Electric vehicle power fuses — 500 Vdc, 50-400 A

RoHS

Catalog symbols:

- EV20-(amp) 20 mm diameter
- EV25-(amp) 25 mm diameter
- EV30-(amp) 30 mm diameter

Description:

Eaton's Bussmann® series Electric Vehicle (EV) fuses for the protection of high power battery charging and management systems up to 500 Vdc in ratings from 50 to 400 amps.

Specifications:

Ratings

- Volts - 500 Vdc
- Amps – 50-400 A
- Interrupting rating
  - Max DC – 20 kA
  - Min DC 200%

Agency information

- Designed to:
  - JASO D622
  - ISO 8820-8
- Manufactured under a TS16949 quality system for compliance with automotive requirements
- RoHS compliant
- REACH declaration available upon request

Packaging

- One fuse per box
- Carton:
  - 20 mm fuses: 350 boxes per carton
  - 25 mm fuses: 180 boxes per carton
  - 30 mm fuses: 135 boxes per carton

Features:

- Higher voltage rating provides overall system efficiency using smaller, more economical conductors while meeting the needs of higher voltage battery packs
- Higher interrupting rating protects high capacity battery packs needed for vehicle acceleration and range requirements
- Up to ten times faster opening under high fault current conditions helps assure reliable protection of circuits and components
- Requires up to 48% less space than conventional high speed fuses to help reduce space and weight
- Data logging system marks each fuse with a serial number and date code for traceability of Critical to Quality characteristics
- To help project the life of the fuse in your application, unique driving profiles and conditions can be simulated to verify proper fuse size and performance under a wide range of driving behaviors
- Operation as low as 200% overload provides back up protection to the battery management system
- Can be applied in parallel to realize greater ampacity within sizing guidelines

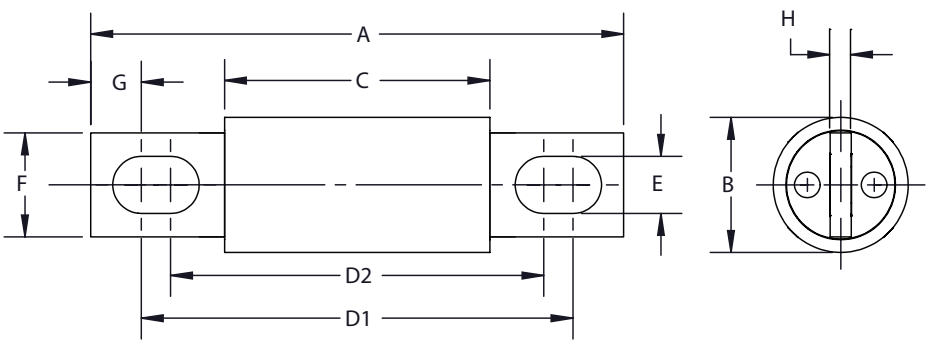
Catalog numbers:

		Average @ 20 kA/500 Vdc*		
Catalog no.	**Amp**	**Melting I^2t**	**Clearing I^2t**	**Power loss (W) @ 50%****
20 mm diameter case				
EV20-50	50	368	746	1.19
EV20-60	60	529	1074	1.43
EV20-70	70	720	1462	1.67
EV20-80	80	910	2200	1.90
EV20-100	100	1470	2983	2.38
EV20-125	125	1384	4114	3.12
EV20-150	150	1993	5924	3.75
25 mm diameter case				
EV25-100	100	1043	2317	3.00
EV25-125	125	1630	3620	3.75
EV25-150	150	1618	5499	4.50
EV25-175	175	2202	7485	5.25
EV25-200	200	3398	10,220	6.00
EV25-225	225	4300	12,934	6.97
EV25-250	250	5309	15,968	7.75
30 mm diameter case				
EV30-200	200	3211	8665	6.74
EV30-225	225	4064	10,967	7.58
EV30-250	250	5017	13,539	8.42
EV30-300	300	7224	19,496	10.11
EV30-350	350	9833	26,536	11.79
EV30-400	400	12,843	34,660	13.47

* For system parameters below 500 Vdc and 20 kA, see clearing I^2t correction factors on page 9.

** 50 percent of fuse label amp rating tested at 23°C ± 2°C.

Dimensions† — mm:

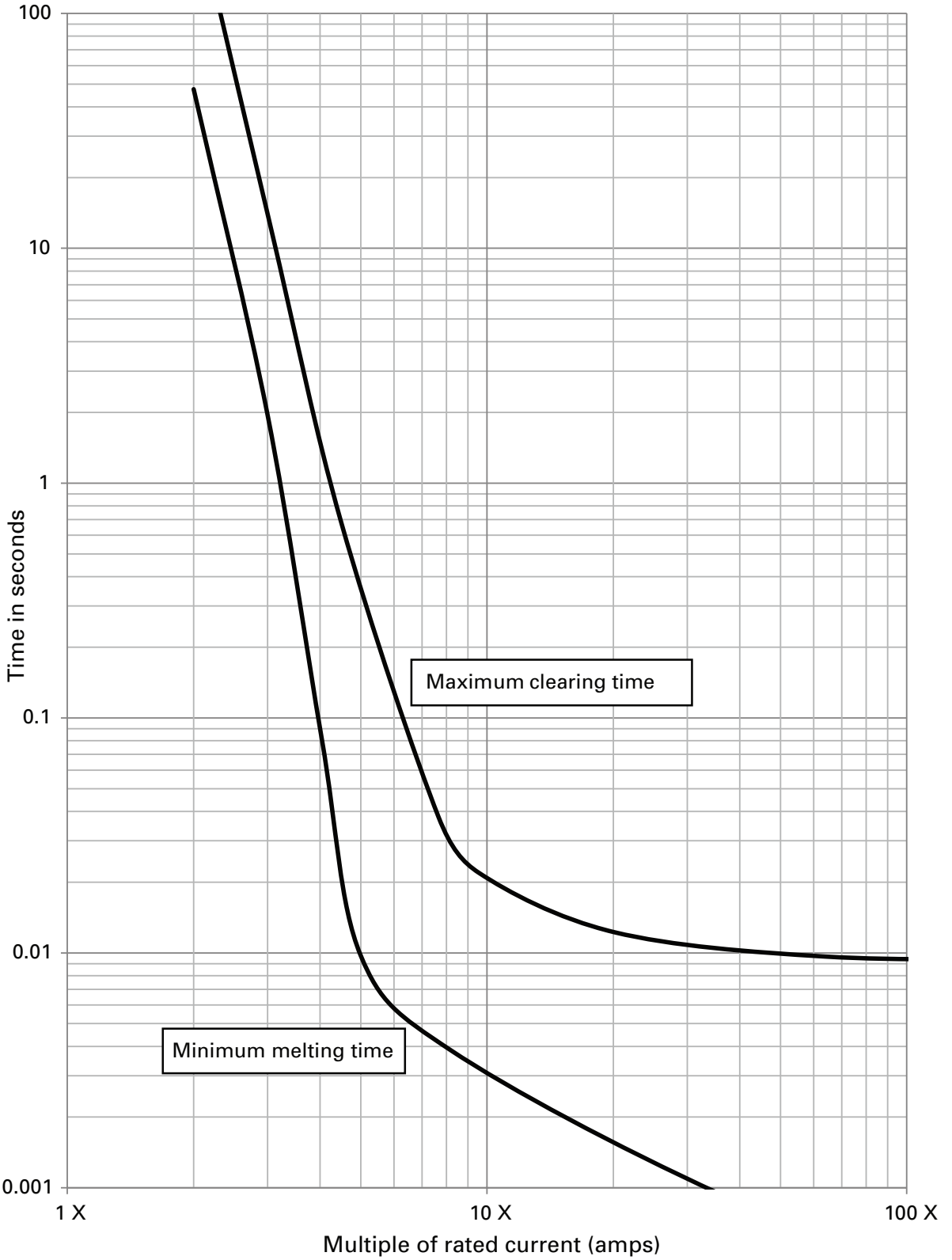


Catalog symbol	Fuse diameter (mm)	Amp range	A	B	C	D1	D2	E	F	G	H
EV20-_	20	50-150	81	20	40	66	57	8.7	16	7.7	3.2
EV25-_	25	100-250	92	25	53	77	68	8.8	19	7.8	3.2
EV30-_	30	200-400	92	31	53	75	68	8.8	25	9.0	4.8

† Dimension are nominal values.

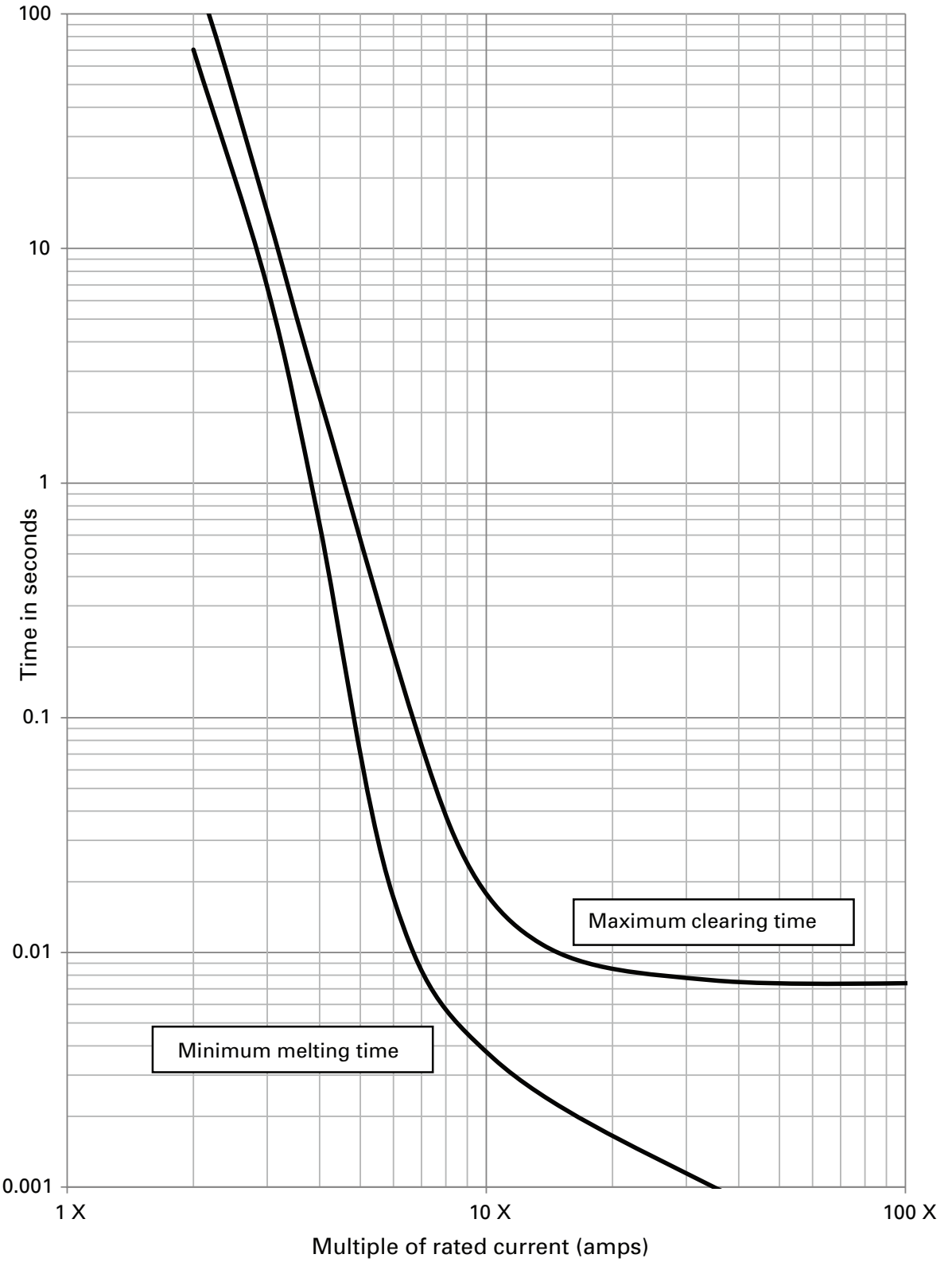
20 mm diameter DC minimum melt / maximum clearing time-current curves — multiple of rated current

For catalog numbers EV20-50 to EV20-100 amp fuses supplied via DC rectifier @ 500 Vdc and time constant (L/R) 2 ms ± 0.5 ms



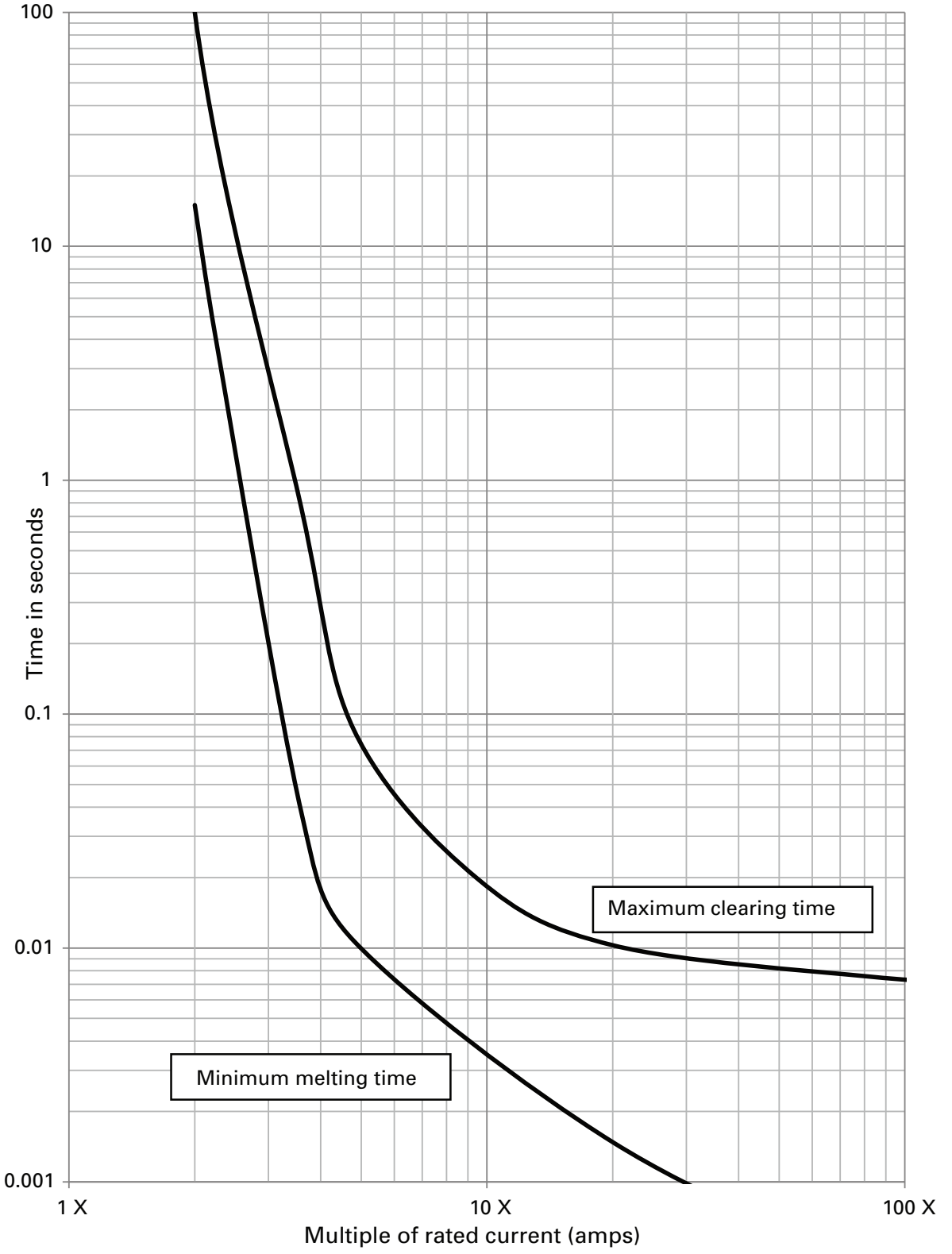
20 mm diameter DC minimum melt / maximum clearing time-current curves — multiple of rated current

For catalog numbers EV20-125 to EV20-150 amp fuses supplied via DC rectifier @ 500 Vdc and time constant (L/R) 2 ms ± 0.5 ms



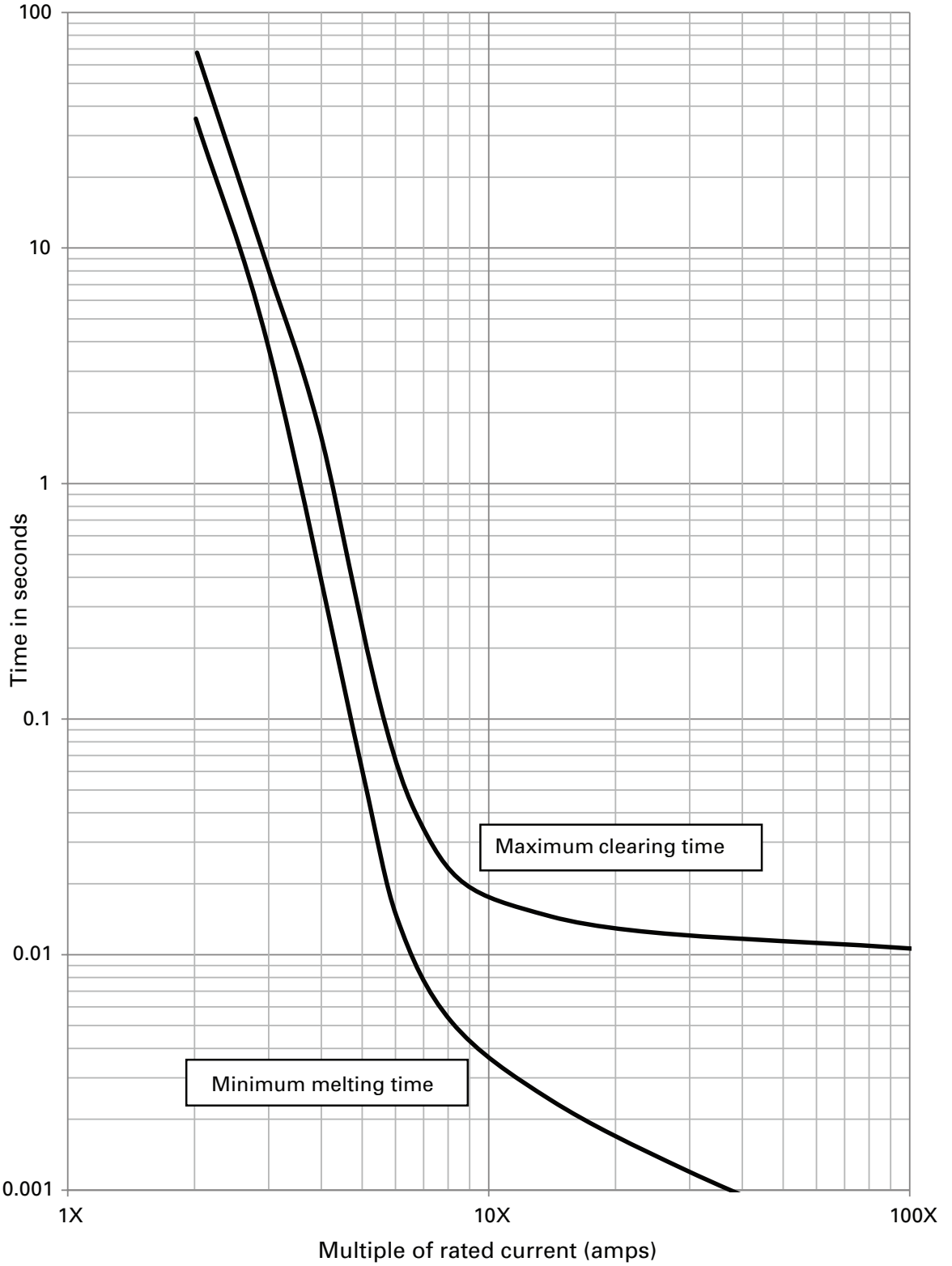
25 mm diameter DC minimum melt / maximum clearing time-current curves — multiple of rated current

For catalog numbers EV25-100 to EV25-150 amp fuses supplied via DC rectifier @ 500 Vdc and time constant (L/R) 2 ms ± 0.5 ms



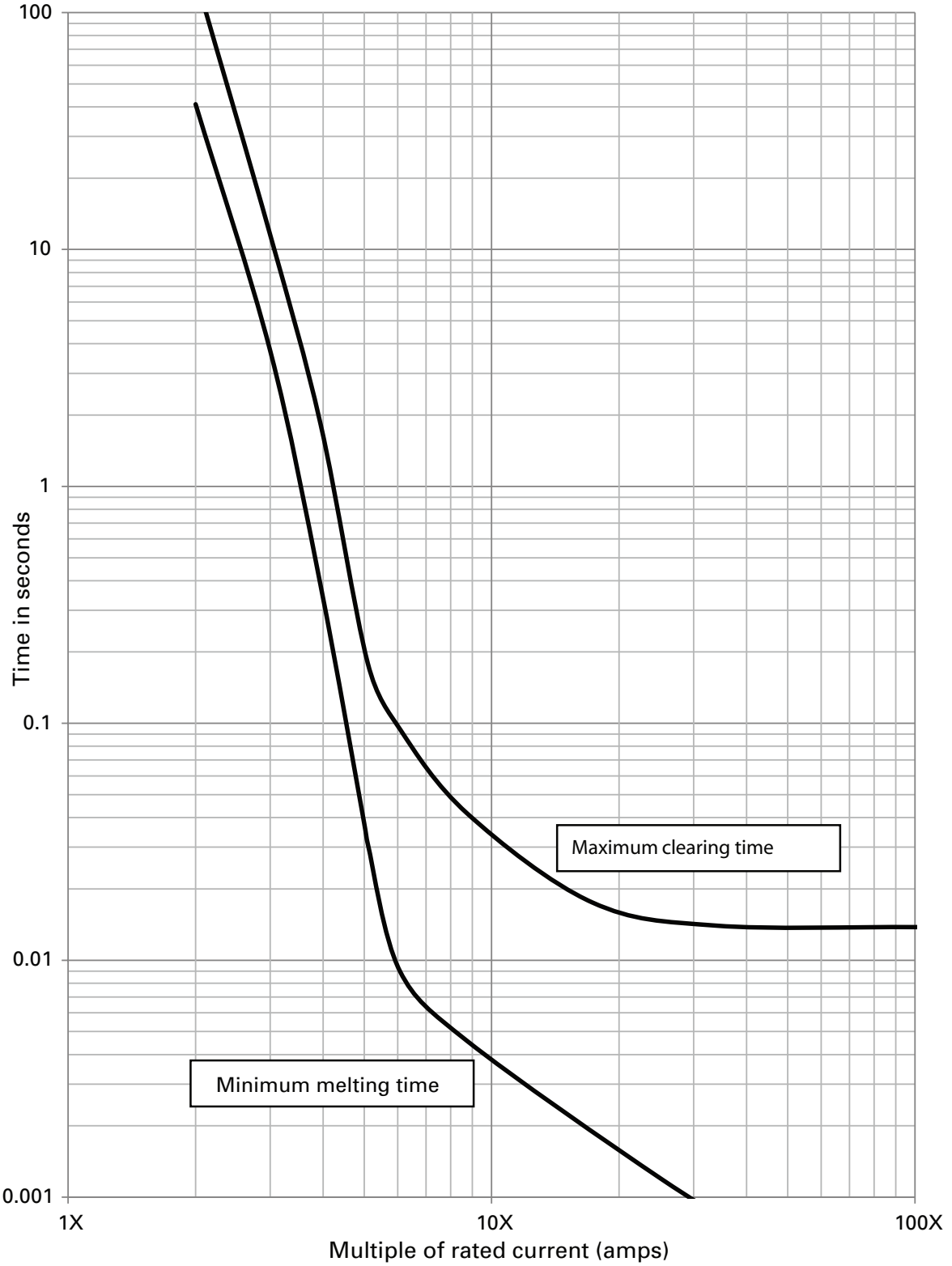
25 mm diameter DC minimum melt / maximum clearing time-current curves — multiple of rated current

For catalog numbers EV25-175 to EV25-250 amp fuses supplied via DC rectifier @ 500 Vdc and time constant (L/R) 2 ms ± 0.5 ms

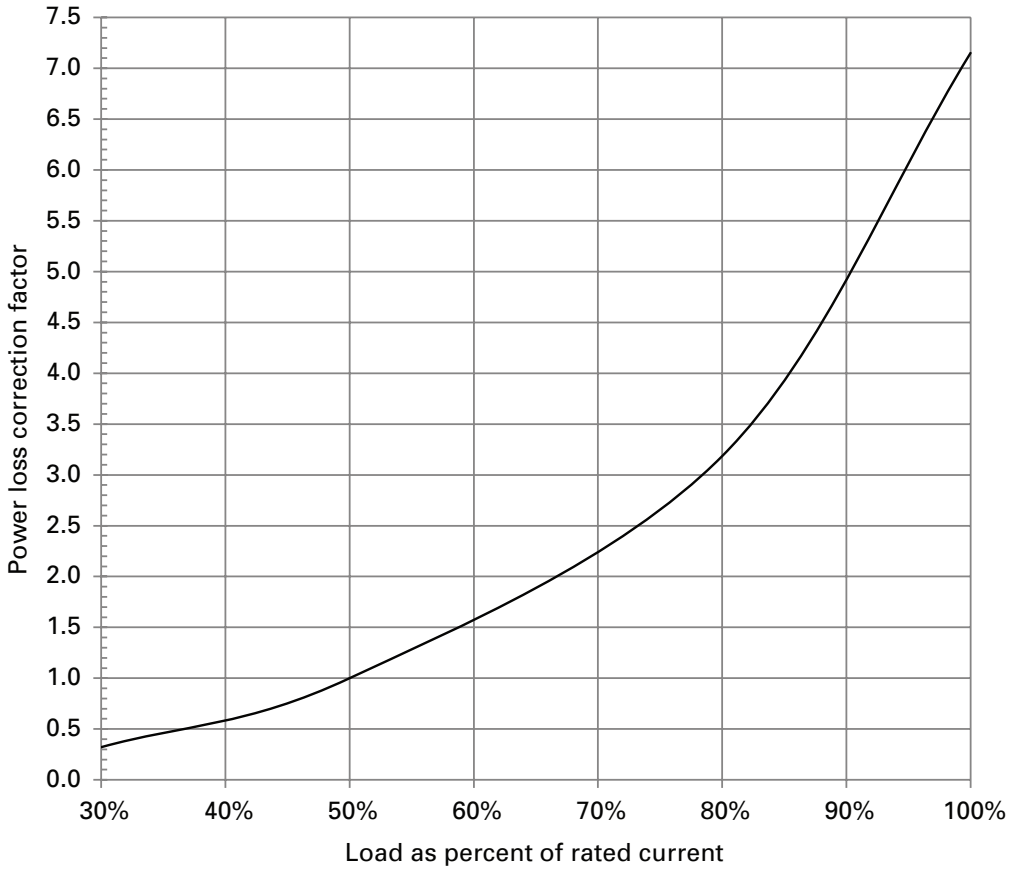


30 mm diameter DC minimum melt / maximum clearing time-current curves — multiple of rated current

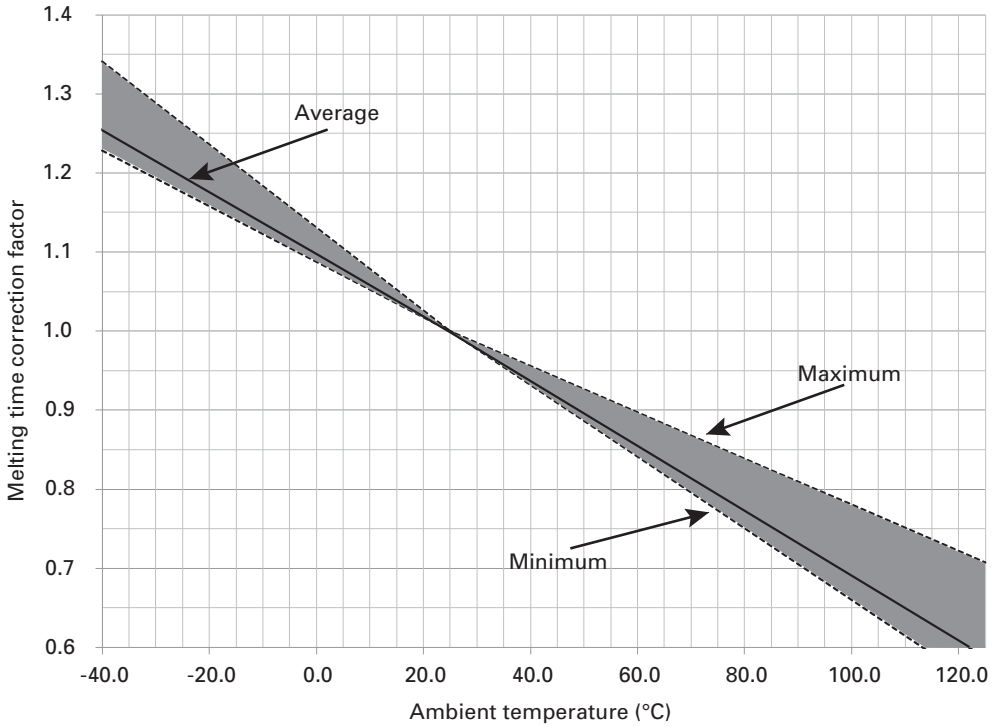
For catalog numbers EV30-200 to EV30-400 amp fuses supplied via DC rectifier @ 500 Vdc and time constant (L/R) 2 ms ± 0.5 ms



Power loss correction factors

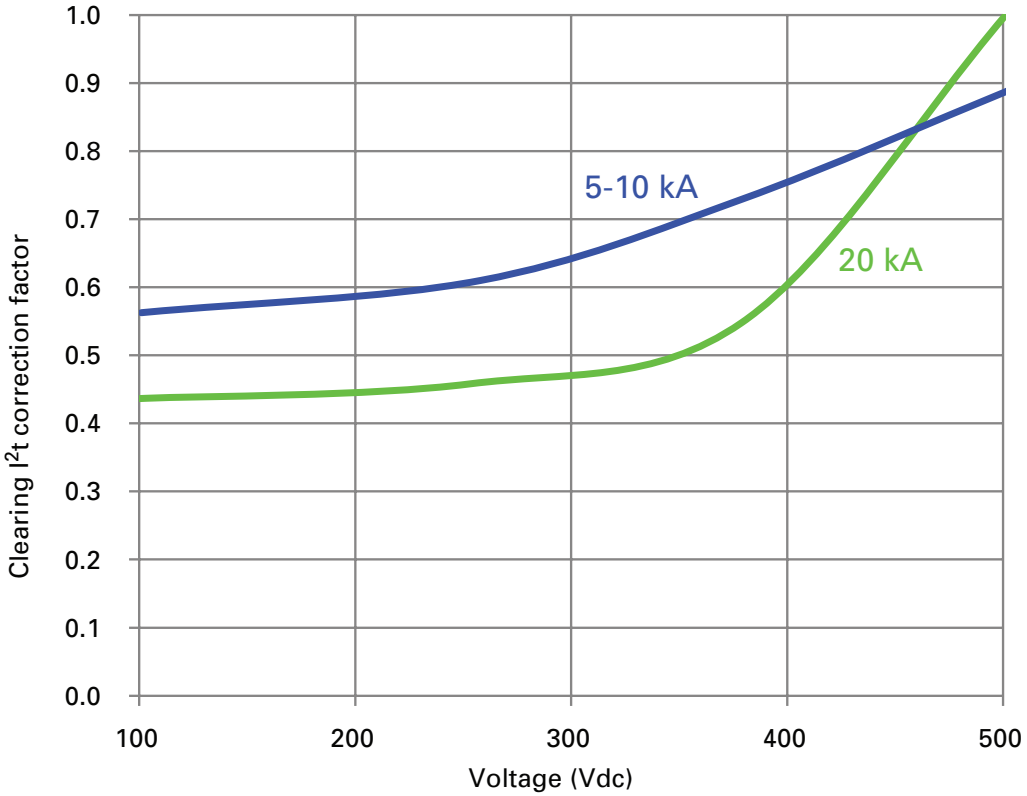


Melting time correction factors (tolerance band)*



* Average at 250 percent of rated current.

Clearing I^2t correction factors — 5 to 10 kA and 20 kA



* Correction factor applies to I^2t clearing at 20 kA in the catalog number table on page 2.

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