

AMP-TRAP®-Form 101

A15QS

SEMICONDUCTOR PROTECTION FUSES



A15QS Amp-trap® Form 101 Semiconductor Protection fuses were designed for the specific protection of diodes and other semiconductor devices rated 150VAC/DC.

The A15QS product line's compact design is perfect for those applications that have limitations on available space.

Features/Benefits

- **Low I^2t** minimizes damage to protected components on short circuit
- **Controlled arc voltage** reduces stress to circuit components during fuse clearing
- **Choice of mounting types** provides options for unique termination requirements

Ratings

- **AC:** 1-6000A
150VAC, 100kA I.R.
- **DC:** 1-6000A
150VDC, 100kA I.R.

Approvals

- UL Recognized Component
- AC: UL Guide No. JFHR2 (1-4000A)
- DC Tested to UL Standard 198L parameters (1-4000A)

HIGHLIGHTS:

- Fast Acting
- Current Limiting
- Low I^2t
- Indicator Options Available

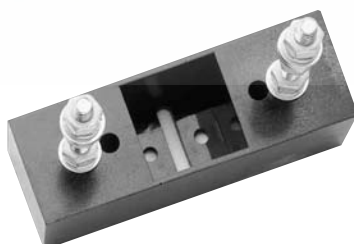
APPLICATIONS:

- Protection of heavy duty devices such as electrochemical rectifiers



Single Pole Fuse Blocks for A15QS Fuses

FUSE AMPERE RATING	FUSE BLOCK CATALOG NUMBER
1-30	30311
31-60	U71006
61-100	P243D
101-200	P243D
201-450	P243D
500-600	P243G



Catalog Numbering System

	A	15	QS	400	- 4	TI
Amp-trap® Fuse	A					
Rated Volts - 250		15				
Style			QS			
Amperes*				400		
Mounting Types*						
Ferrule						1
Ferrule, midjet dims. (1-1/2" x 13/32")						2
Blades, bolt-in						4
Hockey puck, bolt-in						128
Integral Blown-Fuse Indicator						
Trigger Indicator						TI
Trigger Actuator						IL

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

** For harsh duty applications, refer to the A13X product family. Consult the factory or OEM Central web site for A13X application information.
<http://www.ferrazshawmut.com/oem>

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Standard Fuse Ampere Ratings, Catalog Numbers

AMPERE RATING	CATALOG NUMBER	OUTLINE FIG.	AMPERE RATING	CATALOG NUMBER	OUTLINE FIG.	AMPERE RATING	CATALOG NUMBER	OUTLINE FIG.	AMPERE RATING	CATALOG NUMBER	OUTLINE FIG.
1	A15QS1-2	1	60	A15QS60-1	1	350	A15QS350-4TI	2	2000	A15QS2000-128IL	5
2	A15QS2-2	1	70	A15QS70-4	2	400	A15QS400-4	2	2500	A15QS2500-128	4
3	A15QS3-2	1	70	A15QS70-4TI	2	400	A15QS400-4IL	3	2500	A15QS2500-128IL	5
4	A15QS4-2	1	80	A15QS80-4	2	400	A15QS400-4TI	2	3000	A15QS3000-128	4
5	A15QS5-2	1	80	A15QS80-4TI	2	450	A15QS450-4	2	3000	A15QS3000-128IL	5
6	A15QS6-2	1	90	A15QS90-4	2	450	A15QS450-4IL	3	3500	A15QS3500-128	6
7	A15QS7-2	1	100	A15QS100-4	2	500	A15QS500-4	2	4000	A15QS4000-128	6
8	A15QS8-2	1	100	A15QS100-4TI	2	500	A15QS500-4IL	3	4000	A15QS4000-128IL	7
10	A15QS10-2	1	130	A15QS130-4	2	600	A15QS600-4	2	5000*	A15QS5000-128	8
12	A15QS12-2	1	130	A15QS130-4TI	2	800	A15QS600-4IL	3	6000*	A15QS6000-128	8
15	A15QS15-2	1	150	A15QS150-4	2	800	A15QS800-4	2			
20	A15QS20-2	1	150	A15QS150-4IL	3	1000	A15QS1000-4	2			
25	A15QS25-2	1	150	A13X150-4TI	2	1000	A15QS1000-4IL	3			
30	A15QS30-2	1	200	A15QS200-4	2	1000	A15QS1000-4TI	2			
35	A15QS35-1	1	200	A15QS200-4IL	3	1000	A15QS1000-128	4			
40	A15QS40-1	1	250	A15QS250-4	2	1000	A15QS1000-128IL	5			
40	A15QS40-4TI	2	250	A15QS250-4TI	2	1200	A15QS1200-128	4			
45	A15QS45-1	1	300	A15QS300-4	2	1200	A15QS1200-128IL	5			
50	A15QS50-1	1	300	A15QS300-4IL	2	1200	A15QS1500-128	4			
50	A15QS50-4	2	300	A15QS300-4IL	3	1500	A15QS1500-128IL	5			
			350	A15QS350-4	2	2000	A15QS2000-128	4			

*For ampere ratings, technical information, and styles not listed, call Technical Services.

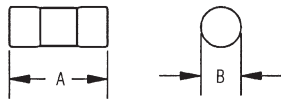


Figure 1

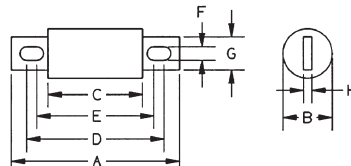


Figure 2

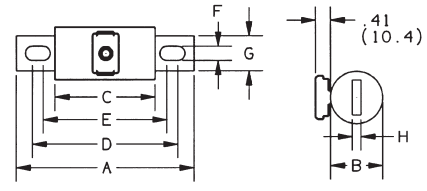


Figure 3

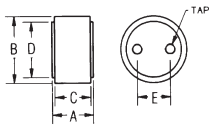


Figure 4

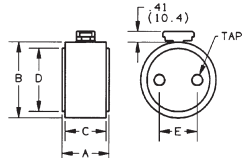


Figure 5

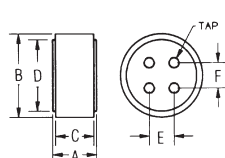


Figure 6

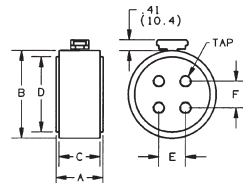


Figure 7

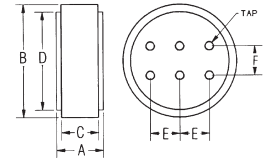


Figure 8

Dimensions

OUTLINE REF.	MOUNTING TYPE	FIG.	DIMENSIONS - INCHES (mm)								TAP
			A	B	C	D	E	F	G	H	
A15QS1 to 30	2	1	1.50 (38.1)	.41 (10.4)	-	-	-	-	-	-	-
A15QS35 to 60	1	1	2.00 (50.8)	.81 (20.6)	-	-	-	-	-	-	-
A15QS70 to 450	4, 4TI*, 4IL*	2, 3*	2.66 (67.6)	1.13 (28.7)	1.16 (29.5)	2.19 (55.6)	1.91 (48.5)	.31 (7.9)	.74 (22.4)	.13 (4.8)	-
A15QS500 to 1000	4, 4TI*, 4IL*	2, 3*	3.50 (88.9)	1.50 (38.1)	1.25 (31.8)	2.56 (65.0)	1.94 (49.3)	.41 (10.4)	1.00 (25.4)	.25 (6.4)	-
A15QS750 to 2000	128, 128IL*	4, 5*	1.88 (47.8)	2.00 (50.8)	1.63 (41.4)	1.75 (44.5)	1.00 (25.4)	-	-	-	3/8-24-1/2 Deep
A15QS2500 to 3000	128, 128IL*	4, 5*	1.88 (47.88)	3.00 (76.2)	1.63 (41.4)	2.50 (63.5)	1.50 (38.1)	-	-	-	1/2-20-1/2 Deep
A15QS3500 to 4000	128, 128IL*	6, 7*	1.88 (47.88)	3.50 (88.9)	1.63 (41.4)	3.00 (76.2)	1.06 (27.0)	1.06 (27.0)	-	-	1/2-20-1/2 Deep
A15QS5000 to 6000	128	8	2.38 (60.5)	5.75 (146)	1.88 (47.7)	5.00 (127)	1.50 (38.1)	1.50 (38.1)	-	-	1/2-20-1/2 Deep

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SEMICONDUCTOR PROTECTION FUSES

I²t Data-150VAC

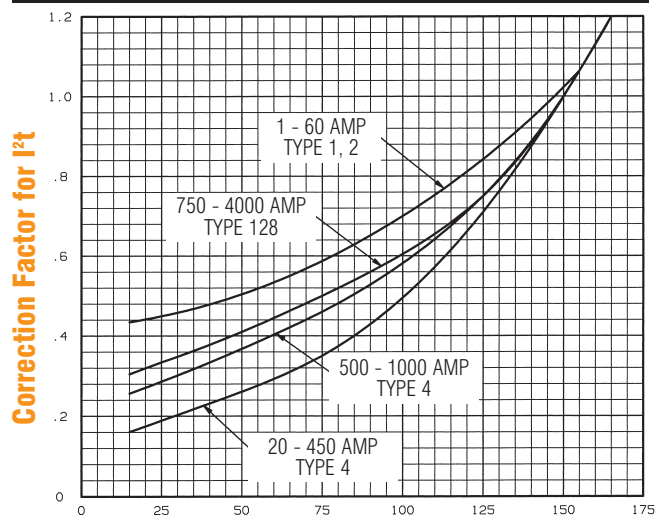
AMPERE RATING	Melting (A ² s X 10 ³)			MAX CLEARING I ² t @ 150VAC (A ² s X 10 ³)
	Body Style			
	Type 2	Type 1	Type 4	
1	0.0001	0.045		0.0002
2	0.0007			0.001
3	0.002			0.003
4	0.005			0.007
5	0.008			0.012
6	0.015			0.022
7	0.001			0.011
8	0.001			0.015
10	0.002			0.019
12	0.003			0.030
15	0.005			0.042
20	0.009			0.072
25	0.017			0.14
30	0.032			0.25
35				0.21
40		0.28		
45		0.34		
50		0.47		
60		0.80		
20		0.01	0.10	
25		0.02	0.16	
30		0.03	0.21	
35		0.04	0.29	
40		0.05	0.39	
45		0.06	0.47	
50		0.08	0.64	
60		0.12	0.94	
70		0.16	2.0	
80		0.21	2.5	
90		0.27	3.1	
100		0.33	3.6	

AMPERE RATING	Melting (A's X 10³)		MAX CLEARING I²t @ 150VAC (A's X 10³)
	Body Style		
	Type 4	Type 128	
125	0.49		5.0
130	0.53		5.3
150	0.72		6.8
175	1.0		9.0
200	1.3		11
225	1.7		14
250	1.9		15
275	2.4		19
300	2.9		22
350	4.1		32
400	5.1		40
450	6.4		50
500	15		90
550	18		108
600	20		130
700	25		220
800	34		290
900	46		400
1000	58		520
750		40	300
800		46	340
1000		72	540
1200		90	680
1500		160	1200
1600		160	1200
1800		202	1500
2000		250	1900
2500		422	3200
3000		640	4800
3500		1200	6500
4000		1400	8500

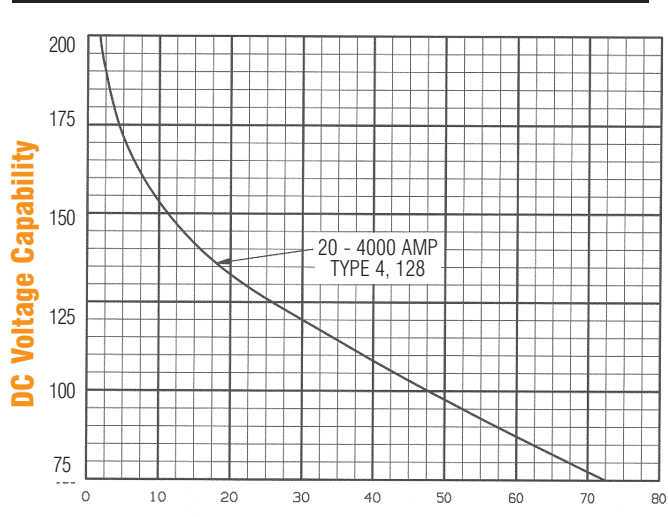
I²t Data-150VDC ; L/R = 10ms

AMPERE RATING	CLEARING I ² t @ 150 VDC L/R = 10ms (A ² s X 10 ³)	
	Type 4	Type 128
20	0.07	
25	0.11	
30	0.15	
35	0.20	
40	0.27	
45	0.33	
50	0.45	
60	0.66	
70	1.4	
80	1.8	
90	2.2	
100	2.5	
125	3.5	
130	3.7	
150	4.7	
175	6.3	
200	7.7	
225	9.8	
250	11	
275	13	
300	15	
350	22	
400	28	
450	35	
500	63	
550	76	
600	91	
700	150	
750		210
800	200	240
900	280	
1000	360	380
1200		470
1500		840
1600		840
1800		1000
2000		1300
2500		2200
3000		3400
3500		5200
4000		6800

Clearing I²t vs Working Voltage



DC Voltage vs Time Constant (L/R)

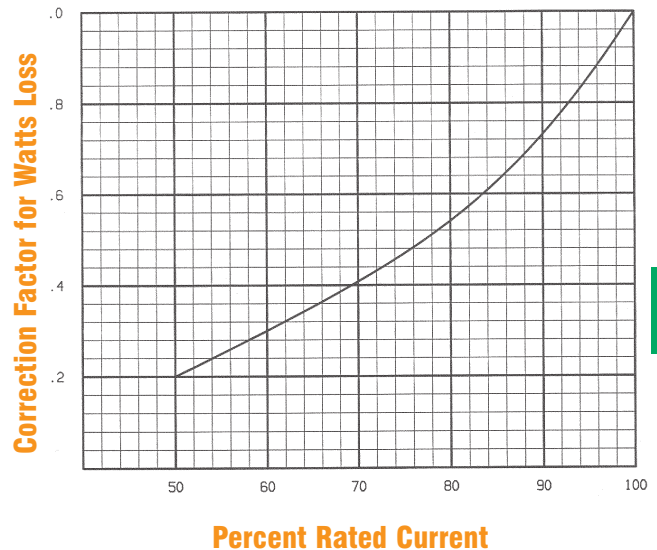
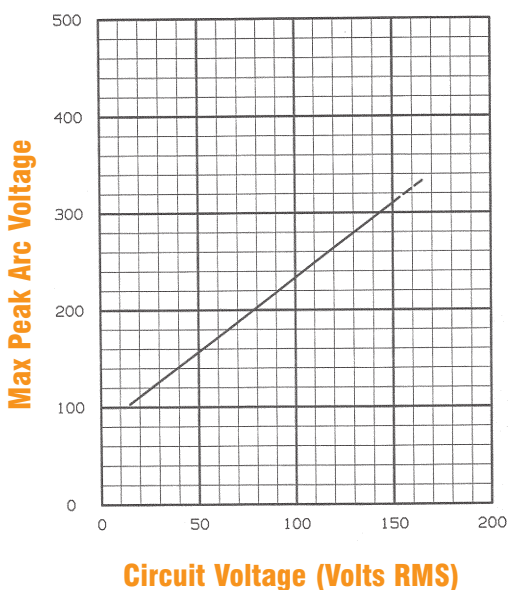
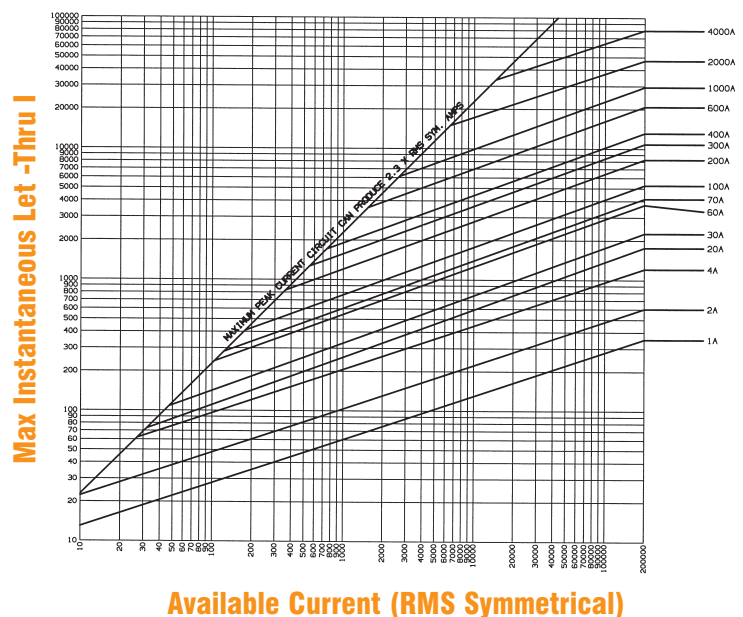


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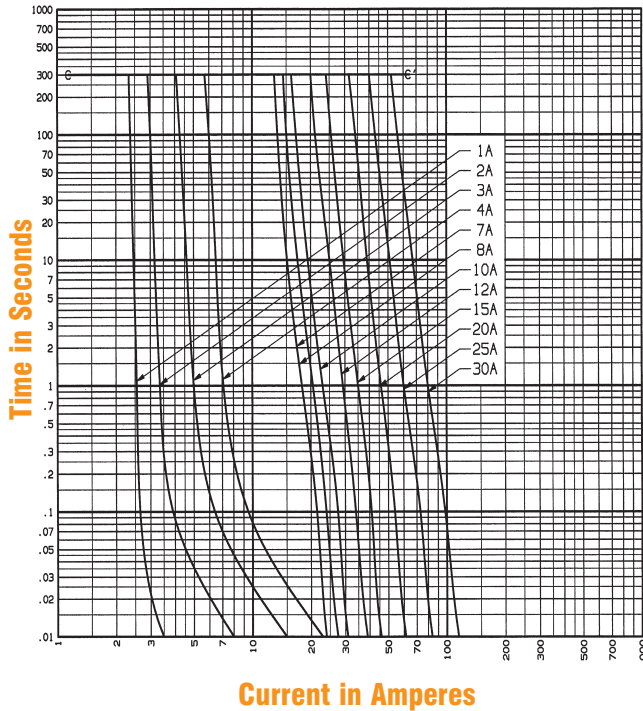
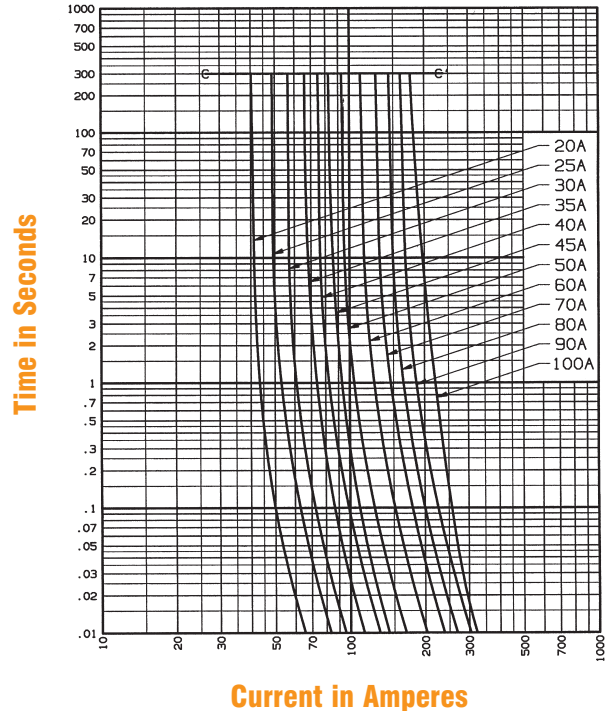
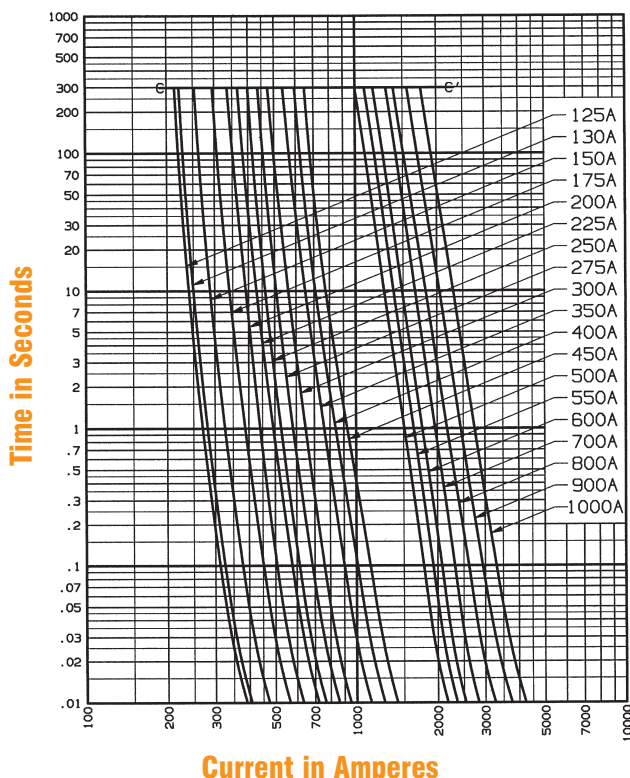
Watts Loss @ Rated Current

AMPERE RATING	WATTS LOSS @ RATED CURRENT (W)			AMPERE RATING	WATTS LOSS @ RATED CURRENT (W)	
	Type 2	Type 1	Type 4		Type 4	Type 128
1	0.68			100	10	
2	1.3			125	13	
3	1.7			130	14	
4	2.1			150	16	
5	2.8			175	20	
6	3.1			200	22	
7	2.2			225	25	
8	2.5			250	27	
10	2.6			275	30	
12	3.0			300	33	
15	3.0			350	40	
20	4.0			400	45	
25	5.2			450	50	
30	5.6			500	30	
35		9		550	33	
40		10		600	35	
45		12		700	50	
50		13		750		66
60		14		800	57	71
20			1.5	900	67	
25			2.0	1000	75	88
30			2.2	1200		100
35			2.6	1500		130
40			3.1	1600		132
45			3.4	1800		149
50			4.0	2000		165
60			4.7	2500		195
70			5.6	3000		240
80			8.0	3500		260
90			9.0	4000		270

Watts Loss vs % Rated Current

Max ARC Voltage vs System Voltage

Peak Let Thru Data A15QS 1 to 4000


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SEMICONDUCTOR PROTECTION FUSES

Melt Time - Current Data A15QS 1 to 30

Melt Time - Current Data A15QS 20 to 100

Melt Time - Current Data A15QS 125 to 1000

Melt Time - Current Data A15QS 750 to 4000
