protectors
- LED and general lighting

### Agency information

- cURus Recognition file number: E19180, Vol 7

### Ordering

- Use ordering number (see page 3 for details)

### Packaging suffixes

- BK (100 parts per carton)
- TR (500 parts per roll)

**Electrical characteristics**

$I_n$	1.0I <sub>n</sub> min hour	2.0I <sub>n</sub> max minute
21A	4	2

**Product specifications**

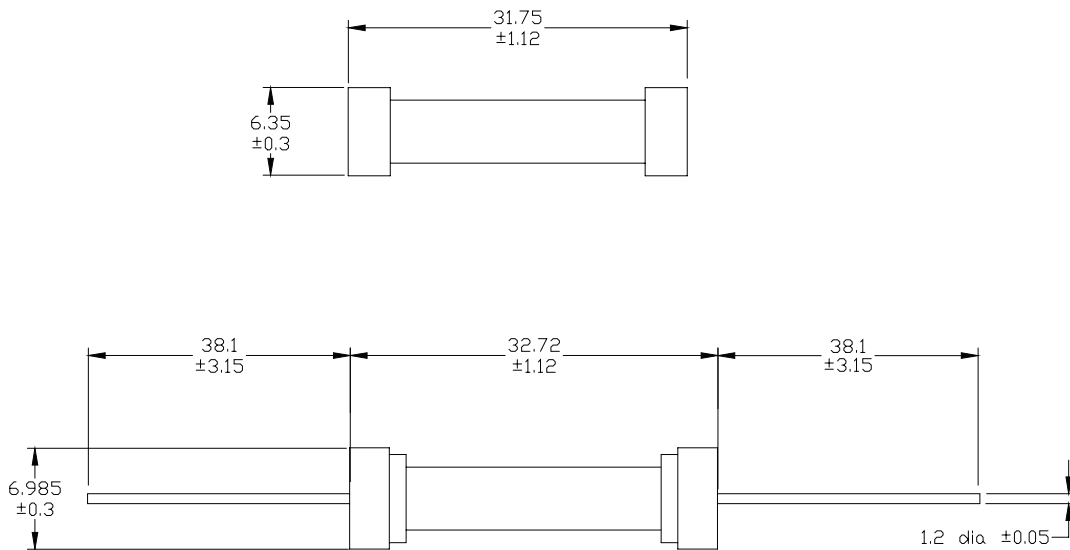
Part number <sup>1</sup>					Interrupting rating at rated AC voltage (50 Hz) (A <sub>AC</sub> )	Interrupting rating at rated DC voltage (A <sub>DC</sub> )	Typical D C cold resistance (Ω)	Typical pre-arcing <sup>1</sup> I <sup>2</sup> t (A <sup>2</sup> s)
Ferrule	Axial lead	Current rating (A )	Voltage rating (V <sub>AC</sub> )	Voltage rating (V <sub>DC</sub> )				
MDH- 21-R	MDH-V- 21-R	21	600	150	200	200	0.0024	5100

1. Typical I<sup>2</sup>t value measured at 10 times of rated current under DC.

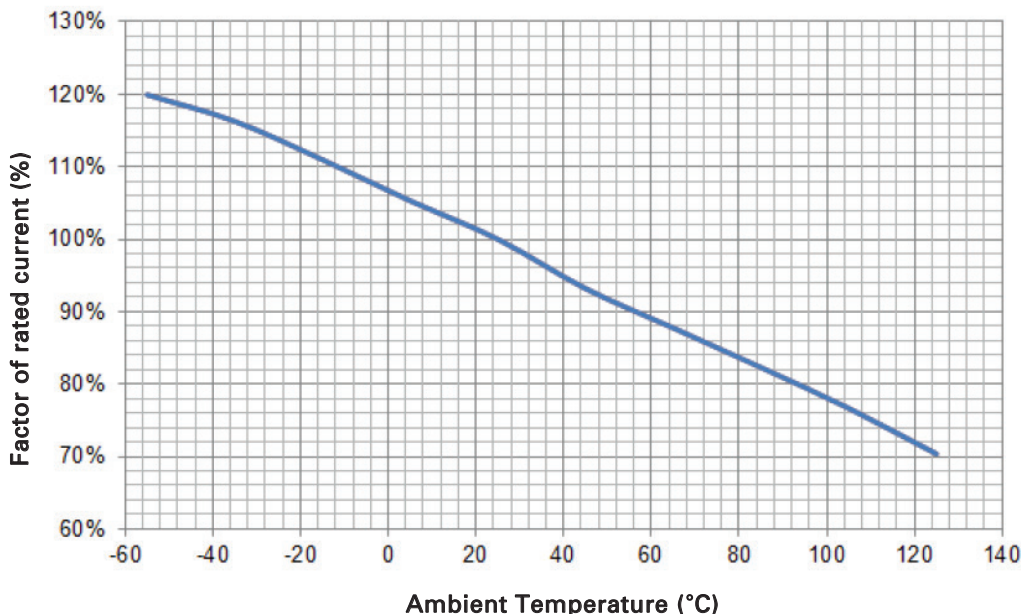
2. Part Number Definition: MDH-x-xx-R  
x = Use "V" code for axial lead, leave blank for ferrule  
xx= Ampere rating  
-R suffix = RoHS compliant

**Dimensions—mm**

Drawing not to scale



**Temperature derating curve**



**Environmental data**

- Operating temperature: - 55 °C to 125 °C (with derating)
- Thermal shock: MIL-STD- 202G, Method 107G, test condition B (5 cycles - 65 °C to 125 °C)
- Vibration: MIL-STD- 202G, Method 201A
- Mechanical shock: MIL-STD- 202, Method 213, test condition A
- Humidity: MIL-STD- 202G, Method 103B, Test condition A
- High surge withstand: 20 cycles of 1.2/50 µs - 8/20 µs, 20 kV/10 kA surge

**Ordering codes**

The ordering code is the part number replacing the "." with a "-" plus adding the packaging suffix as shown.

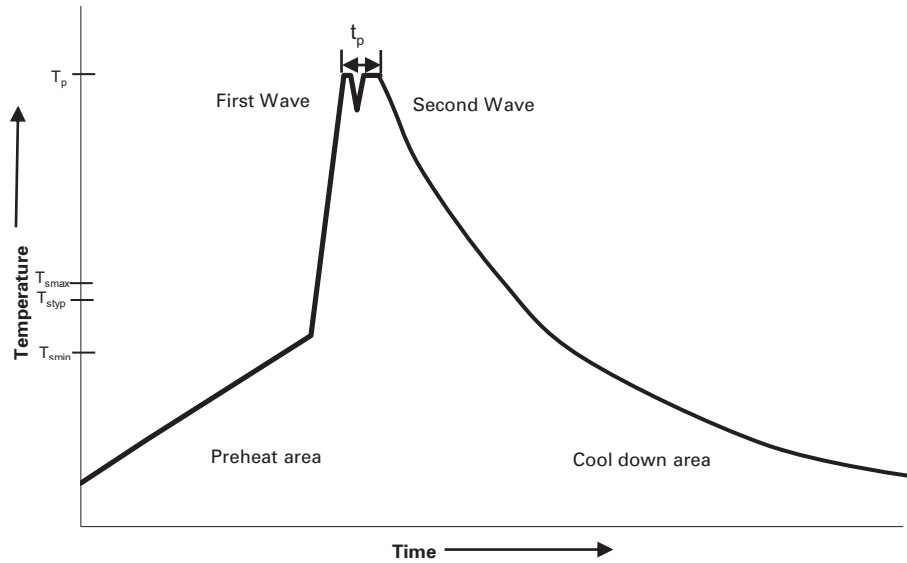
**Packaging suffixes**

- BK (100 parts per carton)
- TR (500 parts per roll)

Part number	Ordering codes	
	BK option	TR option
<b>Ferrule</b>		
MDH-21-R	MDH-21-R-BK	
<b>Axial lead</b>		
MDH-V-21-R	MDH-V-21-RBK	MDH-V-21-RTR

**Through-hole wave solder profile (axial lead only)**

Reflow soldering not recommended



**Reference EN 61760-1:2006**

Profile Feature		Standard SnPb Solder	Lead (Pb) Free Solder
Preheat	• Temperature min. (T <sub>smin</sub> )	100°C	100°C
	• Temperature typ. (T <sub>styp</sub> )	120°C	120°C
	• Temperature max. (T <sub>smax</sub> )	130°C	130°C
	• Time (T <sub>smin</sub> to T <sub>smax</sub> ) (t <sub>s</sub> )	70 seconds	70 seconds
Δ preheat to max Temperature		150°C max.	150°C max.
Peak temperature (T <sub>p</sub> )*		235°C – 260°C	250°C – 260°C
Time at peak temperature (t <sub>p</sub> )		10 seconds max 5 seconds max each wave	10 seconds max 5 seconds max each wave
Ramp-down rate		~ 2 K/s min ~3.5 K/s typ ~5 K/s max	~ 2 K/s min ~3.5 K/s typ ~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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