

# Pre-production and sample electric vehicle power fuses — 500 Vdc, 50-400 A



## Fuse size/ratings

- 20 mm diameter, 50-150 A
- 25 mm diameter, 100-250 A
- 30 mm diameter, 200-400 A

## Description

Eaton's Bussmann™ series Electric Vehicle (EV) fuses for protecting 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 IATF 16949 quality system for compliance with automotive requirements
- RoHS compliant
- REACH declaration available upon request

## 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



Powering Business Worldwide

**Fuse ratings**

Amps	Average @ 20 kA/500 Vdc*		Power loss (W) @ 50%**
	Melting I <sup>2</sup> t	Clearing I <sup>2</sup> t	
<b>20 mm diameter case</b>			
50	368	746	1.19
60	529	1074	1.43
70	720	1462	1.67
80	910	2200	1.90
100	1470	2983	2.38
125	1384	4114	3.12
150	1993	5924	3.75
<b>25 mm diameter case</b>			
100	1043	2317	3.00
125	1630	3620	3.75
150	1618	5499	4.50
175	2202	7485	5.25
200	3398	10,220	6.00
225	4300	12,934	6.97
250	5309	15,968	7.75
<b>30 mm diameter case</b>			
200	3211	8665	6.74
225	4064	10,967	7.58
250	5017	13,539	8.42
300	7224	19,496	10.11
350	9833	26,536	11.79
400	12,843	34,660	13.47

\* For system parameters below 500 Vdc and 20 kA, see clearing I<sup>2</sup>t correction factors on page 9.

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

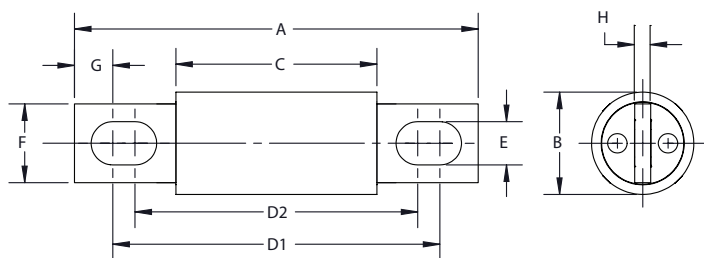
**Available pre-production and sample catalog numbers**

Catalog no.		Amps
Pre-production fuses*	Sample fuses**	
<b>20 mm diameter case</b>		
XEV20-50	XEV20-50-SP	50
XEV20-60	XEV20-60-SP	60
XEV20-70	XEV20-70-SP	70
XEV20-80	XEV20-80-SP	80
XEV20-100	XEV20-100-SP	100
XEV20-100-S	XEV20-100-S-SP	
XEV20-125	XEV20-125-SP	125
XEV20-125-S	XEV20-125-S-SP	
XEV20-150	XEV20-150-SP	150
XEV20-150-PX	XEV20-150-PX-SP	
XEV20-150-S	XEV20-150-S-SP	
<b>25 mm diameter case</b>		
XEV25-100	XEV25-100-SP	100
XEV25-125	XEV25-125-SP	125
XEV25-150	XEV25-150-SP	150
XEV25-175	XEV25-175-SP	175
XEV25-200	XEV25-200-SP	200
XEV25-225	XEV25-225-SP	225
XEV25-250	XEV25-250-SP	250
<b>30 mm diameter case</b>		
XEV30-200	XEV30-200-SP	200
XEV30-225	XEV30-225-SP	225
XEV30-250	XEV30-250-SP	250
XEV30-300	XEV30-300-SP	300
XEV30-300-CE	XEV30-300-CE-SP	
XEV30-350	XEV30-350-SP	350
XEV30-400	XEV30-400-SP	400

\* Pre-production fuses sold in non-breakable quantities for these case sizes: 20 mm - 250 fuses, 25 mm - 100 fuses, 30 mm - 100 fuses.

\*\*Sample fuses sold in non-breakable quantities of four fuses.

**Dimensions† — mm**



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

† Dimension are nominal values.

**To order pre-production or sample fuses, contact Bussmann Customer Service**

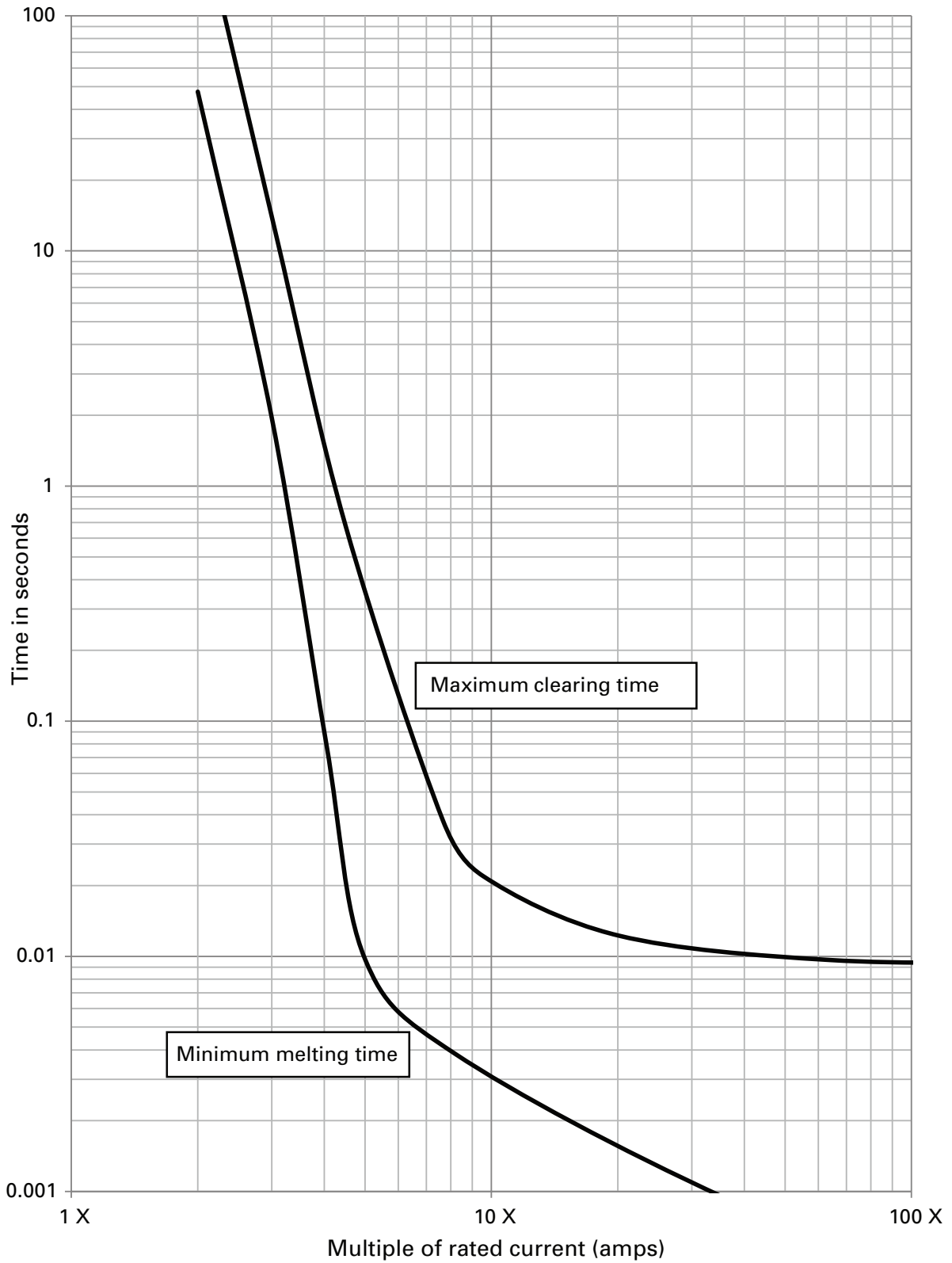
Phone: 855-BUSSMANN (855-287-7626) M—F, 7:00 a.m. — 6:00 p.m., Central time

Email: BussCustSat@Eaton.com

For information on production fuses, contact your local Bussmann product sales representative.

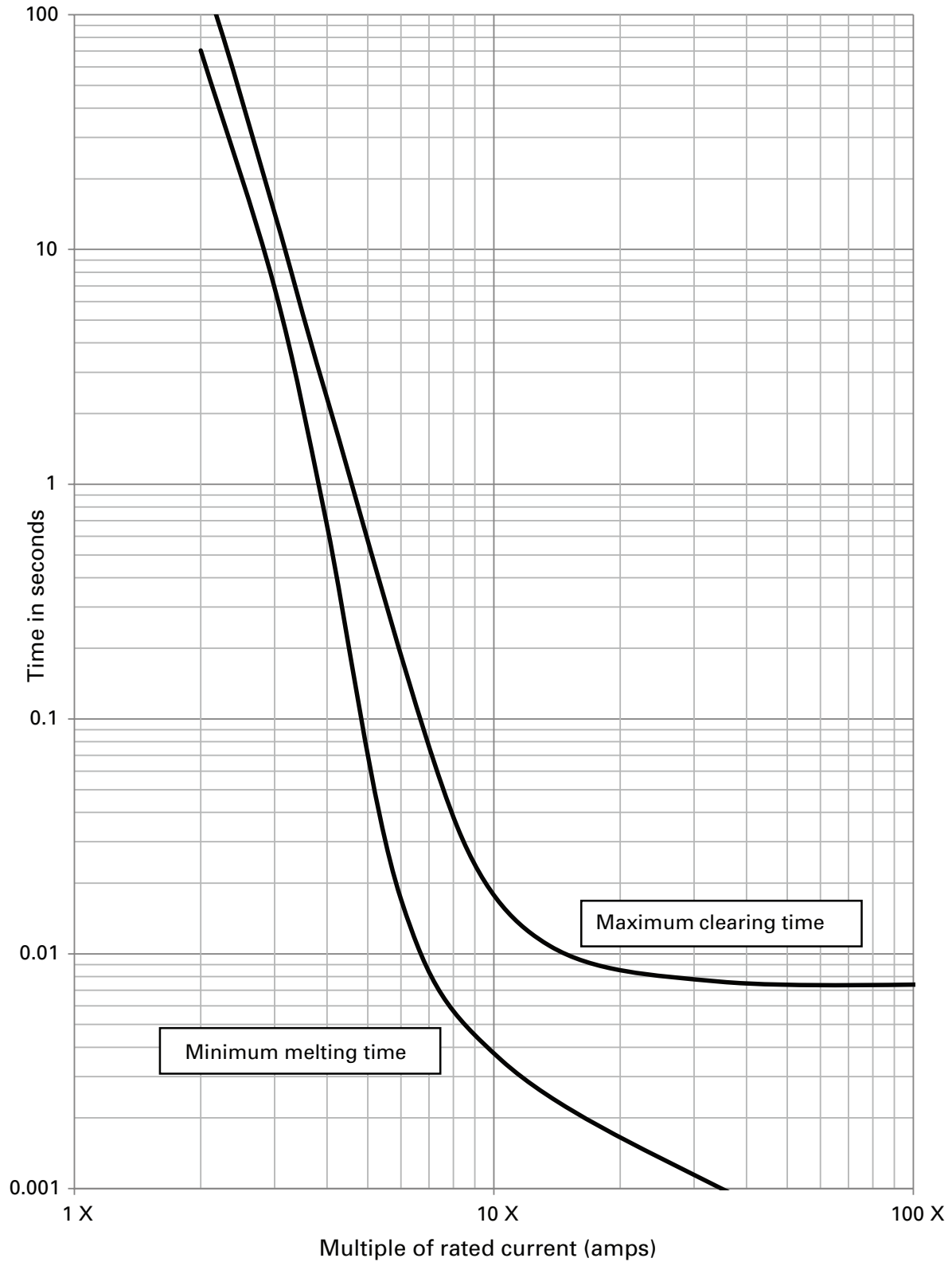
**20 mm diameter DC minimum melt / maximum clearing time-current curves — multiple of rated current**

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



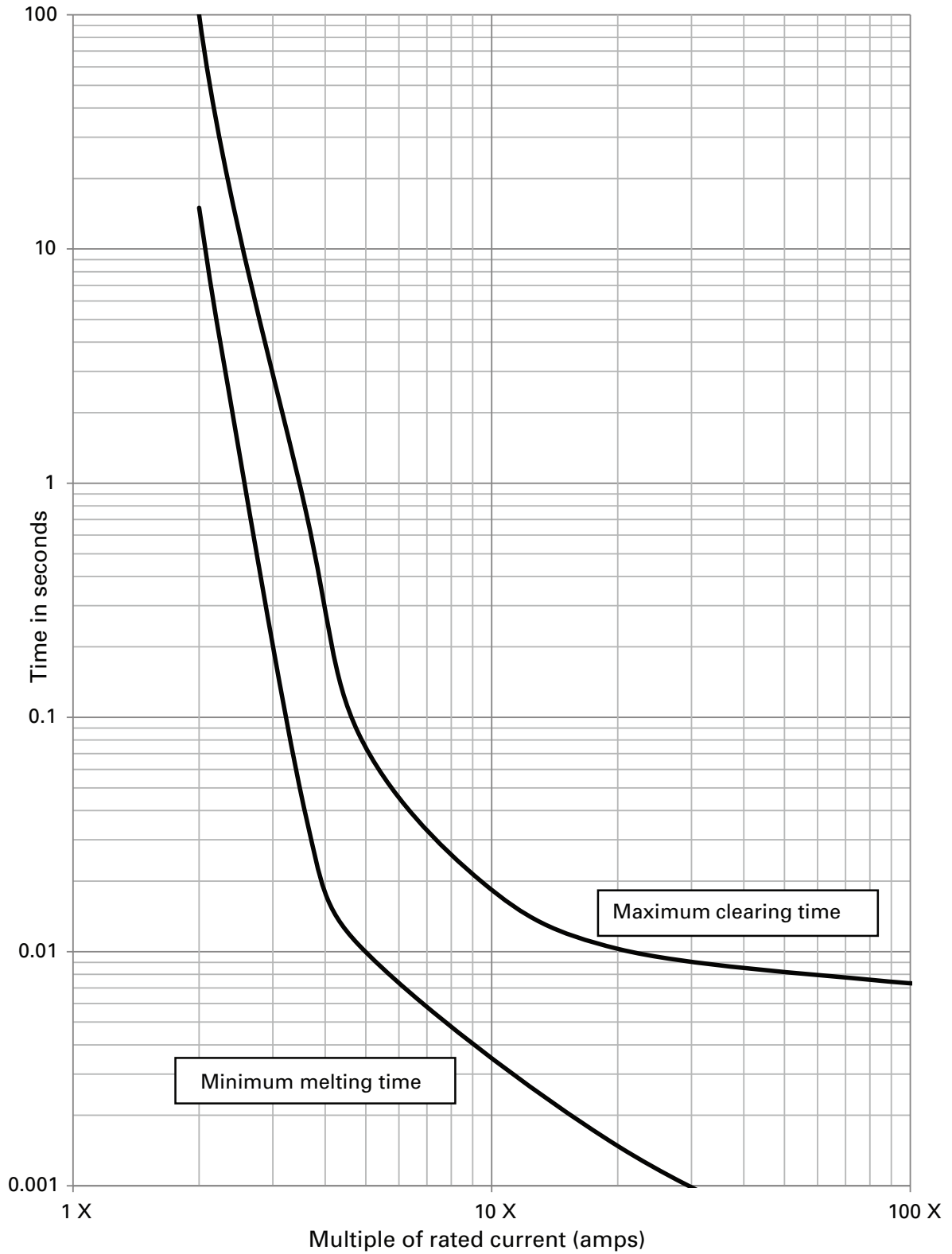
**20 mm diameter DC minimum melt / maximum clearing time-current curves — multiple of rated current**

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



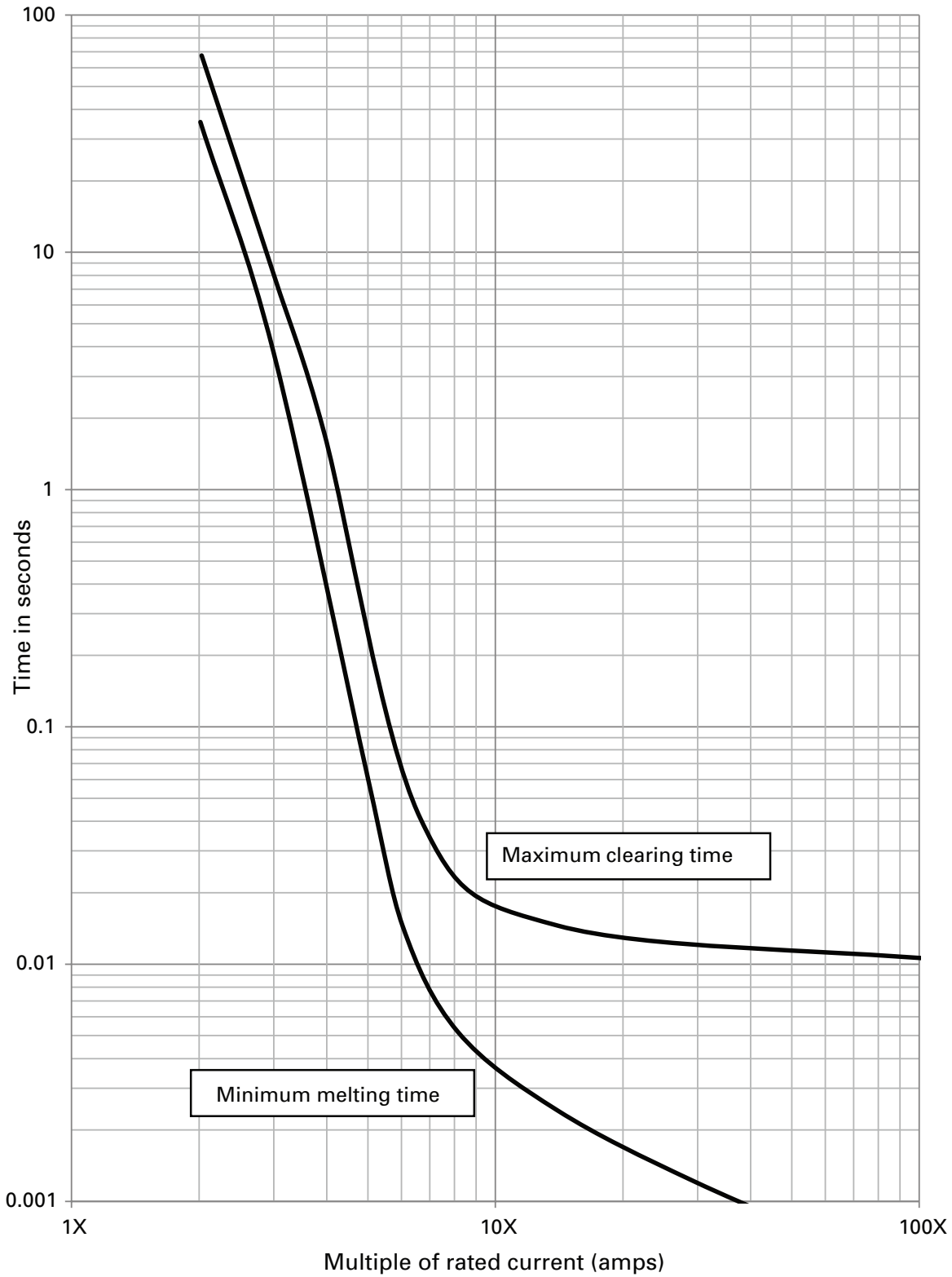
**25 mm diameter DC minimum melt / maximum clearing time-current curves – multiple of rated current**

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



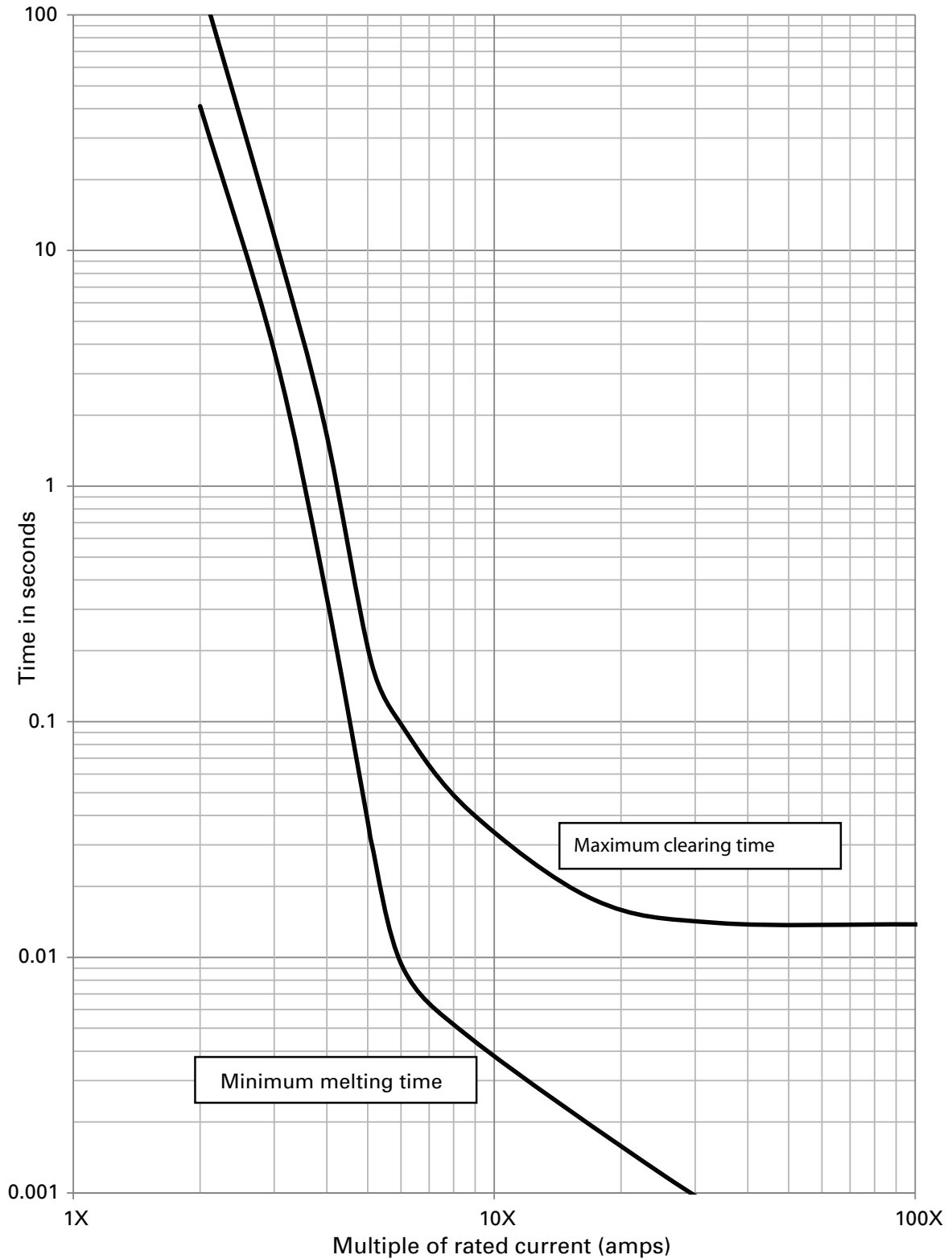
**25 mm diameter DC minimum melt / maximum clearing time-current curves — multiple of rated current**

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

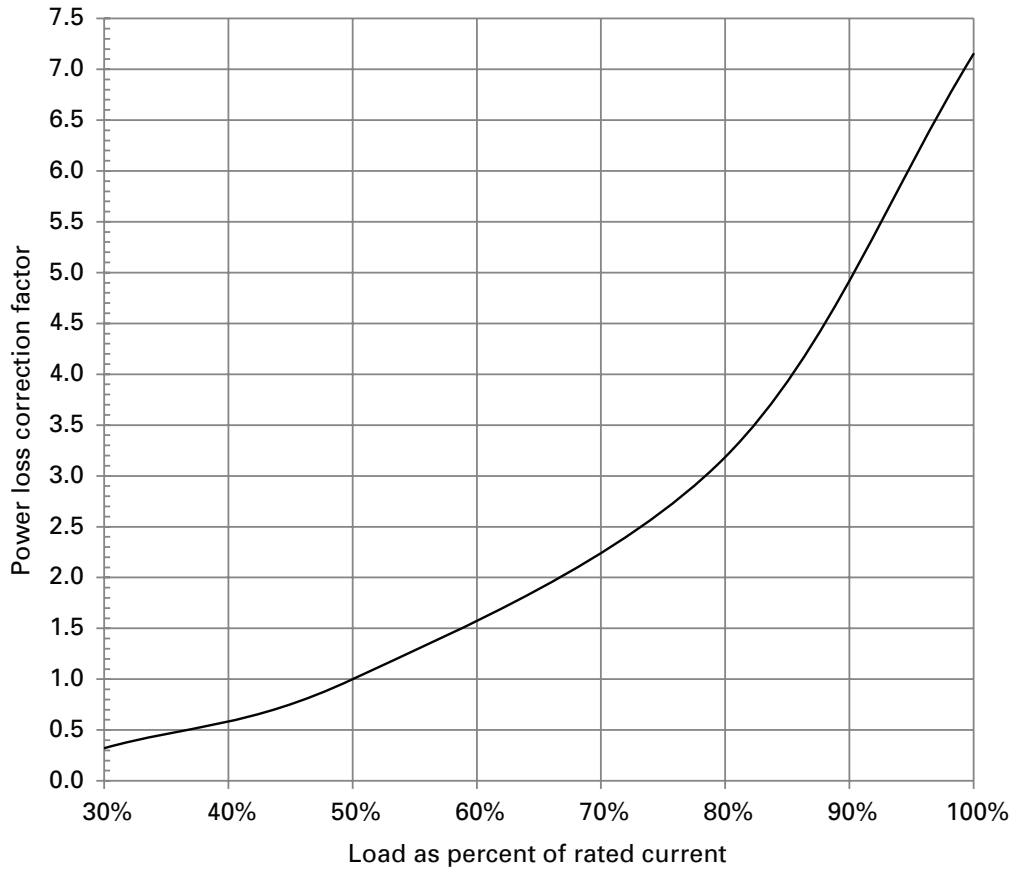


**30 mm diameter DC minimum melt / maximum clearing time-current curves – multiple of rated current**

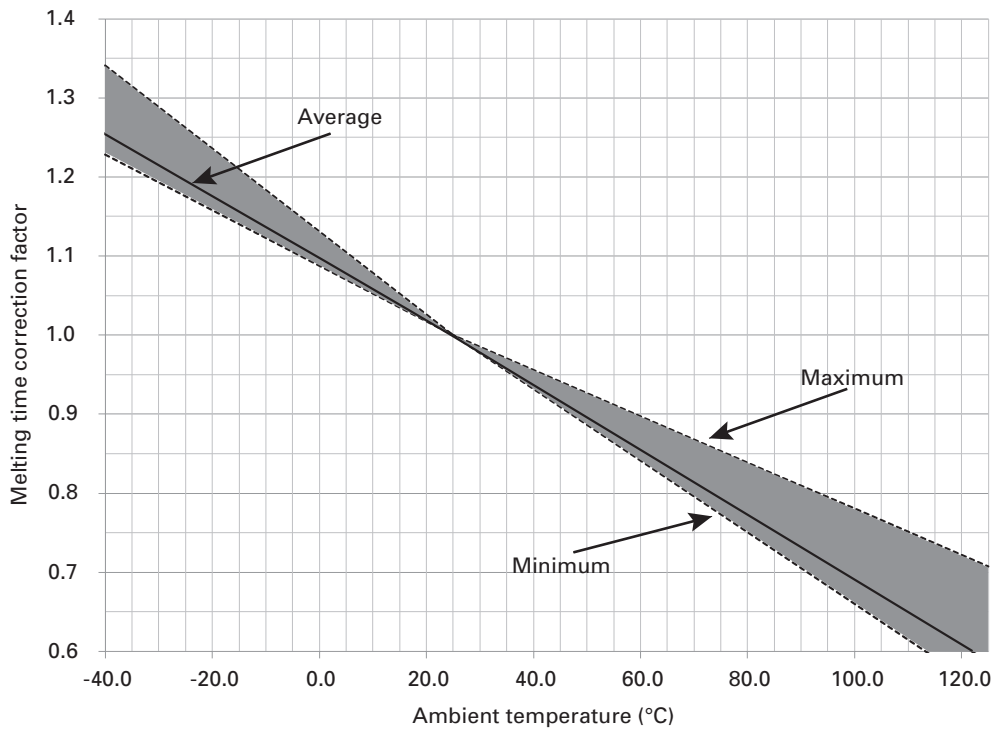
For 200 to 400 amp fuses supplied via DC rectifier @ 500 Vdc and time constant (L/R) 2 ms ± 0.5 ms



**Power loss correction factors**



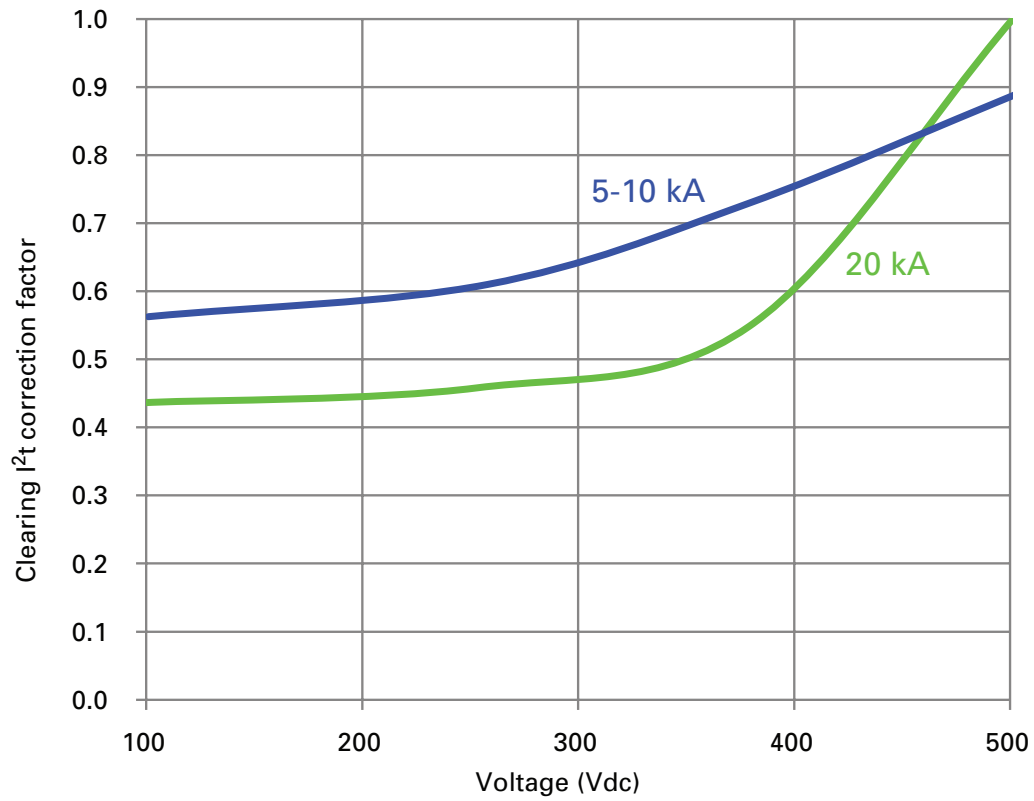
**Melting time correction factors (tolerance band)\***



\* 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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