

# EVpack-fuse MEV55C & MEV50A

500VDC max, L/R less than 2.5ms, 5 - 800A

## BATTERY FUSES

### BATTERY PACK FUSES



**EVpack-fuse** line-up belongs to Mersen's DC Over-Current protection (O.C.P.) portfolio specifically developed to address on-board electric and hybrid vehicles applications.

**EVpack-fuse** provides the ultimate protection by offering reliable clearing of DC fault currents in challenging environments and complies with the high-quality requirements of the automotive industry.

The MEV55C has specifically engineered and tested to provide best-in-class protection performance for auxiliary circuits: Up to 550VDC, Current rating ( $I_n$ )= 5 to 50A, Interrupting Rating (IR) = 20kA, L/R  $\leq 1$ ms, Minimum Breaking Capacity (MBC) as low as  $2 \times I_n$  for a perfect matching with cable protection.

The MEV50A has been specifically engineered and tested to provide best-in-class protection performance for main battery and on-board charging protection: Up to 500VDC, Current rating ( $I_n$ )= 60 to 800A, Interrupting Rating (IR) = 30kA, L/R  $\leq 2.5$ ms, Minimum Breaking Capacity (MBC) as low as  $2 \times I_n$  for a perfect matching with DC contactor.

## TECHNICAL DATA OVERVIEW

Voltage	Up to 550VDC
L/R	$\leq 1$ ms MEV55C $\leq 2.5$ ms MEV50A
Ampere Range (A)	5 ... 800 A
Operating temperature	-40°C - 125°C
I.R	Up to 30kA

## 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 ( $I_n$ ): 5 to 800A
- Interrupting Rating (IR) for MEV55C: 20kA @550VDC, L/R  $\leq 1$ ms
- Interrupting Rating (IR) for MEV50A: 30kA @500VDC, L/R  $\leq 2.5$ ms

## APPLICATIONS

- EV/HEV
- Battery pack protection
- Battery Disconnect Unit (BDU)
- Battery Management System (BMS)
- Battery Junction Box for auxiliaries
- On-Board Charging

## STANDARDS

- Complies to Automotive IATF 16949:2016 Quality System
- IEC 60 269-4
- ISO 8820-8



# EVpack-fuse MEV55C & MEV50A

500VDC max, L/R less than 2.5ms, 5 - 800A

## PRODUCT RANGE



MEV55C30

### MEV55C Ferrule Fuse

Catalog number	Rated voltage	Rated current $I_n$	DC Min. breaking capacity (MBC)	DC Max. time to clear MBC	Power dissipation at 0.5 $I_n$	Package	Weight
MEV55C5	600VAC/550VDC	5 A	10 A	10 s	0.25 W	80	7.5 g
MEV55C6	600VAC/550VDC	6 A	12 A	10 s	0.29 W	80	7.5 g
MEV55C7	600VAC/550VDC	7 A	14 A	10 s	0.31 W	80	7.5 g
MEV55C8	600VAC/550VDC	8 A	16 A	10 s	0.4 W	80	7.5 g
MEV55C10	600VAC/550VDC	10 A	20 A	10 s	0.45 W	80	7.5 g
MEV55C12	600VAC/550VDC	12 A	24 A	10 s	0.47 W	80	7.5 g
MEV55C15	600VAC/550VDC	15 A	30 A	100 s	0.49 W	80	7.5 g
MEV55C20	600VAC/550VDC	20 A	40 A	100 s	0.56 W	80	7.5 g
MEV55C25	600VAC/550VDC	25 A	50 A	100 s	0.63 W	80	7.5 g
MEV55C30	600VAC/550VDC	30 A	60 A	100 s	0.68 W	80	7.5 g
MEV55C30/40	600VAC/550VDC	40 A	150 A	10 s	0.63 W	80	7.5 g
MEV55C30/50	600VAC/550VDC	50 A	180 A	10 s	1 W	80	7.5 g



MEV55C30-S

### MEV55C -S Surface Mount Fuse

Catalog number	Rated voltage	Rated current $I_n$	DC Min. breaking capacity (MBC)	DC Max. time to clear MBC	Power dissipation at 0.5 $I_n$	Package	Weight
MEV55C5-S	600VAC/550VDC	5 A	10 A	10 s	0.25 W	80	9.9 g
MEV55C6-S	600VAC/550VDC	6 A	12 A	10 s	0.29 W	80	9.9 g
MEV55C7-S	600VAC/550VDC	7 A	14 A	10 s	0.31 W	80	9.9 g
MEV55C8-S	600VAC/550VDC	8 A	16 A	10 s	0.4 W	80	9.9 g
MEV55C10-S	600VAC/550VDC	10 A	20 A	10 s	0.45 W	80	9.9 g
MEV55C12-S	600VAC/550VDC	12 A	24 A	10 s	0.47 W	80	9.9 g
MEV55C15-S	600VAC/550VDC	15 A	30 A	100 s	0.49 W	80	9.9 g
MEV55C20-S	600VAC/550VDC	20 A	40 A	100 s	0.56 W	80	9.9 g
MEV55C25-S	600VAC/550VDC	25 A	50 A	100 s	0.63 W	80	9.9 g
MEV55C30-S	600VAC/550VDC	30 A	60 A	100 s	0.68 W	80	9.9 g
MEV55C30/40-S	600VAC/550VDC	40 A	150 A	10 s	0.63 W	80	9.9 g
MEV55C30/50-S	600VAC/550VDC	50 A	180 A	10 s	1 W	80	9.9 g



MEV55C30-P

### MEV55C -P PC Board Mount

Catalog number	Rated voltage	Rated current $I_n$	DC Min. breaking capacity (MBC)	DC Max. time to clear MBC	Power dissipation at 0.5 $I_n$	Package	Weight
MEV55C5-P	600VAC/550VDC	5 A	10 A	10 ms	0.25 W	100	9.9 g
MEV55C6-P	600VAC/550VDC	6 A	12 A	10 s	0.29 W	100	9.9 g
MEV55C7-P	600VAC/550VDC	7 A	14 A	10 s	0.31 W	100	9.9 g
MEV55C8-P	600VAC/550VDC	8 A	16 A	10 s	0.4 W	100	9.9 g
MEV55C10-P	600VAC/550VDC	10 A	20 A	10 s	0.45 W	100	9.9 g
MEV55C12-P	600VAC/550VDC	12 A	24 A	10 s	0.5 W	100	9.9 g
MEV55C15-P	600VAC/550VDC	15 A	30 A	100 s	0.45 W	100	9.9 g
MEV55C20-P	600VAC/550VDC	20 A	40 A	100 s	0.54 W	100	9.9 g
MEV55C25-P	600VAC/550VDC	25 A	50 A	100 s	0.59 W	100	9.9 g
MEV55C30-P	600VAC/550VDC	30 A	60 A	100 s	0.65 W	100	9.9 g
MEV55C30/40-P	600VAC/550VDC	40 A	150 A	10 s	0.63 W	100	9.9 g
MEV55C30/50-P	600VAC/550VDC	50 A	180 A	10 s	1.1 W	100	9.9 g

# EVpack-fuse MEV55C & MEV50A

500VDC max, L/R less than 2.5ms, 5 - 800A

## PRODUCT RANGE



MEV50A600-38G

### MEV50A Size 38

Catalog number	Rated voltage DC	Rated current I <sub>n</sub>	Pre-arcing I <sup>2</sup> t	Clearing I <sup>2</sup> t at Rated Voltage	Power dissipation at 0.5 I <sub>n</sub>	Min. breaking capacity (MBC)	Max. time to clear MBC	Package	Weight
MEV50A300-38G	500 V	300 A	18440 A <sup>2</sup> s	143000 A <sup>2</sup> s	7.3 W	1500 A	0.5 s	8	0.17 kg
MEV50A350-38G	500 V	350 A	25900 A <sup>2</sup> s	190000 A <sup>2</sup> s	8.7 W	1750 A	0.5 s	8	0.17 kg
MEV50A400-38G	500 V	400 A	32780 A <sup>2</sup> s	255000 A <sup>2</sup> s	10.6 W	2000 A	0.5 s	8	0.17 kg
MEV50A450-38G	500 V	450 A	40470 A <sup>2</sup> s	310000 A <sup>2</sup> s	12.7 W	2000 A	0.5 s	8	0.17 kg
MEV50A500-38G	500 V	500 A	51210 A <sup>2</sup> s	400000 A <sup>2</sup> s	14.1 W	2000 A	1 s	8	0.17 kg
MEV50A600-38G	500 V	600 A	73750 A <sup>2</sup> s	565000 A <sup>2</sup> s	17.6 W	2000 A	3.3 s	8	0.17 kg



MEV50A150-20G

### MEV50A Size 20

Catalog number	Rated voltage DC	Rated current I <sub>n</sub>	Pre-arcing I <sup>2</sup> t	Clearing I <sup>2</sup> t at Rated Voltage	Power dissipation at 0.5 I <sub>n</sub>	Min. breaking capacity (MBC)	Max. time to clear MBC	Package	Weight
MEV50A60-20G	500 V	60 A	230 A <sup>2</sup> s	2000 A <sup>2</sup> s	1.7 W	120 A	6 s	30	41 g
MEV50A70-20G	500 V	70 A	390 A <sup>2</sup> s	3400 A <sup>2</sup> s	2.2 W	140 A	20 s	30	41 g
MEV50A80-20G	500 V	80 A	510 A <sup>2</sup> s	4400 A <sup>2</sup> s	2.4 W	160 A	26 s	30	41 g
MEV50A100-20G	500 V	100 A	910 A <sup>2</sup> s	7800 A <sup>2</sup> s	3.6 W	200 A	33 s	30	41 g
MEV50A125-20G	500 V	125 A	1420 A <sup>2</sup> s	12500 A <sup>2</sup> s	3.9 W	250 A	36 s	30	41 g
MEV50A150-20G	500 V	150 A	2050 A <sup>2</sup> s	17500 A <sup>2</sup> s	4.8 W	300 A	39 s	30	41 g



MEV50A150-25G

### MEV50A Size 25

Catalog number	Rated voltage DC	Rated current I <sub>n</sub>	Pre-arcing I <sup>2</sup> t	Clearing I <sup>2</sup> t at Rated Voltage	Power dissipation at 0.5 I <sub>n</sub>	Min. breaking capacity (MBC)	Max. time to clear MBC	Package	Weight
MEV50A100-25G	500 V	100 A	1420 A <sup>2</sup> s	12500 A <sup>2</sup> s	2.4 W	500 A	0.5 s	12	75 g
MEV50A125-25G	500 V	125 A	2790 A <sup>2</sup> s	24000 A <sup>2</sup> s	2.9 W	625 A	0.5 s	12	75 g
MEV50A150-25G	500 V	150 A	4610 A <sup>2</sup> s	51000 A <sup>2</sup> s	3.1 W	750 A	0.5 s	12	75 g
MEV50A175-25G	500 V	175 A	6470 A <sup>2</sup> s	60500 A <sup>2</sup> s	3.7 W	875 A	0.5 s	12	75 g
MEV50A200-25G	500 V	200 A	8190 A <sup>2</sup> s	70000 A <sup>2</sup> s	4.3 W	1000 A	0.5 s	12	75 g
MEV50A250-25G	500 V	250 A	12800 A <sup>2</sup> s	110000 A <sup>2</sup> s	6.3 W	1250 A	0.5 s	12	75 g



MEV50A400-30G

### MEV50A Size 30

Catalog number	Rated voltage DC	Rated current I <sub>n</sub>	Pre-arcing I <sup>2</sup> t	Clearing I <sup>2</sup> t at Rated Voltage	Power dissipation at 0.5 I <sub>n</sub>	Min. breaking capacity (MBC)	Max. time to clear MBC	Package	Weight
MEV50A150-30G	500 V	150 A	4610 A <sup>2</sup> s	36500 A <sup>2</sup> s	3.5 W	750 A	0.5 s	12	0.1 kg
MEV50A200-30G	500 V	200 A	8190 A <sup>2</sup> s	65000 A <sup>2</sup> s	4.7 W	1000 A	0.5 s	12	0.1 kg
MEV50A250-30G	500 V	250 A	12800 A <sup>2</sup> s	105000 A <sup>2</sup> s	6.2 W	1250 A	0.5 s	12	0.1 kg
MEV50A300-30G	500 V	300 A	18440 A <sup>2</sup> s	146000 A <sup>2</sup> s	7.5 W	1500 A	0.5 s	12	0.1 kg
MEV50A350-30G	500 V	350 A	25900 A <sup>2</sup> s	205000 A <sup>2</sup> s	8.8 W	1750 A	0.5 s	12	0.1 kg
MEV50A400-30G	500 V	400 A	32780 A <sup>2</sup> s	260000 A <sup>2</sup> s	10.9 W	2000 A	0.5 s	12	0.1 kg



MEV50A600-45G

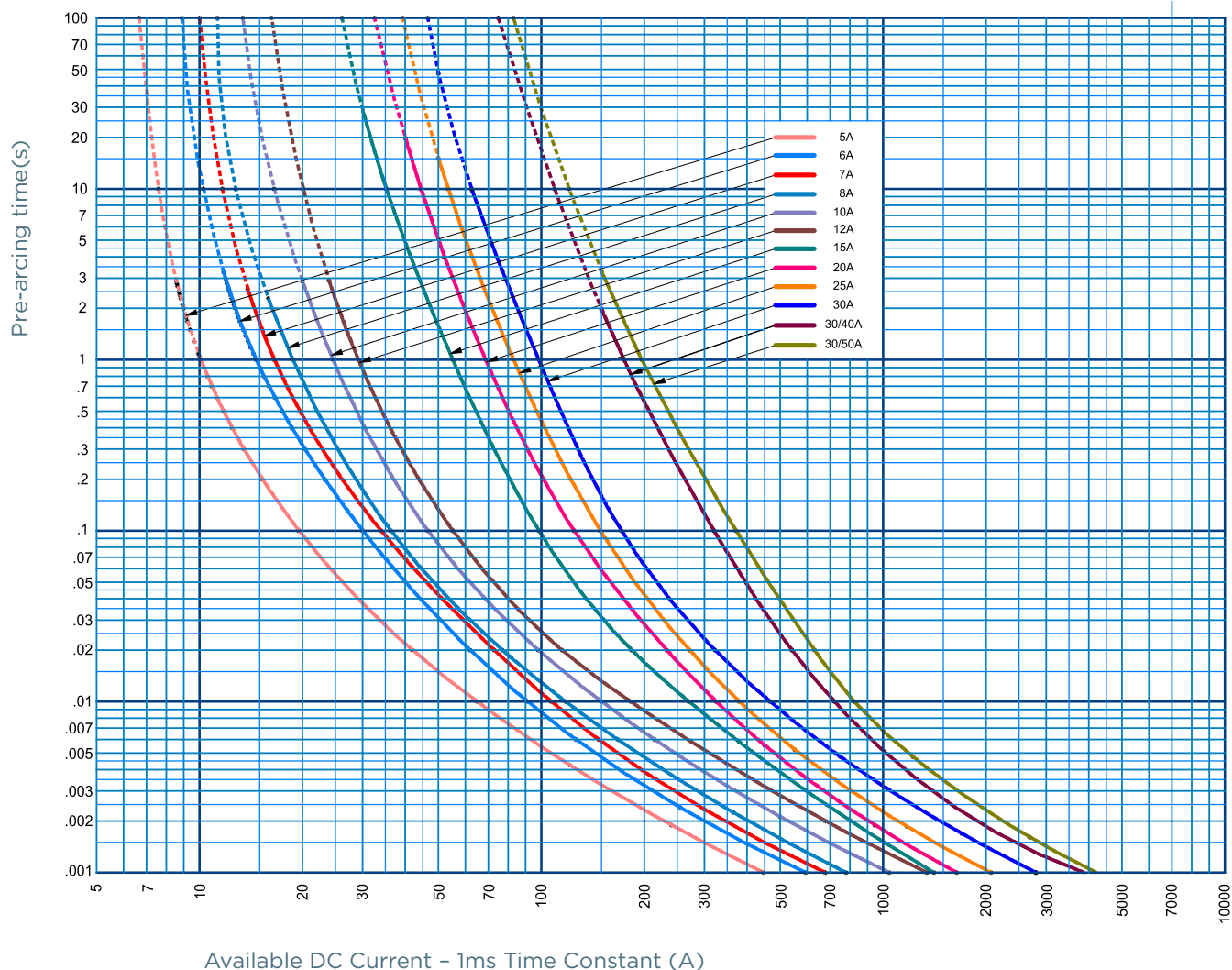
### MEV50A Size 45

Catalog number	Rated voltage DC	Rated current I <sub>n</sub>	Pre-arcing I <sup>2</sup> t	Clearing I <sup>2</sup> t at Rated Voltage	Power dissipation at 0.5 I <sub>n</sub>	Min. breaking capacity (MBC)	Max. time to clear MBC	Package	Weight
MEV50A400-45G	500 V	400 A	32780 A <sup>2</sup> s	255000 A <sup>2</sup> s	10.7 W	2000 A	0.5 s	4	0.24 kg
MEV50A450-45G	500 V	450 A	40470 A <sup>2</sup> s	310000 A <sup>2</sup> s	12.9 W	2000 A	0.5 s	4	0.24 kg
MEV50A500-45G	500 V	500 A	51210 A <sup>2</sup> s	400000 A <sup>2</sup> s	14.4 W	2000 A	1 s	4	0.24 kg
MEV50A550-45G	500 V	550 A	61970 A <sup>2</sup> s	475000 A <sup>2</sup> s	16.6 W	2000 A	1.5 s	4	0.24 kg
MEV50A600-45G	500 V	600 A	73750 A <sup>2</sup> s	565000 A <sup>2</sup> s	18.2 W	2000 A	3.5 s	4	0.24 kg
MEV50A700-45GMT	500 V	700 A	68050 A <sup>2</sup> s	651000 A <sup>2</sup> s	19.9 W	2500 A	6 s	4	0.27 kg
MEV50A800-45GMT	500 V	800 A	88890 A <sup>2</sup> s	850000 A <sup>2</sup> s	21.6 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

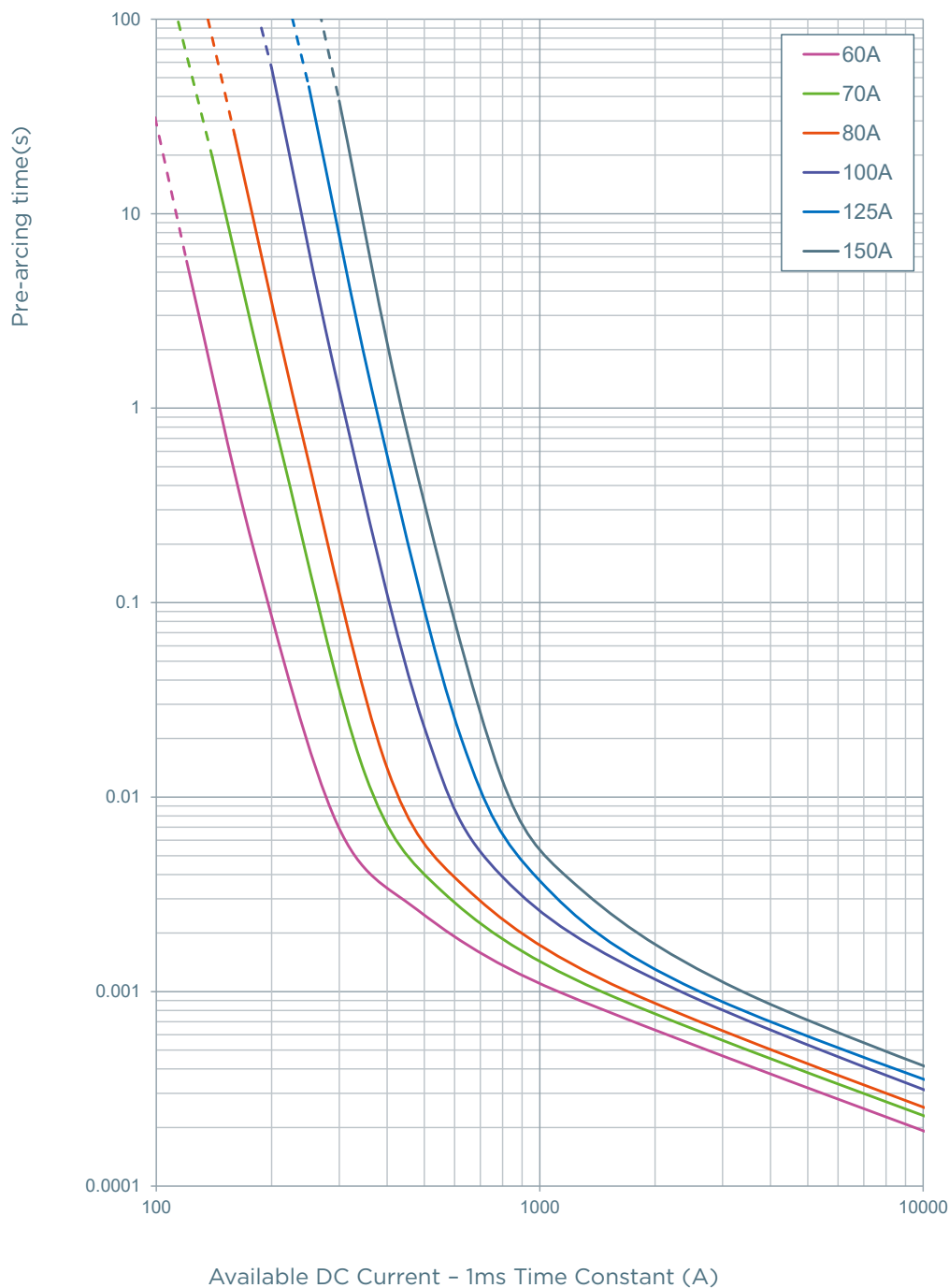
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### MEV55C, -S, -P



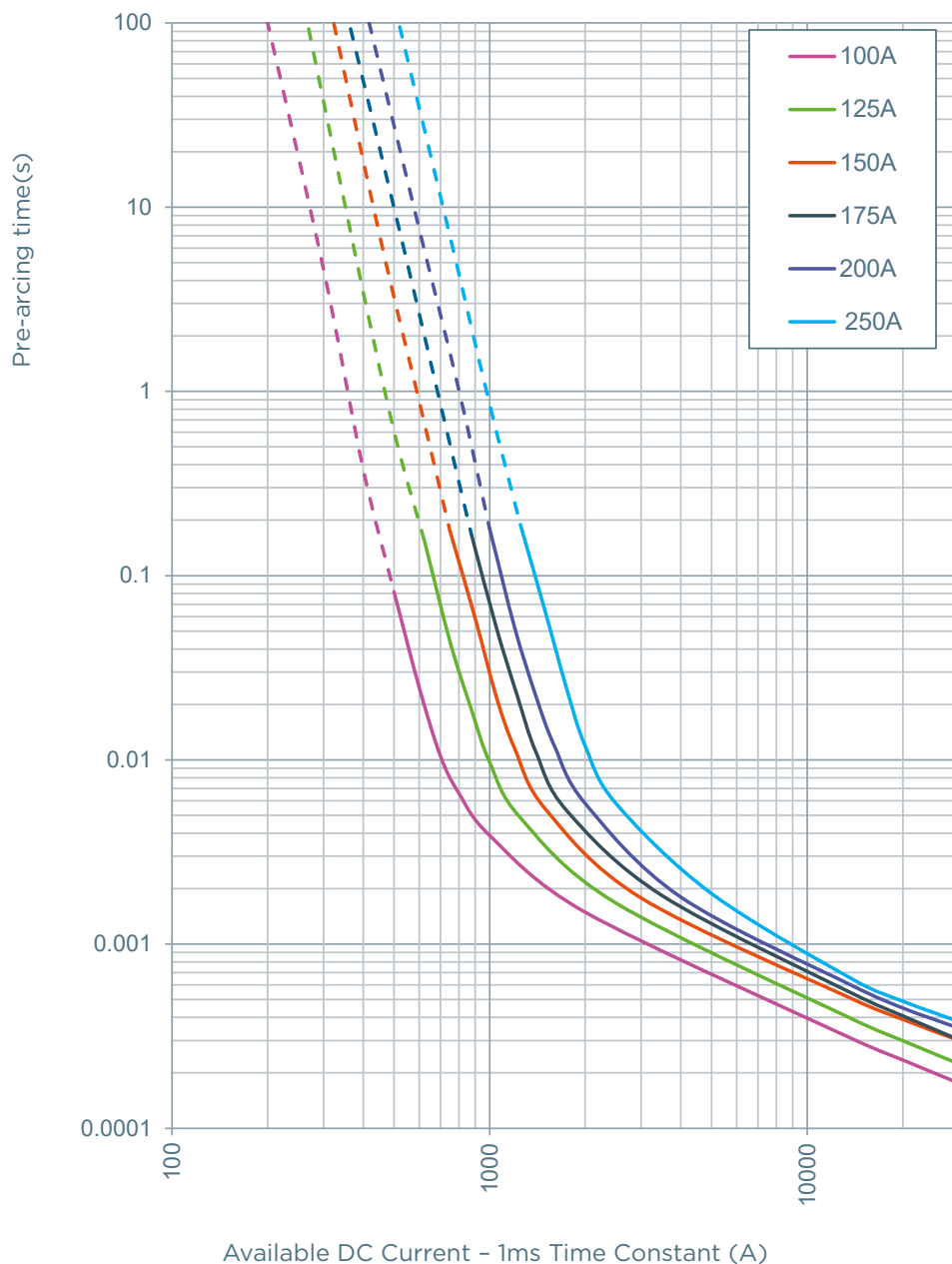
## TIME CURRENT CHARACTERISTIC CURVES

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



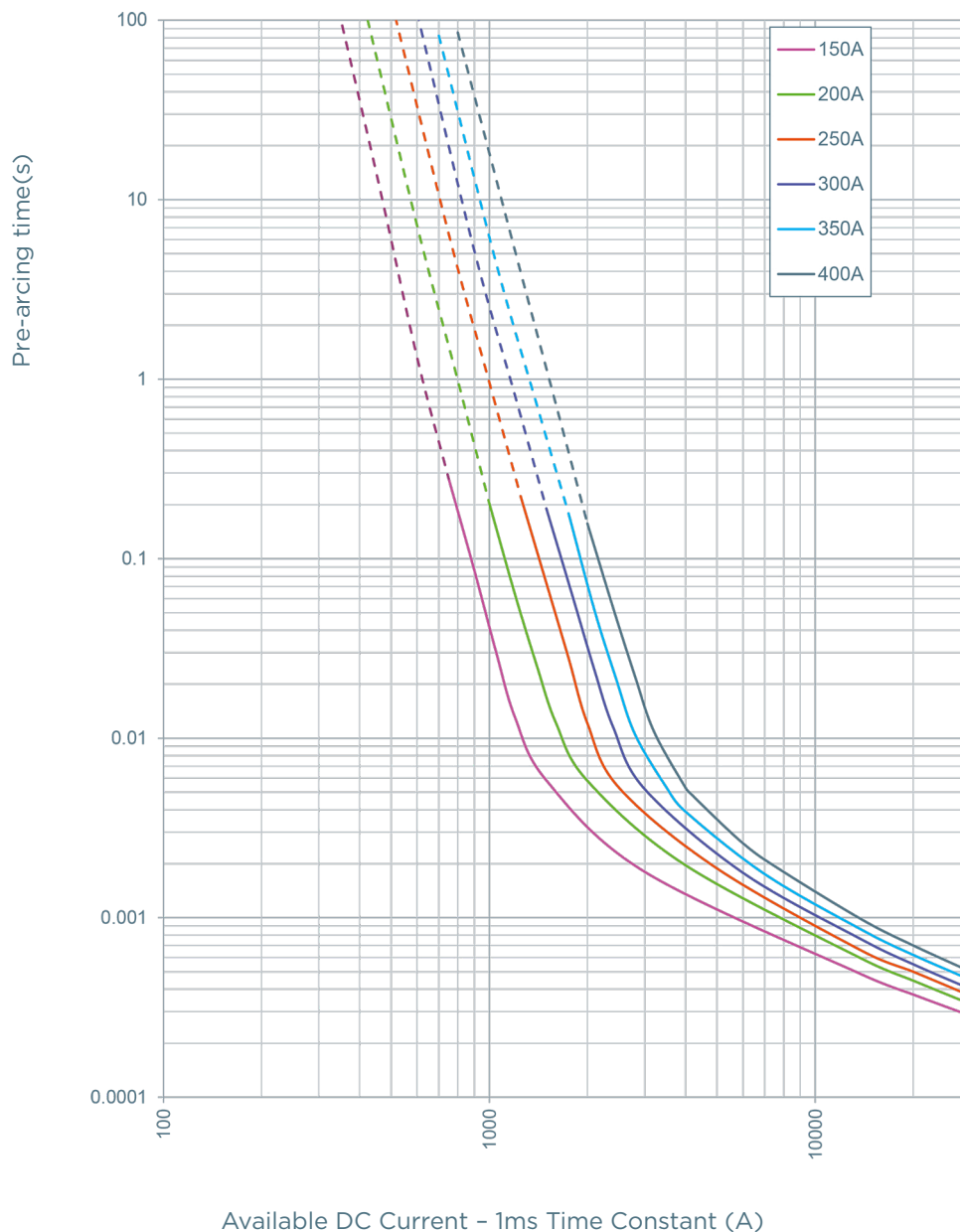
## TIME CURRENT CHARACTERISTIC CURVES

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



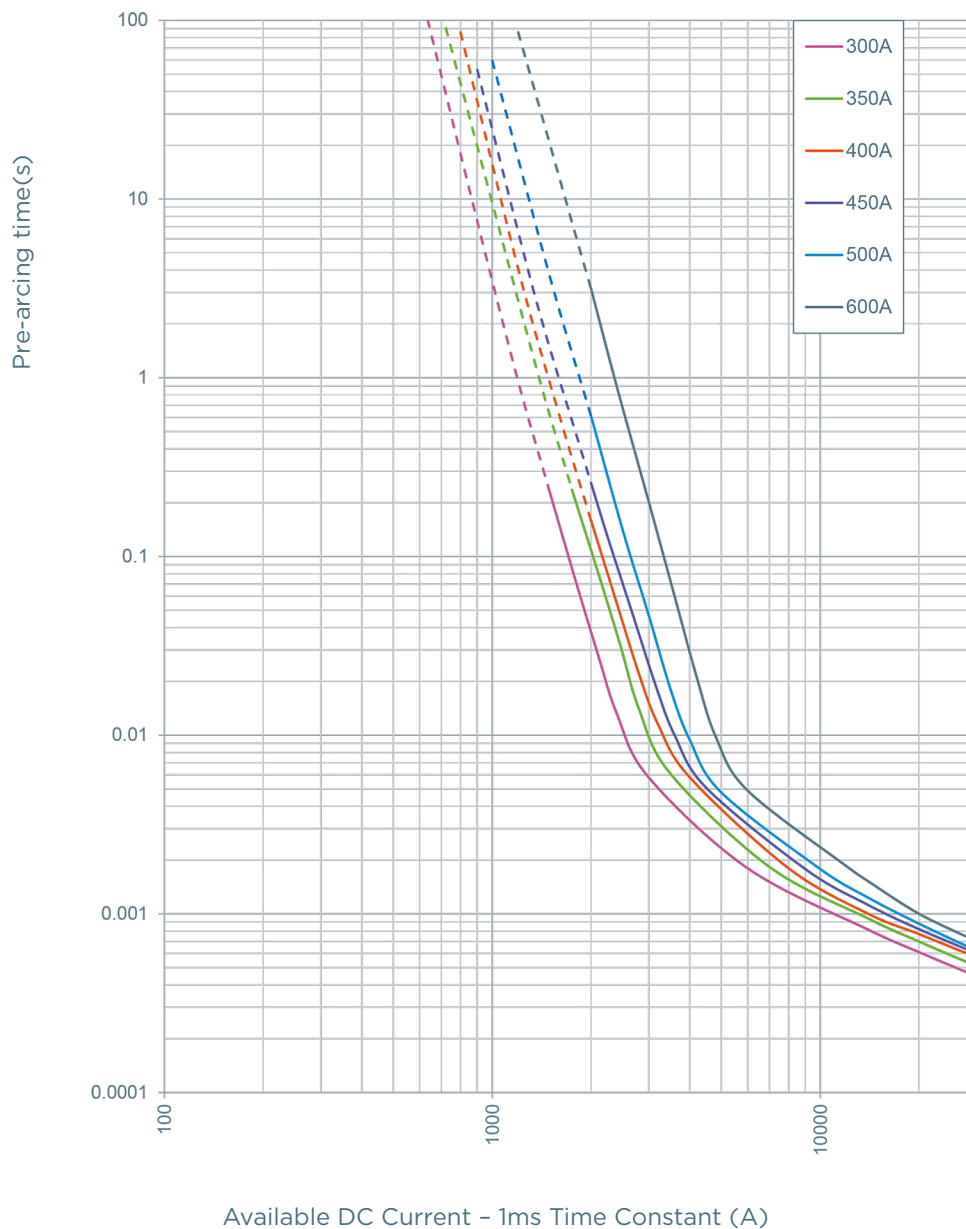
## TIME CURRENT CHARACTERISTIC CURVES

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



## TIME CURRENT CHARACTERISTIC CURVES

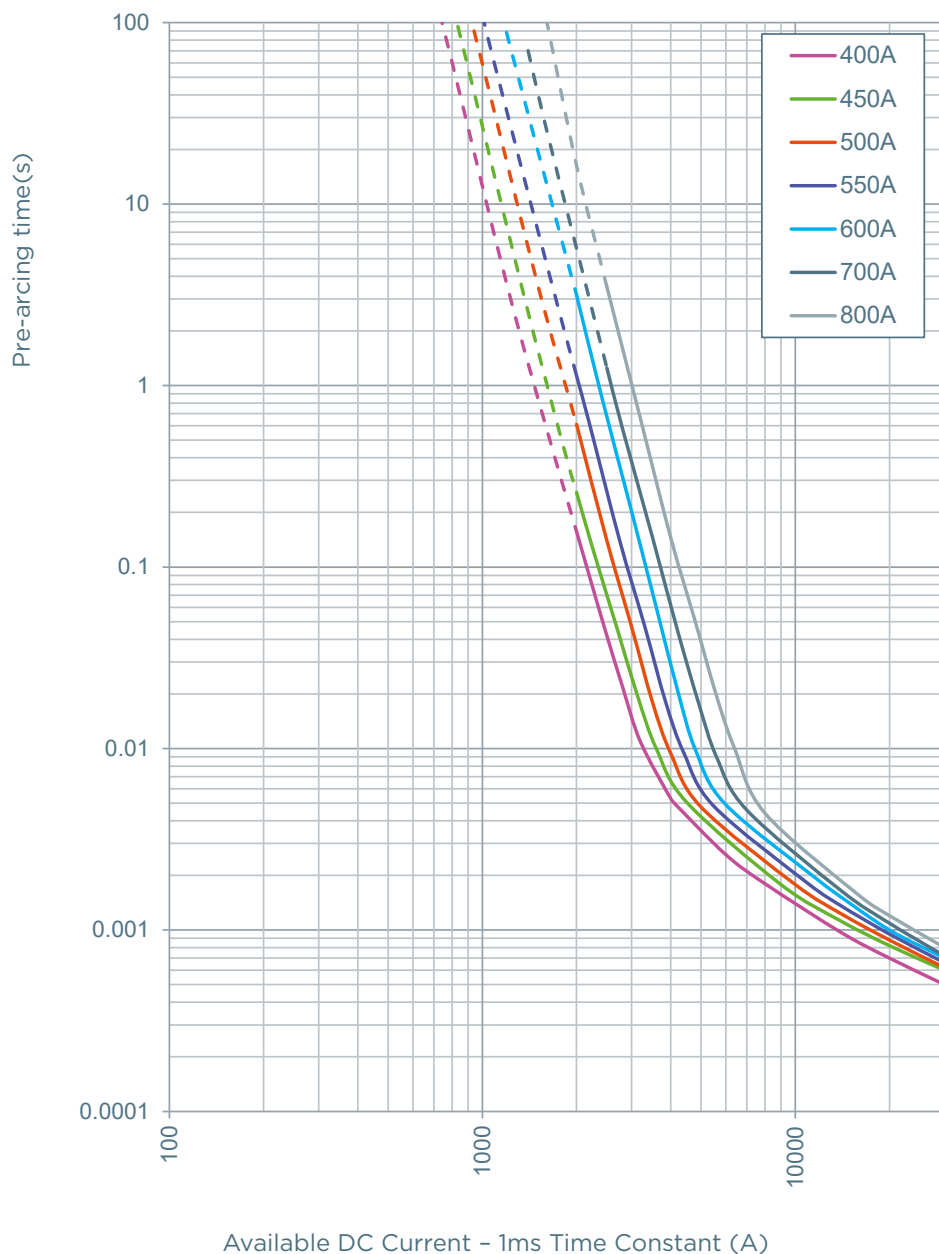
### MEV50A-38G (300A to 600A)





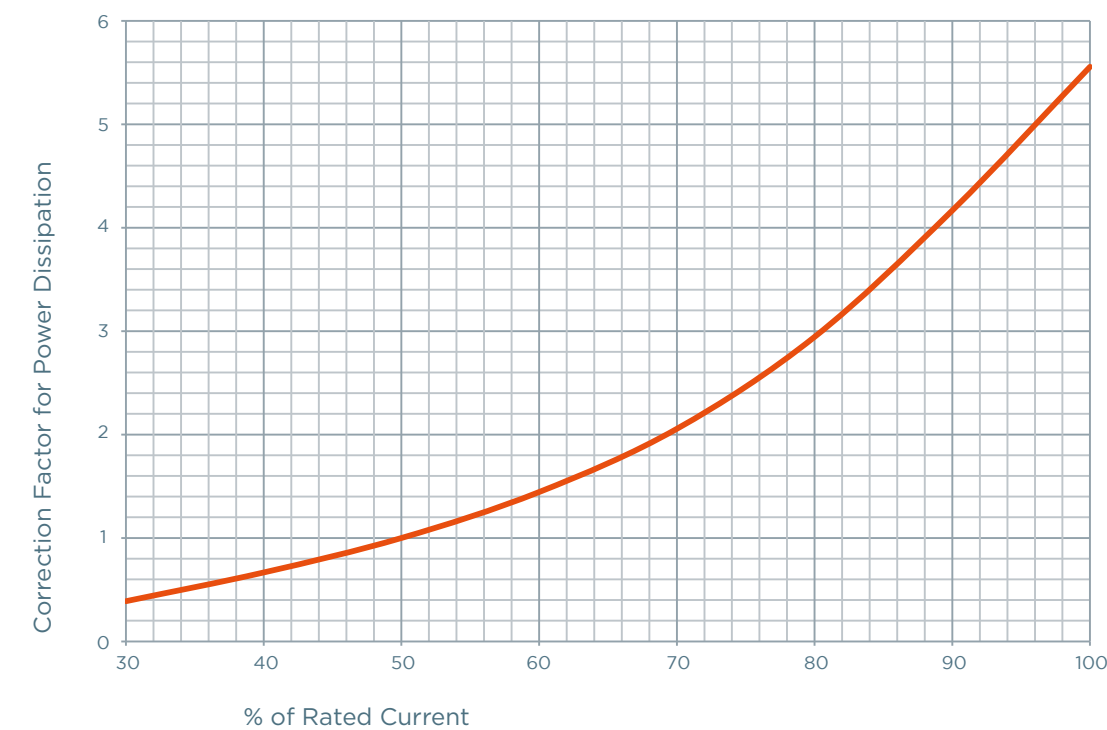
## TIME CURRENT CHARACTERISTIC CURVES

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

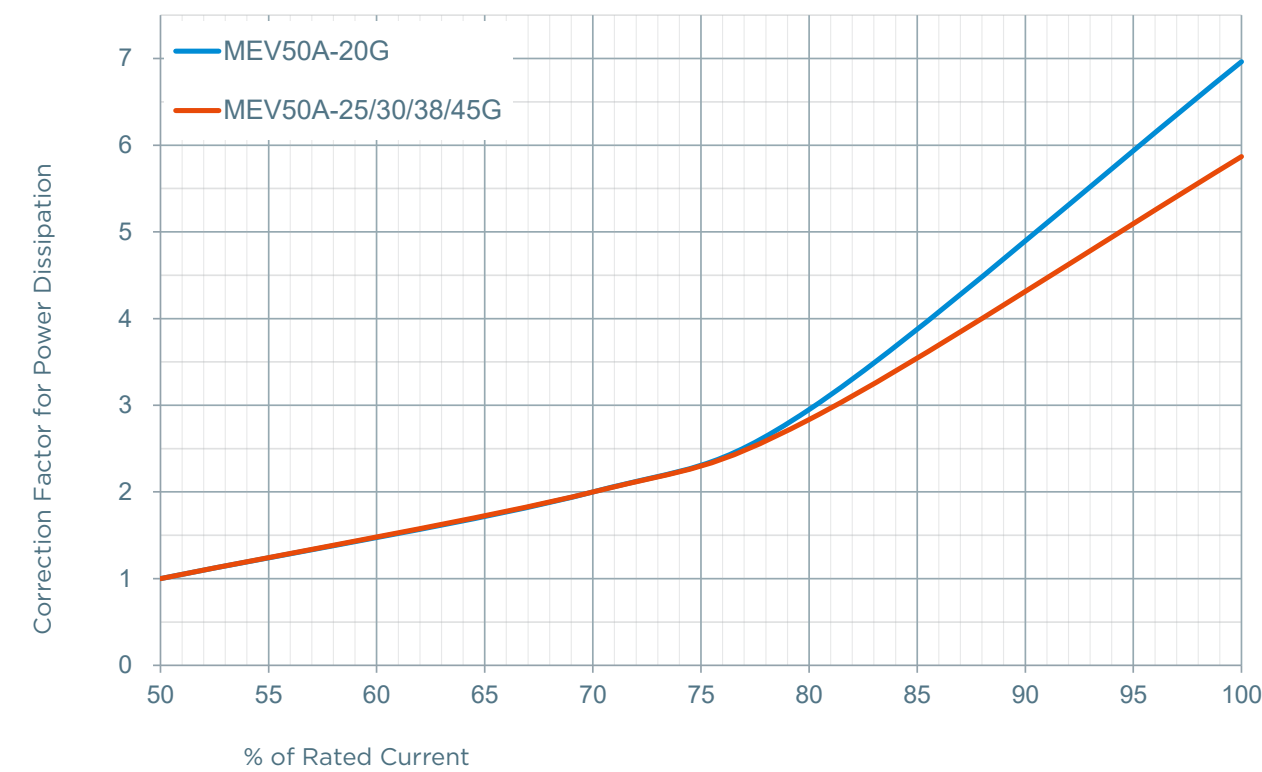


POWER DISSIPATION

MEV55C, -S, -P

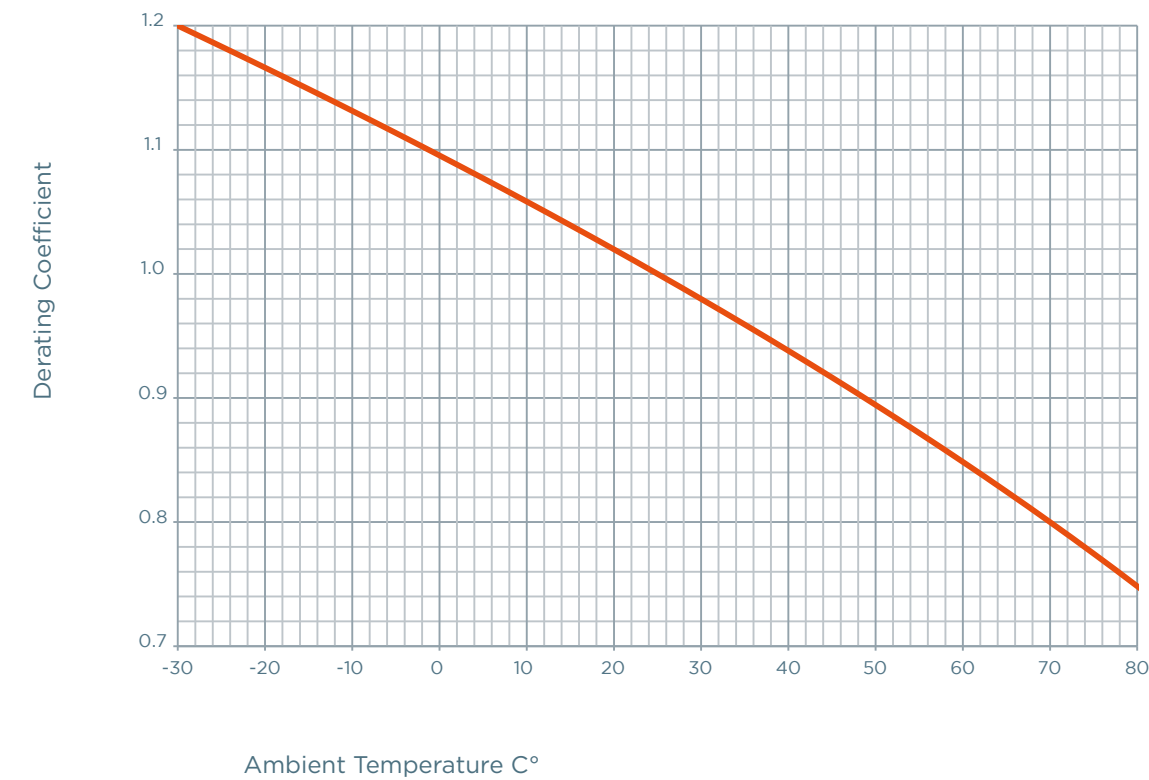


MEV50A



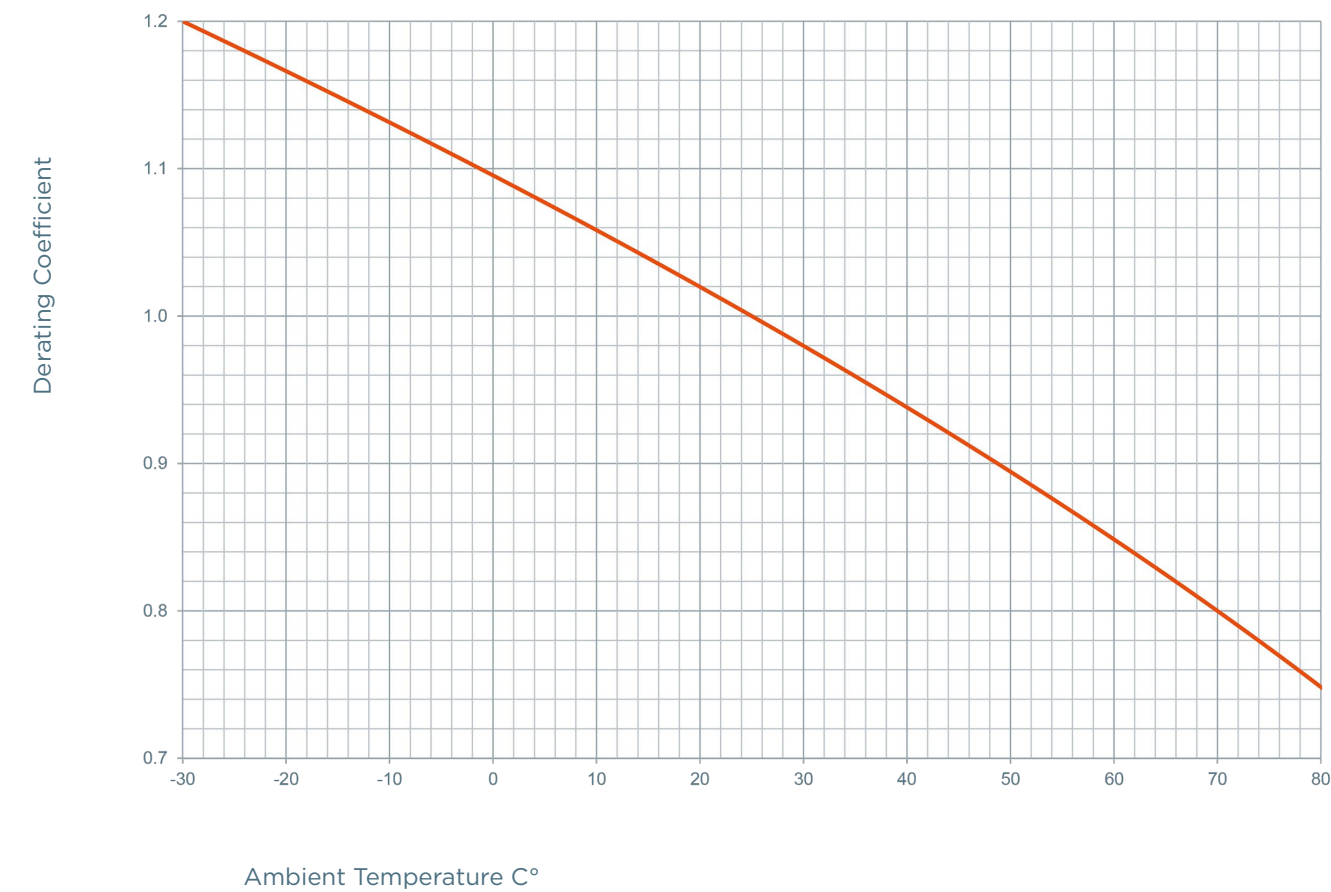
TEMPERATURE DERATING

MEV55C, -S, -P



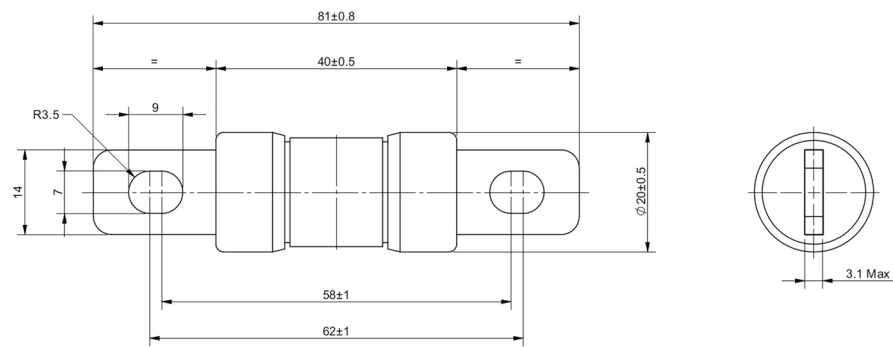
TEMPERATURE DERATING

MEV50A



DIMENSIONS

MEV50A-20G



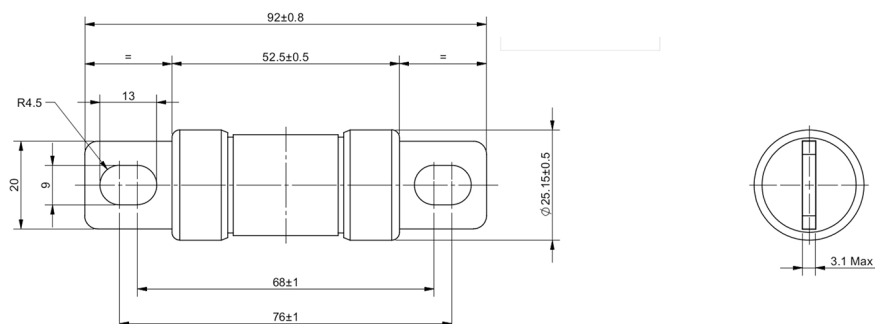
Dimensions in mm

# EVpack-fuse MEV55C & MEV50A

500VDC max, L/R less than 2.5ms, 5 - 800A

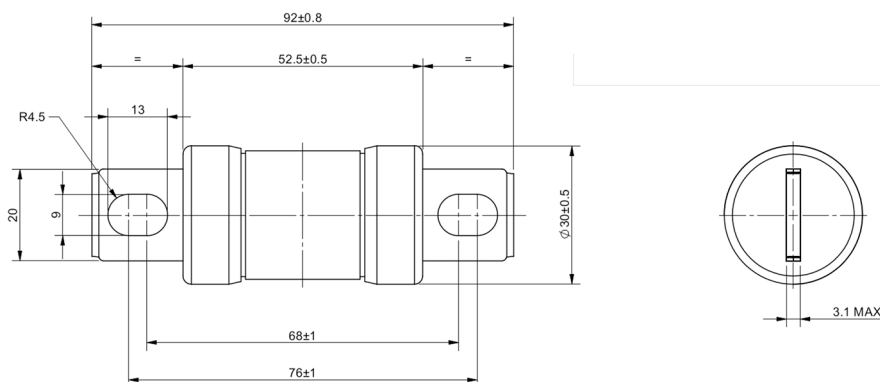
## DIMENSIONS

### MEV50A-25G



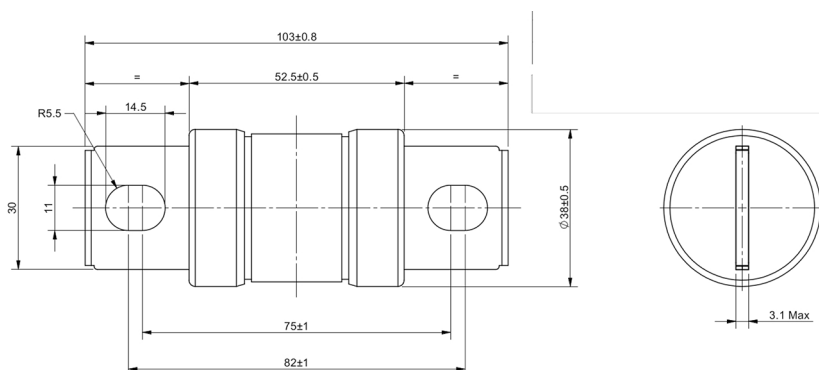
Dimensions in mm

### MEV50A-30G



Dimensions in mm

### MEV50A-38G



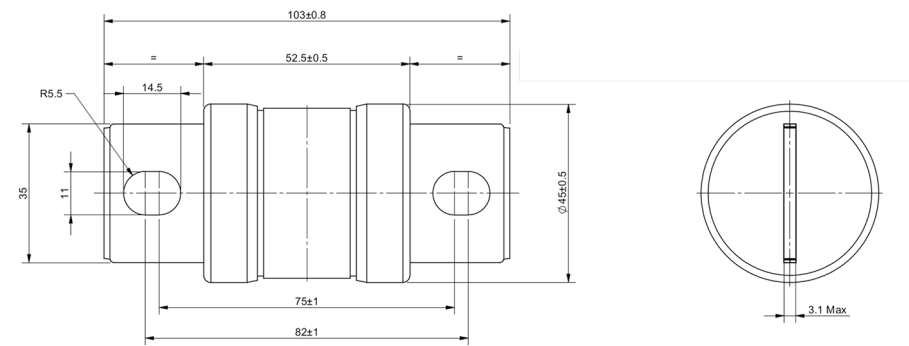
Dimensions in mm

# EVpack-fuse MEV55C & MEV50A

500VDC max, L/R less than 2.5ms, 5 - 800A

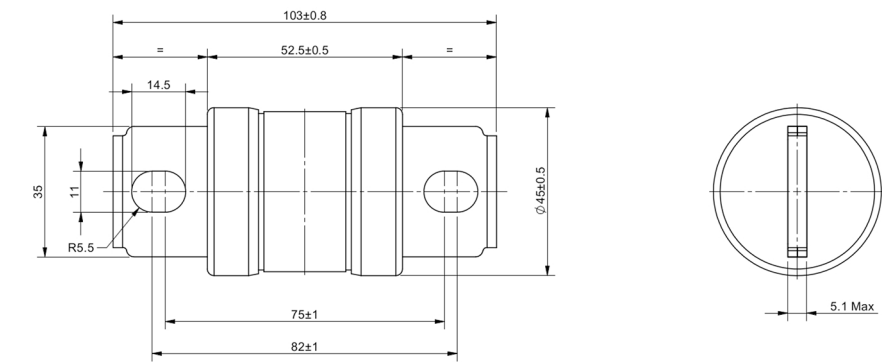
## DIMENSIONS

### MEV50A-45G



Dimensions in mm

### MEV50A-45GMT



Dimensions in mm

### MEV55C Ferrule Fuse (5-50A)



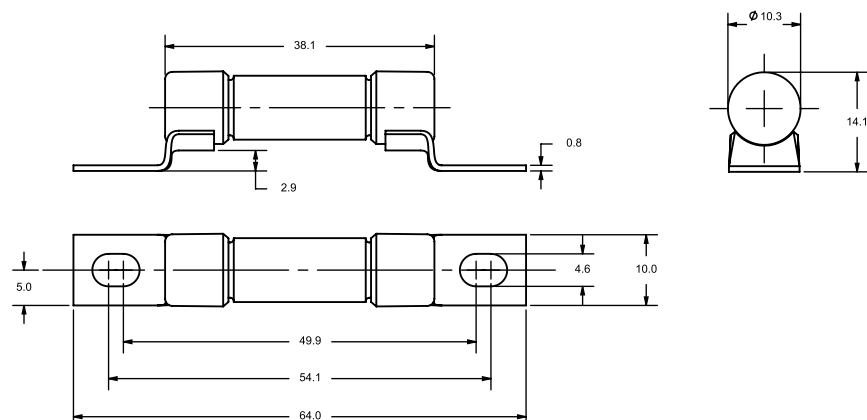
Dimensions in mm

# EVpack-fuse MEV55C & MEV50A

500VDC max, L/R less than 2.5ms, 5 - 800A

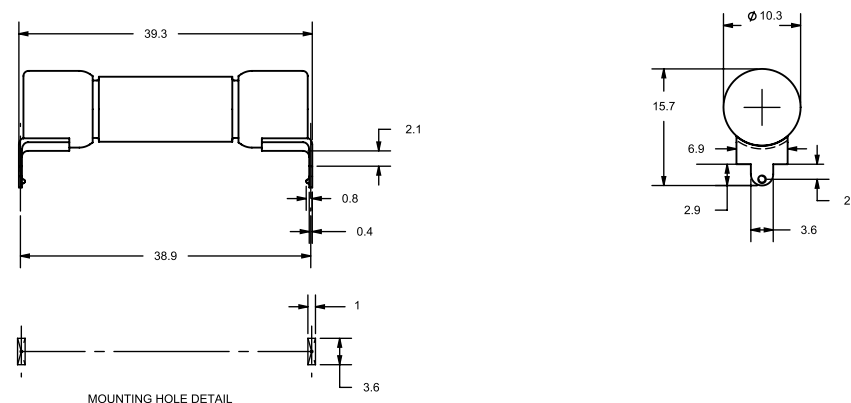
## DIMENSIONS

### MEV55C -S Surface Mount Fuse (5-50A)



Dimensions in mm

### MEV55C -P PC Board Mount (5-50A)



Dimensions in mm

### Recommended Mounting Torque and Bolt Size MEV50A

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

DIMENSIONS

Recommended Mounting Torque and Bolt Size MEV55C

				Tightening Torque	
Fuse Type	Mounting Style	Fuse Rating	Thread Size	N-m	in-lbs
MEV55C	Surface mount (-S)	5 - 50A	8-32 or M4 Bolt	4,7	42