

MDC06A

600V DC/AC 10x38mm Auxiliary Fuse

SPECIAL PURPOSE

FOR DC DISTRIBUTION



With the evolution of DC distribution and new technologies on the horizon, Mersen's MDC DC Distribution Series is the product line to help customers achieve ultimate protection for today and tomorrow. The product portfolio allows system integrators and OEM manufacturers to select fuses easily for the protection of DC distribution in a variety of applications.

The MDC Series incorporates proven fuse technologies which provide optimal current limitation while achieving maximum performance. The MDC portfolio is designed to easily allow customers to choose fuses where coordination with other DC components is critical, eliminating unnecessary downtime.

Technical Data Overview	
Volts	600VDC/AC
Amps	1-50A
IR	100kA @ 600VDC/VAC (1A to 30A) 20kA @ 600VDC (35A to 50A) 50kA @ 250VDC (35A to 50A)
AC MBC	2.0 x In @ Rated Voltage (1-30A) 2.5 x In @ Rated Voltage (35-50A)
DC MBC	2.0 x In @ Rated Voltage (1-30A) L/R ≤ 1ms 3.6 x In @ Rated Voltage (35-50A) L/R ≤ 1ms

FEATURES/BENEFITS

- Designed for DC applications
- Low watt losses
- High cycling performance
- Low & high current interrupting capability
- Ultra compact size

APPLICATIONS







- DC Distribution
- DC Cabling and Bus
- DC Auxiliary Circuits
- Electrical Energy Storage
- EV Charging
- Critical Power
- UPS Protection

APPROVALS/STANDARDS

- UL Listed E33925 (1-30A)
- DC Listed (1-30A)
- UL Recognized Component File E60314 (35-50A)



CATALOG NUMBERS

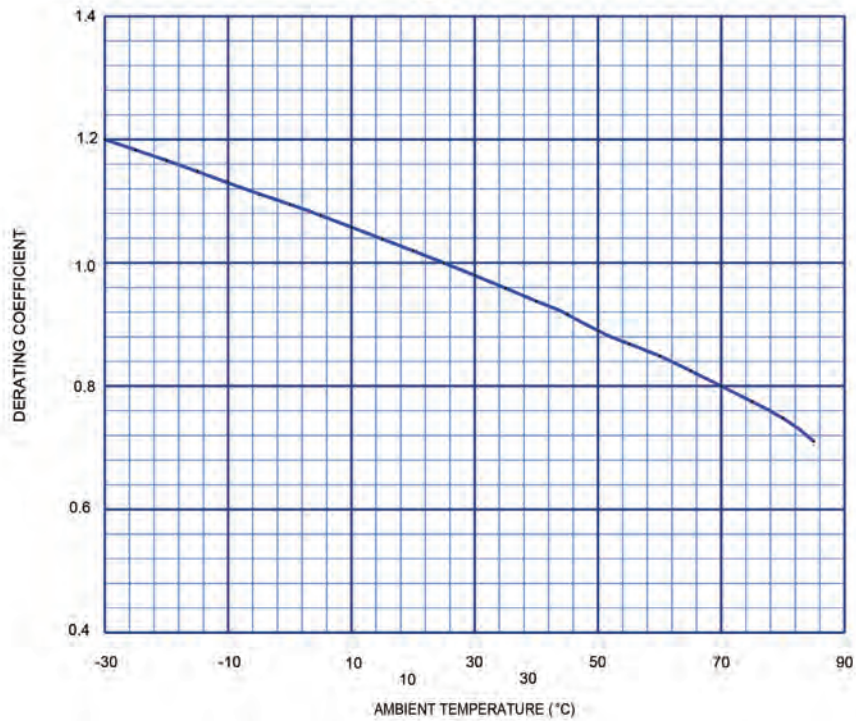
Ferrule			Surface Mount			PC Mount		
 			 			 		
MDC06A30			MDC06A30S			MDC06A30P		
Catalog Number			Rated Voltage [VAC]	Rated Voltage [VDC]	Rated Current [A]	DC Min. Breaking Capacity [MBC]	DC Max Interrupting Rating [kA]	DC Time Constant L/R [ms]
MDC06A1	MDC06A1S	MDC06A1P	600	600	1	2	100	≤1
MDC06A2	MDC06A2S	MDC06A2P	600	600	2	4	100	≤1
MDC06A3	MDC06A3S	MDC06A3P	600	600	3	6	100	≤1
MDC06A4	MDC06A4S	MDC06A4P	600	600	4	8	100	≤1
MDC06A5	MDC06A5S	MDC06A5P	600	600	5	10	100	≤1
MDC06A6	MDC06A6S	MDC06A6P	600	600	6	12	100	≤1
MDC06A7	MDC06A7S	MDC06A7P	600	600	7	14	100	≤1
MDC06A8	MDC06A8S	MDC06A8P	600	600	8	16	100	≤1
MDC06A10	MDC06A10S	MDC06A10P	600	600	10	20	100	≤1
MDC06A12	MDC06A12S	MDC06A12P	600	600	12	24	100	≤1
MDC06A15	MDC06A15S	MDC06A15P	600	600	15	30	100	≤1
MDC06A20	MDC06A20S	MDC06A20P	600	600	20	40	100	≤1
MDC06A25	MDC06A25S	MDC06A25P	600	600	25	50	100	≤1
MDC06A30	MDC06A30S	MDC06A30P	600	600	30	60	100	≤1
MDC06A35	MDC06A35S	MDC06A35P	600	600	35	126	20	≤1
MDC06A40	MDC06A40S	MDC06A40P	600	600	40	144	20	≤1
MDC06A50	MDC06A50S	MDC06A50P	600	600	50	180	20	≤1

*Fuse Minimum Breaking Capacity [MBC]: the smallest current the fuse has been tested to safely clear at a given voltage and time constant

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AMPERE RATING VS AMBIENT TEMPERATURE

MDC06A



I²t DATA AT 600VAC, 100KA SYM. RMS AMPERES, 20% POWER FACTOR

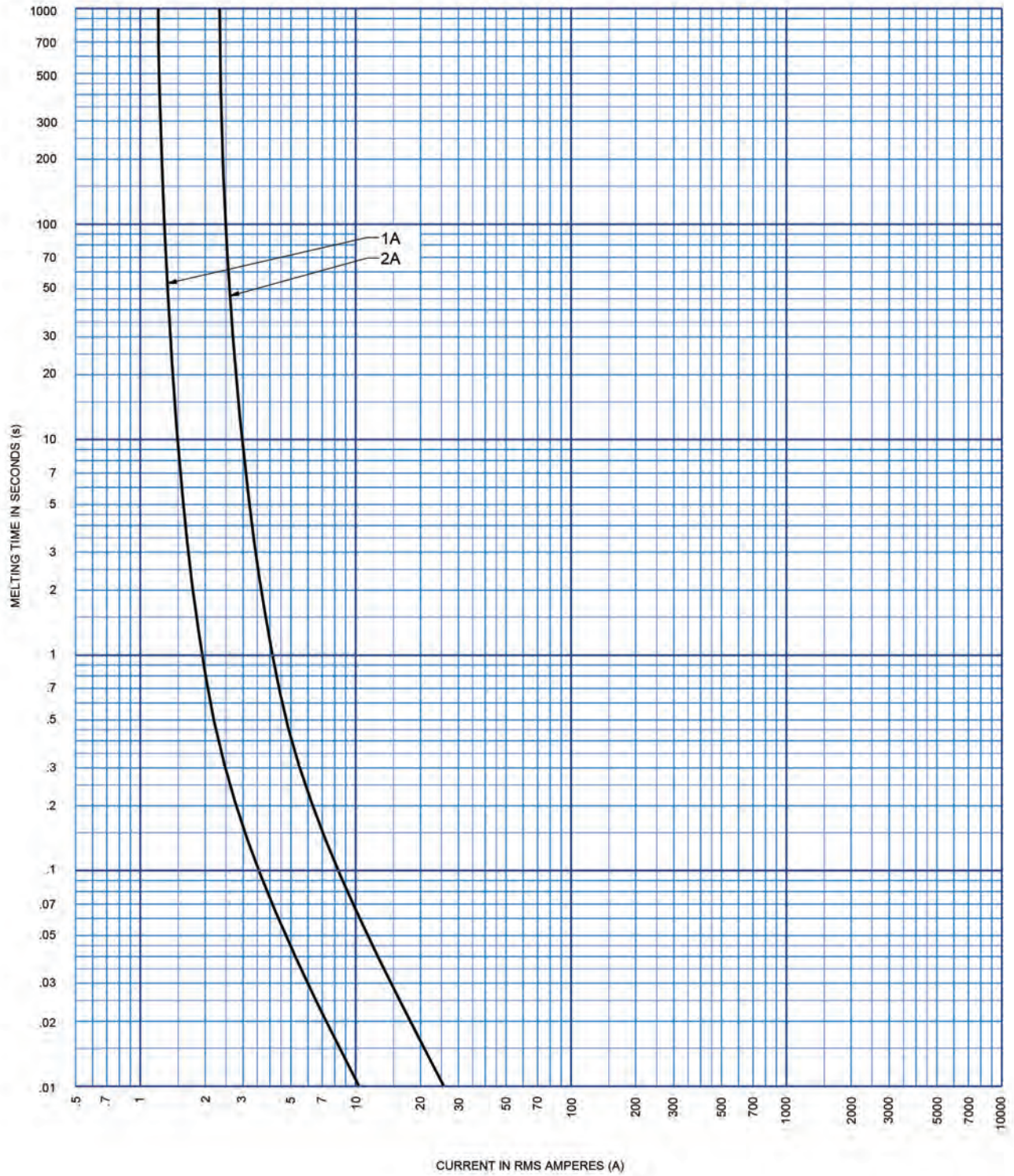
MDC06A

Ampere Rating	Melting I ² t (A ² s)	Clearing I ² t at 600v (A ² s)
1/10	0.01	0.03
1/8	0.016	0.04
2/10	0.04	0.11
1/4	0.063	0.18
1/2	0.25	0.7
3/4	0.56	1.6
1	1.7	5
1 1/2	4	8
2	6.7	13
3	3.3	8
4	10.4	22
5	22	60
6	50	130
7	65	180
8	64	420
10	130	650
12	190	900
15	130	800
20	270	1600
25	510	2500
30	920	3800

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MELTING TIME CURRENT DATA

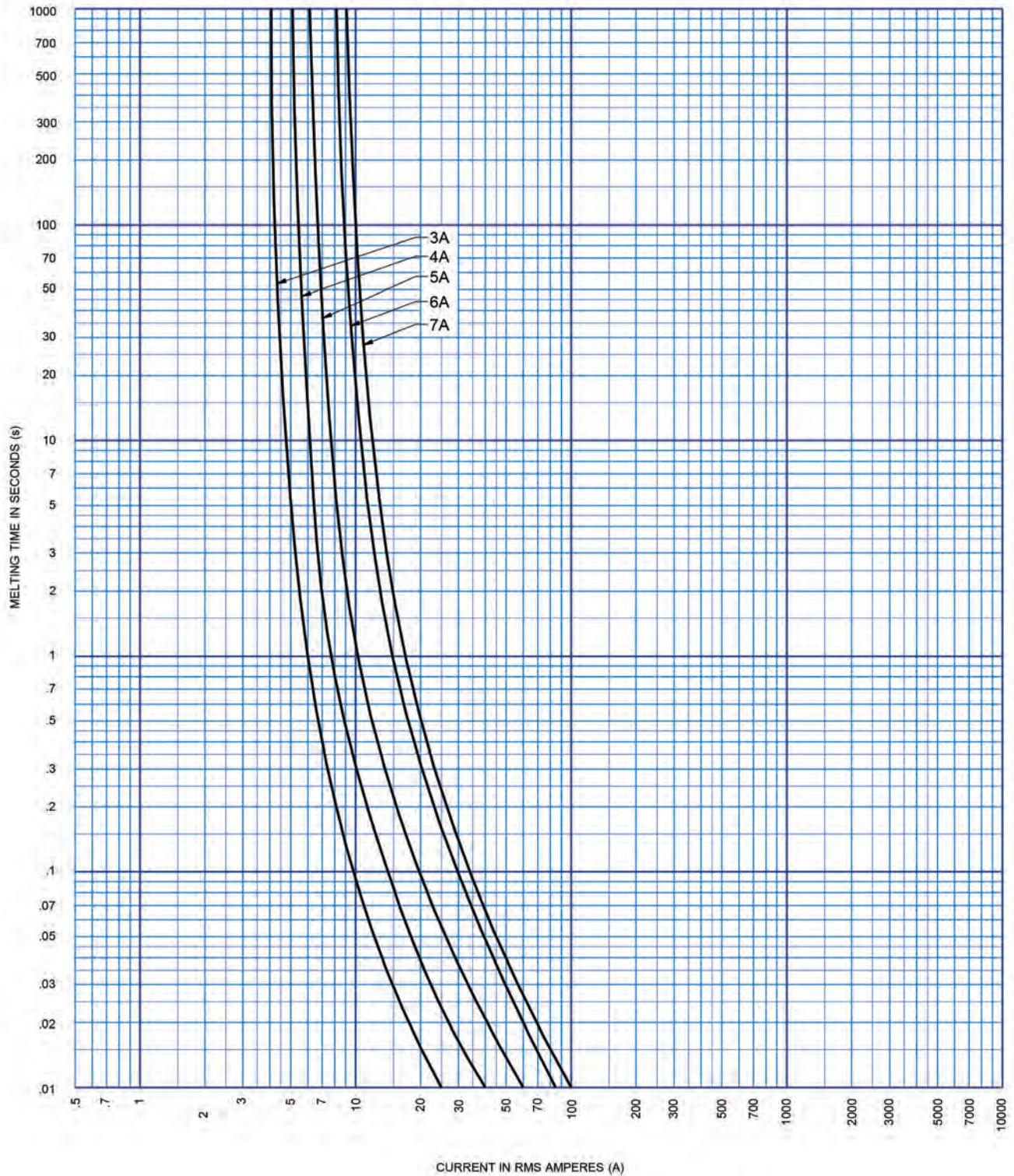
MDC06A 1-2A



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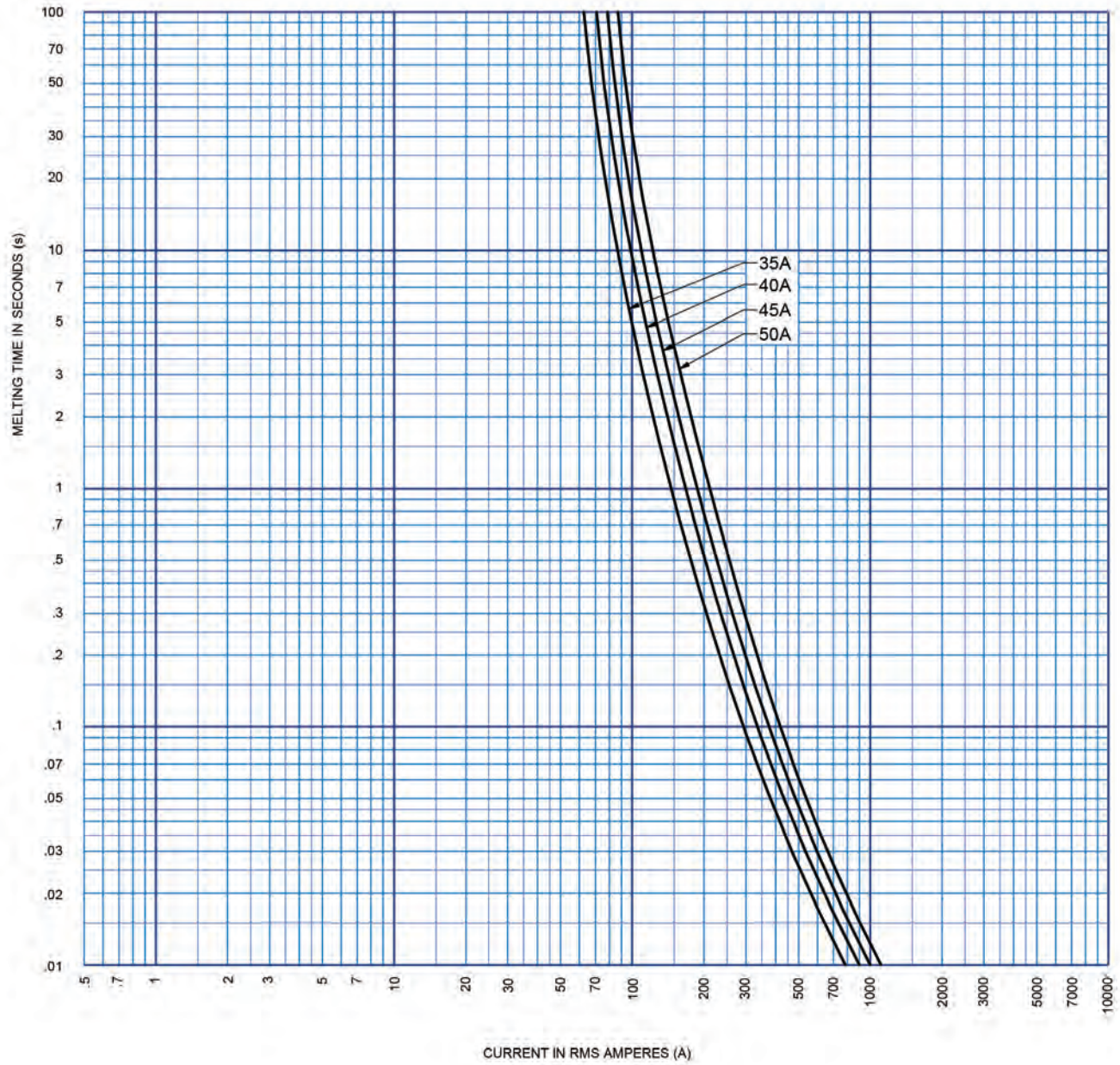
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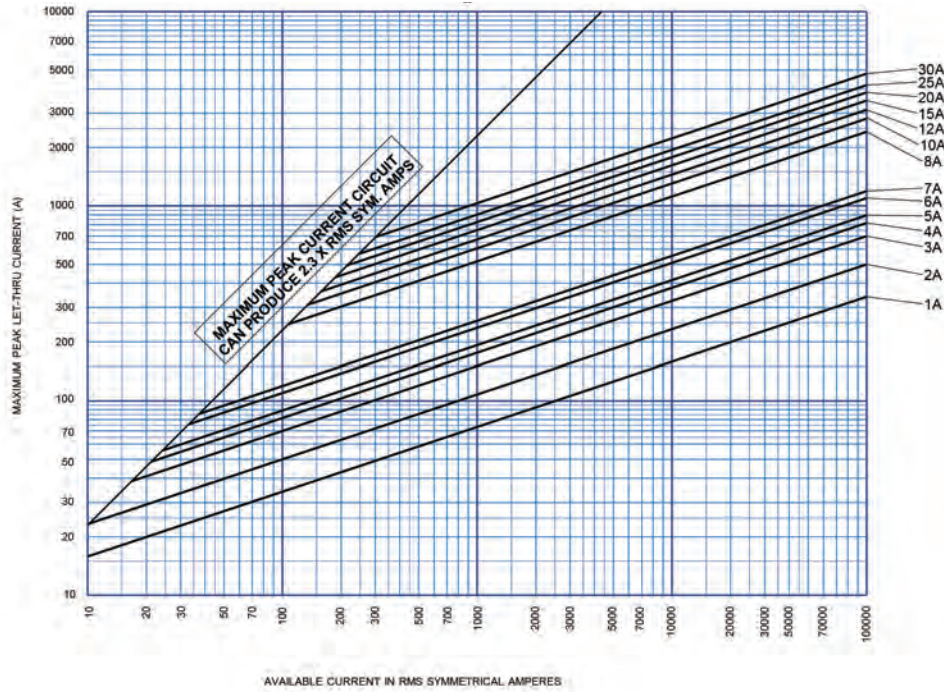
MDC06A 35-50A



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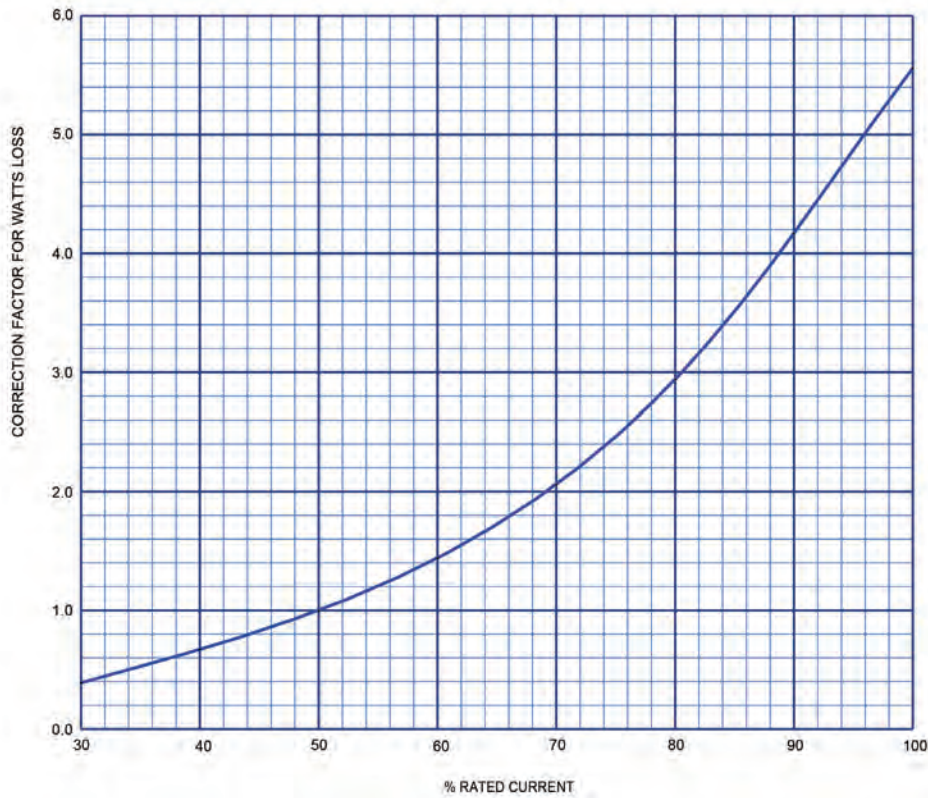
PEAK LET-THRU CURRENT DATA

MDC06A



WATTS LOSS VS RATED CURRENT

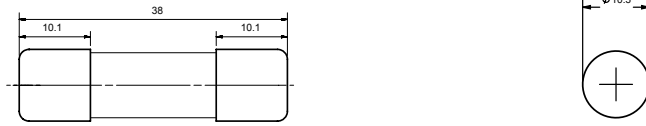
MDC06A 5-50A



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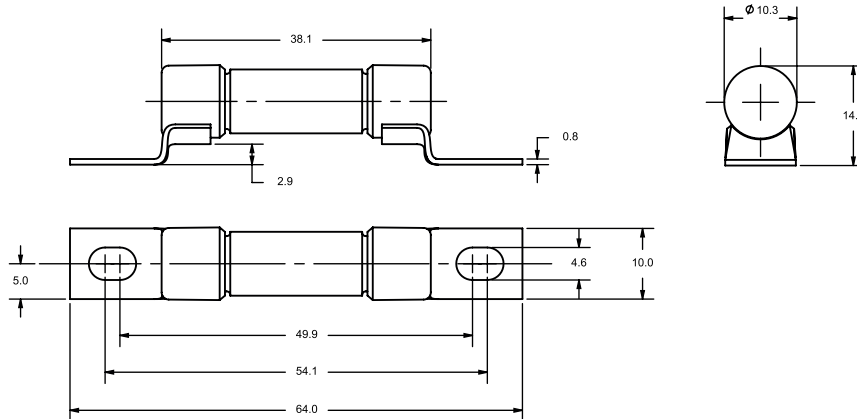
DIMENSIONS:

MDC06A(1-50) Ferrule Fuse



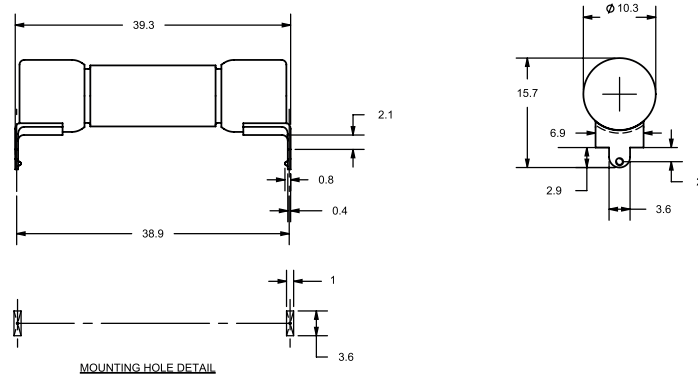
Dimensions in mm

MDC06A(1-50)S Surface Mount Fuse



Dimensions in mm

MDC06A(1-50)P PC Board Mount



Dimensions in mm

Recommended Mounting Torque and Bolt Size

Fuse Type	Mounting Style	Fuse Rating	Thread Size	Tightening Torque	
				N-m	In-lbs
MDC06A	Surface Mount [-S]	1-50A	1/4-20	5.5	50

RECOMMENDED FUSE BLOCKS for midget (10x38mm fuses)

USM and USFM



Number of Poles	Catalog Number			
	UltraSafe™ Indicating Fuse Holder	Screw Connector	Pressure Plate Connector	Copper Box Connector
Adder		30310	30320	30350
1	USM1I	30311	30321	30351
2	USM2I	30312	30322	30352
3	USM3I	30313	30323	30353
3	USFM10I			

USGM



Number of Poles	Catalog Number			
	UltraSafe™ Non-Indicating Fuse Holder	UltraSafe™ Indicating Fuse Holder	UltraSafe™ Photovoltaic Midget Non-Indicating	UltraSafe™ Photovoltaic Midget Indicating
1	USGM1	USGM1I, USGM1I-DC24	USGM1HEL	USGM1IHEL
2	USGM2	USGM2I		
3	USGM3	USGM3I		
4	USGM4	USGM4I		
3 + N	USGM3N	USGM3IN		

RECOMMENDED FUSE CLIPS



C08919P

- Fuse Clips 30A - 13/32" mounting hole: .196" dia. - #10



C08915P

- Fuse Clips 30A - 13/32" mounting hole: .172" dia. - #8



SDC7

- PC Mount Fuse Clips 30A max - 13/32"

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MDC10A

1000VDC/ 750VAC 10x38mm Auxiliary Fuse

SPECIAL PURPOSE

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Technical Data Overview	
Volts	1000VDC/750VAC
Amps	1A-30A
IR	65kA @ 1000VDC 100kA @ 750VAC
AC MBC	2.0 x In @ Rated Voltage
DC MBC	1.3 x In @ Rated Voltage (1-7A) L/R ≤ 1ms 2.0 x In @ Rated Voltage (8-30A) L/R ≤ 1ms

FEATURES/BENEFITS

- Designed for DC applications
- Low watt losses
- High cycling performance
- Low & high current interrupting capability
- Ultra compact size

APPLICATIONS





- DC Distribution
- DC Cabling and Bus
- DC Auxiliary Circuits
- Electrical Energy Storage
- EV Charging
- Critical Power
- UPS Protection

APPROVALS/STANDARDS

- UL Recognized Component File E60314



CATALOG NUMBERS

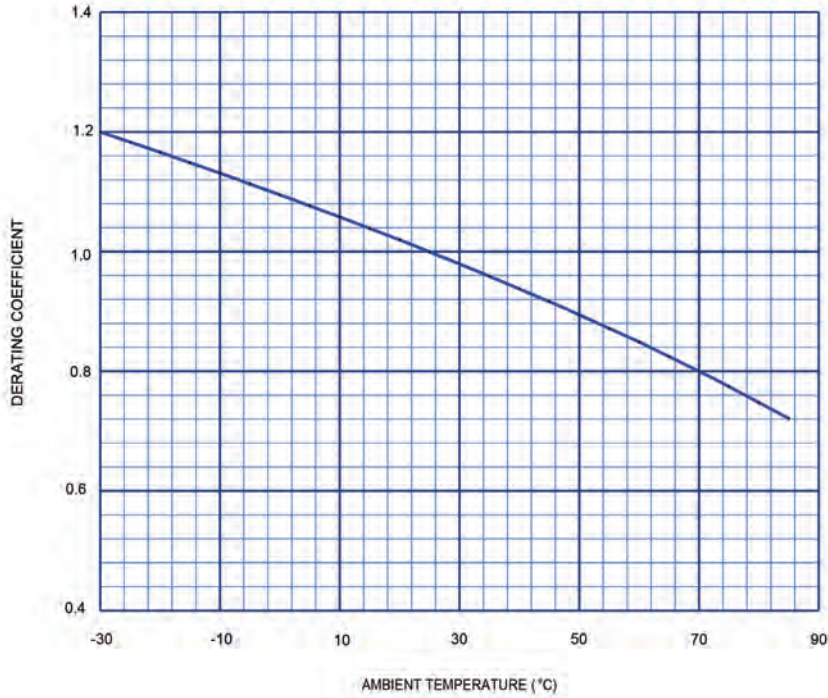
Ferrule				Surface Mount					
									
									
MDC10A30				MDC10A30S					
Catalog Number		Rated Voltage (VAC)	Rated Voltage (VDC)	Rated Current (A)	DC Min. Breaking Capacity (MBC)	DC Max Interrupting Rating (kA)	Melting I ² t (A ² s)	Clearing I ² t at 1000VDC, 10kA (A ² s)	DC Time Constant L/R (ms)
MDC10A1	MDC10A1S	750	1000	1	2	50	1.2	19	≤1
MDC10A2	MDC10A2S	750	1000	2	4	50	10.4	120	≤1
MDC10A3	MDC10A3S	750	1000	3	6	50	3.1	130	≤1
MDC10A3-1/2	MDC10A3-1/2S	750	1000	3-1/2	8	50	10.4	220	≤1
MDC10A4	MDC10A4S	750	1000	4	10	50	22	330	≤1
MDC10A5	MDC10A5S	750	1000	5	12	50	49	410	≤1
MDC10A6	MDC10A6S	750	1000	6	14	50	65	630	≤1
MDC10A8	MDC10A8S	750	1000	8	16	50	6.5	105	≤1
MDC10A10	MDC10A10S	750	1000	10	20	50	10	127	≤1
MDC10A12	MDC10A12S	750	1000	12	24	50	17	215	≤1
MDC10A15	MDC10A15S	750	1000	15	30	50	26	495	≤1
MDC10A20	MDC10A20S	750	1000	20	40	50	49	755	≤1
MDC10A25	MDC10A25S	750	1000	25	50	50	132	1650	≤1
MDC10A30	MDC10A30S	750	1000	30	60	50	197	1850	≤1

*Fuse Minimum Breaking Capacity (MBC): the smallest current the fuse has been tested to safely clear at a given voltage and time constant

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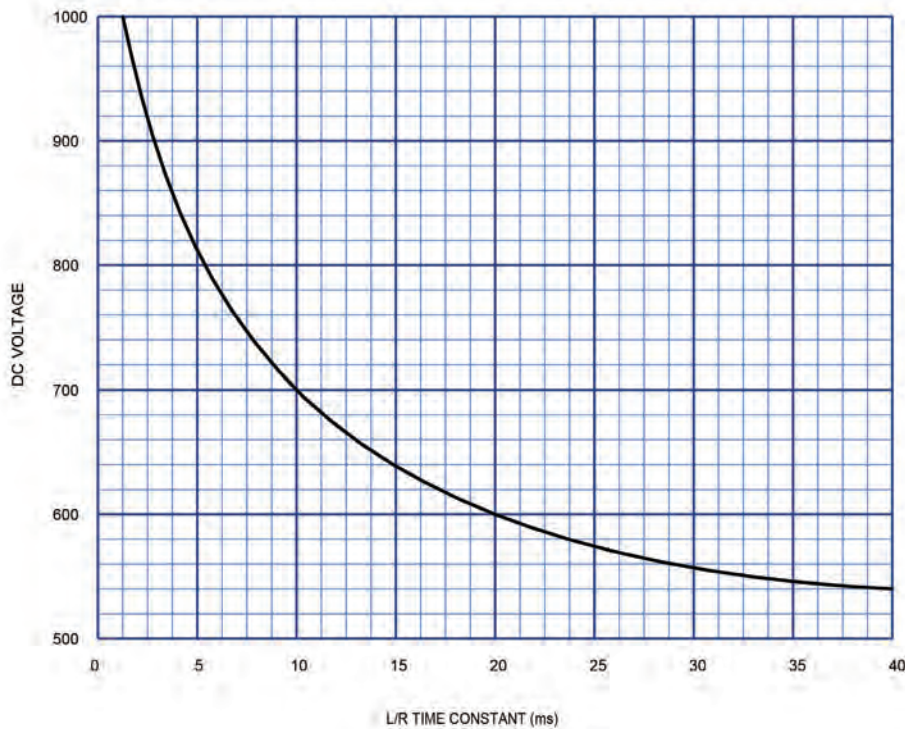
AMPERE RATING VS AMBIENT TEMPERATURE

MDC10A



DC VOLTAGE CAPABILITY VS CIRCUIT L/R TIME CONSTANT (rms)

MDC10A



**I²t DATA AT 750VAC, 200KA SYM. RMS
AMPS, 20% POWER FACTOR**

MDC10A

Ampere Rating	Melting I ² t (A ² s) [calculated]	Clearing I ² t (A ² s)
5	5	87
8	6.5	113
10	10	173
12	17	295
15	26	335
20	41	529
25	69	891
30	132	1705

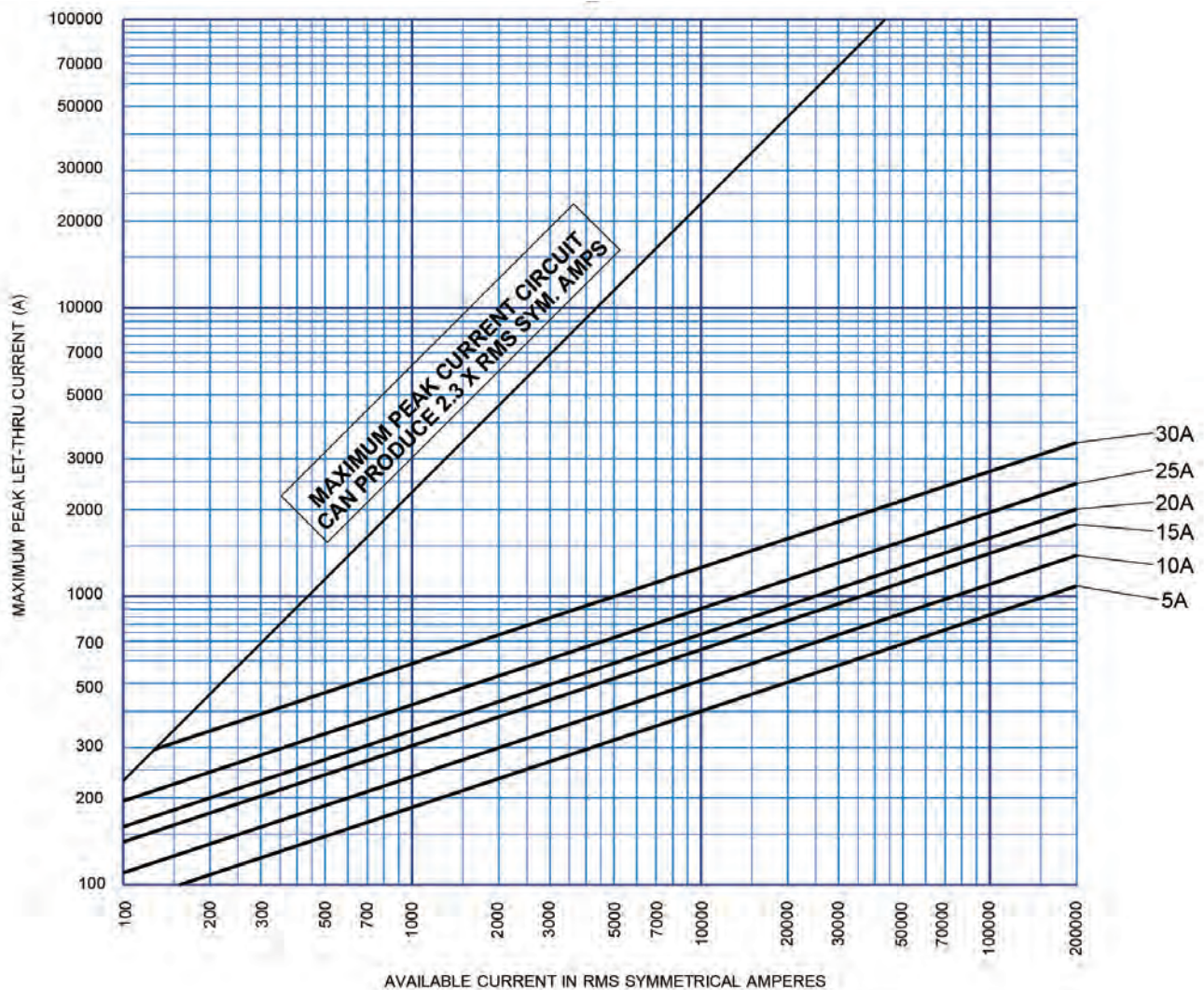
**I²t DATA AT 1000VAC,
50KA, L/R = 10MS**

MDC10A

Ampere Rating	Melting I ² t (A ² s) [calculated]	Clearing I ² t (A ² s)
5	5	64
8	6.5	83
10	10	127
12	17	215
15	26	495
20	41	755
25	69	970
30	132	1650

PEAK LET-THRU CURRENT DATA

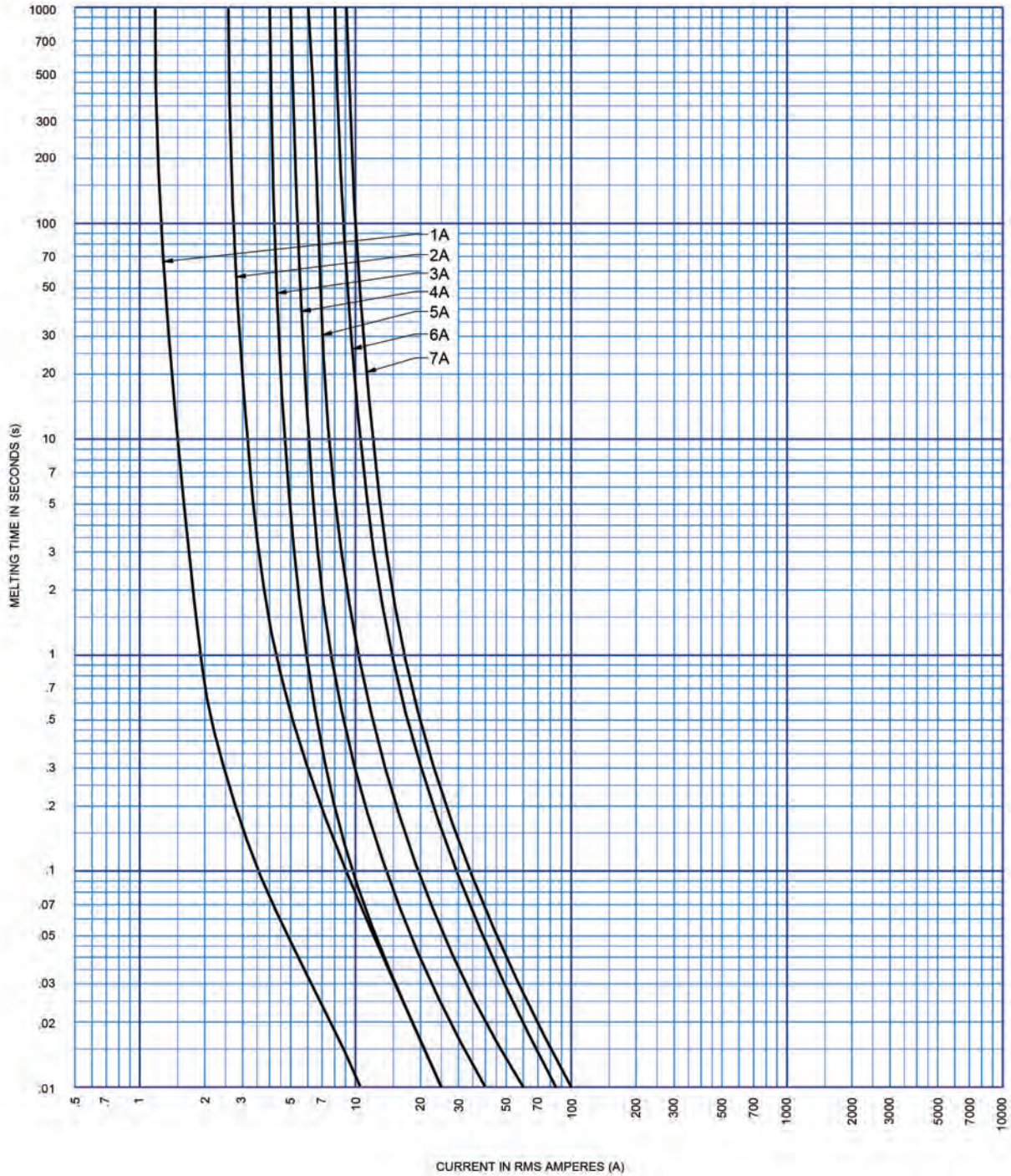
MDC10A



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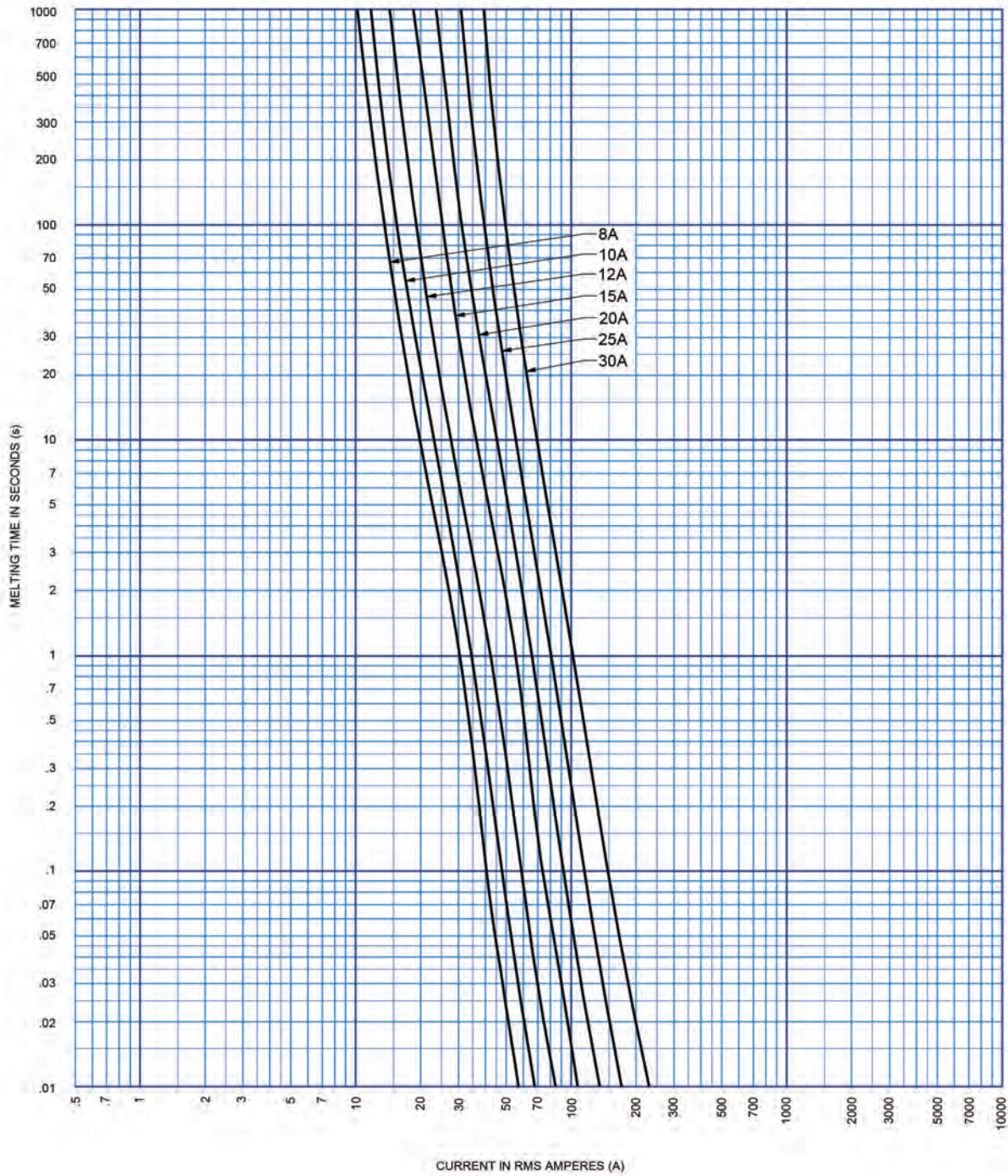
MELTING TIME CURRENT DATA

MDC10A 1-7A



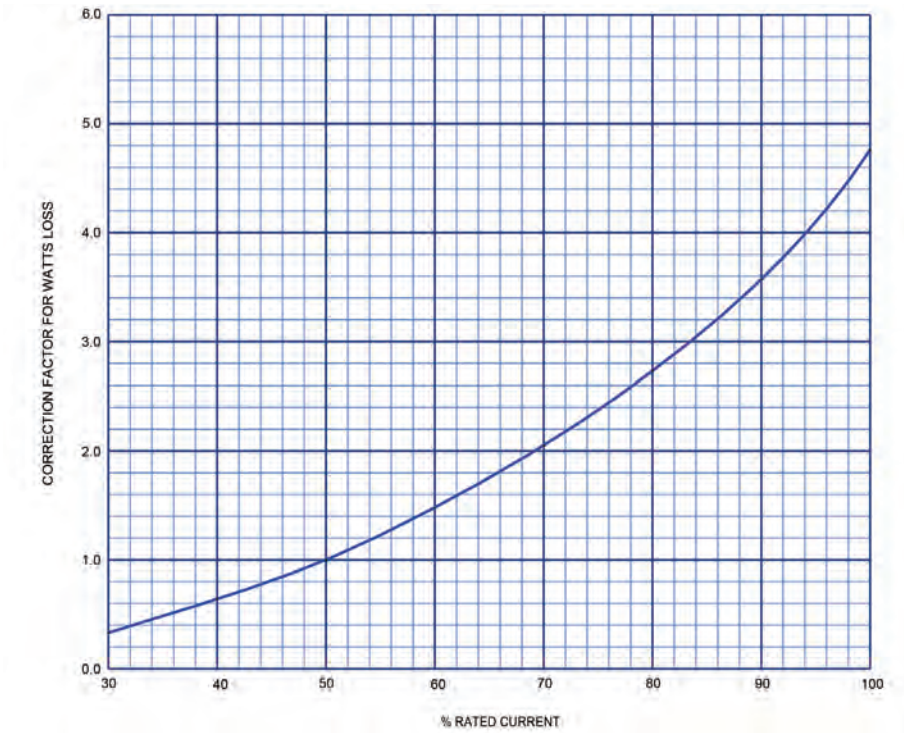
MELTING TIME CURRENT DATA

MDC10A 8-30A



WATTS LOSS VS RATED CURRENT

MDC10A



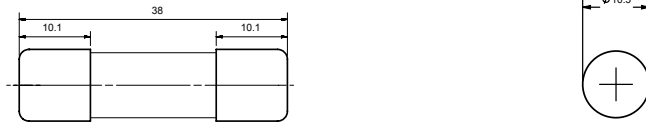
WATTS LOSS DATA

MDC10A

Ampere Rating	70% Amp Rating [W]	80% Amp Rating [W]	100% Amp Rating [W]
1	0.1	0.2	0.32
2	0.14	0.27	0.43
3	0.33	0.9	1.4
4	0.4	0.8	1.3
5	0.5	0.9	1.4
6	0.5	1.0	1.5
7	0.6	1.1	1.5
8	0.52	0.7	1.1
10	0.69	0.9	1.5
12	0.71	1.3	2.0
15	0.96	1.9	3.0
20	1.5	2.6	4.4
25	1.8	2.9	5.3
30	1.8	3.0	5.8

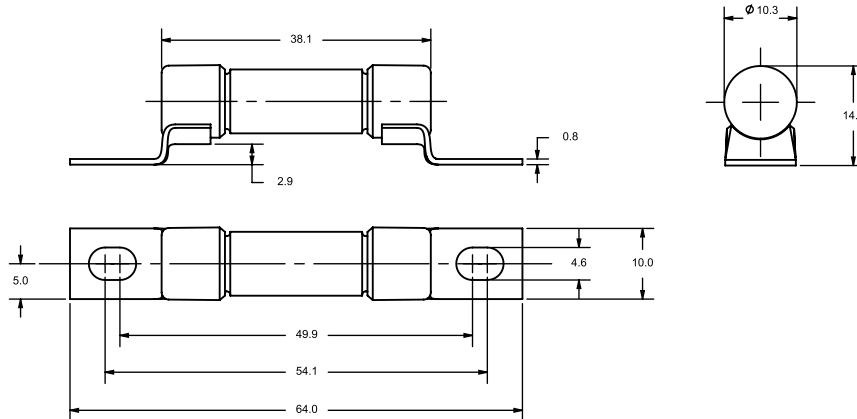
DIMENSIONS:

MDC10A(1-30) Ferrule Fuse



Dimensions in mm

MDC10A(1-30)S Surface Mount Fuse



Dimensions in mm

Recommended Mounting Torque and Bolt Size

Fuse Type	Mounting Style	Fuse Rating	Thread Size	Tightening Torque	
				N-m	In-lbs
MDC010A	Surface Mount [-S]	1-30A	1/4-20	5.5	50

RECOMMENDED FUSE BLOCKS for midget (10x38mm fuses)

USM and USFM



Number of Poles	Catalog Number			
	UltraSafe™ Indicating Fuse Holder	Screw Connector	Pressure Plate Connector	Copper Box Connector
Adder		30310	30320	30350
1	USM1I	30311	30321	30351
2	USM2I	30312	30322	30352
3	USM3I	30313	30323	30353
3	USFM10I			

USGM



Number of Poles	Catalog Number			
	UltraSafe™ Non-Indicating Fuse Holder	UltraSafe™ Indicating Fuse Holder	UltraSafe™ Photovoltaic Midget Non-Indicating	UltraSafe™ Photovoltaic Midget Indicating
1	USGM1	USGM1I, USGM1I-DC24	USGM1HEL	USGM1IHEL
2	USGM2	USGM2I		
3	USGM3	USGM3I		
4	USGM4	USGM4I		
3 + N	USGM3N	USGM3IN		

RECOMMENDED FUSE CLIPS



C08919P

- Fuse Clips 30A - 13/32" mounting hole: .196" dia. - #10



C08915P

- Fuse Clips 30A - 13/32" mounting hole: .172" dia. - #8



SDC7

- PC Mount Fuse Clips 30A max - 13/32"

MDC10M

1000VDC Main Fuse

SPECIAL PURPOSE

FOR DC DISTRIBUTION



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Technical Data Overview	
Volts	1000VDC; 600VAC (70-400A)
Amps	70A-600A
IR	65kA @ 1000VDC 200kA @ 600VAC (70-400A)
AC MBC	2.0 x In @ 600VAC
DC MBC	2.0 x In @ 1000VDC

FEATURES/BENEFITS

- Designed for DC applications
- Low watt losses
- High cycling performance
- Low & high current interrupting capability

APPLICATIONS

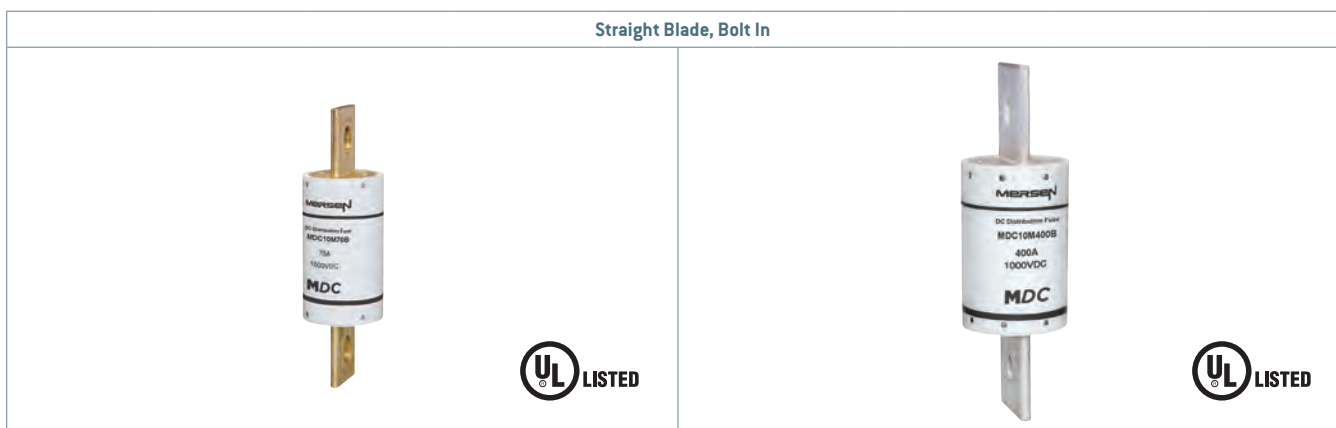
- DC Distribution
- DC Cabling and Bus
- DC Auxiliary Circuits
- Electrical Energy Storage
- EV Charging
- Critical Power
- UPS Protection

APPROVALS/STANDARDS

- AC Listed E2137 (70-400A)
- DC Listed E333668 (70-600A)



CATALOG NUMBERS



MDC10M70B				MDC10M400B				
Catalog Number	Rated Voltage (VAC)	Rated Voltage (VDC)	Rated Current (A)	DC Min. Breaking Capacity (MBC)	DC Max Interrupting Rating (kA)	Melting I ² t (A ² s)	Clearing I ² t at 1000VDC, L/R = 1ms	DC Time Constant L/R (ms)
MDC10M70B	600	1000	70	140	65	3	5	0.6
MDC10M80B	600	1000	80	160	65	4	5	0.6
MDC10M100B	600	1000	100	200	65	6	7	0.6
MDC10M125B	600	1000	125	250	65	5	7	0.6
MDC10M160B	600	1000	160	320	65	6	8	0.6
MDC10M200B	600	1000	200	400	65	10	15	0.6
MDC10M250B	600	1000	250	500	65	13	18	0.4
MDC10M300B	600	1000	300	600	65	16	22	0.4
MDC10M350B	600	1000	350	700	65	17	24	0.4
MDC10M400B	600	1000	400	800	65	19	27	0.4
MDC10M450B	N/A	1000	450	900	65	22	27	0.4
MDC10M500B	N/A	1000	500	1000	65	22	31	0.4
MDC10M600B	N/A	1000	600	1200	65	30	43	0.4

*Fuse Minimum Breaking Capacity (MBC): the smallest current the fuse has been tested to safely clear at a given voltage and time constant

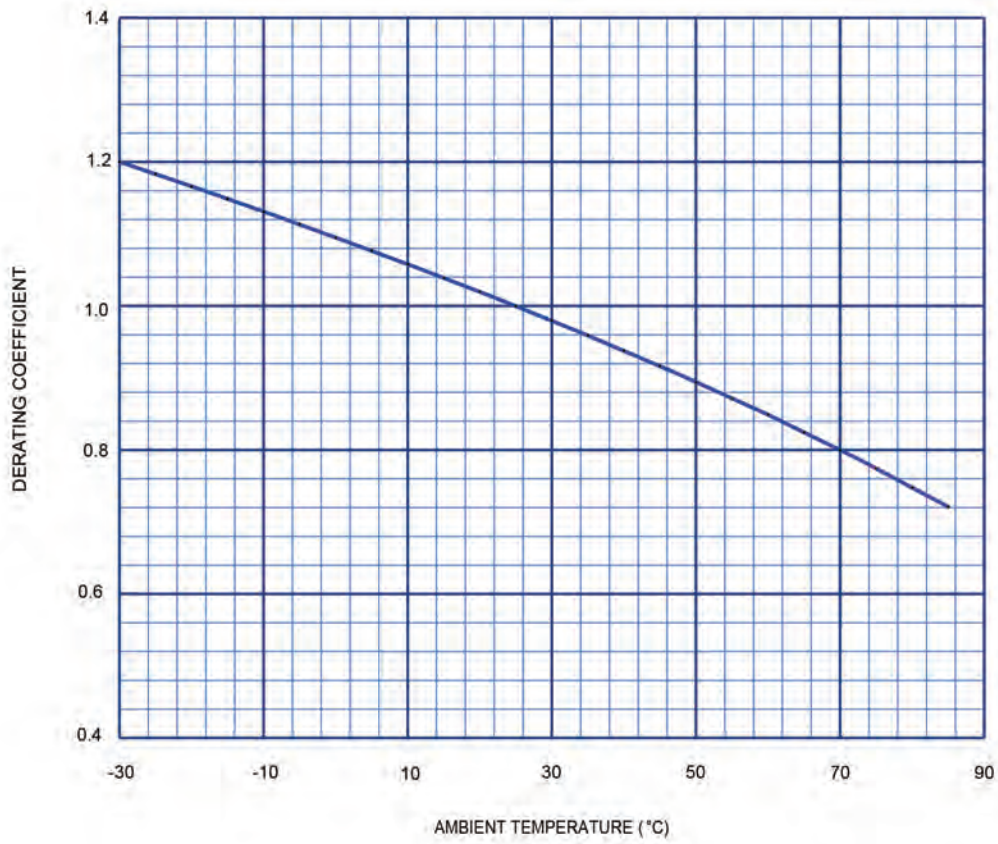
Recommended Mounting Torque and Bolt Size

Fuse Type	Mounting Style	Fuse Rating	Thread Size	Tightening Torque	
				N-m	In-lbs
MDC10M	Blade Mount [-4]	350-400A 450-600A	3/8-24 1/2-20	20 42	180 375

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AMPERE RATING VS AMBIENT TEMPERATURE

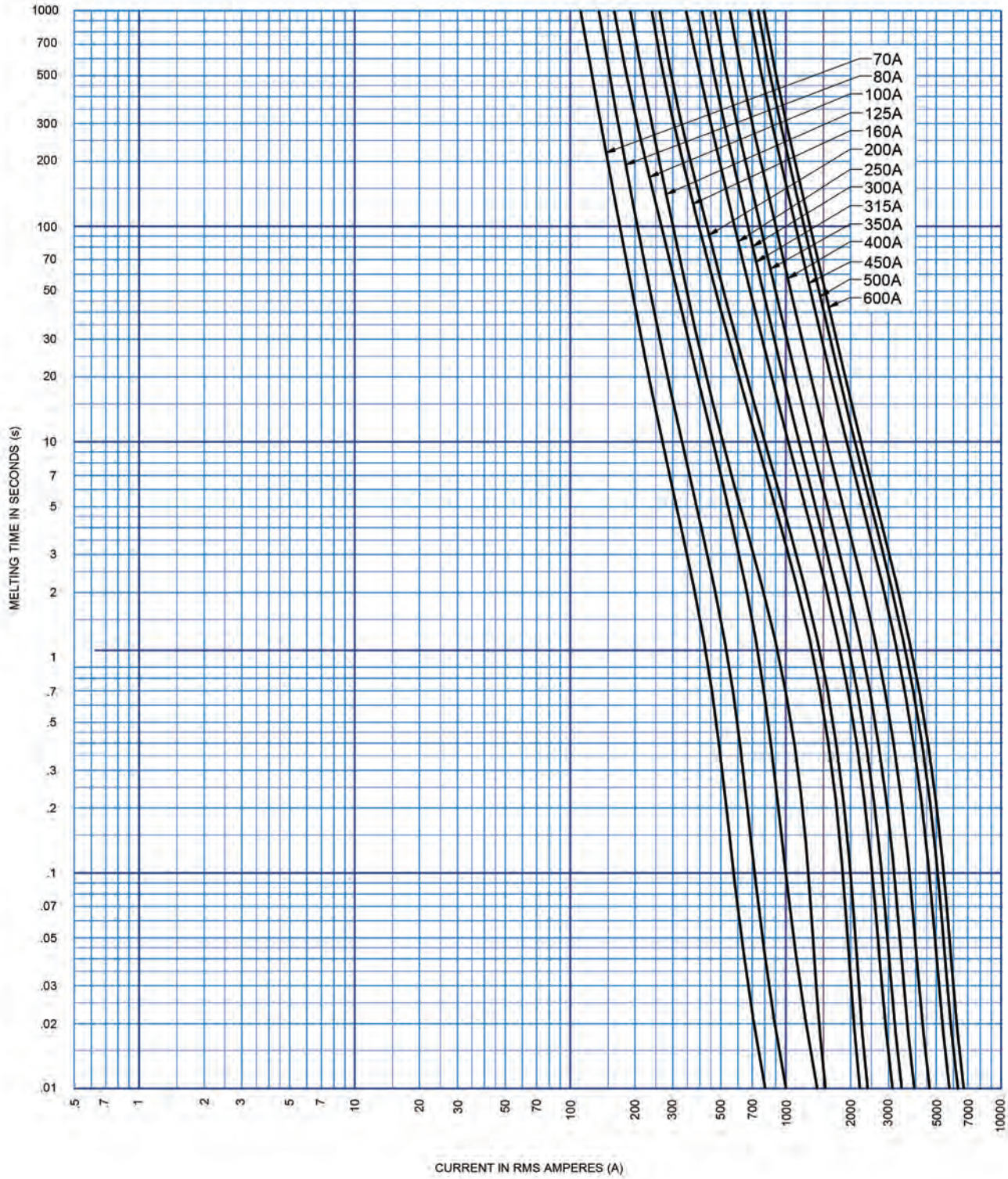
MDC10M



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AVERAGE MELTING TIME CURRENT CURVE

MDC10M



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WATTS LOSS DATA

MDC10M 1-50A

Ampere Rating	Watts Loss @70% [W]	Watts Loss @80% [W]	Watts Loss @100% [W]
1			.314
2			.413
3			1.42
4			1.29
5			1.45
6			1.54
8			2.05
10			2.13
12			2.49
15			2.20
20			2.78
25			3.07
30			3.33
35			32.74
40			13.7
50			16.43

WATTS LOSS DATA

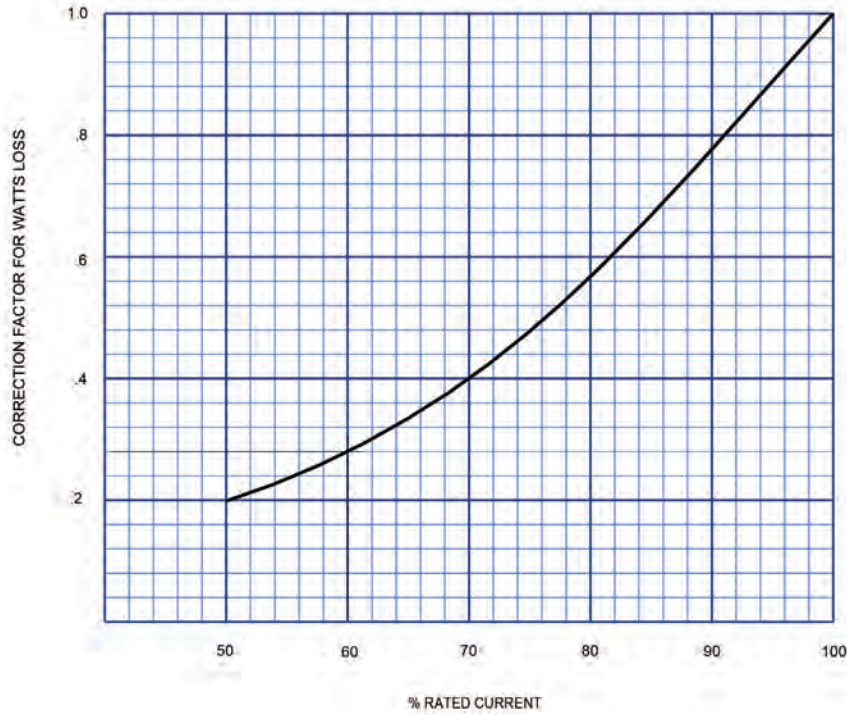
MDC10M 70-600A

Ampere Rating	Watts Loss @70% [W]	Watts Loss @80% [W]	Watts Loss @100% [W]
70	3	5	10
80	4	5	10
100	6	7	15
125	5	7	14
160	6	8	16
200	10	15	27
250	13	18	34
300	16	22	37
315	16	23	43
350	17	24	45
400	19	27	52
450	22	27	56
500	22	31	58
600	30	43	82

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WATTS LOSS VS % RATED CURRENT

MDC10M



I²t DATA

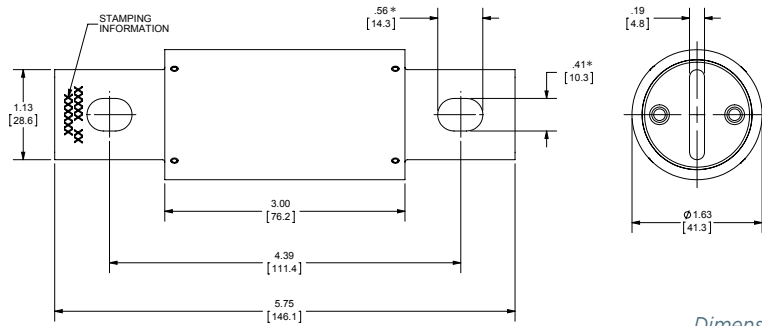
MDC10M

Ampere Rating	Melting I ² t (A ² s x 10 ³)	Max Clearing I ² t @1000VDC (A ² s x 10 ³)
70	3	5
80	4	5
100	6	7
125	5	7
160	6	8
200	10	15
250	13	18
300	16	22
315	16	23
350	17	24
400	19	27
450	22	27
500	22	31
600	30	43

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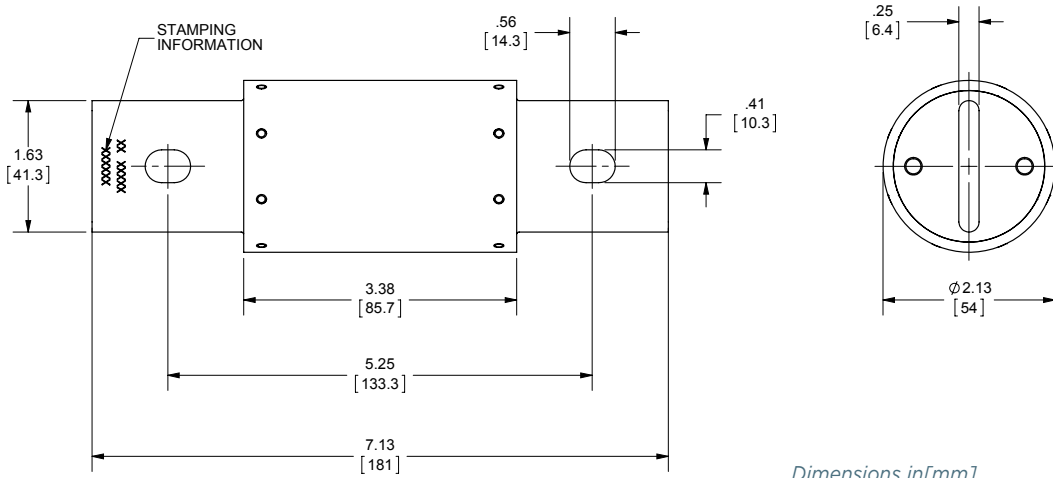
DIMENSIONS:

MDC10M(70-200A)B



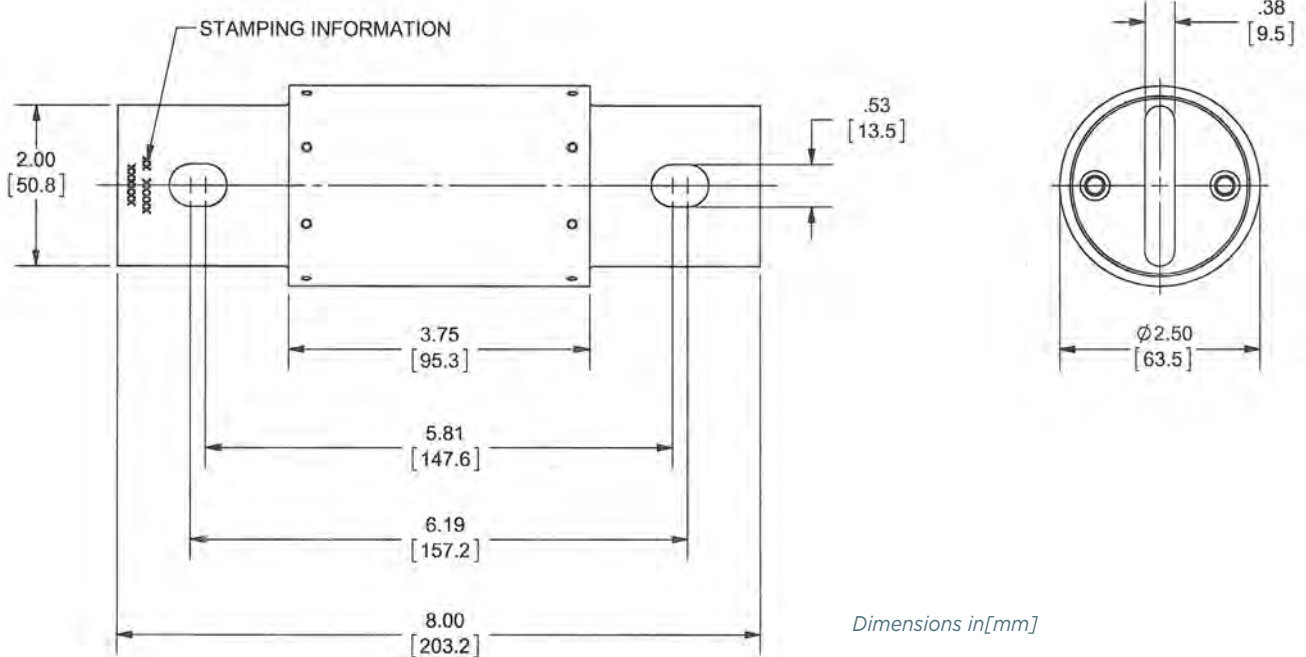
Dimensions in[mm]

MDC10M(250-400A)B



Dimensions in[mm]

MDC10M(450-600A)B



Dimensions in[mm]

MDC15A

1500VDC 10x85mm Auxiliary Fuse

SPECIAL PURPOSE

FOR DC DISTRIBUTION



With the evolution of DC distribution and new technologies on the horizon, Mersen's MDC DC Distribution Series is the product line to help customers achieve ultimate protection for today and tomorrow. The product portfolio allows system integrators and OEM manufacturers to select fuses easily for the protection of DC distribution in a variety of applications.

The MDC Series incorporates proven fuse technologies which provide optimal current limitation while achieving maximum performance. The MDC portfolio is designed to easily allow customers to choose fuses where coordination with other DC components is critical, eliminating unnecessary downtime.

Technical Data Overview	
Volts	1500VDC
Amps	4A-32A
IR	50kA @ 1500VDC
DC MBC	2.0 x In @ Rated Voltage L/R ≤1ms

FEATURES/BENEFITS

- Designed for DC applications
- Low watt losses
- High cycling performance
- Low & high current interrupting capability
- Ultra compact size

APPLICATIONS





- DC Distribution
- DC Cabling and Bus
- DC Auxiliary Circuits
- Electrical Energy Storage
- EV Charging
- Critical Power
- UPS Protection

APPROVALS/STANDARDS

- UL Listed File E333668



CATALOG NUMBERS

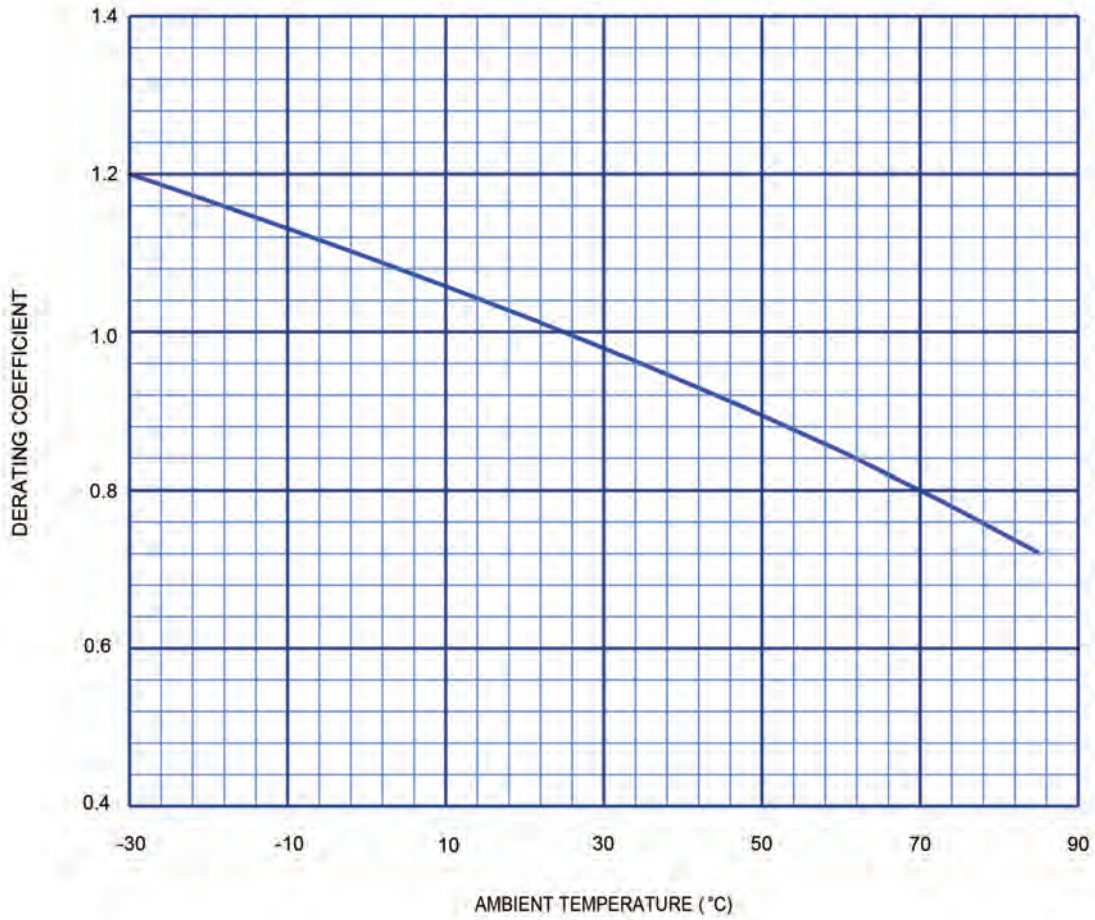
Ferrule		Surface Mount						
 		 						
MDC15A32		MDC15A32S						
Catalog Number		Rated Voltage (VDC)	Rated Current (A)	DC Min. Breaking Capacity (MBC)	DC Max Interrupting Rating (kA)	Melting I ² t (A ² s)	clearing I ² t at 1000VDC, 10kA, L/R = 1ms	DC Time Constant L/R (ms)
MDC15A4	MDC15A4S	1500	4	8	50	10	30	≤1
MDC15A5	MDC15A5S	1500	5	10	50	34	56	≤1
MDC15A6	MDC15A6S	1500	6	12	50	52	79	≤1
MDC15A7	MDC15A7S	1500	7	14	50	86	16	≤1
MDC15A8	MDC15A8S	1500	8	16	50	134	241	≤1
MDC15A10	MDC15A10S	1500	10	20	50	240	702	≤1
MDC15A12	MDC15A12S	1500	12	24	50	26	216	≤1
MDC1515A	MDC1515AS	1500	15	30	50	69	478	≤1
MDC15A20	MDC15A20S	1500	20	40	50	118	868	≤1
MDC15A25	MDC15A25S	1500	25	50	50	197	1371	≤1
MDC15A30	MDC15A30S	1500	30	60	50	320	1942	≤1
MDC15A32	MDC15A32S	1500	32	64	50			≤1

*Fuse Minimum Breaking Capacity (MBC): the smallest current the fuse has been tested to safely clear at a given voltage and time constant

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AMPERE RATING VS AMBIENT TEMPERATURE

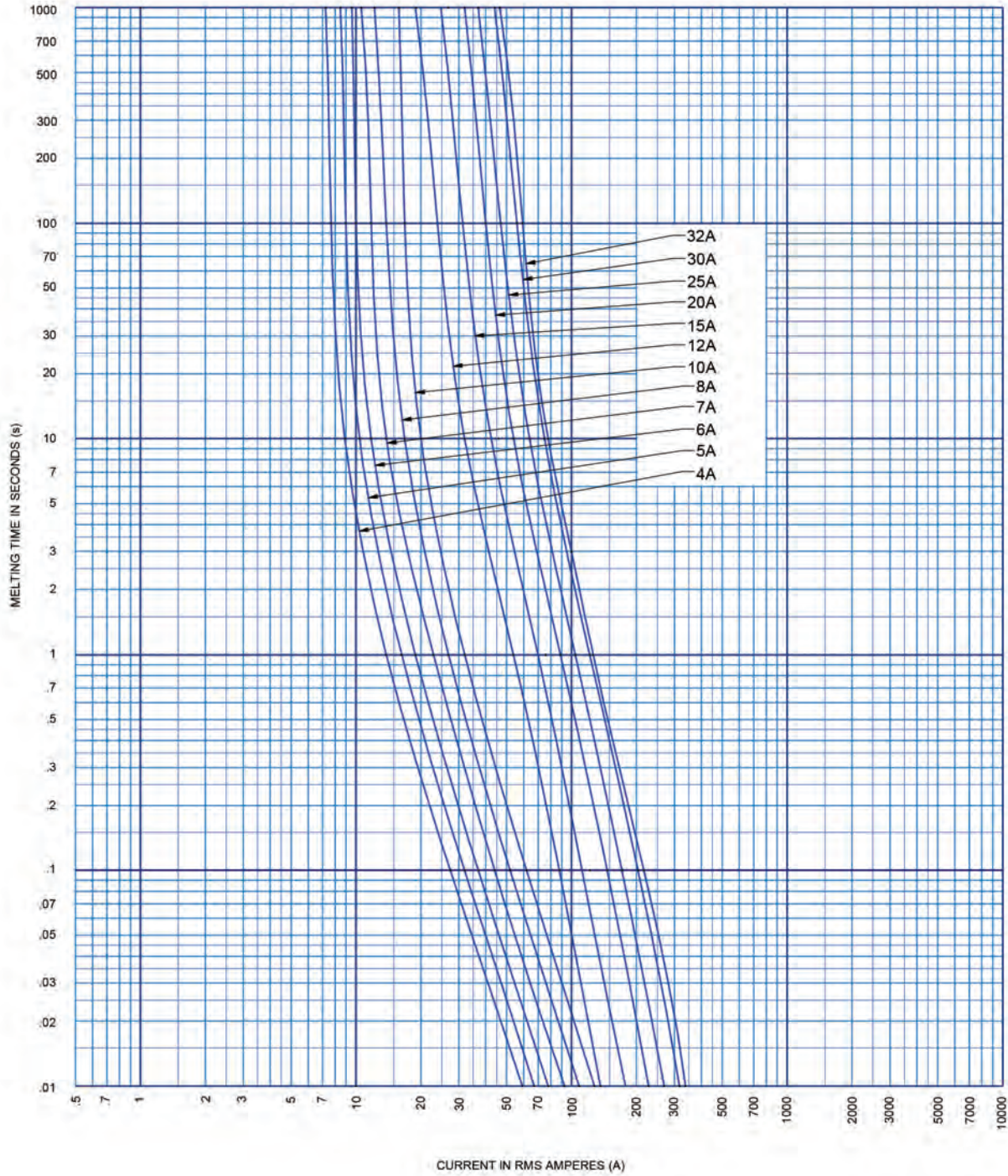
MDC15A



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AVERAGE MELTING TIME CURRENT CURVE

MDC15A



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I²t DATA @ 1500VDC

MDC15A

Ampere Rating	Melting I ² t (A ² s) (calculated)	Clearing I ² t (A ² s)
4	10	30
5	34	56
6	52	79
7	86	160
8	134	241
10	240	702
12	26	216
15	69	478
20	118	868
25	197	1371
30/32	320	1942

WATTS LOSS DATA

MDC15A 12-32A

Catalog Number	70% Amp Rating (W)	80% Amp Rating (W)	100% Amp Rating (W)
12	1.30	1.79	3.08
15	1.30	1.76	2.95
20	1.77	2.36	4.27
25	2.21	3.07	5.54
30	2.63	3.62	6.42
32	3.18	4.22	7.14

Recommended Mounting Torque and Bolt Size

Fuse Type	Mounting Style	Fuse Rating	Thread Size	Tightening Torque	
				N-m	In-lbs
MDC015A	Surface Mount (-S)	1-30A	1/4-20	5.5	50

RECOMMENDED FUSE CLIPS



C08919P

- Fuse Clips 30A - 13/32" mounting hole: .196" dia. - #10



C08915P

- Fuse Clips 30A - 13/32" mounting hole: .172" dia. - #8



SDC7

- PC Mount Fuse Clips 30A max - 13/32"

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