

RAPIDPLUS

HIGH SPEED FUSES FOR SEMICONDUCTORS



gR SEMICONDUCTOR FUSES

Cylindrical high speed fuse-links intended for the optimum protection of semiconductor devices (thyristors, triacs, diodes, rectifiers, static relays, etc). gR class allows protection in whole range of over-currents, overloads as well as short-circuits, protecting semiconductor devices and conductors and other switchgear installations. Typical applications comprise protection in rectifiers, UPS, converters, motor drives, soft starters and inverters. Melting elements are specially designed to obtain low I^2t values, reduced arc voltages and an adequate selective coordination with upstream fuse-links. Wide range of rated currents and striker versions for use in fuse bases with micro-switch. Made of ceramic tube with high withstand to internal pressure and thermal shock, that allow a high breaking capacity in a reduced physical space. Contacts caps are made of silver plated copper.

www.df-sa.es/rapidplus/gR/

In (A)	REFERENCE		U (V AC)	BREAKING CAPACITY (kA)	PACKING
	WITHOUT STRIKER	WITH STRIKER			
10x38	4	492003	690	100	10
	6	492004	690	100	10
	8	492005	690	100	10
	10	492006	690	100	10
	12	492007	690	100	10
	16	492008	690	100	10
	20	492009	690	100	10
	25	492010	690	100	10
	32	492011	690	100	10

440 VDC - BREAKING CAPACITY 30 KA



492006

14x51	4	492014	690	100	10
	6	492015	690	100	10
	8	492016	492116	100	10
	10	492017	492117	100	10
	12	492018	492118	100	10
	16	492019	492119	100	10
	20	492020	492120	100	10
	25	492021	492121	100	10
	32	492022	492122	100	10
	40	492023	492123	100	10
	50	492024	492124	100	10

440 VDC - BREAKING CAPACITY 30 KA



492014

22x58	20	492033	492133	690	100	10
	25	492034	492134	690	100	10
	32	492035	492135	690	100	10
	40	492036	492136	690	100	10
	50	492037	492137	690	100	10
	63	492038	492138	690	100	10
	80	492039	492139	690	100	10
	100	492040	492140	690	100	10

440 VDC - BREAKING CAPACITY 30 KA



492040

STANDARDS
IEC 60269-1
IEC 60269-4
EN 60269-1
EN 60269-4

APPROVALS
Cd-Pb
RoHS
compliant
REACH

TECHNICAL
DIMENSIONS AND
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t-I AND CUT-OFF
CHARACTERISTICS
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TECHNICAL
RAPIDPLUS FUSES IN
PMC, PMF & PMX
MODULAR FUSE
HOLDERS
PAGE 12

COMPATIBLE
PMF MODULAR
FUSE HOLDERS
SEE
CYLINDRICAL

COMPATIBLE
PMX MODULAR
FUSE HOLDERS
SEE
CYLINDRICAL

COMPATIBLE
BAC OPEN FUSE BASES
SEE
CYLINDRICAL

RAPIDPLUS

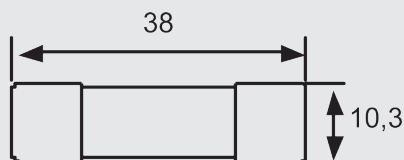
HIGH SPEED FUSES FOR SEMICONDUCTORS

TECHNICAL

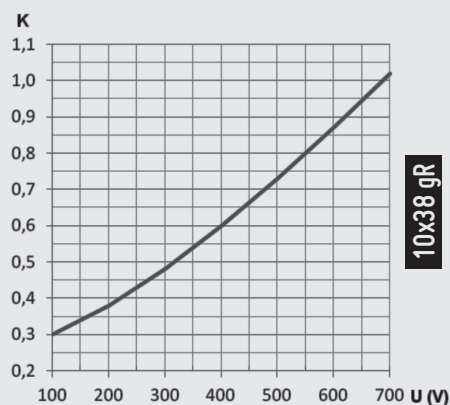
gR

SEMICONDUCTOR FUSES DIMENSIONS & TECHNICAL DATA

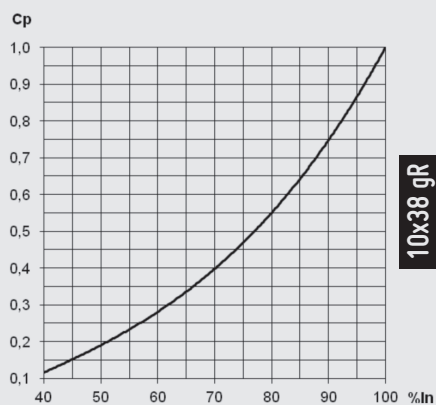
10x38



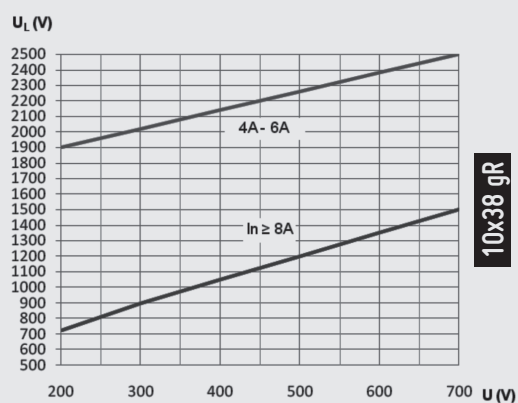
I^2t Correction Factor (K)



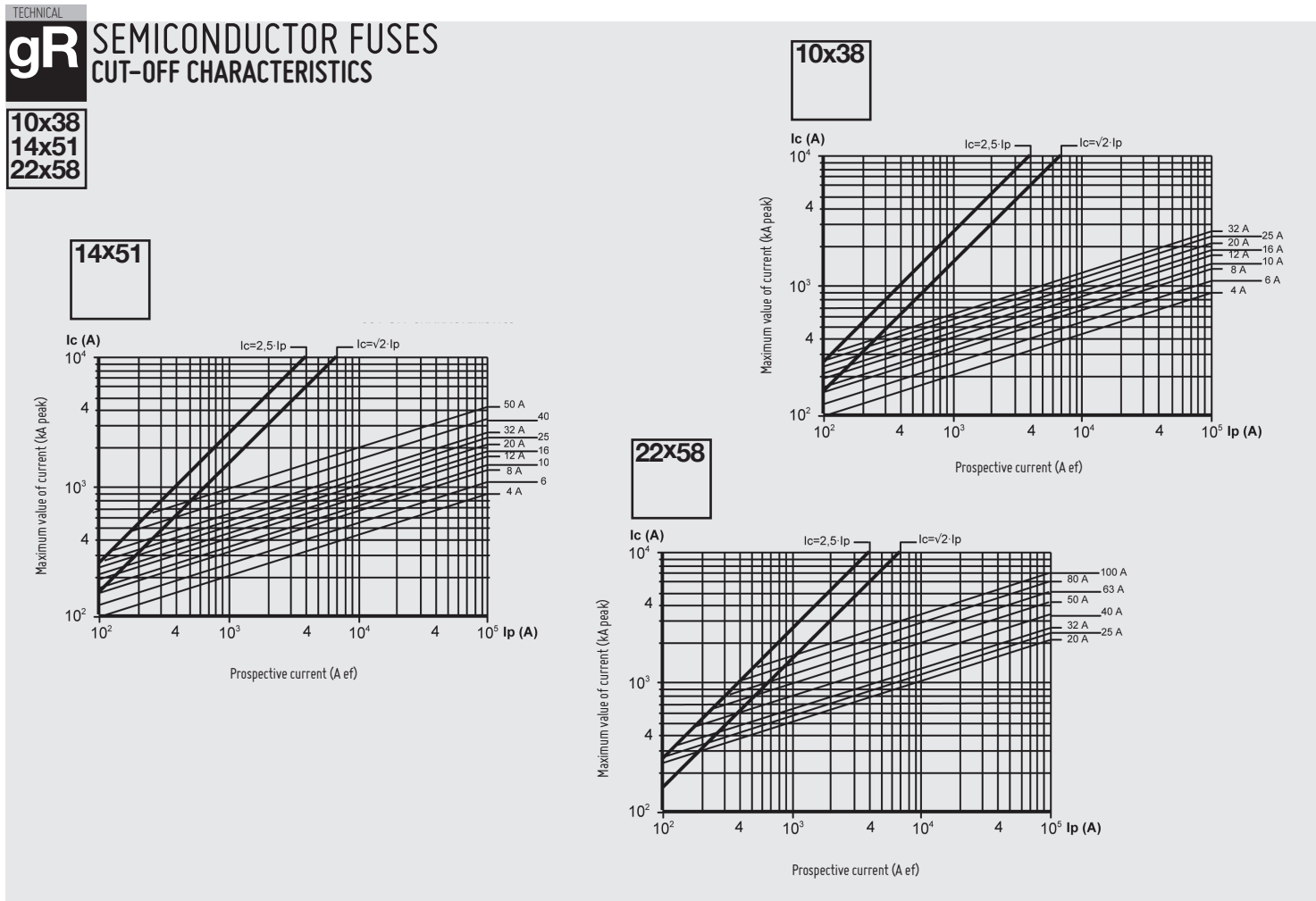
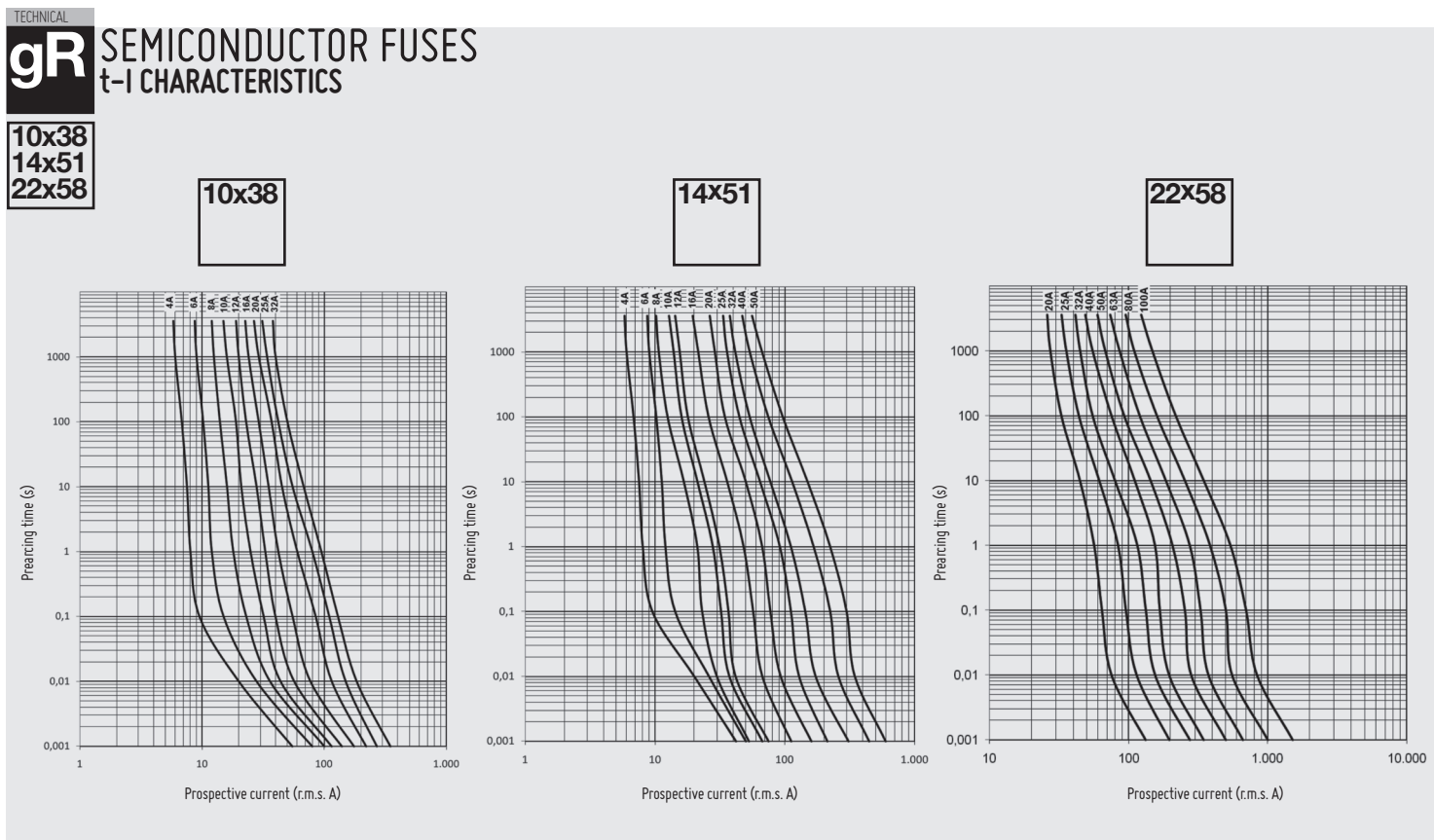
Correction Factor for Power Loss (Cp)



Peak Arc Voltage (UL)



I_n (A)	I^2t Prearcing (A ² S)	Operating I^2t @ 690 V (A ² S)	Power loss $0.8 \cdot I_n$ (W)	Power loss I_n (W)
4	5,6	17	1,13	2,05
6	16,0	48	1,56	3,00
8	4,3	38	0,97	1,68
10	6,6	59	1,20	2,09
12	9,6	84	1,69	2,99
16	17,0	150	2,31	4,27
20	23,5	200	2,86	5,35
25	60,2	512	2,94	5,52
32	94,0	800	3,82	7,43



TECHNICAL

aR
gR

SEMICONDUCTOR FUSES

USE OF SEMICONDUCTOR FUSE LINKS (RAPIDPLUS) IN PMC, PMF & PMX MODULAR FUSE HOLDERS AND BAC FUSE BASES

The modular fuse holders for cylindrical fuses have a rated power acceptance according to the maximum power dissipations allowed for the general use fuse links (gG) and back up fuse links.

These maximum values allowed for the fuse links (gG/aM) are regulated by standards (IEC/EN60269-2). In the same way, this standards specify the minimum power acceptance for the fuse holders. This power acceptance is the power dissipated by the fuse links (converted in heat) tha the fuse holder can accept with an acceptable increase of the temperature (values also regulated by standards).

The fuse links for protection of semiconductors **RAPIDPLUS** have a rated power dissipation (or power loss) higher than the gG or aM types, and for this reason there are some limitations for the application of these fuses in closed modular fuse holders.

It is necessary to check that the fuse links have a power diissipation not higher than the maximum value admissible of the fuse holder indicated by the manufacturer.

When it is no possible to use modular fuse holders the solution is the use of an open fuse base where the heat can be appropriately dissipated.

In the following table are indicated the maximum values of power acceptance for **DF ELECTRIC** fuse holders. These limits should never be exceeded:

FUSE HOLDER TYPE	RATED POWER ACCEPTANCE IEC/EN60269-2-1	MAX. POWER ACCEPATNCE DF ELECTRIC FUSE HOLDERS
PMC 10x38	3 W	4 W
PMF 10x38	3 W	4 W
PMX 14x51	5 W	6 W
PMX 22x58	9,5 W	12 W
BAC 10x38	–	8 W
BAC 14x51	–	12 W
BAC 22x58	–	20 W