

# Protistor® size 20x127 gR (GRB/C/D)

1000 to 1500VDC

## SEMICONDUCTOR PROTECTION FUSES

## IEC HIGH-SPEED CYLINDRICAL FUSE-LINKS DC PROTECTION



Specially developed for DC applications, 20x127 gR cylindrical is a fast acting, full range fuse used in the protection of auxiliaries, control circuit and other measuring and monitoring devices.

### TECHNICAL DATA OVERVIEW

Voltage Range DC	1000 ... 1500 VDC
Ampere Range (A)	1.5 ... 63 A
Speed/Characteristic	gR
Product Size	20x127 mm

### FEATURES & BENEFITS

- International 20x127mm (13/16" x 5") for worldwide acceptance
- gR Class according to VDE 636-23 and IEC 60269-4
- Low  $I^2t$  for improved semiconductor protection
- Eliminate all overloads
- Extremely fast acting
- Current limiting
- Excellent cycling capability

### APPLICATIONS

- DC control circuit, measuring & monitoring auxiliaries circuit

### STANDARDS

- UL Recognized for some ratings
- UL file No. E76491
- IEC 60269-4 Compliance



# Protistor® size 20x127 gR (GRB/C/D)

1000 to 1500VDC

## PRODUCT RANGE



FD20GB100V6T

### Size 20x127 gR 1000VDC with striker

Catalog number	Item number	Rated voltage DC (IEC)	Rated current I <sub>n</sub>	Rated breaking capacity DC	Power dissipation at I <sub>n</sub>	Package	Weight
FD20GB100V6T	Z088020	1000 V	6 A	100 kA	3.5 W	10	97 g
FD20GB100V8T	T088774	1000 V	8 A	100 kA	3.8 W	10	97 g
FD20GB100V10T	A089493	1000 V	10 A	100 kA	4.2 W	10	97 g
FD20GB100V12T	B089494	1000 V	12 A	100 kA	5.3 W	10	97 g
FD20GB100V16T	C089495	1000 V	16 A	100 kA	6.6 W	10	97 g
FD20GB100V20T	D089496	1000 V	20 A	100 kA	7.7 W	10	97 g
FD20GB100V25T	E089497	1000 V	25 A	100 kA	9 W	10	97 g
FD20GB100V32T	F089498	1000 V	32 A	100 kA	10.5 W	10	97 g
FD20GC100V40T	S086795	1000 V	40 A	100 kA	13.2 W	10	97 g
FD20GC100V50T	F086186	1000 V	50 A	100 kA	15.5 W	10	97 g
FD20GC100V63T	F083656	1000 V	63 A	100 kA	17.4 W	10	97 g

### Size 20x127 gR 1000VDC without striker

Catalog number	Item number	Rated voltage DC (IEC)	Rated current I <sub>n</sub>	Rated breaking capacity DC	Power dissipation at I <sub>n</sub>	Package	Weight
FD20GB100V6	N089482	1000 V	6 A	100 kA	3.5 W	10	0.1 kg
FD20GB100V8	P089483	1000 V	8 A	100 kA	3.8 W	10	0.1 kg
FD20GB100V10	Q089484	1000 V	10 A	100 kA	4.2 W	10	0.1 kg
FD20GB100V12	R089485	1000 V	12 A	100 kA	5.3 W	10	0.1 kg
FD20GB100V16	S089486	1000 V	16 A	100 kA	6.6 W	10	0.1 kg
FD20GB100V20	T089487	1000 V	20 A	100 kA	7.7 W	10	0.1 kg
FD20GB100V25	V089488	1000 V	25 A	100 kA	9 W	10	0.1 kg
FD20GB100V32	W089489	1000 V	32 A	100 kA	10.5 W	10	0.1 kg
FD20GC100V40	Z087054	1000 V	40 A	100 kA	13.2 W	10	0.1 kg
FD20GC100V50	K083660	1000 V	50 A	100 kA	15.5 W	10	0.1 kg
FD20GC100V63	J083659	1000 V	63 A	100 kA	17.4 W	10	0.1 kg

### Size 20x127 gR 1500VDC with striker

Catalog number	Item number	Rated voltage DC (IEC)	Rated current I <sub>n</sub>	Rated breaking capacity DC	Power dissipation at I <sub>n</sub>	Design	Package	Weight
FD20GB150V1,5T	G075745	1500 V	1.5 A	30 kA	1.4 W	gRB	10	97 g
FD20GB150V2T	B088367	1500 V	2 A	30 kA	1.6 W	gRB	10	97 g
FD20GB150V3,15T	H075746	1500 V	3.15 A	30 kA	2.1 W	gRB	10	97 g
FD20GB150V4T	J075747	1500 V	4 A	30 kA	2.1 W	gRB	10	97 g
FD20GB150V5T	C088368	1500 V	5 A	30 kA	2.3 W	gRB	10	97 g

# Protistor® size 20x127 gR (GRB/C/D)

1000 to 1500VDC

## PRODUCT RANGE

### Size 20x127 gR 1500VDC without indicator

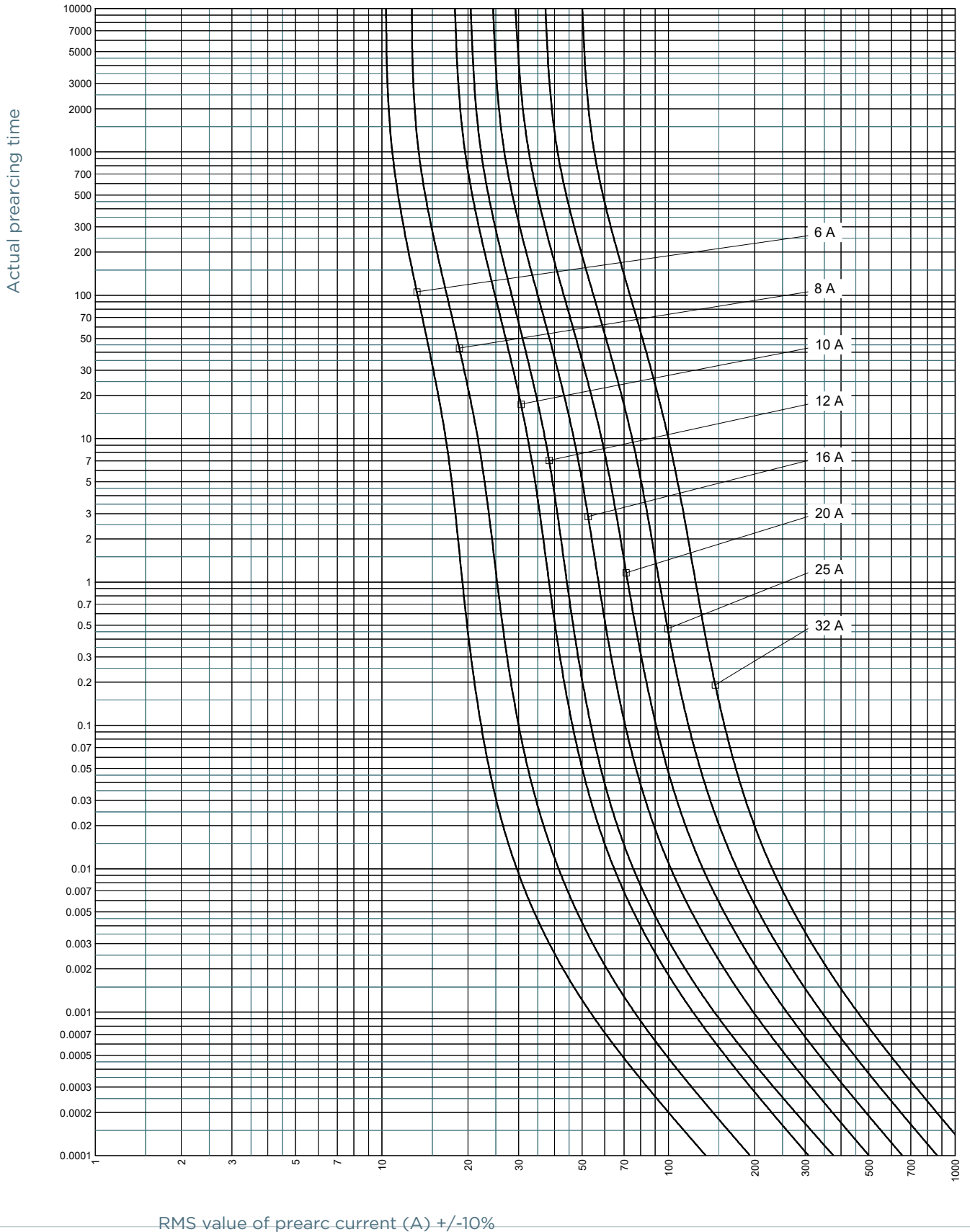
Catalog number	Item number	Rated voltage DC (IEC)	Rated current I <sub>n</sub>	Rated breaking capacity DC	Power dissipation at I <sub>n</sub>	Design	Package	Weight
FD20GB150V1,5	K081843	1500 V	1.5 A	30 kA	1.4 W	gRB	10	97 g
FD20GB150V2	Y099243	1500 V	2 A	30 kA	1.6 W	gRB	10	97 g
FD20GB150V3,15	L081844	1500 V	3.15 A	30 kA	2.1 W	gRB	10	97 g
FD20GB150V4	Z099244	1500 V	4 A	30 kA	2.1 W	gRB	10	97 g
FD20GB150V5	A099245	1500 V	5 A	30 kA	2.3 W	gRB	10	97 g
FD20GD150V6	E082804	1500 V	6 A	30 kA	6.3 W	gRD	10	97 g
FD20GD150V8	Z080867	1500 V	8 A	30 kA	6 W	gRD	10	97 g
FD20GD150V10	F081655	1500 V	10 A	30 kA	6.1 W	gRD	10	97 g
FD20GD150V12	B080593	1500 V	12 A	30 kA	6.8 W	gRD	10	97 g
FD20GD150V16	Q081457	1500 V	16 A	30 kA	8.9 W	gRD	10	97 g
FD20GD150V20	D082803	1500 V	20 A	30 kA	9.6 W	gRD	10	97 g
FD20GD150V25	A080431	1500 V	25 A	30 kA	12 W	gRD	10	97 g

## TECHNICAL DATA

	Size 20x127 gR 1000VDC with striker	Size 20x127 gR 1000VDC without striker	Size 20x127 gR 1500VDC with striker	Size 20x127 gR 1500VDC without indicator
Ampere Range (A)	6 ... 63 A	6 ... 63 A	1.5 ... 5 A	1.5 ... 25 A

## TIME CURRENT CHARACTERISTIC CURVES

Size 20x127 gR 1000VDC 6A to 32A



RMS value of prearc current (A) +/-10%

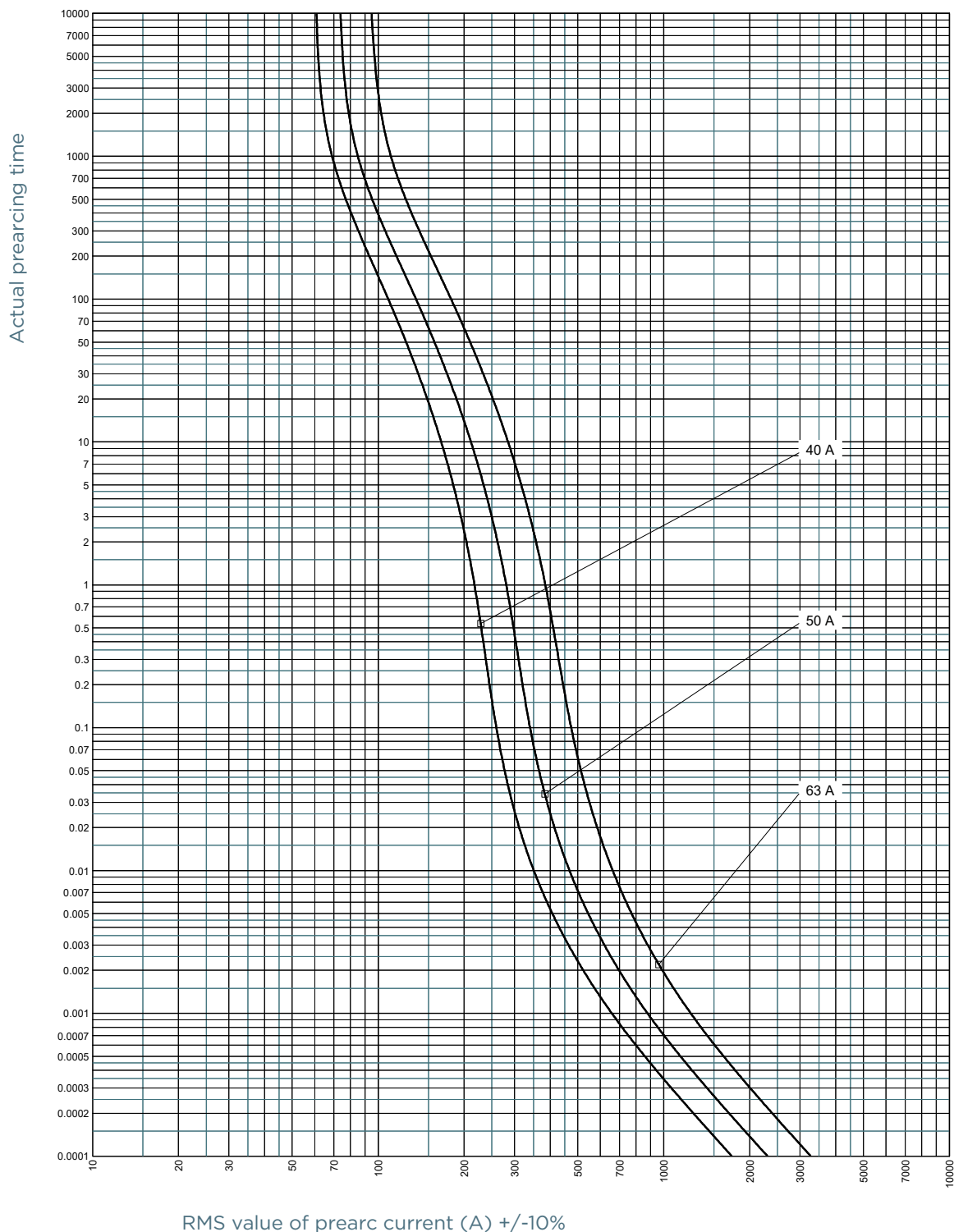
Semiconductor Protection Fuses / DS-PFCY20GR-05-0724-EN

# Protistor® size 20x127 gR (GRB/C/D)

1000 to 1500VDC

## TIME CURRENT CHARACTERISTIC CURVES

Size 20x127 gR 1000VDC 40A to 63A

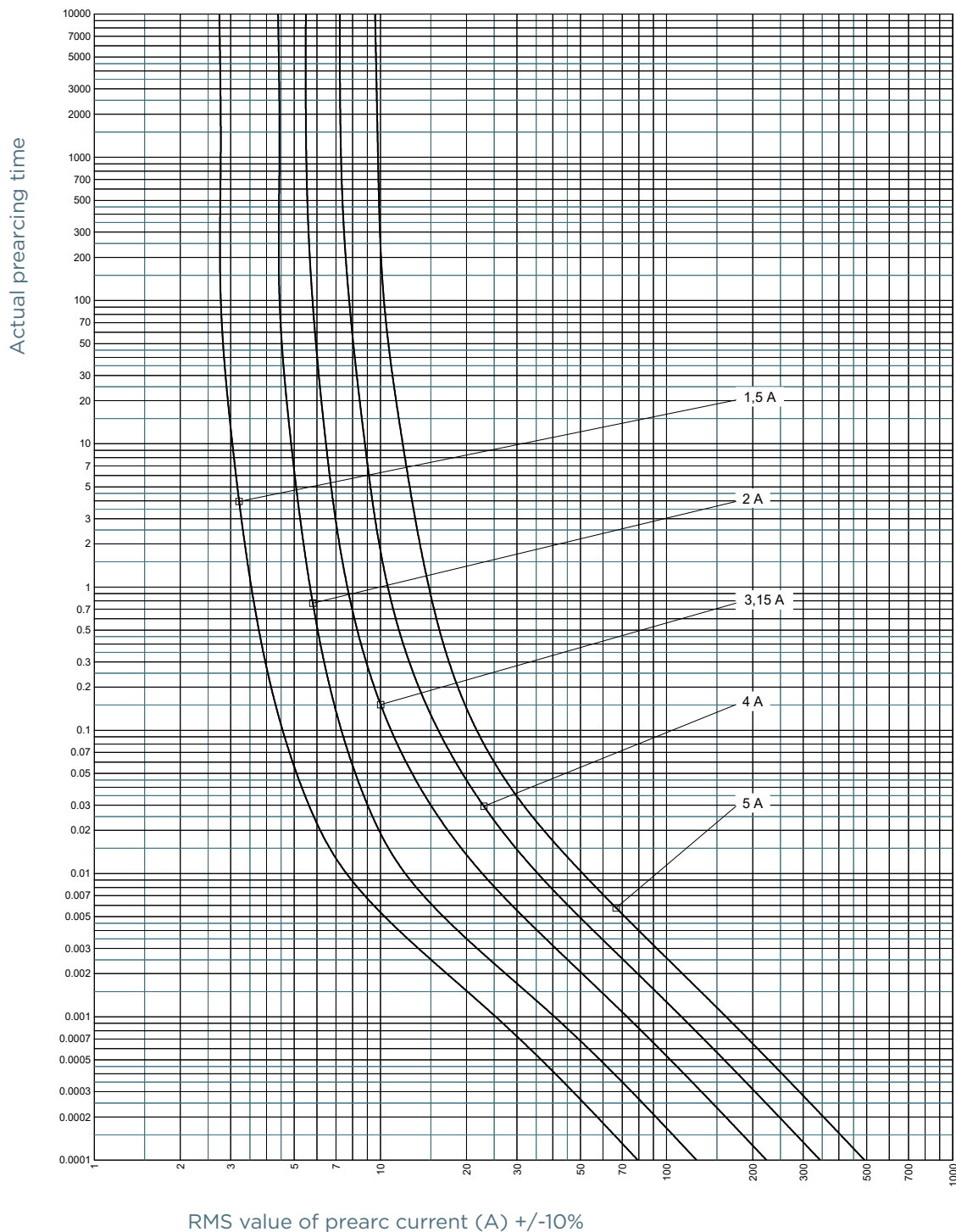


# Protistor® size 20x127 gR (GRB/C/D)

1000 to 1500VDC

## TIME CURRENT CHARACTERISTIC CURVES

Size 20x127 1500VSC 1,5A to 5A with or without striker

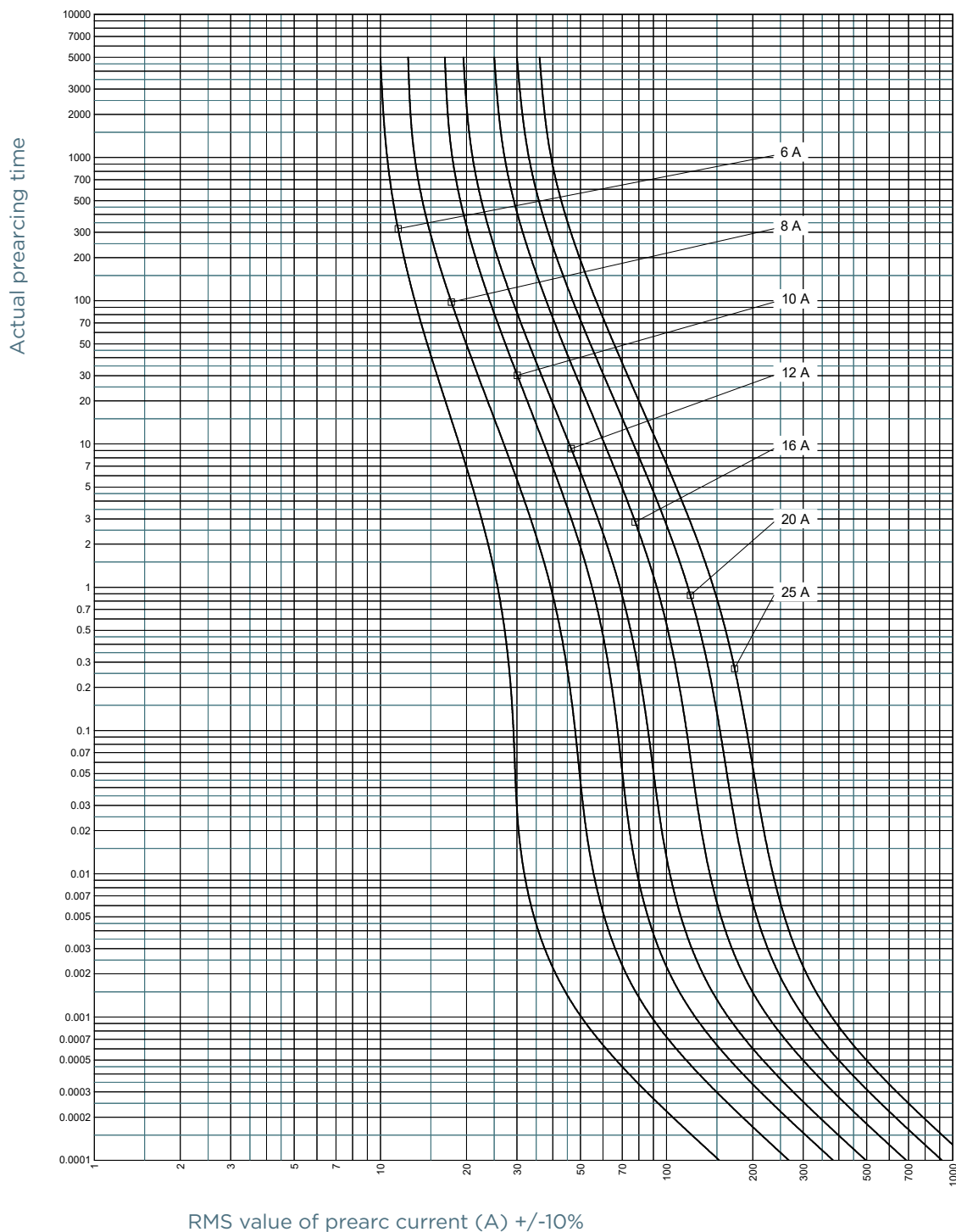


# Protistor® size 20x127 gR (GRB/C/D)

1000 to 1500VDC

## TIME CURRENT CHARACTERISTIC CURVES

Size 20x127 1500VDC 6A to 25A without striker

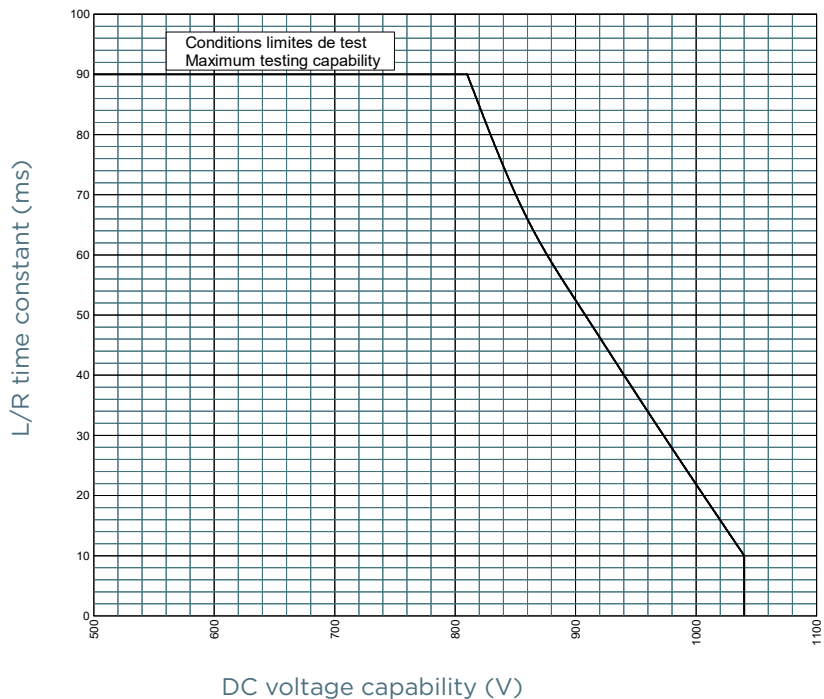


# Protistor® size 20x127 gR (GRB/C/D)

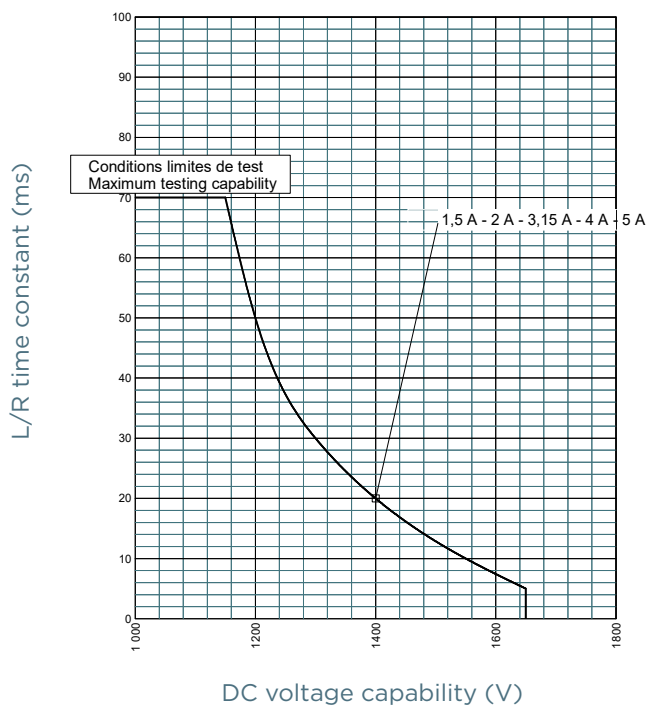
1000 to 1500VDC

## L/R TIME CONSTANT VS DC VOLTAGE CAPABILITY

### Size 20x127 gR 1000VDC



### Size 20x127 gR 1500VDC 1,5A to 5A



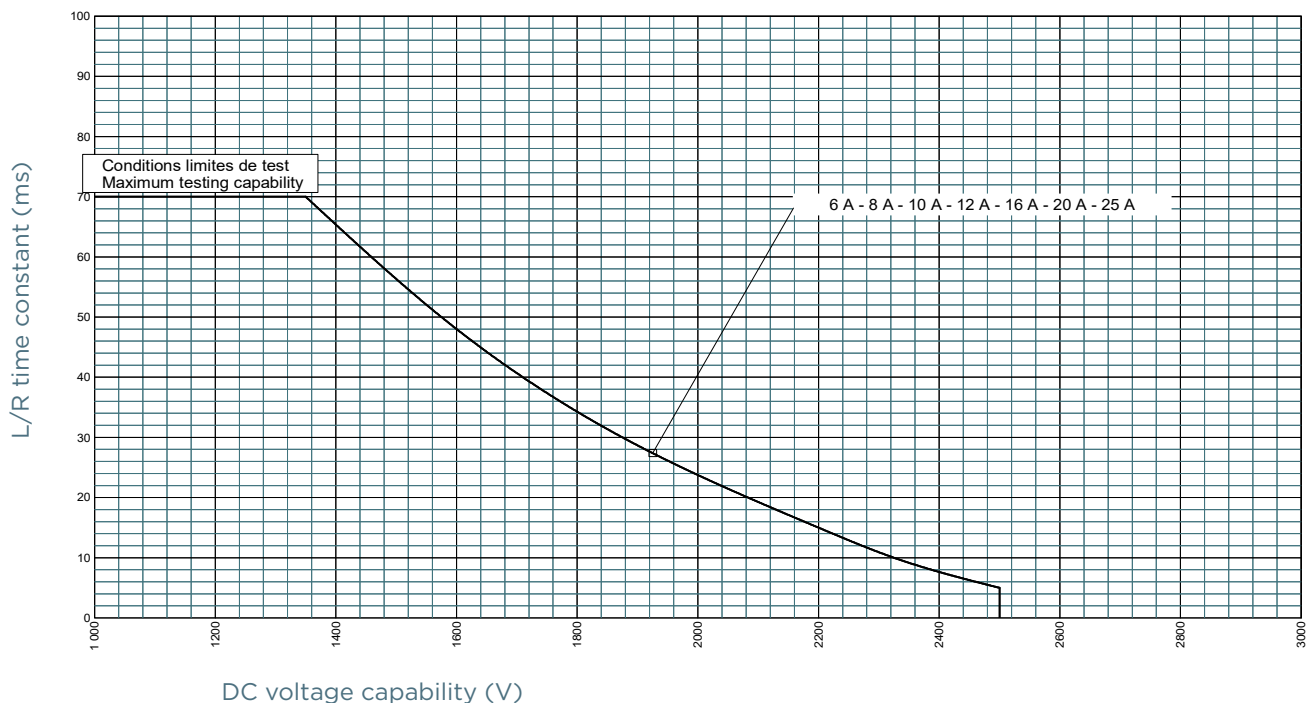


# Protistor® size 20x127 gR (GRB/C/D)

1000 to 1500VDC

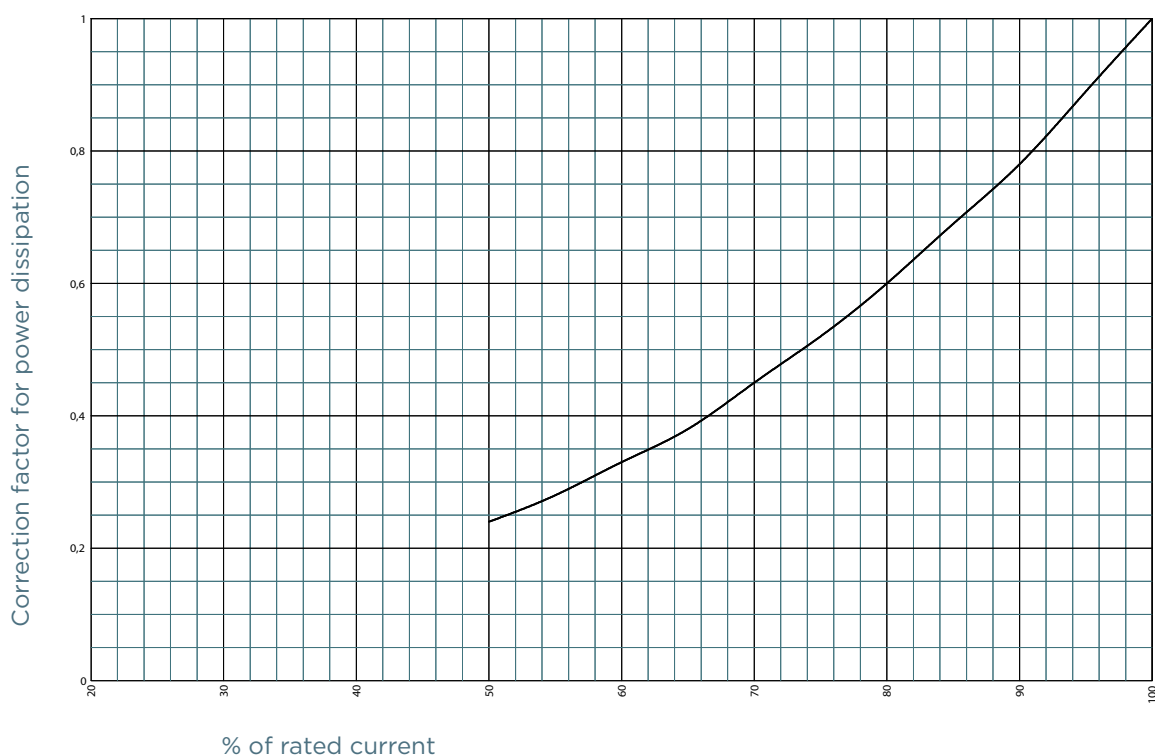
## L/R TIME CONSTANT VS DC VOLTAGE CAPABILITY

Size 20x127 gR 1500VDC 6A to 25A



## POWER DISSIPATION

Size 20x127 gR 1000VDC

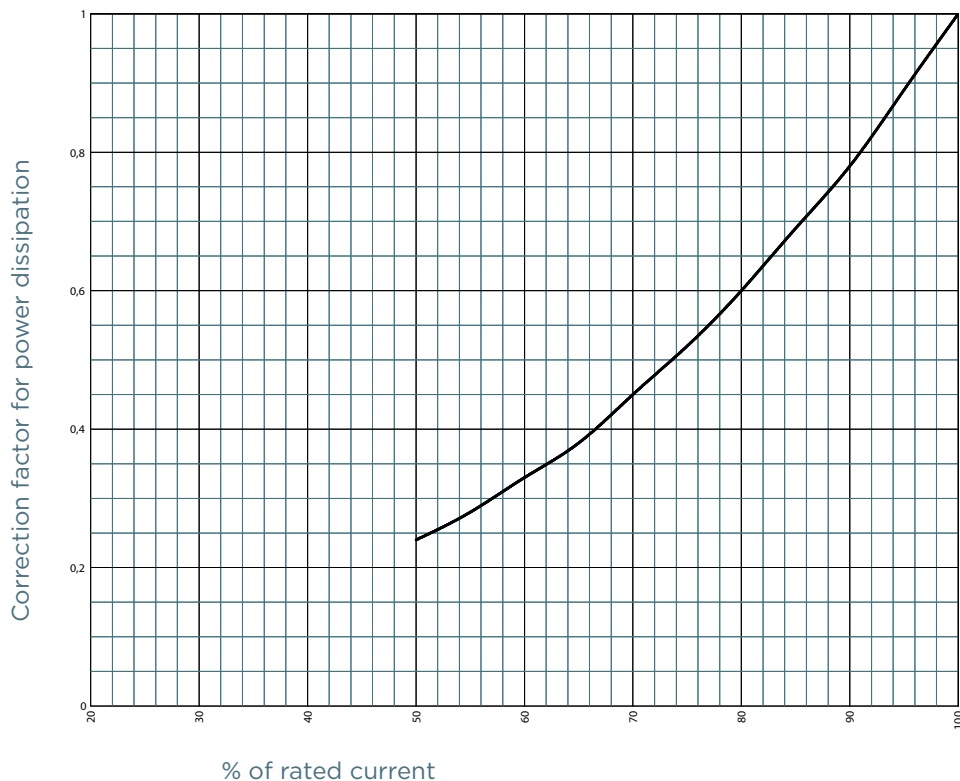


# Protistor® size 20x127 gR (GRB/C/D)

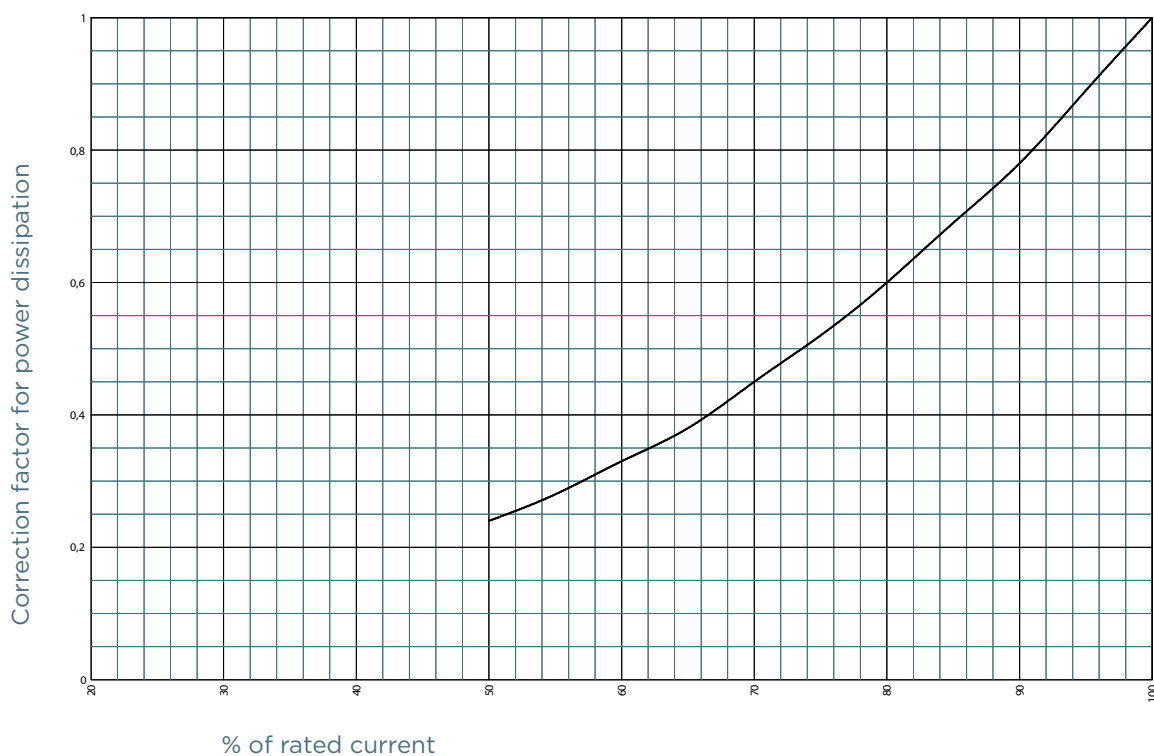
1000 to 1500VDC

## POWER DISSIPATION

### Size 20x127 gR 1500VDC 1,5A to 5A



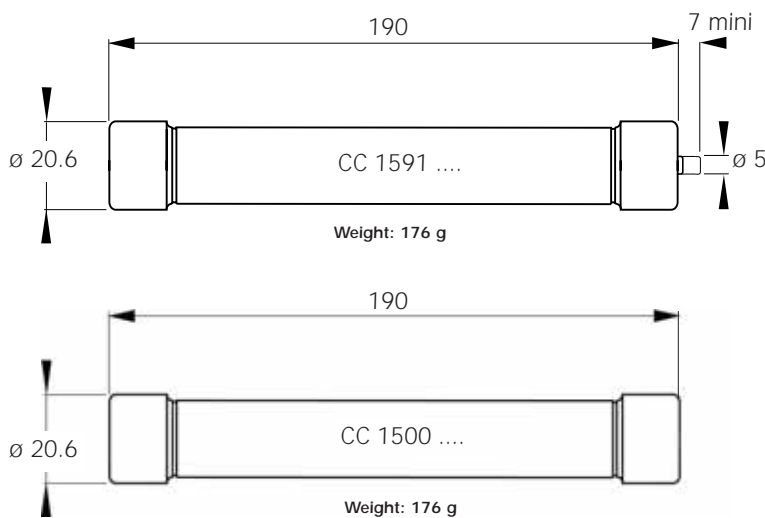
### Size 20x127 gR 1500VDC 6A to 25A



## DC Ferrule Fuses 20x190 gR 1500V DC

gRC from 6 to 32 A

### Dimensions



Trip force: 4.5N at 0 mm - 2.5N at 7 mm

### Main Characteristics

Size	Current rating $I_N$ (A)	Breaking Capacity	Watts loss		Designation	Reference Number	Catalog Number
			0.8 $I_N$ (W)	$I_N$ (W)			
20x190	6	@ 1500 V DC 60 kA L/R = 40 ms	4.8	7.8	CC 1591 CP gRC 20x190/6	D083102	FD20GC150V6T
	8		5.3	8.8	CC 1591 CP gRC 20x190/8	V083738	FD20GC150V8T
	10		6.5	10.5	CC 1591 CP gRC 20x190/10	G087245	FD20GC150V10T
	12		7.0	11.5	CC 1591 CP gRC 20x190/12	Y080429	FD20GC150V12T
	16		8.0	13	CC 1591 CP gRC 20x190/16	N088378	FD20GC150V16T
	20		9.5	15	CC 1591 CP gRC 20x190/20	Q087345	FD20GC150V20T
	25		12	19.5	CC 1591 CP gRC 20x190/25	Z080430	FD20GC150V25T
	32		16	26	CC 1591 CP gRC 20x190/32	G085911	FD20GC150V32T
	6		4.8	7.8	CC 1500 CP gRC 20x190/6	Z089469	FD20GC150V6
	8		5.3	8.8	CC 1500 CP gRC 20x190/8	A089470	FD20GC150V8
	10		6.5	10.5	CC 1500 CP gRC 20x190/10	B089471	FD20GC150V10
	12		7.0	11.5	CC 1500 CP gRC 20x190/12	C089472	FD20GC150V12
	16		8.0	13	CC 1500 CP gRC 20x190/16	D089473	FD20GC150V16
	20		9.5	15	CC 1500 CP gRC 20x190/20	E089474	FD20GC150V20
	25		12	19.5	CC 1500 CP gRC 20x190/25	F089475	FD20GC150V25
	32		16	26	CC 1500 CP gRC 20x190/32	G089476	FD20GC150V32

Minimum trip indicator operating voltage: 90 V

See Fuse Blocks, Fuse Holders and Fuse clips

Pack: 1 piece

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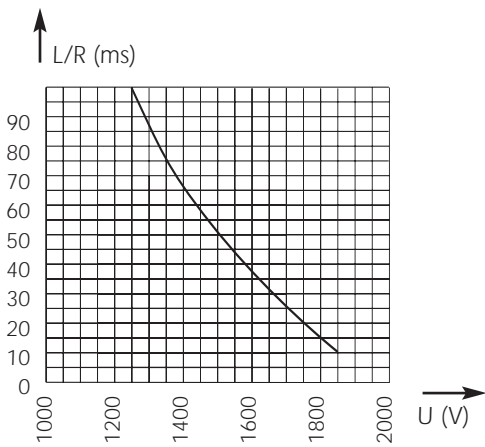
## DC Ferrule Fuses 20x190 gR 1500V DC



gRC from 6 to 32 A

### Electrical characteristics

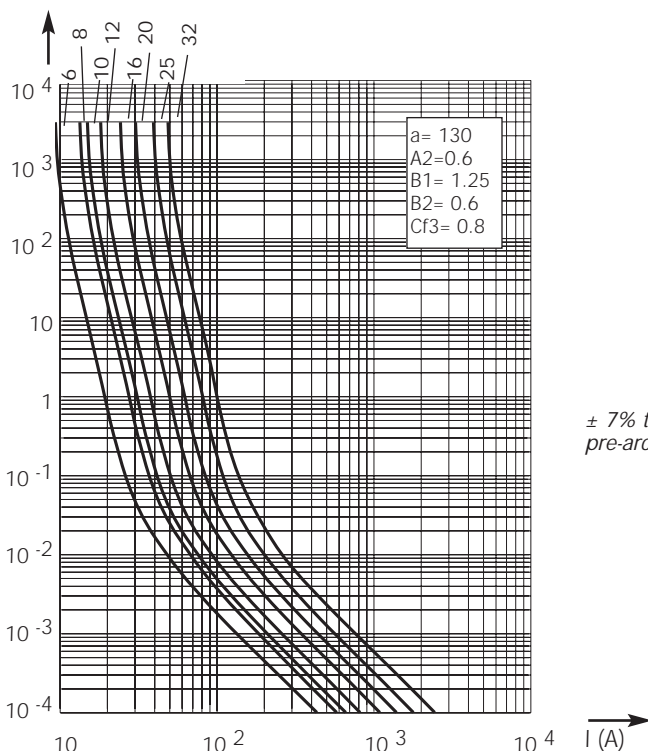
#### DC applications data



Above: Curve indicates maximum permissible value of time constant L/R as a function of DC working voltage

Max. AC voltage (50/60 Hz):  
3000 V with breaking capacity of 50 kA

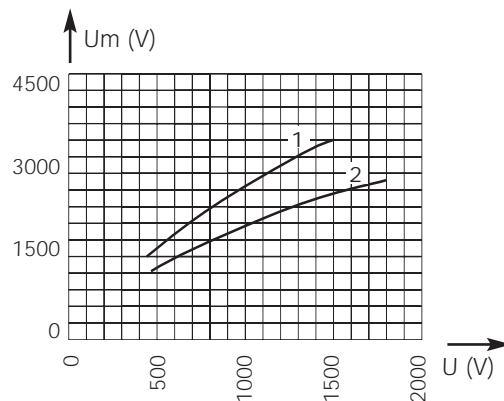
#### Time vs. current characteristics



± 7% tolerance for mean pre-arcing current

Above: Curves indicate, for each rated current, pre-arcing time vs. R.M.S. pre-arcing current.

#### Peak arc voltage vs. working voltage



1- L/R = 45 ms  
2- L/R = 15 ms

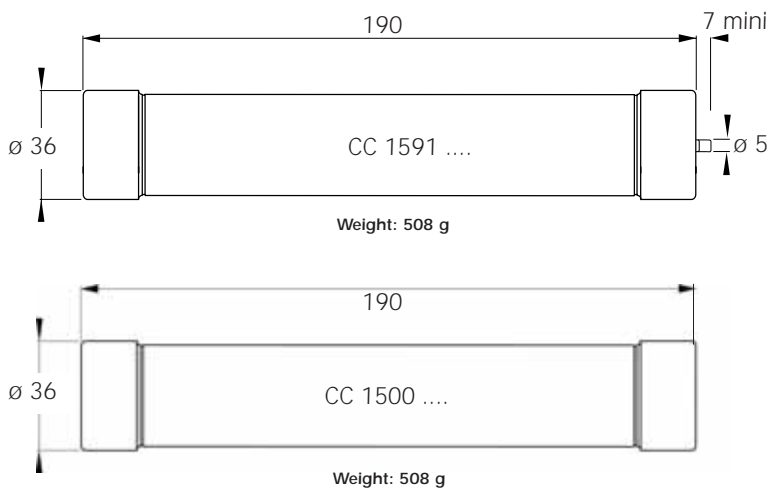
Above: Curves indicate for various time constants L/R peak arc voltage which may appear across fuse terminals, vs. DC working voltage

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## DC Ferrule Fuses 36x190 gR 1500V DC

gRC - gRD from 40 to 100 A

### Dimensions



Trip force: 4.5N at 0 mm - 2.5N at 7 mm

### Main Characteristics

Size	Current rating $I_N$ (A)	Breaking Capacity	Watts loss		Designation	Reference Number	Catalog Number
			0.8 $I_N$ (W)	$I_N$ (W)			
36x190	40	@ 1500 V DC 60 kA L/R = 60 ms	14	26	CC 1591 CP gRC 36x190/40	M 080419	FD36GC150V40T
	50		16.5	30	CC 1591 CP gRC 36x190/50	N 080420	FD36GC150V50T
	63		20.6	38	CC 1591 CP gRC 36x190/63	P 080421	FD36GC150V63T
	80		18	33	CC 1591 CP gRD 36x190/80	N 221134	FD36GD150V80T
	100		23	42	CC 1591 CP gRD 36x190/100	Y 220154	FD36GD150V100T
	40	@ 1500 V DC 100 kA L/R = 30 ms	14	26	CC 1500 CP gRC 36x190/40	H 089477	FD36GC150V40
	50		16.5	30	CC 1500 CP gRC 36x190/50	J 089478	FD36GC150V50
	63		20.6	38	CC 1500 CP gRC 36x190/63	K 089479	FD36GC150V63
	80		18	33	CC 1500 CP gRD 36x190/80	Q 078007	FD36GD150V80
	100		23	42	CC 1500 CP gRD 36x190/100	K 078025	FD36GD150V100

Minimum trip indicator operating voltage: 90 V

See Fuse Blocks, Fuse Holders and Fuse clips

Pack: 1 piece

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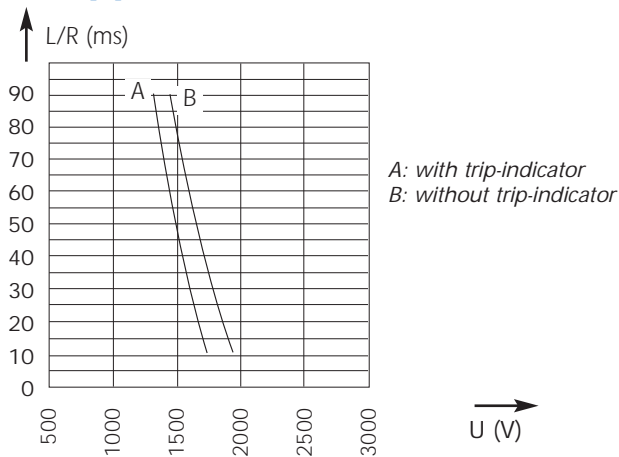
## DC Ferrule Fuses 36x190 gR 1500V DC



gRC - gRD from 40 to 100 A

### Electrical characteristics

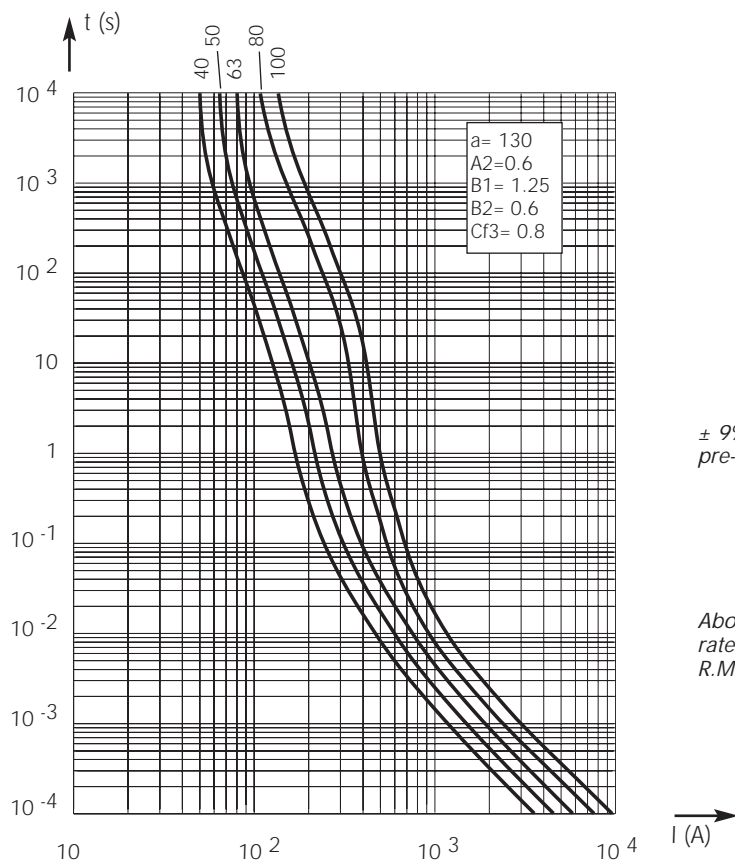
#### DC applications data



Above: Curve indicates maximum permissible value of time constant  $L/R$  as a function of DC working voltage

**Max. AC voltage (50/60 Hz):**  
3000 V with breaking capacity of 50 kA

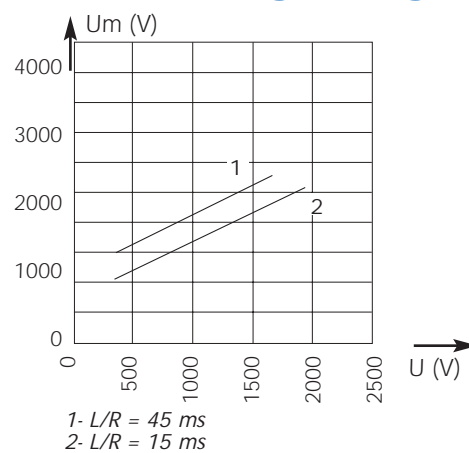
#### Time vs. current characteristics



$\pm 9\%$  tolerance for mean pre-arcing current

Above: Curves indicate, for each rated current, pre-arcing time vs. R.M.S. pre-arcing current.

#### Peak arc voltage vs. working voltage



Above: Curves indicate for various time constants  $L/R$  the peak arc voltage which may appear across fuse terminals, vs. DC working voltage

