MDA

1/4" x 1-1/4" time delay ceramic fuse

Photo is representative

Product features

- Ceramic tube time delay fuse
- 250 Vac/125 Vdc, 0.25 A to 30 A
- Compact 3AB footprint:
  ¼" x 1 ¼" (6.3 x 32 mm)
- Cartridge and axial lead versions available
- Fuse accessories (cartridge version):

1Axxxx	HBH-I/ HBV-I	HTB	HK
HKP	HMR	HGA	HTJ
HRK	HHB	HFA	HHK
HHN	HFB	HHJ	S-4000

Agency information

- UL Listed Card: MDA 1/4 A - 20 A (Guide JDYX, File E19180)
- UL Recognized Card: MDA 25 A - 30 A (Guide JDYX2, File E19180)
- CSA Certification Card: MDA 1/4 A - 20 A (Class No. 1422-01)
- CSA Component Acceptance: MDA 25 A - 30 A (Class No. 1422-30)

Applications

Primary circuit protection:

- LED and general lighting
- LED/LCD televisions
- Appliances and white goods
- Printers and peripherals
- Test equipment
- Uninterruptible power supplies (UPS)

Environmental compliance

Ordering part number

BK-MDA-BV-30-R

- Packaging prefix
- Family name
- Option code
- Ampere rating
- RoHS compliance

Packaging prefix

Blank-
MDA-XXX-R: 5 pieces in tin tray.
MDA-V-XXX-R, MDA-BV-XXX-R : 4 pieces in tin tray.

BK-
MDA-XXX-R, MDA-V-XXX-R, MDA-BV-XXX-R: 100 pieces in a box.

TR-
MDA-V-XXX-R: 500 pieces on reel.

Option code

-B
Board washable

-V
Axial leads

Powering Business Worldwide

Electrical characteristics

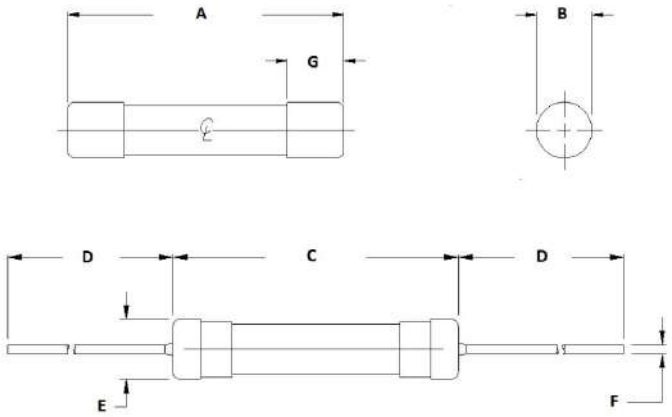
Rating	% Amp rating	Opening time
250 mA to 30 A	100%	4 hours
250 mA to 30 A	135%	60 minutes maximum
250 mA to 30 A	200%	120 seconds maximum

Product specifications

Part number	Current rating (A)	Voltage rating (Vac)	(Vdc)	Interrupting rating @ rated voltage[1]	Typical resistance[2] (mΩ)	Typical voltage drop[3] (mV)	Typical melting[4] I^2t (A^2sec)
MDA-1/4-R	0.25	250	-	200 A @ 250 Vac, 10000 A @ 125 Vac	9100	2900	0.28
MDA-1/2-R	0.50	250	-	200 A @ 250 Vac, 10000 A @ 125 Vac	2600	1650	1.2
MDA-3/4-R	0.75	250	-	200 A @ 250 Vac, 10000 A @ 125 Vac	520	495	0.42
MDA-1-R	1.0	250	-	200 A @ 250 Vac, 10000 A @ 125 Vac	380	470	0.90
MDA-1-1/2-R	1.5	250	-	200 A @ 250 Vac, 10000 A @ 125 Vac	190	370	3.4
MDA-2-R	2.0	250	-	200 A @ 250 Vac, 10000 A @ 125 Vac	120	295	8.8
MDA-2-1/2-R	2.5	250	125	200 A @ 250 Vac, 10000 A @ 125 Vac 10000 A @ 125 Vdc	66	246	7.2
MDA-3-R	3.0	250	125	200 A @ 250 Vac, 10000 A @ 125 Vac 10000 A @ 125 Vdc	48	215	15.9
MDA-4-R	4.0	250	125	200 A @ 250 Vac, 10000 A @ 125 Vac 10000 A @ 125 Vdc	31	176	37.2
MDA-5-R	5.0	250	125	200 A @ 250 Vac, 10000 A @ 125 Vac 10000 A @ 125 Vdc	23	173	65
MDA-6-R	6.0	250	125	200 A @ 250 Vac, 10000 A @ 125 Vac 10000 A @ 125 Vdc	18	166	98.1
MDA-7-R	7.0	250	125	200 A @ 250 Vac, 10000 A @ 125 Vac 10000 A @ 125 Vdc	15	158	135
MDA-8-R	8.0	250	125	200 A @ 250 Vac, 10000 A @ 125 Vac 10000 A @ 125 Vdc	13	162	188
MDA-10-R	10	250	125	200 A @ 250 Vac, 10000 A @ 125 Vac 10000 A @ 125 Vdc	9.5	142	332
MDA-12-R	12	250	125	750 A @ 250 Vac, 10000 A @ 125 Vac 10000 A @ 125 Vdc	7.6	128	125.2
MDA-15-R	15	250	125	750 A @ 250 Vac, 10000 A @ 125 Vac 10000 A @ 125 Vdc	5.7	107	336.8
MDA-20-R	20	250	125	1500 A @ 250 Vac, 10000 A @ 125 Vac 10000 A @ 125 Vdc	4.1	95	483.5
MDA-25-R	25	250	125	1500 A @ 250 Vac, 10000 A @ 125 Vac 10000 A @ 125 Vdc	3.1	105	734.7
MDA-30-R	30	250	125	1500 A @ 250 Vac, 10000 A @ 125 Vac 10000 A @ 125 Vdc	2.5	110	1096.7

1. Interrupting ratings measured at 70% ~ 80% power factor on AC, (20 A and 30 A, 90% - 100% ower factor on AC).
2. Typical resistance measured at <10% of rated current at +25 °C
3. Typical voltage drop measured at +25 °C and rated current
4. Typical melting: (< 10 A, I^2t measured at 10 x rated current), (> 12 A, I^2t measured at interrupting rating and rated voltage)

Dimensions- mm
Drawing not to scale



Cartridge

Dimensions	Size
A	31.75 ± 0.79
B	6.35 ± 0.1
G	4.8 ref for 10 A and below 6.48 ref for above 10 A

Axial lead

Dimensions	Size
C	32.82 ± 0.79
D	38.1mm ref
E	6.76 ref
F	0.81 ± 0.05 for 15 A and below 1.02 ± 0.05 for 20 A and above

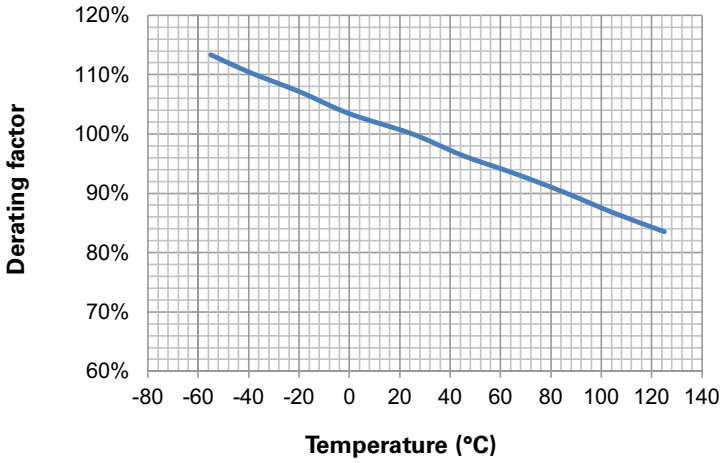
General specifications

Operating temperature: -55 °C to +125 °C with proper derating factor applied.
Mechanical shock test 1/4 A to 10 A: MIL-STD 202 method 213. Condition C Mechanical shock test 12 A to 30 A: MIL-STD 202G method 213. Condition J
Vibration test 1/4 A to 30 A: MIL-STD-202 method 204, test condition C

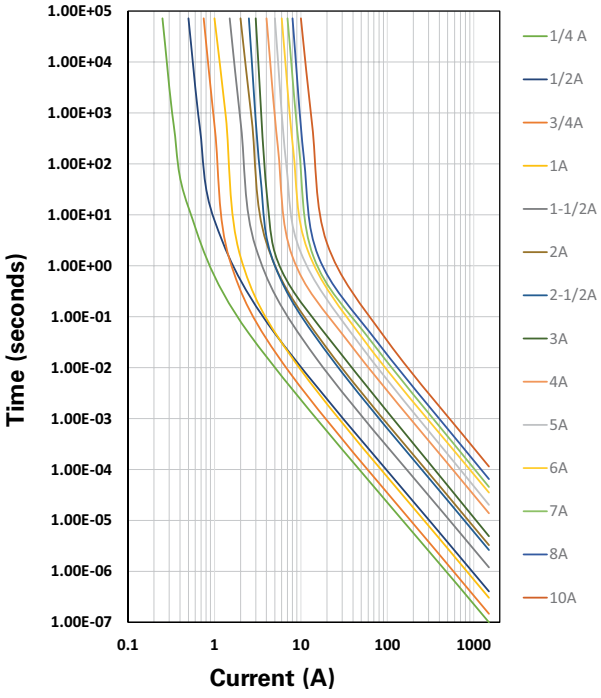
Packaging information

Packaging prefix	Description
Blank	MDA-XXX-R: 5 pieces in tin tray.
	MDA-V-XXX-R, MDA-BV-XXX-R: 4 pieces in tin tray.
BK-	MDA-XXX-R, MDA-V-XXX-R, MDP-BV-XXX-R: 100 pieces in a box.
TR-	MDA-V-XXX-R: 500 pieces on reel.

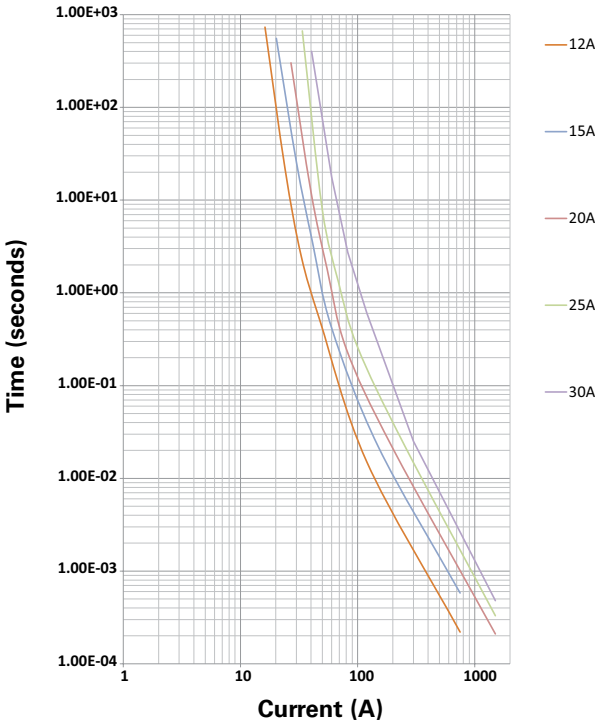
Temperature derating curve



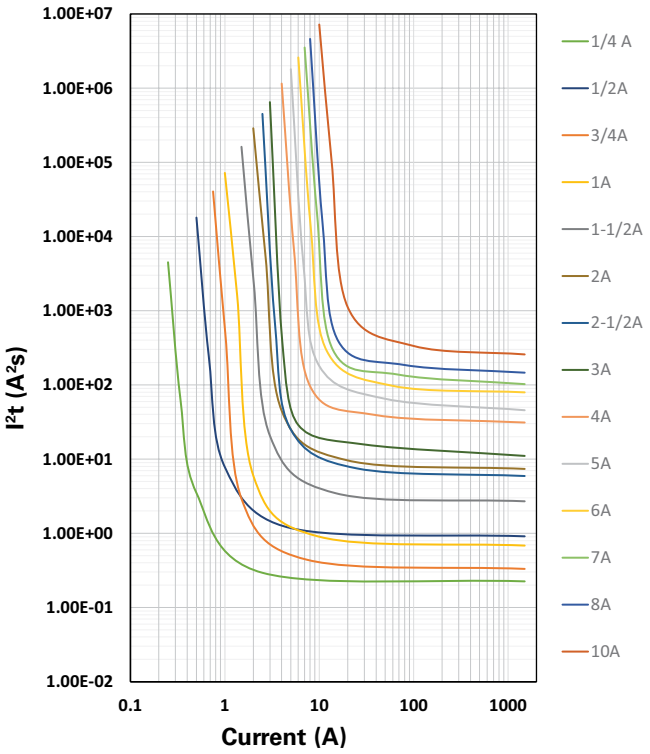
Current vs. time curve



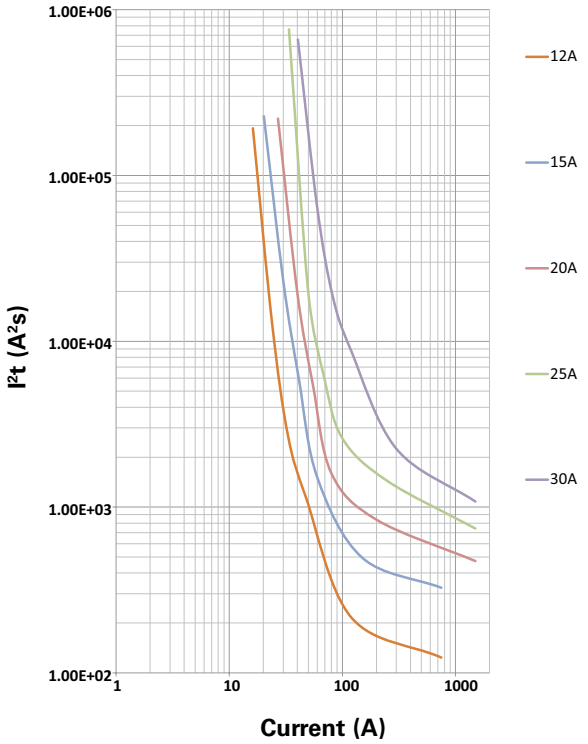
Current vs. time curve



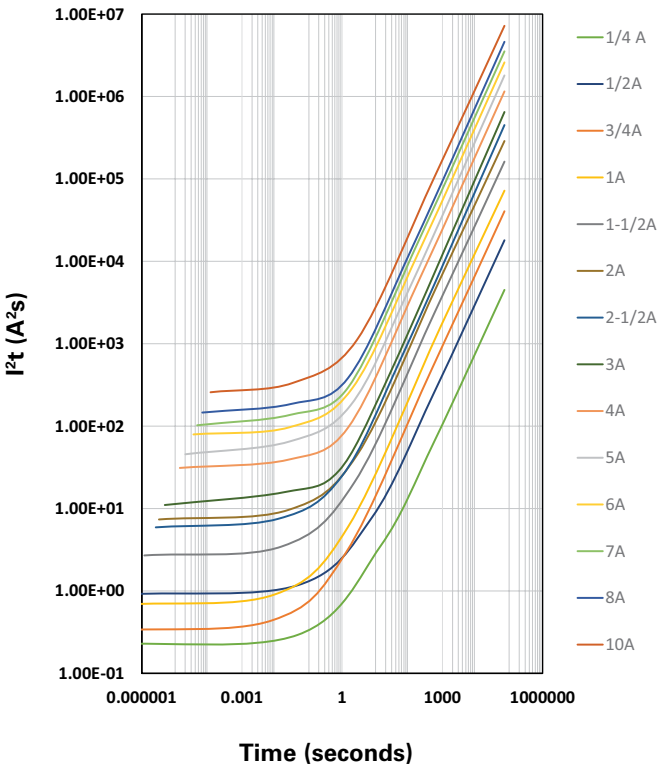
I2t vs. current curve



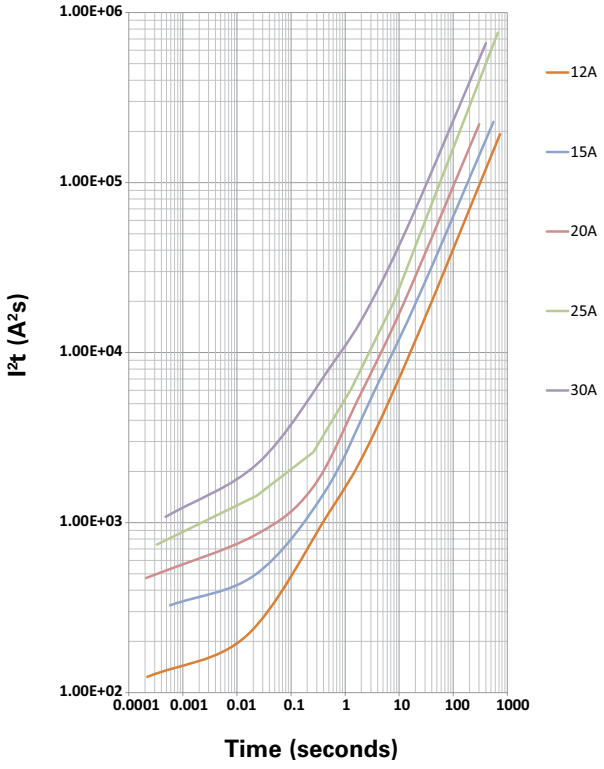
I2t vs current curve



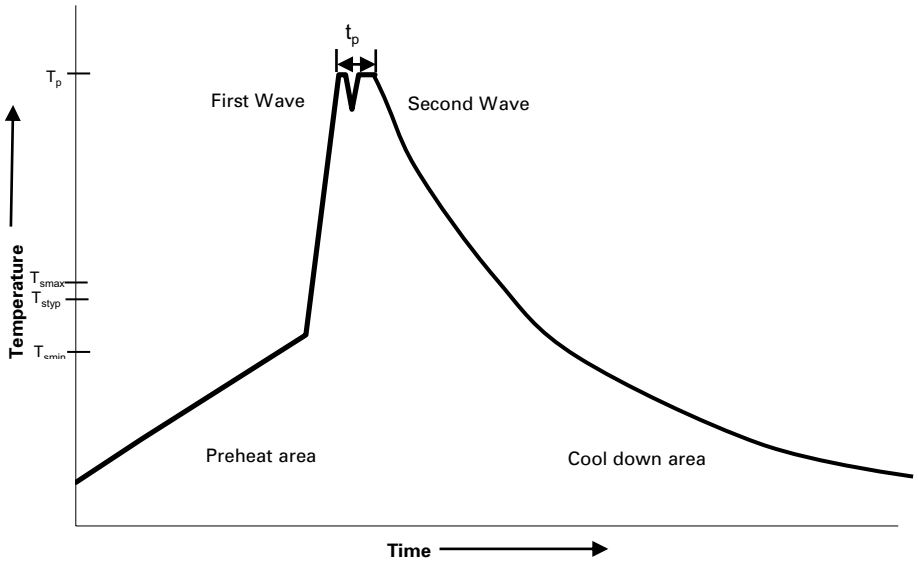
I2t vs. time curve



I2t vs time curve



Wave solder profile--(axial lead version 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
Δ preheat to max Temperature		150 °C max.	150 °C max.
Peak temperature (Tp)*		235 °C – 260 °C	250 °C – 260 °C
Time at peak temperature (t_p)		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

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

Powering Business Worldwide