

# A70QS FRENCH CYLINDRICAL SEMICONDUCTOR PROTECTION FUSES



These Premium Amp-trap® French Cylindrical Semiconductor Fuses are an extension of the popular A70QS product line. They are solid-fill 14mm and 22mm fuses, IEC rated 690VAC, 200kA Interrupting and 700VDC, 100kA interrupting at 10ms time constant. In addition, these fuses have an 890 VDC rating for capacitor discharge applications up to 2.5ms time constant. All ampere ratings are available with a striker. Applications include small inverter drives and UPS systems, with superior I<sup>2</sup>t for improved protection and performance.

## Features/Benefits

- **International 14x51mm (2"x9/16") and 22x58mm (2-1/4"x13/16") sizes** for worldwide acceptance
- **Ferrule mount** up to 100A for design versatility
- **Very low I<sup>2</sup>t** for improved semiconductor protection
- **690V IEC rated**, tested at 760VAC; can be used up to 750VAC in U.S.
- **700VDC rated** for dc protection of equipment with L/R ≤10ms
- **Superior cycling ability** for longer life on difficult cyclic loading applications
- **aR characteristic** for semiconductor short-circuit protection

## HIGHLIGHTS:

- 14 x 51 and 22 x 58 sizes
- 690VAC IEC Rated (760VAC Max.)
- 700VDC rated
- Superior Cycling Ability
- Low Watts Loss
- Optional Striker for Visual/Remote Indication

## APPLICATIONS:

- Small inverters, UPS systems, motor drives and similar 700V or less equipment

## Ratings

- **AC:** 10-100A  
690VAC, 200kA I.R.  
IEC tested at 760VAC
- **DC:** 700VDC,  
100kA I.R.  
Contact factory  
for details

## Approvals

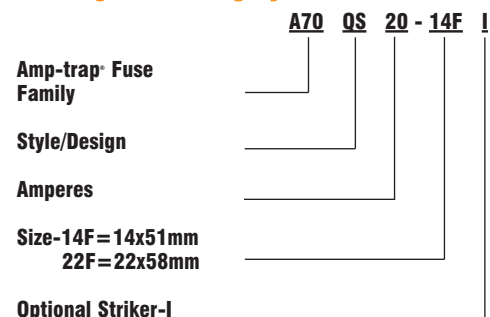
- UL Recognized  
Component  
File E76491
- CSA Certified
- IEC 269-4 Compliance



## Mounting:

- US14 or US22 "finger-safe" IP 20 grade holders, DIN rail or screw mount, with striker actuated microswitch indication available.
- 703 Series open fuse blocks

## Catalog Numbering System



## A70QS

## FRENCH CYLINDRICAL SEMICONDUCTOR PROTECTION FUSES

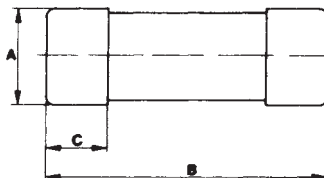
## Ratings and Application Data

| BODY SIZE (mm) | AMP RATING (A) | MELTING I <sup>2</sup> t (A <sup>2</sup> s X 10 <sup>3</sup> ) | MAX. CLEARING I <sup>2</sup> t @ 700VAC (A <sup>2</sup> s X 10 <sup>3</sup> ) | WATTS LOSS @ RATED CURRENT (W) | CATALOG NUMBER |               |
|----------------|----------------|----------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------|----------------|---------------|
|                |                |                                                                |                                                                               |                                | NO STRIKER     | WITH STRIKER  |
| 14 x 51        | 6              | 0.0013                                                         | 0.017                                                                         | 2.0                            | A70QS6-14F     | A70QS6-14FI   |
|                | 8              | 0.0024                                                         | 0.027                                                                         | 2.8                            | A70QS8-14F     | A70QS8-14FI   |
|                | 10             | 0.0043                                                         | 0.04                                                                          | 3.5                            | A70QS10-14F    | A70QS10-14FI  |
|                | 12             | 0.0054                                                         | 0.06                                                                          | 4.4                            | A70QS12-14F    | A70QS12-14FI  |
|                | 16             | 0.0132                                                         | 0.10                                                                          | 4.8                            | A70QS16-14F    | A70QS16-14FI  |
|                | 20             | 0.027                                                          | 0.16                                                                          | 5.2                            | A70QS20-14F    | A70QS20-14FI  |
|                | 25             | 0.053                                                          | 0.27                                                                          | 5.8                            | A70QS25-14F    | A70QS25-14FI  |
|                | 32             | 0.098                                                          | 0.50                                                                          | 7.0                            | A70QS32-14F    | A70QS32-14FI  |
|                | 40             | 0.13                                                           | 0.70                                                                          | 10.7                           | A70QS40-14F    | A70QS40-14FI  |
|                | 50             | 0.28                                                           | 1.50                                                                          | 11.6                           | A70QS50-14F    | A70QS50-14FI  |
| 22 x 58        | 10             | 0.0043                                                         | 0.025                                                                         | 4.0                            | A70QS10-22F    | A70QS10-22FI  |
|                | 15             | 0.008                                                          | 0.049                                                                         | 6.2                            | A70QS15-22F    | A70QS15-22FI  |
|                | 20             | 0.013                                                          | 0.076                                                                         | 8.0                            | A70QS20-22F    | A70QS20-22FI  |
|                | 25             | 0.02                                                           | 0.125                                                                         | 10.0                           | A70QS25-22F    | A70QS25-22FI  |
|                | 32             | 0.49                                                           | 0.27                                                                          | 11.0                           | A70QS32-22F    | A70QS32-22FI  |
|                | 40             | 0.88                                                           | 0.48                                                                          | 13.0                           | A70QS40-22F    | A70QS40-22FI  |
|                | 50             | 0.16                                                           | 0.80                                                                          | 14.9                           | A70QS50-22F    | A70QS50-22FI  |
|                | 63             | 0.35                                                           | 1.85                                                                          | 16.0                           | A70QS63-22F    | A70QS63-22FI  |
|                | 70             | 0.52                                                           | 2.80                                                                          | 16.5                           | A70QS70-22F    | A70QS70-22FI  |
|                | 80             | 0.73                                                           | 3.80                                                                          | 17.8                           | A70QS80-22F    | A70QS80-22FI  |
|                | 90             | 1.10                                                           | 5.64                                                                          | 17.0                           | A70QS90-22F    | A70QS90-22FI  |
|                | 100            | 1.56                                                           | 8.00                                                                          | 19.0                           | A70QS100-22F   | A70QS100-22FI |

\*100kA, L/R = 11.6ms

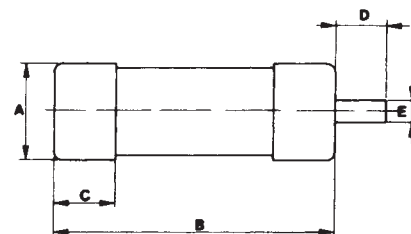
## No Striker

| FUSE SIZE | DIMENSIONS-mm |    |    |
|-----------|---------------|----|----|
|           | A             | B  | C  |
| 14 x 51   | 14            | 51 | 14 |
| 22 x 58   | 22            | 58 | 16 |



## With Striker

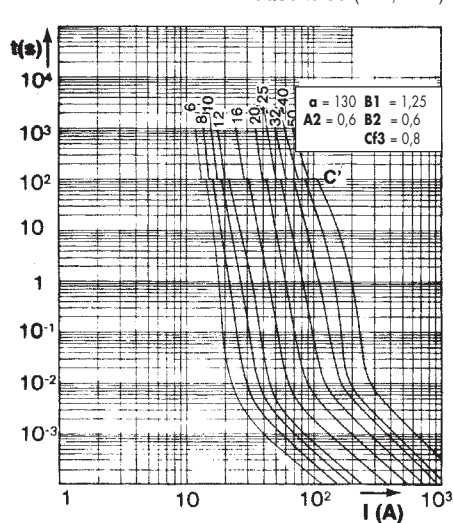
| FUSE SIZE | DIMENSIONS-mm |    |    |     |     |
|-----------|---------------|----|----|-----|-----|
|           | A             | B  | C  | D   | E   |
| 14 x 51   | 14            | 51 | 14 | 7.5 | 3.8 |
| 22 x 58   | 22            | 58 | 16 | 7.5 | 3.8 |



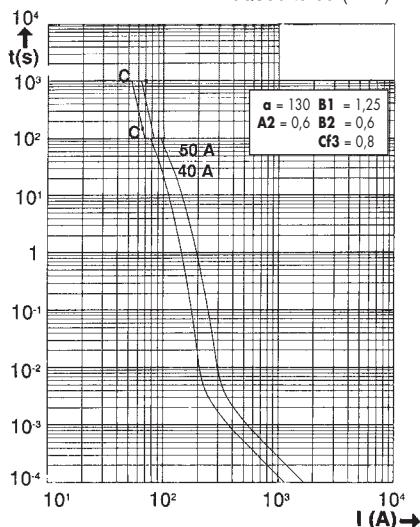
# A70QS FRENCH CYLINDRICAL SEMICONDUCTOR PROTECTION FUSES

## Melting Time-Current Data

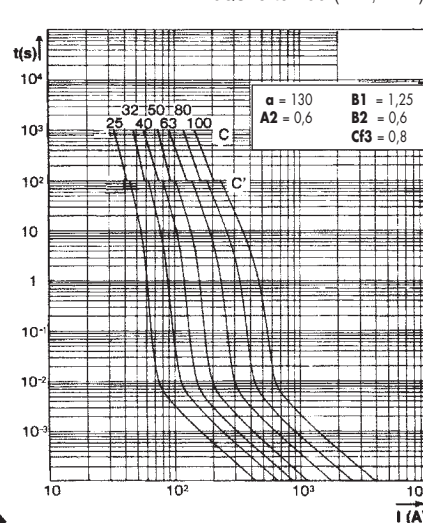
A70QS6 to 50 (14F, 14FI)



A70QS50 to 60 (14FI)



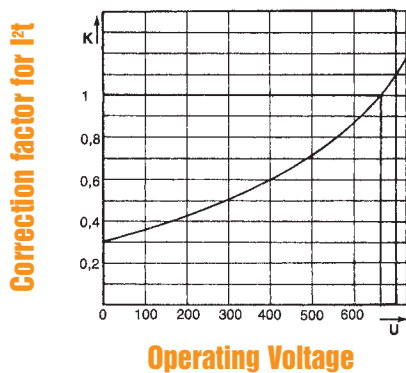
A70QS25 to 100 (22F, 22FI)



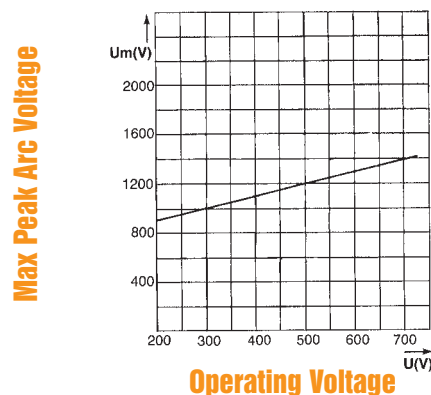
These curves indicate, for each rated current, the pre-arcing (melting) time vs. the R.M.S. current.

## Clearing $I^2t$ vs. Operating Voltage

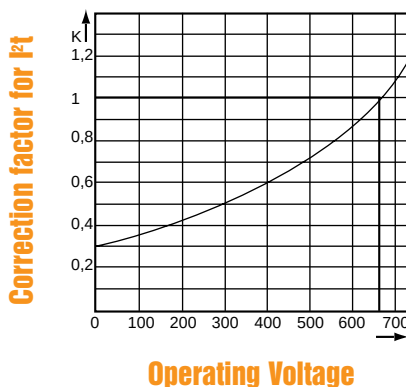
A70QS6 to 60 (14F, 14FI)



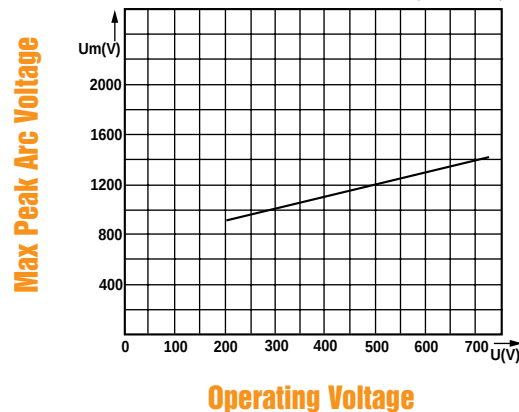
A70QS6 to 60 (14F, 14FI)



A70QS25 to 100 (22F, 22FI)



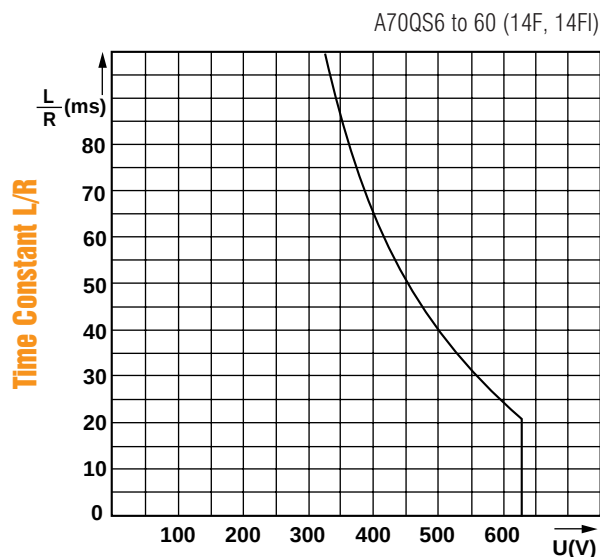
A70QS25 to 100 (22F, 22FI)



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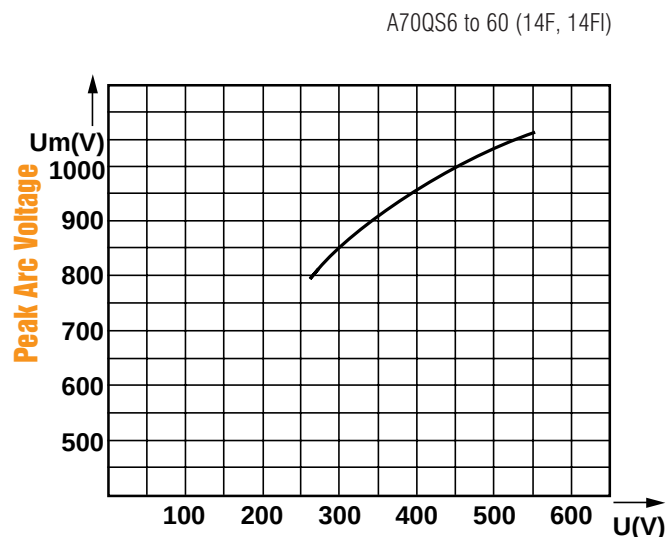
## D.C. Applications Data

DC Voltage Capabilities vs. Time Constant



DC Voltage Capability

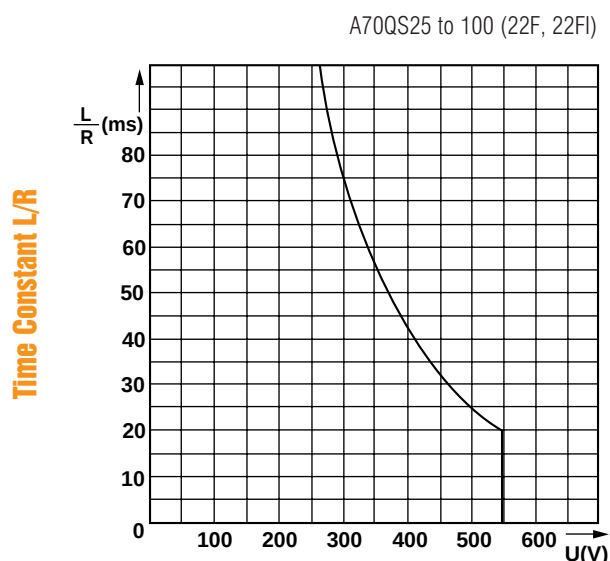
Peak Arc voltage vs. DC circuit voltage



DC Circuit Voltage

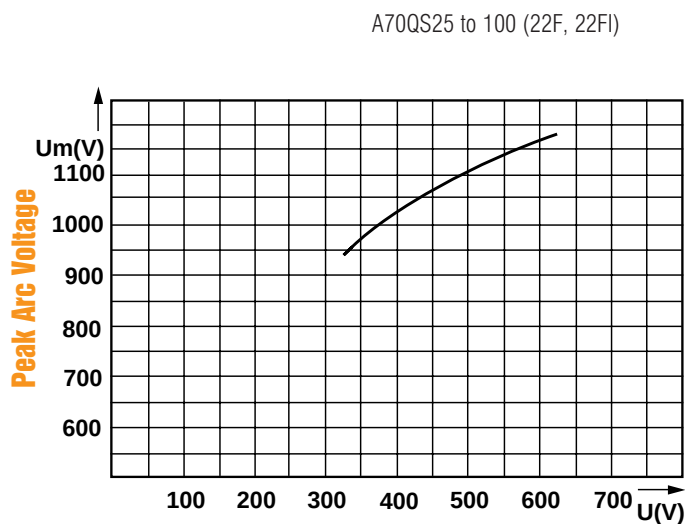
See melting-time current data for minimum breaking current.

DC Voltage Capabilities vs. Time Constant



DC Voltage Capability

Peak Arc voltage vs. DC circuit voltage



DC Circuit Voltage

These curves provide the DC voltage capability of the fuse as a function of circuit time constant. (L/R ratio)

These curves show the peak value  $U_m$  of the arc voltage which appears across the fuse link as a function of the operating voltage  $U$ .