



# Semiconductor (AC) fuses

## American Round Fuses Form 101 Range A70QS



### Semiconductor Protection Fuses

A70QS Amp-trap® Semiconductor Protection fuses were developed in response to the need for improved overall performance of 700 volt semiconductor fuses for new equipment requirements. A70QS fuses have lower  $I^2t$  for better protection, longer life when subjected to cyclic loading, plus lower watts loss. A70QS is the best choice to protect dynamic solid state equipment such as motor drives, UPS, etc.

### Features/Benefits

- Very Low  $I^2t$  for improved protection of equipment
  - Superior cycling ability for long, reliable life on high cyclic loading
  - Low watts loss for cooler operation
- 700V AC/DC rating gives greater design versatility
  - Ultra compact sizes allow down-sizing of existing equipment

### Ratings

- AC: 35-800A  
700VAC, 200kA I.R.
- DC: 35-800A  
700VDC, 100kA I.R.  
L/R = 10ms

### Approvals

- UL Recognized  
Component AC/DC
- AC: GuideNo.JFHR2
- DC: Tested to UL  
Standard 198L  
Parameters (35-800A)
- CSA Certified  
File LR 12636

### Highlights

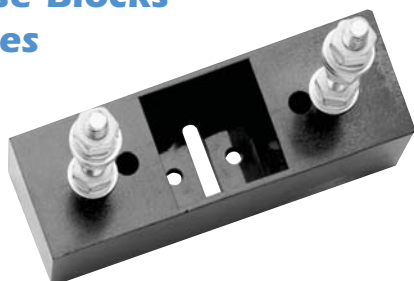
- 700V AC/DC Rated
- Very low  $I^2t$
- Low Watts Loss
- Superior Cycling Ability

### Applications

- Protection of 700V  
less motor drives,  
UPS, inverters, etc.

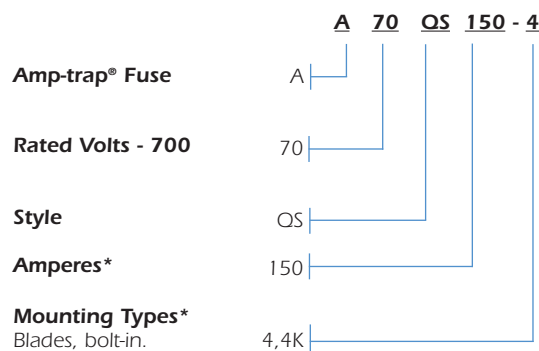


### Single Pole Fuse Blocks for A70QS Fuses



Fuse Ampere Rating	Fuse block	
	Catalog Number	Reference Number
35-200	P243C	M219040
225-600	P266A	Y212380
700-800	15C 375	

### Catalog Numbering System



\* for ampere ratings and types not listed, consult the factory.

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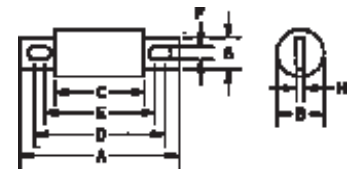
### Standard Fuse Ampere Ratings, Catalog and Reference Numbers

Ampere Rating	Catalog Number	Ref. Number	Ampere Rating	Catalog Number	Ref. Number	Ampere Rating	Catalog Number	Ref. Number	Ampere Rating	Catalog Number	Ref. Number
35	A70QS35-4	D202748	100	A70QS100-4	G214343	200	A70QS200-4	V212814	450	A70QS450-4K	H215356
40	A70QS40-4	Y213829	125	A70QS125-4	L215865	200	A70QS200-4K	E213329	500	A70QS500-4	A218431
50	A70QS50-4	T217919	125	A70QS125-4K	Q216375	250	A70QS250-4	L217406	500	A70QS500-4K	R218952
60	A70QS60-4	H219473	150	A70QS150-4	P218950	300	A70QS300-4	Q218951	600	A70QS600-4	Y219993
70	A70QS70-4	B201527	150	A70QS150-4K	F219471	350	A70QS350-4	M211266	600	A70QS600-4K	P222676
80	A70QS80-4	X212816	175	A70QS175-4	A223192	400	A70QS400-4	J214345	700	A70QS700-4	E202772
90	A70QS90-4	K214346	175	A70QS175-4K	J200982	450	A70QS450-4	F214848	800	A70QS800-4	Z213830

For ampere ratings and styles not listed, ask sales agent. Mounting Type 4; note exception 4k

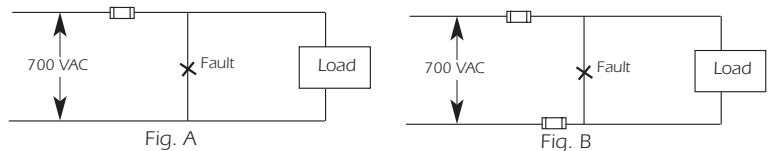
### Dimensions

Catalog Number	Mounting Type	Dimensions - Inches (mm)								
		A	B	C	D	E	F	G	H	
A70QS35 to 100	4	4.38 (111)	1.00 (25.4)	2.88 (73.0)	3.69 (93.6)	3.50 (88.9)	0.31 (7.9)	0.75 (19.0)	0.13 (3.2)	
A70QS125 to 200	4	4.38 (111)	1.22 (31.0)	2.88 (73.0)	3.69 (93.6)	3.56 (90.5)	0.31 (7.9)	1.00 (25.4)	0.19 (4.8)	
A70QS125 to 200	4K	5.09 (129)	1.22 (31.0)	2.88 (73.0)	4.19 (106)	3.50 (88.0)	0.41 (10.3)	1.00 (25.4)	0.19 (4.8)	
A70QS225 to 400	4	5.09 (129)	1.50 (38.1)	2.84 (72.2)	4.16 (106)	3.53 (89.7)	0.40 (10.3)	1.50 (38.1)	0.25 (6.4)	
A70QS450 to 600	4	5.09 (129)	2.00 (50.8)	2.84 (72.2)	4.16 (106)	3.53 (89.7)	0.41 (10.3)	1.50 (38.1)	0.25 (6.4)	
A70QS450 to 600	4K	7.09 (180)	2.00 (50.8)	2.84 (72.2)	6.16 (156)	3.53 (89.7)	0.53 (13.5)	1.50 (38.1)	0.25 (6.4)	
A70QS700 to 800	4	7.09 (180)	2.50 (63.5)	2.84 (72.2)	5.28 (134)	4.91 (125)	0.53 (13.5)	2.00 (50.8)	0.38 (9.5)	

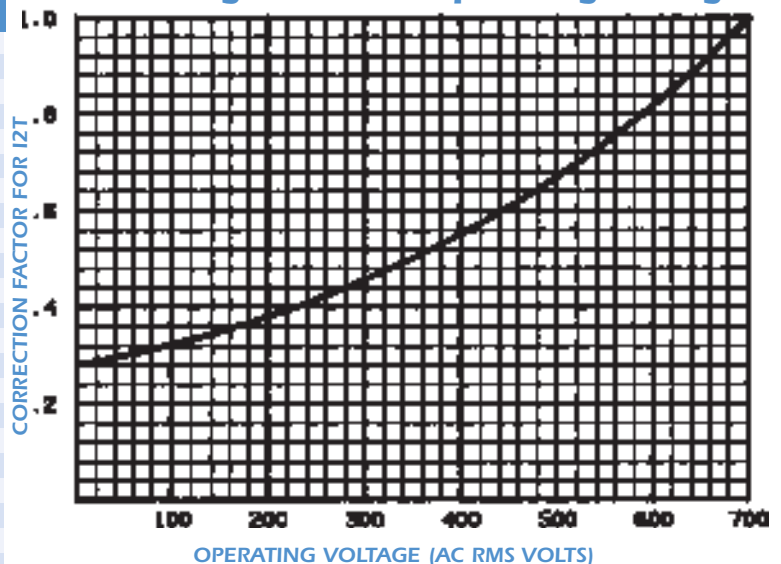


### I<sup>2</sup>t Data – 700 Volts AC, 100kA

Fuse Ampere Rating	Melting $\times 10^3 A^2s$	I <sup>2</sup> t data clearing at 700V AC	
		1 Fuse (Fig. A) $\times 10^3 A^2s$	2 Fuses in series (Fig. B) $\times 10^3 A^2s$
35	0.13	0.47	0.27
40	0.16	0.58	0.33
50	0.24	0.86	0.49
60	0.32	1.2	0.69
70	0.50	1.8	1.0
80	0.65	2.3	1.3
90	0.83	3.0	1.7
100	1.0	3.6	2.1
125	2.1	6.9	4.0
150	3.3	11	6.3
175	4.2	14	8.0
200	5.9	19	11
225	9.0	30	17
250	12.6	42	24
300	16.7	55	32
350	21.5	72	41
400	29.7	99	57
450	36.7	125	72
500	47.1	160	92
600	65.2	222	127
700	103.6	332	190
800	135.3	433	248



### Clearing I<sup>2</sup>t vs. AC Operating Voltage





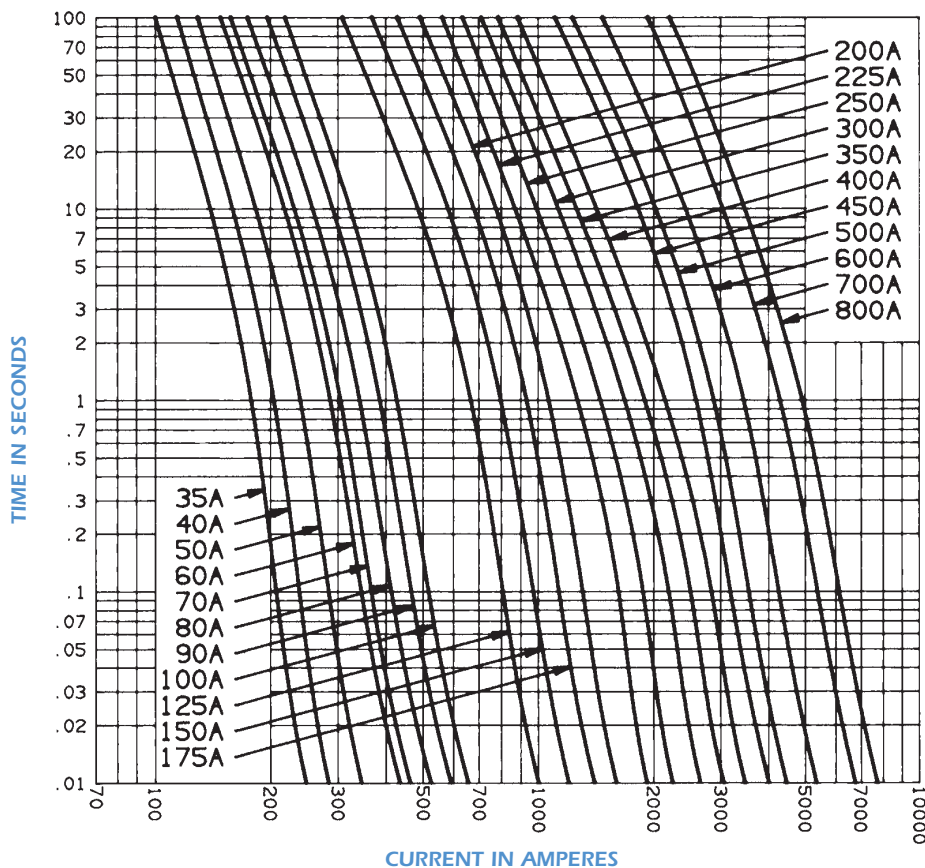
# Semiconductor (AC) fuses

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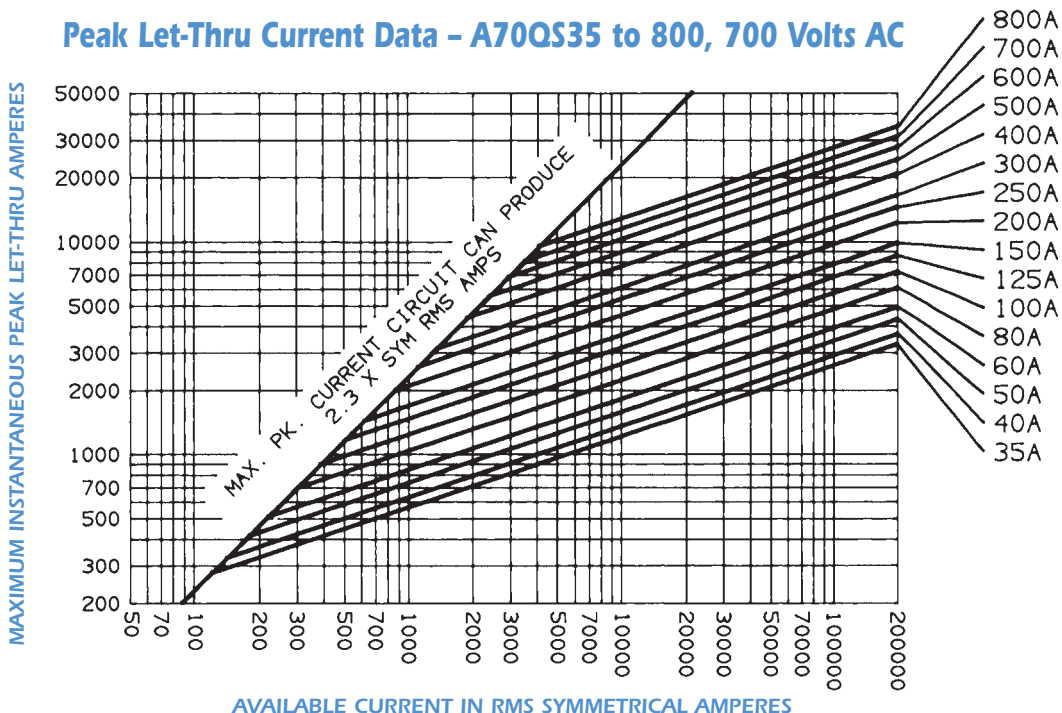
### Semiconductor Protection Fuses

#### A70QS35 to 800

#### Melting Time - Current Data, 700V Fuses



#### Peak Let-Thru Current Data - A70QS35 to 800, 700 Volts AC



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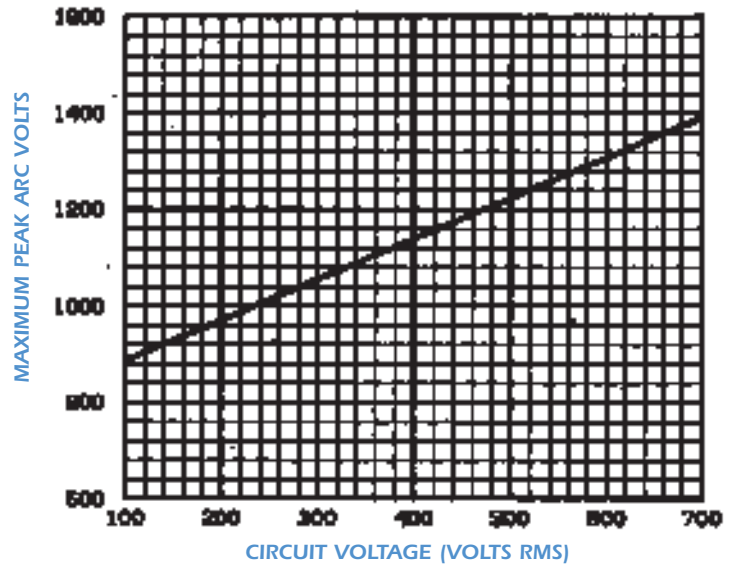
## American Round Fuses Form 101 Range A70QS

### Semiconductor Protection Fuses

Clearing  $I^2t$  at 700V DC,  
100kA, L/R = 10 ms

Ampere Rating	Clearing $I^2t$ ( $A^2s \times 10^3$ )
35	0.25
40	0.35
50	0.60
70	1.3
80	1.8
90	2.4
100	3.1
125	5.3
150	8.1
175	12
200	16
225	21.5
250	27.5
300	42
350	63
400	85
450	115
500	150
600	201
700	325
800	450

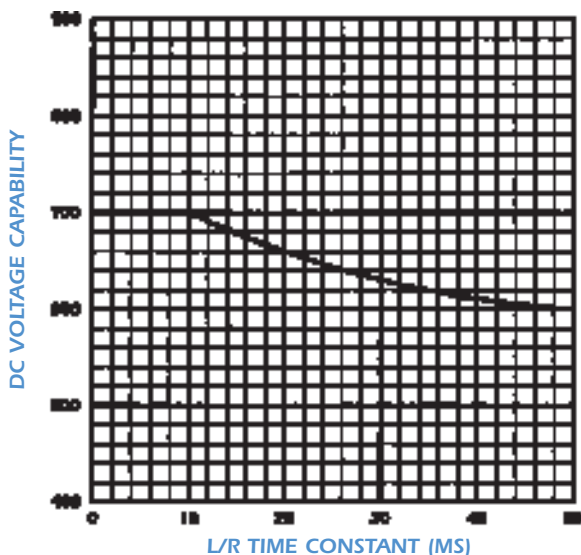
### Maximum Arc Volts vs. System Voltage



### Watts Loss at Rated Current

Ampere Rating	Watts Loss (W)	Ampere Rating	Watts Loss (W)
35	6.2	200	41
40	7.5	225	37
50	9.8	250	42
60	12	300	53
70	15	350	64
80	18	400	75
90	20	450	78
100	24	500	92
125	22	600	116
150	29	700	125
175	35	800	143

### DC Voltage Capability vs. Time Constant



### Watts Loss vs. % Rated Current

