

AMP-TRAP®-Form 101

A13X

SEMICONDUCTOR PROTECTION FUSES



A13X Amp-trap® Form 101 Semiconductor Protection fuses were designed for the specific protection of diodes and other semiconductor devices rated 130VAC or less. A13X fuses are very small for their ampere ratings, especially the hockey-puck type in the higher ampere ratings.

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** helps in equipment design

Ratings

- **AC:** 1-6000A
130VAC, 8kA I.R.
- **DC:** 70-2000A
100VDC, 10kA I.R.
2500-3000A
100VDC, 20kA I.R.
L/R = 10ms

Approvals

- UL Recognized Component
- AC: Guide No. JFHR2 (1-25A, 70-2000A)
- DC Tested to UL Standard 198L parameters (70-3000A)

HIGHLIGHTS:

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

APPLICATIONS:

- Protection of heavy duty devices such as electrochemical rectifiers

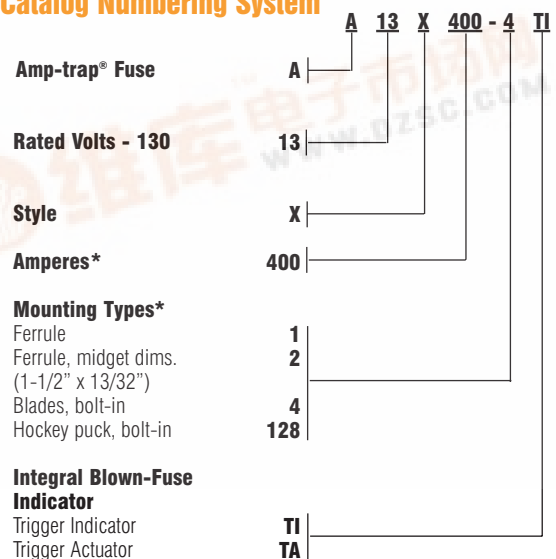


Single Pole Fuse Blocks for A13X Fuses

FUSE AMPERE RATING	FUSE BLOCK CATALOG NUMBER
1-30	30311
31-60	60306J
61-100	P243D
101-200	P243D
201-450	P243D
500-600	P243G



Catalog Numbering System



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

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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	A13X1-2	1	60	A13X60-1	1	350	A13X350-4TI	2	2000	A13X2000-128TA	5
2	A13X2-2	1	70	A13X70-4	2	400	A13X400-4	2	2500	A13X2500-128	4
3	A13X3-2	1	70	A13X70-4TI	2	400	A13X400-4TA	3	2500	A13X2500-128TA	5
4	A13X4-2	1	80	4A13X80-4	2	400	A13X400-4TI	2	3000	A13X3000-128	4
5	A13X5-2	1	80	4A13X80-4TI	2	450	A13X450-4	2	3000	A13X3000-128TA	5
6	A13X6-2	1	90	A13X90-4	2	450	A13X450-4TA	3	3500	A13X3500-128	6
7	A13X7-2	1	100	A13X100-4	2	500	A13X500-4	2	4000	A13X4000-128	6
8	A13X8-2	1	100	A13X100-4TI	2	500	A13X500-4TA	3	4000	A13X4000-128TA	7
10	A13X10-2	1	130	A13X130-4	2	600	A13X600-4	2	5000	A13X5000-128	8
12	A13X12-2	1	130	A13X130-4TI	2	800	A13X600-4TA	3	6000	A13X6000-128	8
15	A13X15-2	1	150	A13X150-4	2	800	A13X800-4	2			
20	A13X20-2	1	150	A13X150-4TA	3	1000	A13X1000-4	2			
25	A13X25-2	1	150	A13X150-4TI	2	1000	A13X1000-4TA	3			
30	A13X30-2	1	200	A13X200-4	2	1000	A13X1000-4TI	2			
35	A13X35-1	1	200	A13X200-4TA	3	1000	A13X1000-128	4			
40	A13X40-1	1	250	A13X250-4	2	1000	A13X1000-128TA	5			
40	A13X40-4TI	2	250	A13X250-4TI	2	1200	A13X1200-128	4			
45	A13X45-1	1	300	A13X300-4	2	1200	A13X1200-128TA	5			
50	A13X50-1	1	300	A13X300-4TA	3	1200	A13X1500-128	4			
50	A13X50-4	2	300	A13X300-4TI	2	1500	A13X1500-128TA	5			
55	A13X55-1	1	350	A13X350-4	2	2000	A13X2000-128	4			

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

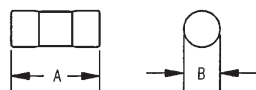


Figure 1

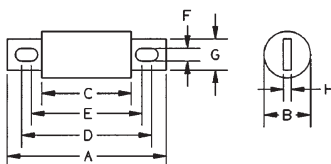


Figure 2

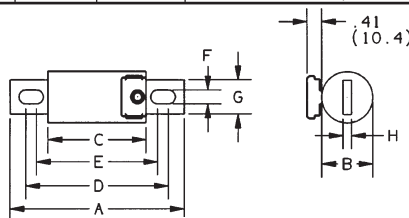


Figure 3

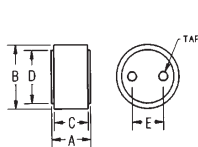


Figure 4

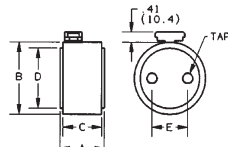


Figure 5

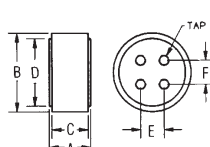


Figure 6

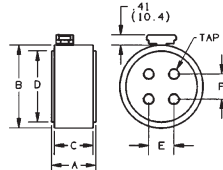


Figure 7

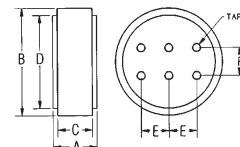


Figure 8

Dimensions

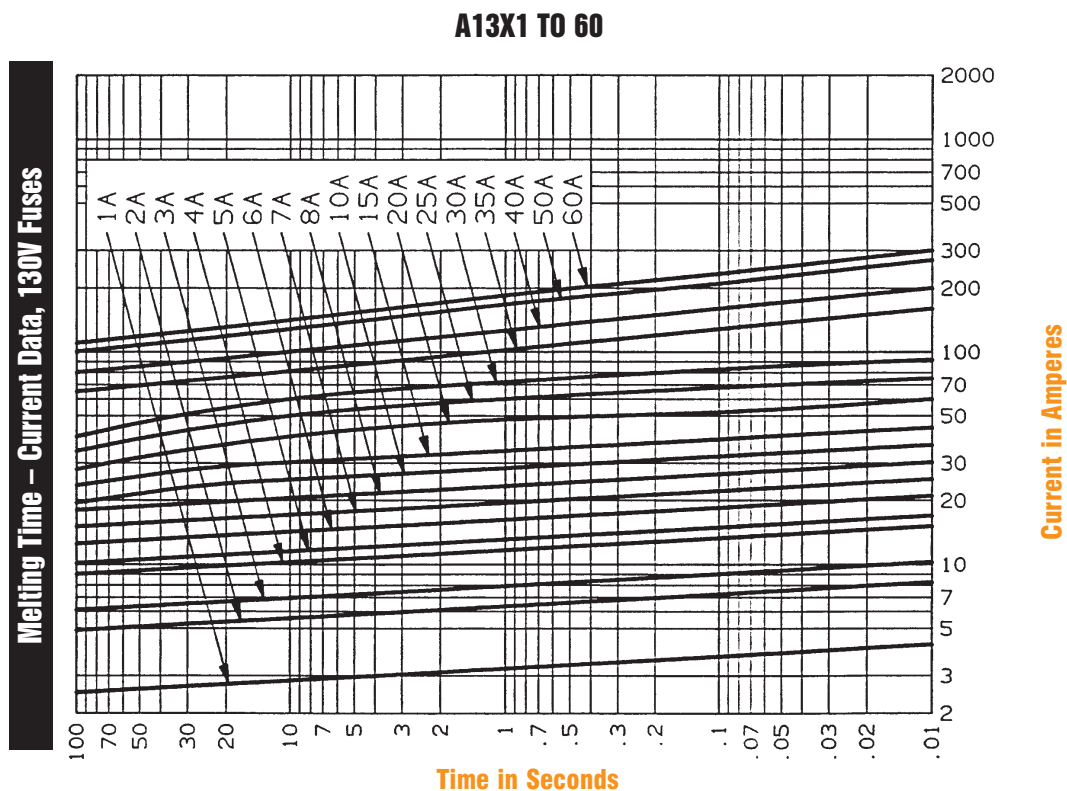
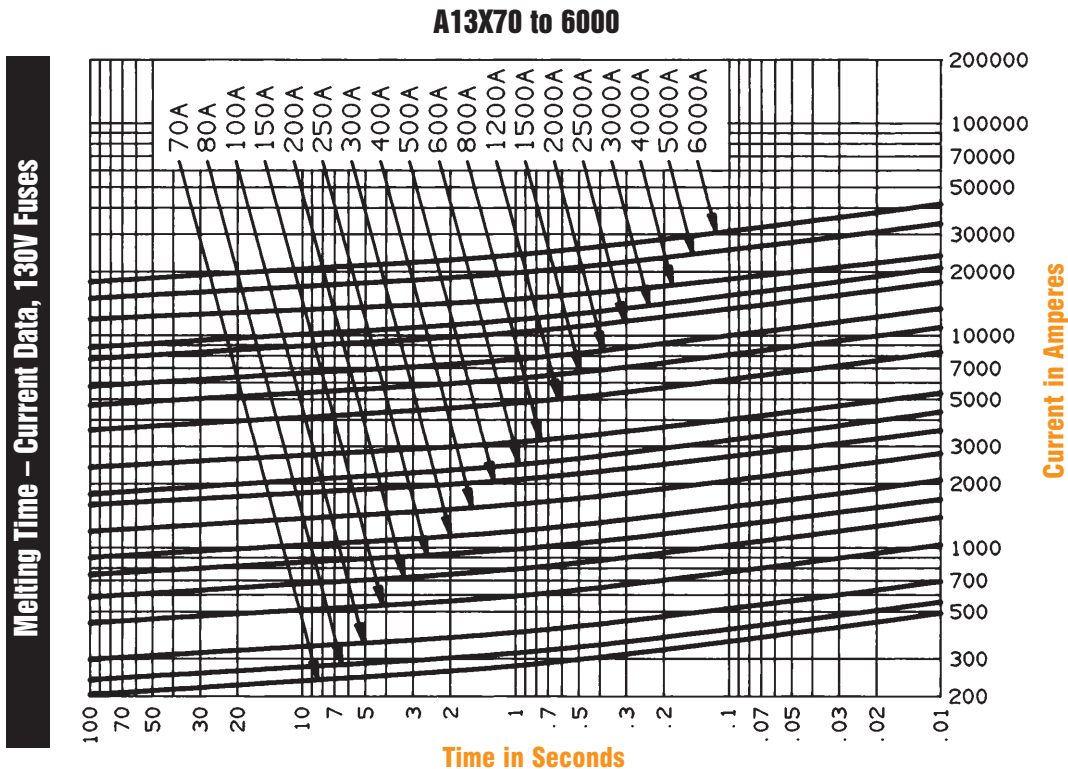
OUTLINE REF.	MOUNTING TYPE	FIG.	DIMENSIONS - INCHES (mm)								TAP
			A	B	C	D	E	F	G	H	
A13X1 to 30	2	1	1.50 (38.1)	.41 (10.4)	-	-	-	-	-	-	-
A13X35 to 60	1	1	2.00 (50.8)	.81 (20.6)	-	-	-	-	-	-	-
A13X70 to 450	4, 4TA*	2, 3*	2.66 (67.6)	1.13 (28.7)	1.16 (29.5)	2.19 (55.6)	1.91 (48.5)	.31 (7.9)	.88 (22.4)	.19 (4.8)	-
A13X500 to 1000	4, 4TA*	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)	-
A13X1000 to 2000	128	4	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
A13X2500 to 3000	128, 128TA*	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
A13X3500 to 4000	128, 128TA*	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
A13X5000 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

* Optional Trigger Actuator (TA)

D

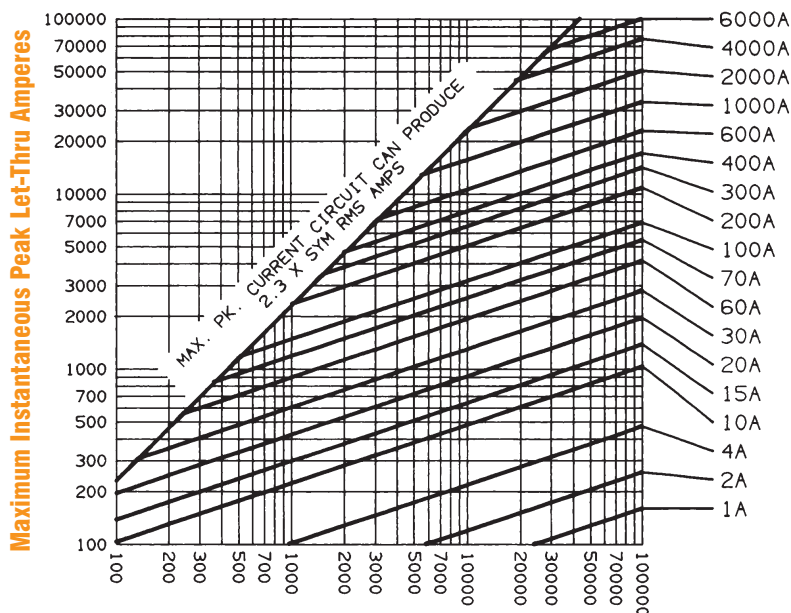
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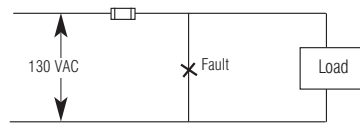
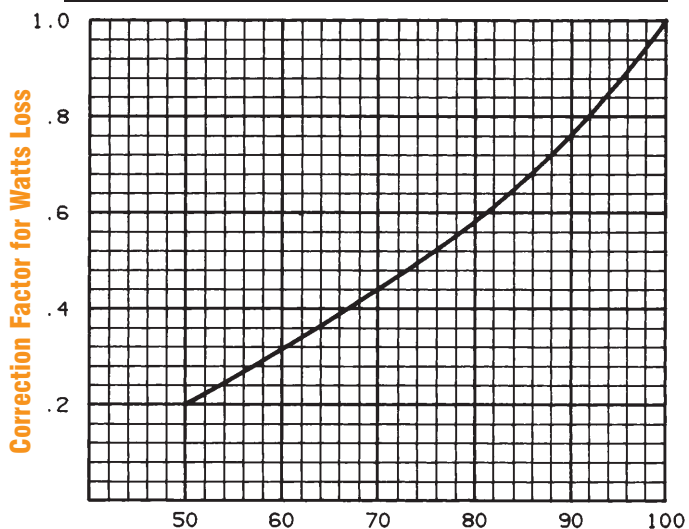
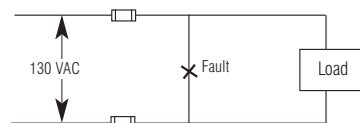


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Peak Let-Thru Current Data – A13X1 to 6000, 130 Volts AC

Available Current in RMS Symmetrical Amperes
Watts Loss at Rated Current

AMPERE RATING	WATTS LOSS (W)	AMPERE RATING	WATTS LOSS (W)	AMPERE RATING	WATTS LOSS (W)
70	2.7	350	18	2000	92
80	3.2	400	20	2500	116
90	3.9	450	23	3000	149
100	4.1	500	20	3500	178
130	5.8	600	26	4000	190
150	6.6	800	37	4500	240
200	9.1	1000	44	5000	280
250	12	1200	52	6000	356
300	15	1500	65		

Watts Loss Correction vs. Percent Rated Current

Fig. A

Fig. B
I²t Data – 130 Volts AC

FUSE AMPERE RATING	MELTING (A ² s)	I ² t DATA	
		CLEARING AT 130V	
		1 FUSE (FIG. A) (A ² s)	2 FUSES IN SERIES (FIG. B) (A ² s)
1	.02	.1	.05
2	.10	.35	.25
3	.18	.7	.5
4	.50	2	1.5
5	.75	3	2
6	1.1	4	3
7	1.6	6	4
8	2.9	10	7
10	5.0	18	12
12	6.3	22	15
15	10	35	25
20	34	120	80
25	65	230	150
30	100	350	230
35	85	450	300
40	120	640	420
45	150	800	520
50	240	1,300	840
55	280	1,500	1,000
60	340	1,800	1,200
70	840	4,200	2,100
80	1,000	5,000	2,500
90	1,300	6,500	3,300
100	1,600	8,000	4,000
130	2,500	12,000	6,300
150	3,600	18,000	9,000
200	6,400	32,000	16,000
250	10,000	50,000	25,000
300	14,000	70,000	35,000
350	20,000	100,000	50,000
400	26,000	130,000	65,000
450	32,000	160,000	80,000
500	40,000	200,000	100,000
600	58,000	290,000	140,000
800	100,000	500,000	250,000
1,000	160,000	800,000	400,000
1,200	240,000	1,200,000	600,000
1,500	360,000	1,800,000	900,000
2,000	640,000	3,200,000	1,600,000
2,500	1,000,000	5,000,000	2,500,000
3,000	1,400,000	7,000,000	3,500,000
3,500	1,800,000	9,000,000	4,500,000
4,000	2,400,000	12,000,000	6,000,000
5,000	3,700,000	18,000,000	9,000,000
6,000	5,400,000	27,000,000	14,000,000

D