

# EVpack-fuse MEV50

500 VDC Max., L/R less than or equal 2.5ms, 60 - 800A

## BATTERY FUSES

### BATTERY PACK FUSES



**EVpack-fuse** line-up belongs to the new DC Over-Current protection (O.C.P.) range developed by MERSEN to address specific needs in EV/HEV and Battery Electrical Storage System.

**EVpack-fuse** provides the ultimate protection of the battery pack offering reliable clearing of DC fault currents.

It has been specifically engineered and tested to provide DC applications best-in-class protection performance: Up to 500VDC, Current rating ( $I_n$ ) = 60 to 800A, Interrupting Rating (IR) = 30kA, L/R  $\leq 2.5$ ms, Minimum Breaking Capacity (MBC) < 2kA for a perfect matching with DC contactor.

## TECHNICAL DATA OVERVIEW

Voltage DC	500 VDC
Ampere Range (A)	60 ... 800 A
Speed/Characteristic	aR

## FEATURES & BENEFITS

- Design for DC applications
- Low watt losses
- High cycling performance
- Full coverage of battery module voltage and current
- Ultra compact size
- Current Ratings ( $I_n$ ): 60 to 800A
- Interrupting Rating (IR): 30kA @ 500VDC, L/R < 2.5ms

## APPLICATIONS

- EV/HEV
- Electrical Energy Storage
- Battery pack protection
- Battery Disconnect Unit (BDU)
- Battery Junction Box for auxiliaries
- Battery charger
- Supercapacitor pack protection
- Backup protection for DC relay / disconnect / switch
- Maintenance Safety Disconnect (MSD)

## STANDARDS

- IEC 60 269 -1 and -4
- IEC 60 269-7 (expected release in 2021)
- ISO 8820-8
- JASO D622



## PRODUCT RANGE



MEV50A150-20G

### MEV50A Size 20

Catalog number	Rated voltage DC (IEC)	Rated voltage DC (UL)	Rated current $I_n$	Pre-arcing $I^2t$	Power dissipation at 0.5 $I_n$	Min. breaking capacity (MBC)	Max. time to clear MBC	Package	Weight
MEV50A60-20G	500 V	500 V	60 A	185 A <sup>2</sup> s	1.7 W	300 A	0.3 s	30	41 g
MEV50A70-20G	500 V	500 V	70 A	320 A <sup>2</sup> s	2 W	350 A	0.3 s	30	41 g
MEV50A80-20G	500 V	500 V	80 A	415 A <sup>2</sup> s	2.4 W	400 A	0.3 s	30	41 g
MEV50A100-20G	500 V	500 V	100 A	735 A <sup>2</sup> s	2.8 W	500 A	0.3 s	30	41 g
MEV50A125-20G	500 V	500 V	125 A	1150 A <sup>2</sup> s	3.5 W	625 A	0.3 s	30	41 g
MEV50A150-20G	500 V	500 V	150 A	1650 A <sup>2</sup> s	6.9 W	750 A	0.3 s	30	41 g



MEV50A150-25G

### MEV50A Size 25

Catalog number	Rated voltage DC (IEC)	Rated voltage DC (UL)	Rated current $I_n$	Pre-arcing $I^2t$	Power dissipation at 0.5 $I_n$	Min. breaking capacity (MBC)	Max. time to clear MBC	Package	Weight
MEV50A100-25G	500 V	500 V	100 A	1150 A <sup>2</sup> s	2.8 W	500 A	0.5 s	12	75 g
MEV50A125-25G	500 V	500 V	125 A	2250 A <sup>2</sup> s	3.5 W	625 A	0.5 s	12	75 g
MEV50A150-25G	500 V	500 V	150 A	3720 A <sup>2</sup> s	6.9 W	750 A	0.5 s	12	75 g
MEV50A175-25G	500 V	500 V	175 A	5700 A <sup>2</sup> s	8 W	875 A	0.5 s	12	75 g
MEV50A200-25G	500 V	500 V	200 A	6600 A <sup>2</sup> s	9.4 W	1000 A	0.5 s	12	75 g
MEV50A250-25G	500 V	500 V	250 A	10350 A <sup>2</sup> s	12.3 W	1250 A	0.5 s	12	75 g



MEV50A400-30G

### MEV50A Size 30

Catalog number	Rated voltage DC (IEC)	Rated voltage DC (UL)	Rated current $I_n$	Pre-arcing $I^2t$	Power dissipation at 0.5 $I_n$	Min. breaking capacity (MBC)	Max. time to clear MBC	Package	Weight
MEV50A150-30G	500 V	500 V	150 A	3700 A <sup>2</sup> s	6.9 W	750 A	0.5 s	12	0.1 kg
MEV50A200-30G	500 V	500 V	200 A	6600 A <sup>2</sup> s	9.4 W	1000 A	0.5 s	12	0.1 kg
MEV50A250-30G	500 V	500 V	250 A	10350 A <sup>2</sup> s	12.3 W	1250 A	0.5 s	12	0.1 kg
MEV50A300-30G	500 V	500 V	300 A	14900 A <sup>2</sup> s	15 W	1500 A	0.5 s	12	0.1 kg
MEV50A350-30G	500 V	500 V	350 A	20900 A <sup>2</sup> s	17.5 W	1750 A	0.5 s	12	0.1 kg
MEV50A400-30G	500 V	500 V	400 A	26500 A <sup>2</sup> s	21.8 W	2000 A	0.5 s	12	0.1 kg



MEV50A600-38G

### MEV50A Size 38

Catalog number	Rated voltage DC (IEC)	Rated voltage DC (UL)	Rated current $I_n$	Pre-arcing $I^2t$	Power dissipation at 0.5 $I_n$	Min. breaking capacity (MBC)	Max. time to clear MBC	Package	Weight
MEV50A300-38G	500 V	500 V	300 A	15000 A <sup>2</sup> s	15 W	1500 A	0.5 s	8	0.17 kg
MEV50A350-38G	500 V	500 V	350 A	20000 A <sup>2</sup> s	17.5 W	1750 A	0.5 s	8	0.17 kg
MEV50A400-38G	500 V	500 V	400 A	26500 A <sup>2</sup> s	21.8 W	2000 A	0.5 s	8	0.17 kg
MEV50A450-38G	500 V	500 V	450 A	32600 A <sup>2</sup> s	25.7 W	2000 A	0.5 s	8	0.17 kg
MEV50A500-38G	500 V	500 V	500 A	41300 A <sup>2</sup> s	28.8 W	2000 A	1 s	8	0.17 kg
MEV50A600-38G	500 V	500 V	600 A	59500 A <sup>2</sup> s	36.3 W	2000 A	3.3 s	8	0.17 kg



MEV50A600-45G

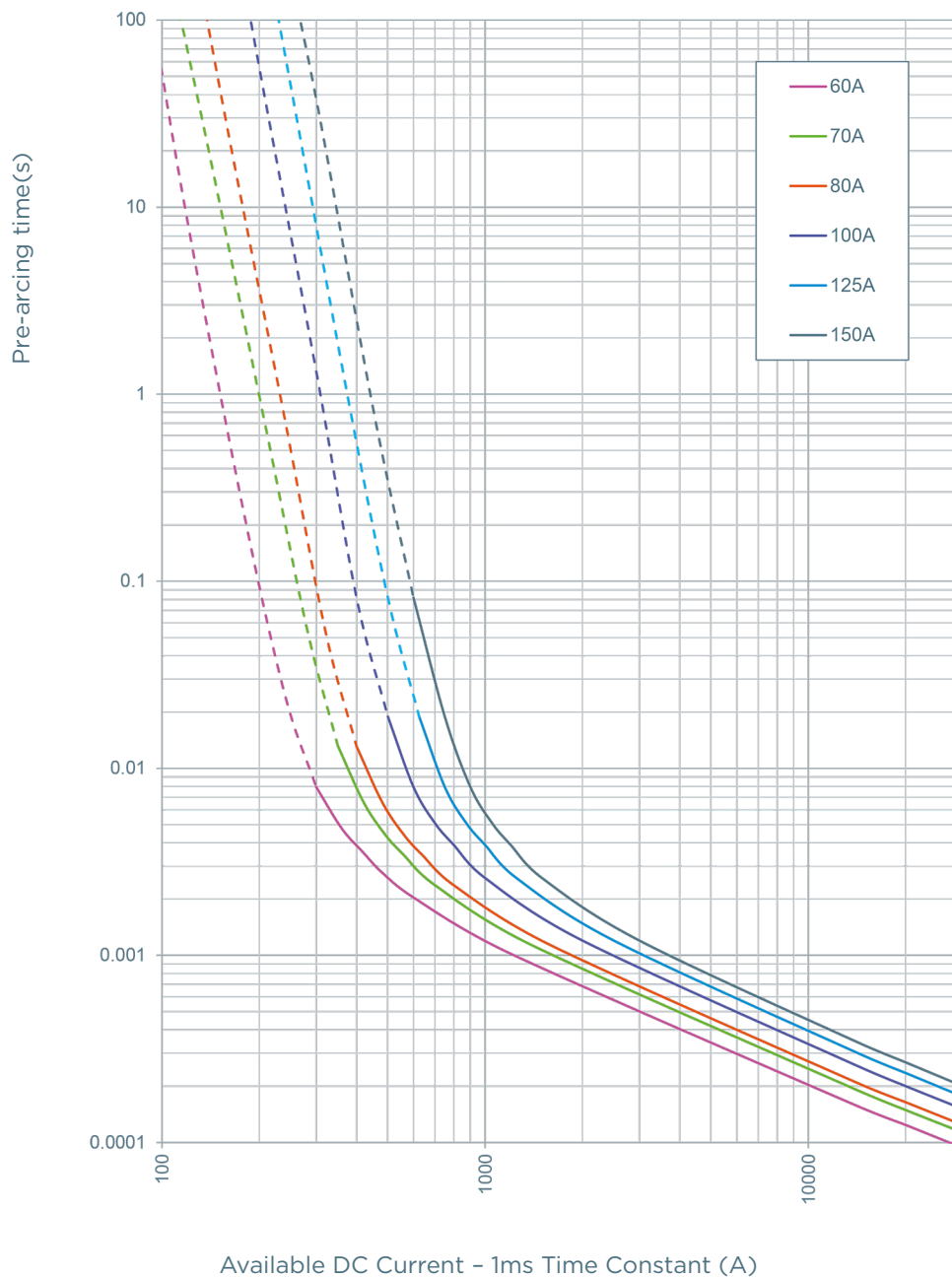
### MEV50A Size 45

Catalog number	Rated voltage DC (IEC)	Rated voltage DC (UL)	Rated current $I_n$	Pre-arcing $I^2t$	Power dissipation at 0.5 $I_n$	Min. breaking capacity (MBC)	Max. time to clear MBC	Package	Weight
MEV50A400-45G	500 V	500 V	400 A	26500 A <sup>2</sup> s	21.4 W	2000 A	0.5 s	4	0.24 kg
MEV50A450-45G	500 V	500 V	450 A	32600 A <sup>2</sup> s	25.7 W	2000 A	0.5 s	4	0.24 kg
MEV50A500-45G	500 V	500 V	500 A	42000 A <sup>2</sup> s	28.8 W	2000 A	1 s	4	0.24 kg
MEV50A550-45G	500 V	500 V	550 A	50000 A <sup>2</sup> s	33 W	2000 A	1.5 s	4	0.24 kg
MEV50A600-45G	500 V	500 V	600 A	59500 A <sup>2</sup> s	36.3 W	2000 A	3.5 s	4	0.24 kg
MEV50A700-45GMT	500 V	500 V	700 A	68500 A <sup>2</sup> s	24.5 W	2500 A	6 s	4	0.27 kg
MEV50A800-45GMT	500 V	500 V	800 A	89000 A <sup>2</sup> s	27.6 W	2500 A	16.5 s	4	0.27 kg

Power loss data is collected using IEC 60 269-1 standard conductor size and may differ from real world application

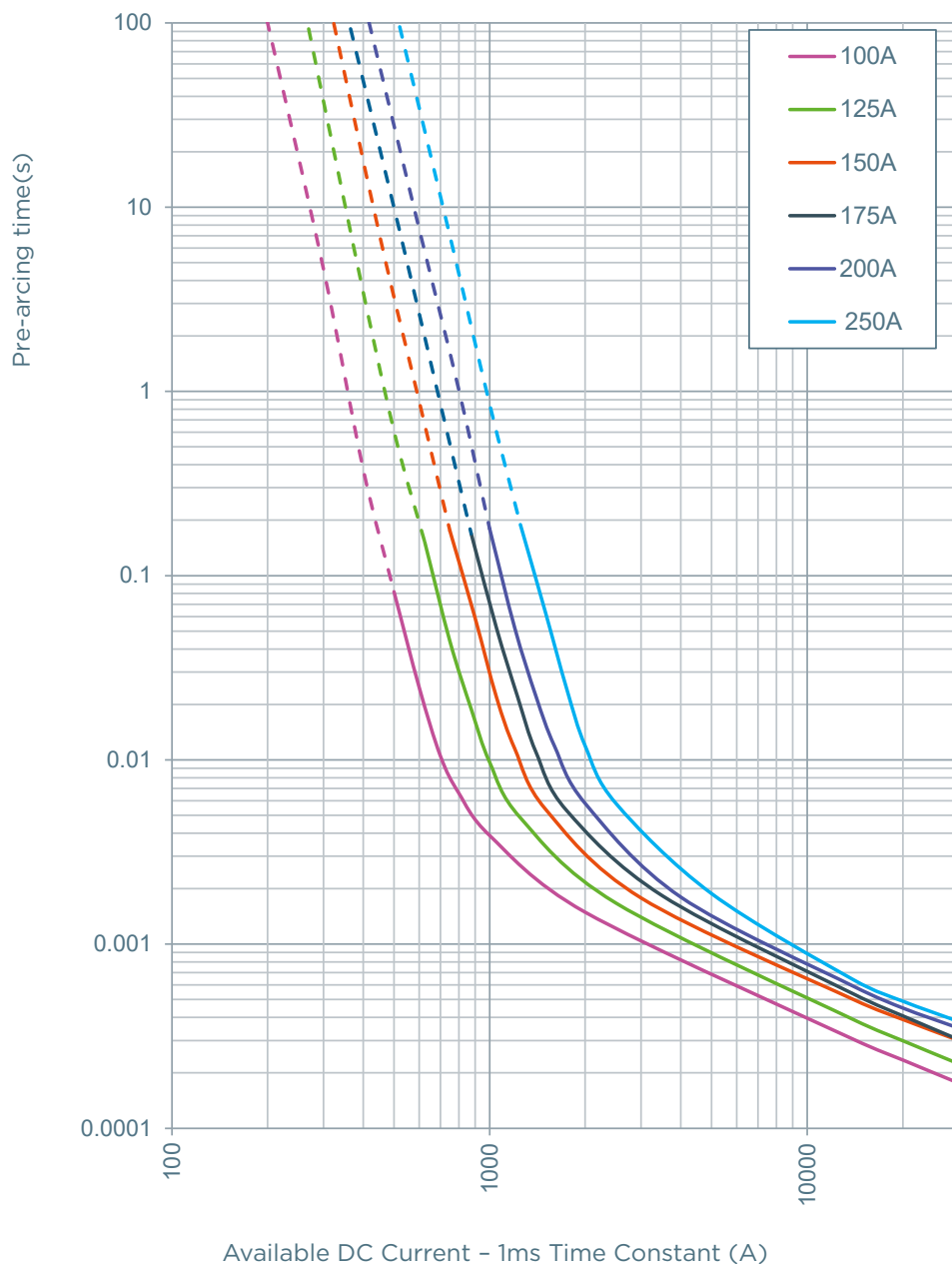
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### MEV50A-20G (60A to 150A)



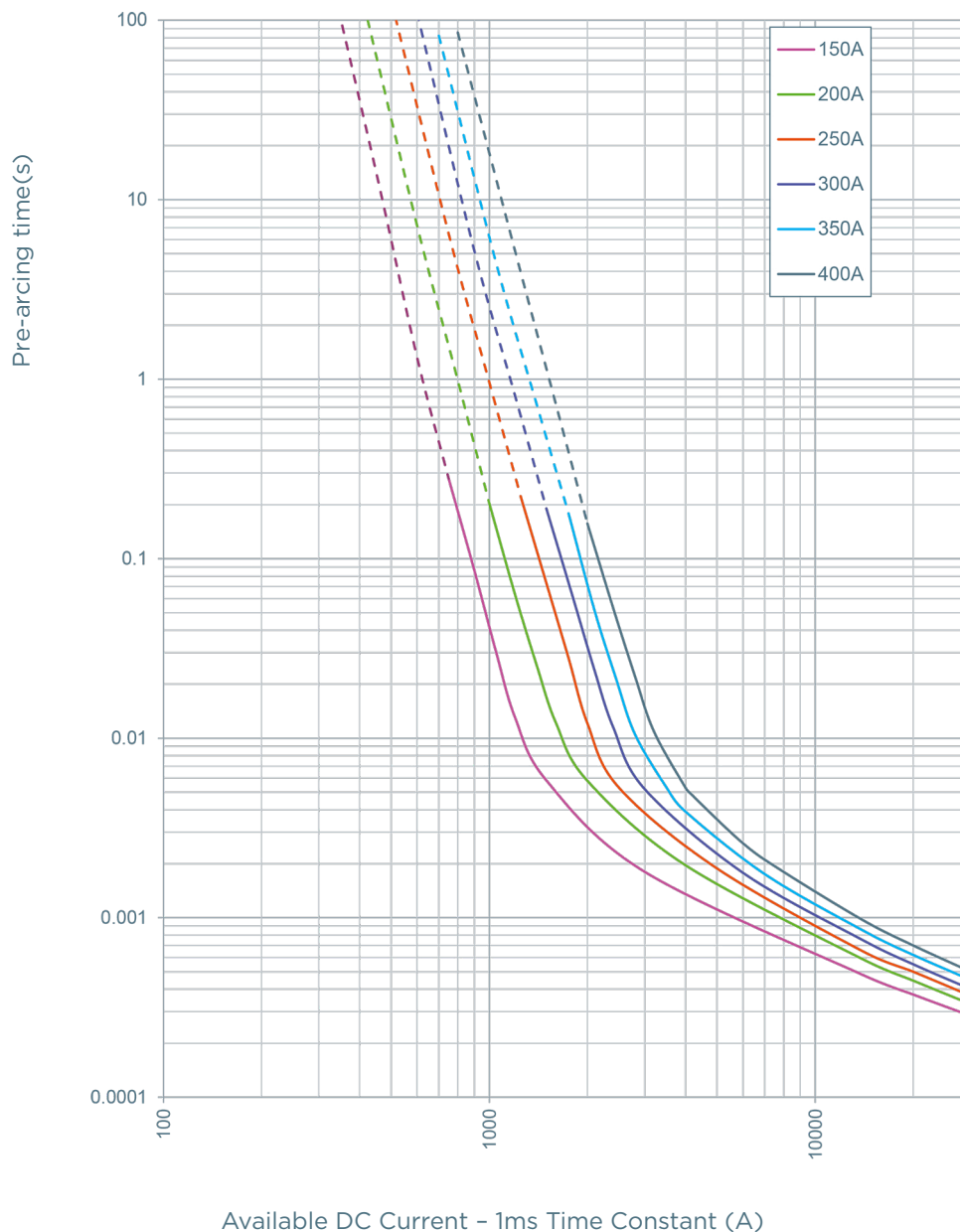
## TIME CURRENT CHARACTERISTIC CURVES

### MEV50A-25G (100A to 250A)



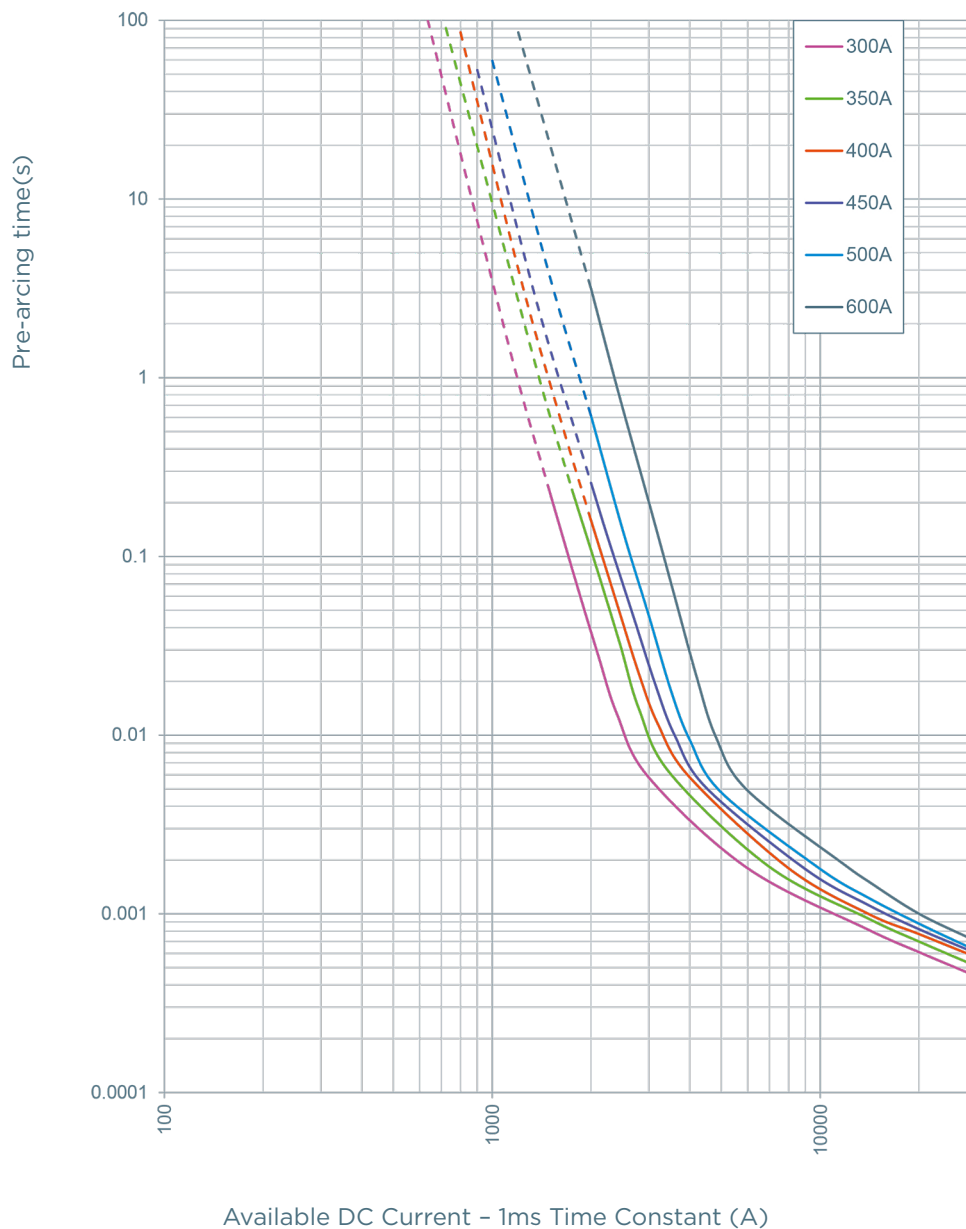
## TIME CURRENT CHARACTERISTIC CURVES

### MEV50A-30G (150A to 400A)



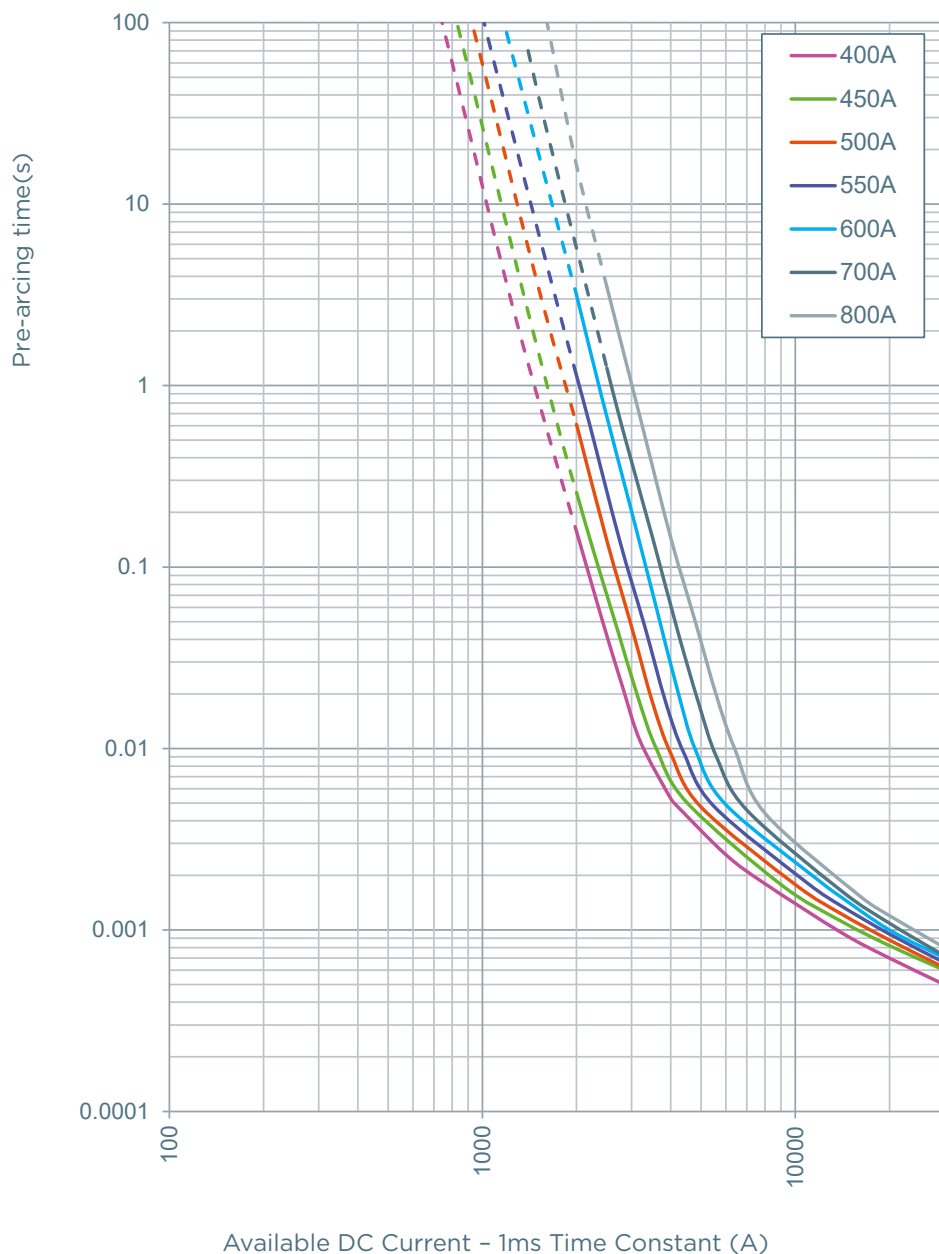
## TIME CURRENT CHARACTERISTIC CURVES

### MEV50A-38G (300A to 600A)



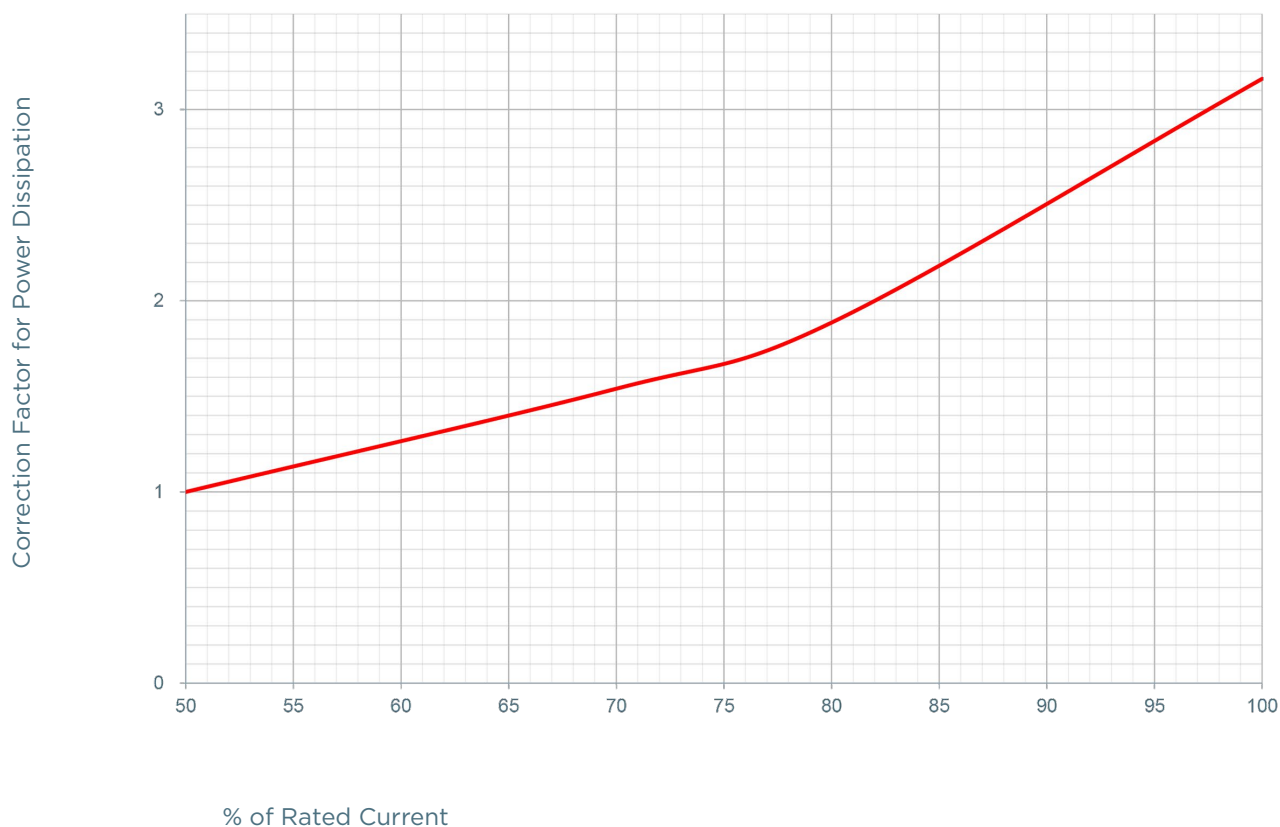
## TIME CURRENT CHARACTERISTIC CURVES

### MEV50A-45G (400A to 800A)



## POWER DISSIPATION

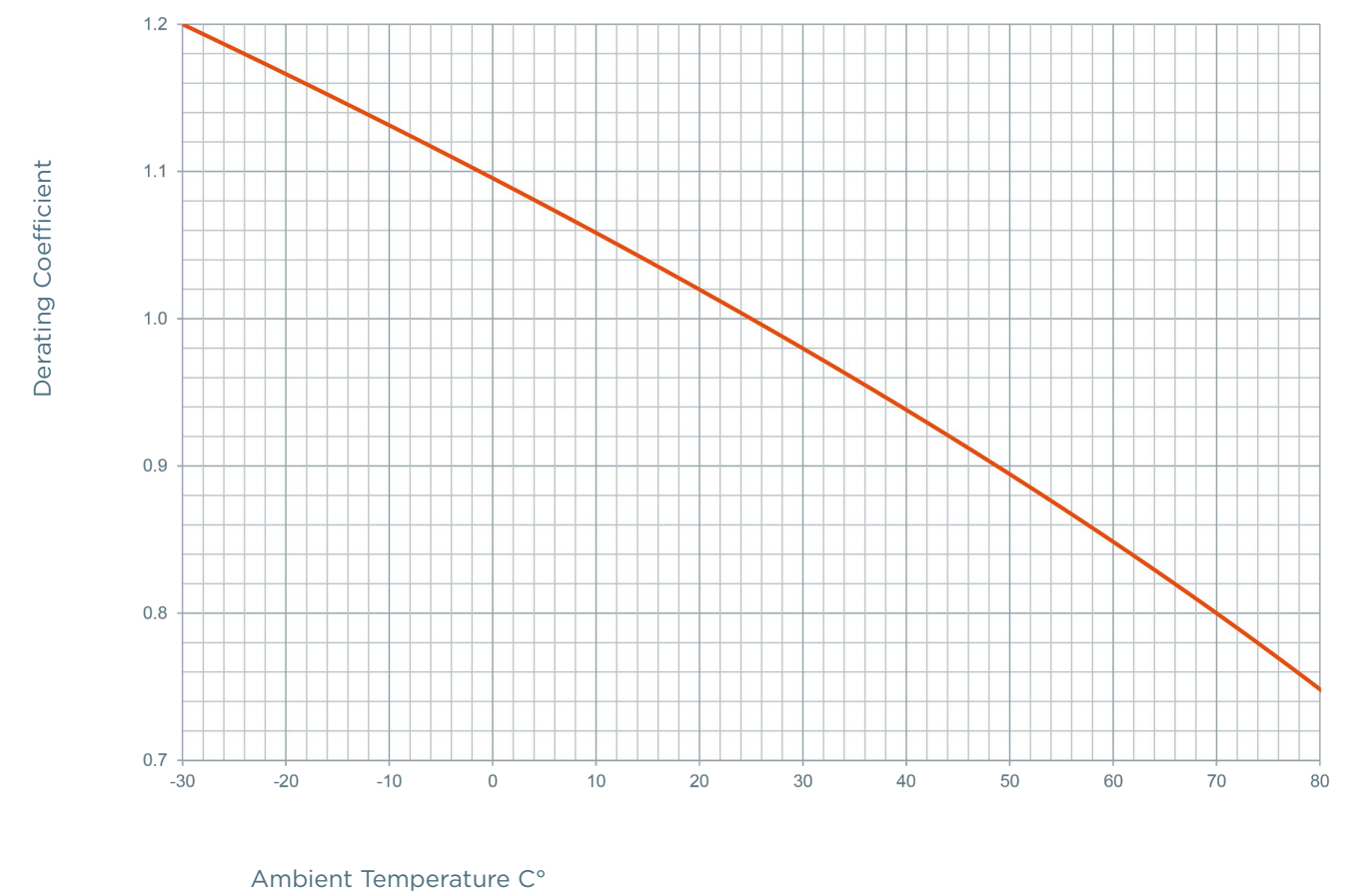
### MEV50A





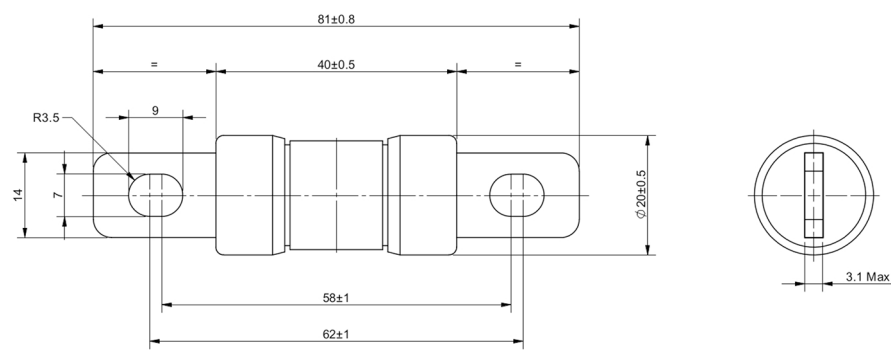
TEMPERATURE DERATING

MEV50A



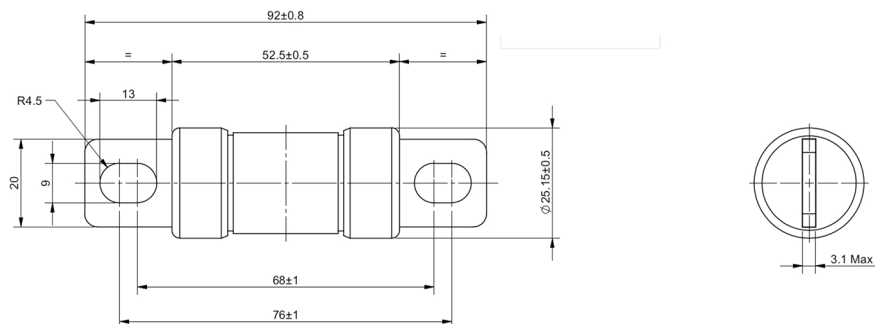
DIMENSIONS

MEV50A-20G

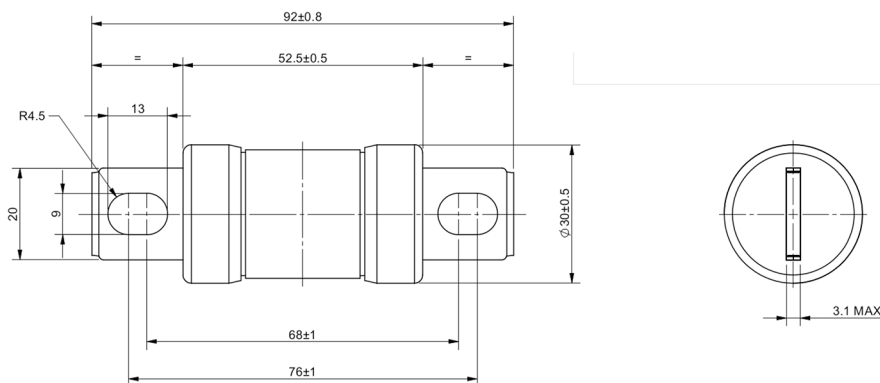


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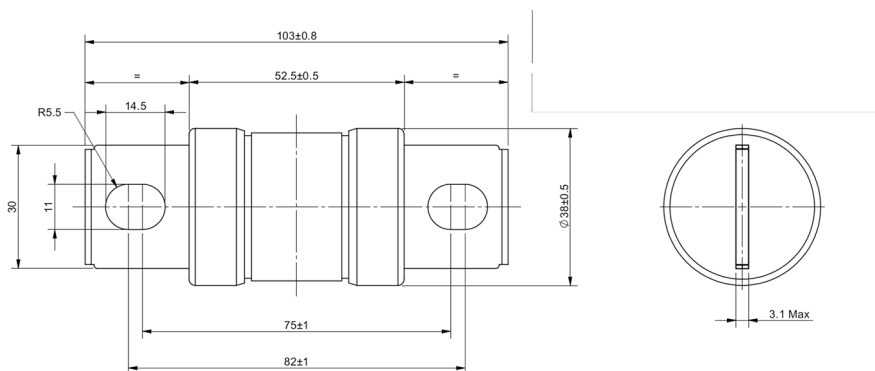
### MEV50A-25G



### MEV50A-30G

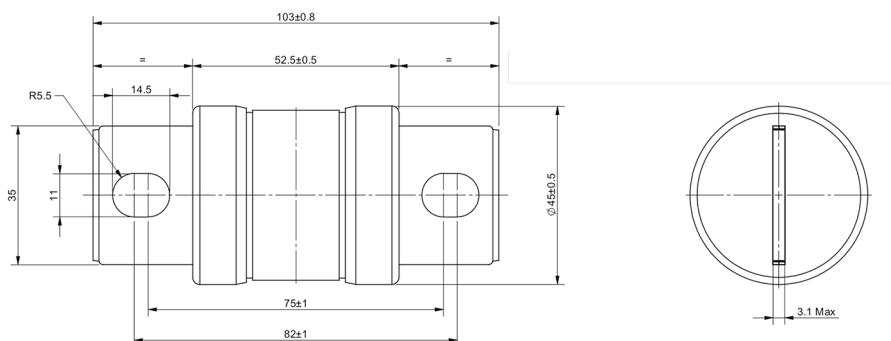


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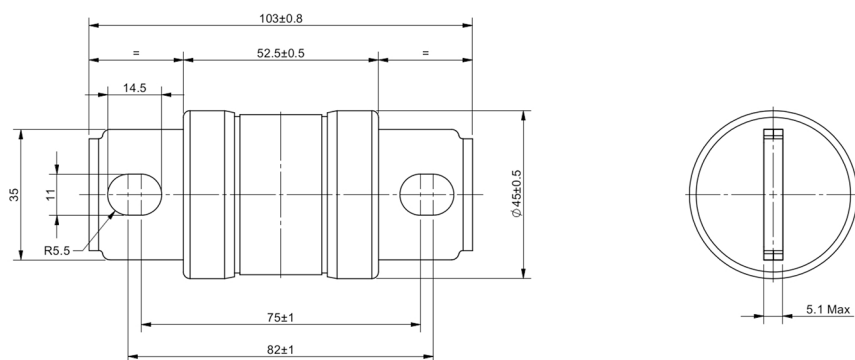


## DIMENSIONS

### MEV50A-45G



### MEV50A-45GMT



## Recommended Mounting Torque and Bolt Size

Fuse size	Mounting Torque	Bolt Size
$\phi 20$ mm	6 N m	M6
$\phi 25$ mm	15 N m	M8
$\phi 30$ mm	15 N m	M8
$\phi 38$ mm	20 N m	M10
$\phi 45$ mm	20 N m	M10