

# POWR-GARD® Fuse

## L50S SERIES HIGH-SPEED ROUND BODY

500 V ac • 450 V dc • Very Fast Acting • 10–800 A



### Description

Littelfuse L50S series high-speed fuses are designed to protect today's equipment and systems, and are manufactured with Littelfuse-developed technology that sets tomorrow's standards for accuracy, consistent quality, reliability, and predictable performance.

Littelfuse engineers have redefined high-speed fuse technology by using advanced metallurgical, polymer, and materials research, mathematical modeling, and computerized statistical analysis.

### Features/Benefits

- Extremely current limiting
- Low watt losses
- Controlled transient over-voltages
- UL Recognized

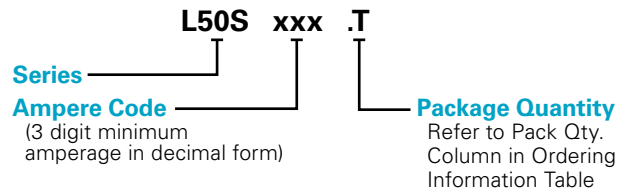
### Applications

- Ac and dc drives
- Dc common bus protection
- Power converters
- UPS
- Soft-starters

### Specifications

<b>Voltage Rating</b>	500 V ac 450 V dc
<b>Amperage Rating</b>	10, 12, 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 125, 150, 175, 200, 225, 250, 275, 300, 350, 400, 450, 500, 550, 600, 700, 800
<b>Interrupting Rating</b>	Ac: 200 kAIC Dc: 20 kAIC
<b>Material</b>	Body: melamine Terminals: copper (silver plated)
<b>Mounting Type</b>	Cylindrical (10–30 A) Bolted tags (35–800 A)
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Storage Temperature</b>	Up to 35 °C with relative humidity less than 65%
<b>Approvals</b>	UL Recognized (File: E71611) CSA Recognized (File: LR29862)
<b>Environmental</b>	RoHS Compliant
<b>Country of Origin</b>	Mexico

### Part Numbering System



SERIES	AMP	CATALOG NUMBER	ORDERING NUMBER
L50S	10	L50S010	L50S010.T
L50S	500	L50S500	L50S500.X

### Recommended Fuse Holder

LSCR001 (35–200 A)  
LSCR002 (225–800 A)  
107/127 Series (10–30A)

### Web Resources

Download technical documents: [Littelfuse.com/L50S](http://Littelfuse.com/L50S)

*Note: high-speed fuses are designed for fixed installations. They are not intended for use in moving vehicle applications.*

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### Electrical Specifications

CATALOG NUMBER	AMPERAGE RATING	VOLTAGE RATING		INTERRUPT RATING		MELTING (PRE-ARC) I <sup>2</sup> T (A <sup>2</sup> s)	TOTAL CLEARING I <sup>2</sup> T (A <sup>2</sup> s)	TOTAL CLEARING I <sup>2</sup> T (A <sup>2</sup> s)	TOTAL CLEARING I <sup>2</sup> T (A <sup>2</sup> s)	WATTS LOSS AT 100 % RATED CURRENT	WATTS LOSS AT 80 % RATED CURRENT
		AC	DC	AC	DC		100 kA @ 500 V AC	200 kA @ 500 V AC	20 kA @ 450 V DC	(W)	(W)
L50S010	10	500	450	200 kA	20 kA	21	112	128	85	2	1
L50S012	12	500	450	200 kA	20 kA	26	149	170	97	2	1
L50S015	15	500	450	200 kA	20 kA	34	222	250	116	2	2
L50S020	20	500	450	200 kA	20 kA	48	363	400	143	5	3
L50S025	25	500	450	200 kA	20 kA	62	528	600	170	7	4
L50S030	30	500	450	200 kA	20 kA	77	707	820	193	10	5
L50S035	35	500	450	200 kA	20 kA	130	1,120	1,210	400	6	3
L50S040	40	500	450	200 kA	20 kA	161	1,420	1,550	525	7	4
L50S050	50	500	450	200 kA	20 kA	222	2,150	2,360	867	11	6
L50S060	60	500	450	200 kA	20 kA	259	3,016	3,300	1,287	13	7
L50S070	70	500	450	200 kA	20 kA	420	4,100	4,930	1,670	17	10
L50S080	80	500	450	200 kA	20 kA	554	5,300	6,950	2,240	19	10
L50S090	90	500	450	200 kA	20 kA	677	6,750	9,500	2,900	24	13
L50S100	100	500	450	200 kA	20 kA	807	8,273	12,600	3,626	30	16
L50S125	125	500	450	200 kA	20 kA	1,290	13,100	19,000	5,150	22	12
L50S150	150	500	450	200 kA	20 kA	2,504	19,100	26,500	6,700	27	15
L50S175	175	500	450	200 kA	20 kA	3,224	26,300	35,000	8,700	33	17
L50S200	200	500	450	200 kA	20 kA	3,938	34,233	44,583	11,297	35	19
L50S225	225	500	450	200 kA	20 kA	6,034	43,500	56,000	14,750	31	17
L50S250	250	500	450	200 kA	20 kA	7,510	54,000	69,000	19,600	36	19
L50S275	275	500	450	200 kA	20 kA	9,000	65,500	82,000	25,500	41	22
L50S300	300	500	450	200 kA	20 kA	10,808	78,500	97,500	32,200	42	23
L50S350	350	500	450	200 kA	20 kA	16,500	107,000	132,000	50,100	50	28
L50S400	400	500	450	200 kA	20 kA	22,941	142,333	169,667	72,270	58	30
L50S450	450	500	450	200 kA	20 kA	29,300	178,500	208,000	95,000	58	32
L50S500	500	500	450	200 kA	20 kA	37,000	220,000	250,000	118,000	64	35
L50S550	550	500	450	200 kA	20 kA	45,851	311,667	347,333	176,766	75	41
L50S600	600	500	450	200 kA	20 kA	45,851	311,667	347,333	176,766	98	50
L50S700	700	500	450	200 kA	20 kA	82,396	460,000	622,333	289,000	96	51
L50S800	800	500	450	200 kA	20 kA	115,656	647,667	687,500	465,590	118	60

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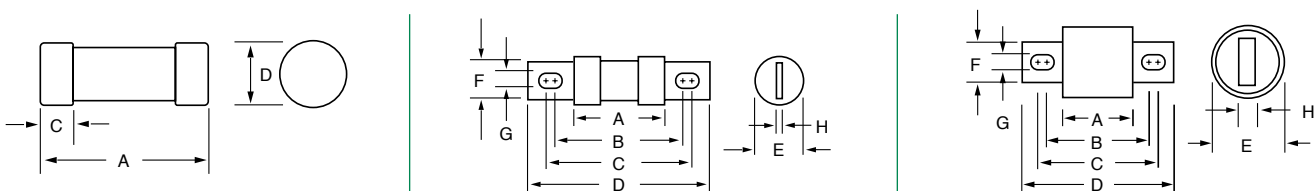
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### Ordering Information

SERIES	AMPERAGE RATING	AMP CODE	CATALOG NUMBER	ORDERING NUMBER	PACK QUANTITY	UPC
L50S	10	010	L50S010	L50S010.T	10 pcs/box	07945885010
L50S	12	012	L50S012	L50S012.T	10 pcs/box	07945885012
L50S	15	015	L50S015	L50S015.T	10 pcs/box	07945885015
L50S	20	020	L50S020	L50S020.T	10 pcs/box	07945885020
L50S	25	025	L50S025	L50S025.T	10 pcs/box	07945885025
L50S	30	030	L50S030	L50S030.T	10 pcs/box	07945885030
L50S	35	035	L50S035	L50S035.T	10 pcs/box	07945885035
L50S	40	040	L50S040	L50S040.T	10 pcs/box	07945885040
L50S	50	050	L50S050	L50S050.T	10 pcs/box	07945885050
L50S	60	060	L50S060	L50S060.T	10 pcs/box	07945885060
L50S	70	070	L50S070	L50S070.T	10 pcs/box	07945885070
L50S	80	080	L50S080	L50S080.T	10 pcs/box	07945885080
L50S	90	090	L50S090	L50S090.T	10 pcs/box	07945885090
L50S	100	100	L50S100	L50S100.T	10 pcs/box	07945885100
L50S	125	125	L50S125	L50S125.V	5 pcs/box	07945885125
L50S	150	150	L50S150	L50S150.V	5 pcs/box	07945885150
L50S	175	175	L50S175	L50S175.V	5 pcs/box	07945885175
L50S	200	200	L50S200	L50S200.V	5 pcs/box	07945885200
L50S	225	225	L50S225	L50S225.V	5 pcs/box	07945885225
L50S	250	250	L50S250	L50S250.V	5 pcs/box	07945885250
L50S	275	275	L50S275	L50S275.V	5 pcs/box	07945885275
L50S	300	300	L50S300	L50S300.V	5 pcs/box	07945885300
L50S	350	350	L50S350	L50S350.V	5 pcs/box	07945885350
L50S	400	400	L50S400	L50S400.V	5 pcs/box	07945885400
L50S	450	450	L50S450	L50S450.X	1 pc/box	07945885450
L50S	500	500	L50S500	L50S500.X	1 pc/box	07945885500
L50S	550	550	L50S550	L50S550.X	1 pc/box	07945885550
L50S	600	600	L50S600	L50S600.X	1 pc/box	07945885600
L50S	700	700	L50S700	L50S700.X	1 pc/box	07945885700
L50S	800	800	L50S800	L50S800.X	1 pc/box	07945885800

### Dimensions

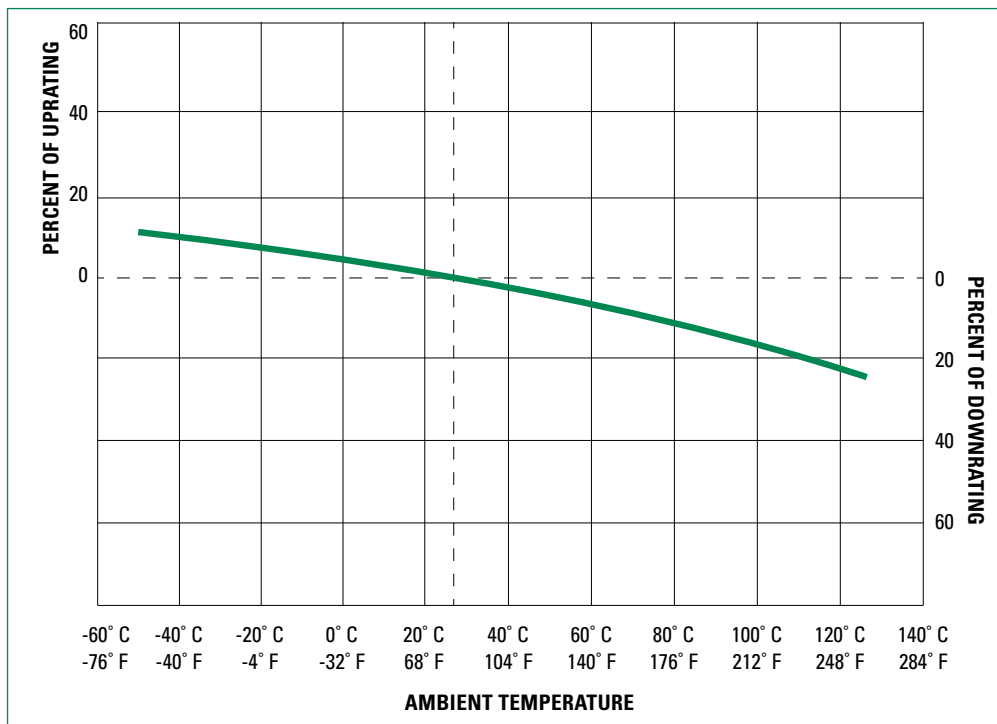
AMPERE RATING	FIGURE NO.	DIMENSIONS INCHES (mm)							
		A	B	C	D	E	F	G	H
10–30	1	2 (50.8)	—	½ (12.7)	¾ (14.3)	—	—	—	—
31–60	2	1 5/8 (41.3)	2 ¼ (57.2)	2 ½ (63.5)	3 3/16 (81.0)	1 3/16 (20.6)	23/32 (18.3)	1 1/32 (8.7)	1/8 (3.2)
61–100	3	2 1/8 (54.0)	2 11/16 (68.3)	3 (76.2)	3 5/8 (92.1)	1 (25.4)	.670 (17.0)	1 1/32 (8.7)	1/8 (3.2)
101–200	3	2 1/8 (54.0)	2 13/16 (71.4)	2 15/16 (74.6)	3 5/8 (92.1)	1 7/32 (31.0)	.895 (22.7)	5/16 (7.9)	3/16 (4.75)
201–400	3	2 3/32 (53.2)	2 25/32 (70.6)	3 13/32 (86.5)	4 11/32 (110.3)	1 ½ (38.1)	1 (25.4)	13/32 (10.3)	¼ (6.4)
401–600	3	2 7/32 (56.4)	2 29/32 (73.8)	3 17/32 (89.7)	4 15/32 (113.5)	2 (50.8)	1 ½ (38.1)	13/32 (10.3)	¼ (6.4)
601–800	3	2 7/32 (56.4)	4 3/32 (108.7)	4 5/8 (117.5)	6 15/32 (164.3)	2 ½ (63.5)	2 (50.8)	17/32 (13.5)	3/8 (9.5)



**Recommended Torque Values For Bus Bar Mounting**

RECOMMENDED TORQUE VALUES FOR BUS BAR MOUNTING FUSE		
CATALOG NUMBER	FUSE TORQUE—METRIC (STANDARD)	HARDWARE SIZE—METRIC (STANDARD)
L50S035	15 N m (132.76 in-lb)	M8 (5/16")
L50S040	15 N m (132.76 in-lb)	M8 (5/16")
L50S050	15 N m (132.76 in-lb)	M8 (5/16")
L50S060	15 N m (132.76 in-lb)	M8 (5/16")
L50S070	15 N m (132.76 in-lb)	M8 (5/16")
L50S080	15 N m (132.76 in-lb)	M8 (5/16")
L50S090	15 N m (132.76 in-lb)	M8 (5/16")
L50S100	15 N m (132.76 in-lb)	M8 (5/16")
L50S125	8 N m (70.81 in-lb)	M6 (¼")
L50S150	8 N m (70.81 in-lb)	M6 (¼")
L50S175	8 N m (70.81 in-lb)	M6 (¼")
L50S200	8 N m (70.81 in-lb)	M6 (¼")
L50S225	15 N m (132.76 in-lb)	M8 (5/16")
L50S250	15 N m (132.76 in-lb)	M8 (5/16")
L50S275	15 N m (132.76 in-lb)	M8 (5/16")
L50S300	15 N m (132.76 in-lb)	M8 (5/16")
L50S350	15 N m (132.76 in-lb)	M8 (5/16")
L50S400	15 N m (132.76 in-lb)	M8 (5/16")
L50S450	15 N m (132.76 in-lb)	M8 (5/16")
L50S500	15 N m (132.76 in-lb)	M8 (5/16")
L50S550	15 N m (132.76 in-lb)	M8 (5/16")
L50S600	15 N m (132.76 in-lb)	M8 (5/16")
L50S700	54 N m (477.94 in-lb)	M12 (½")
L50S800	54 N m (477.94 in-lb)	M12 (½")

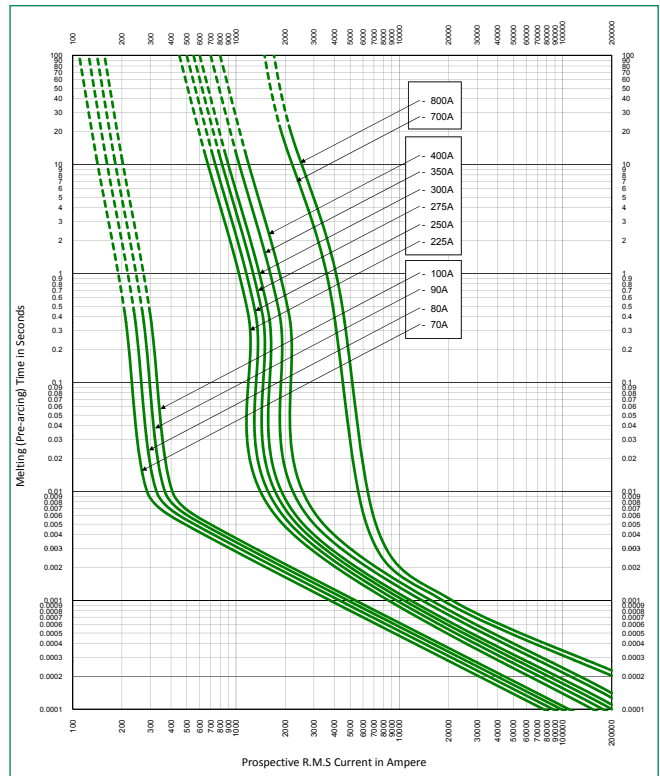
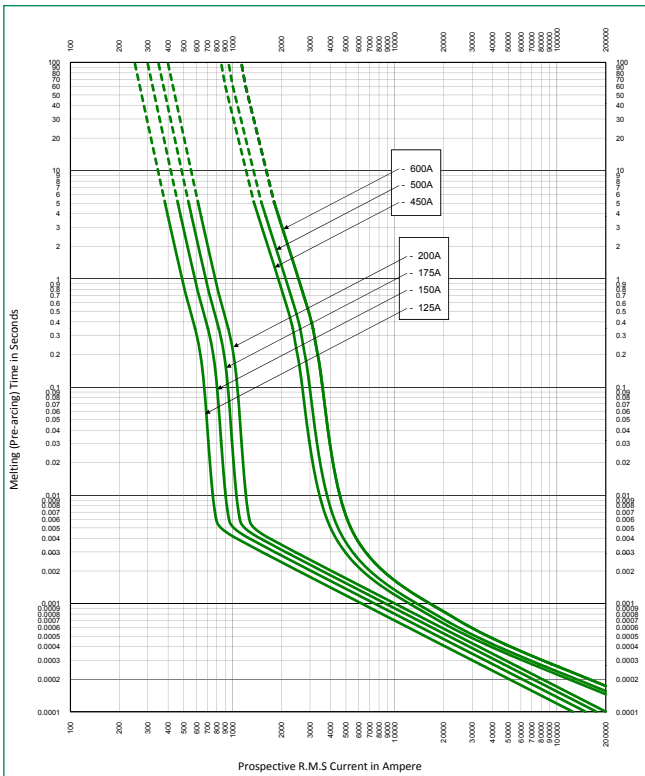
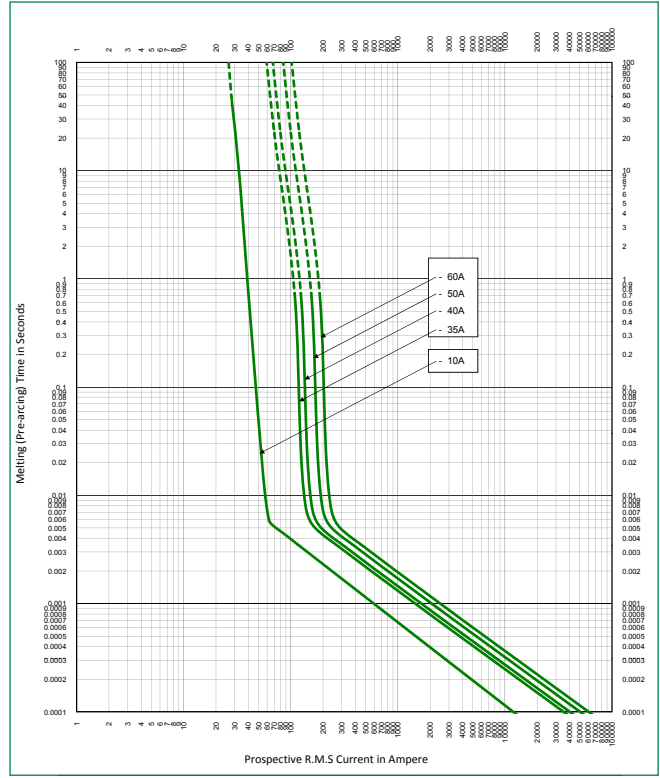
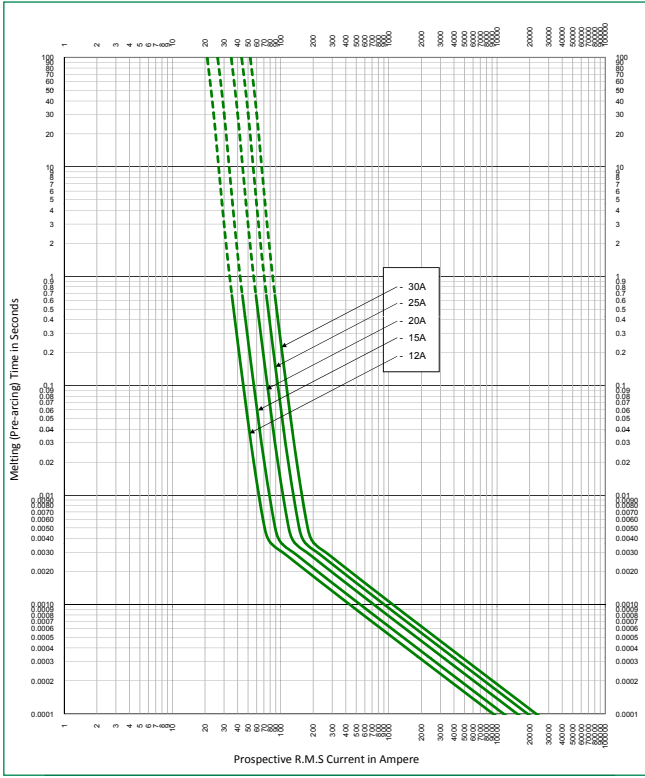
**Temperature De-rating Curve** (temperature of air immediately surrounding fuse)



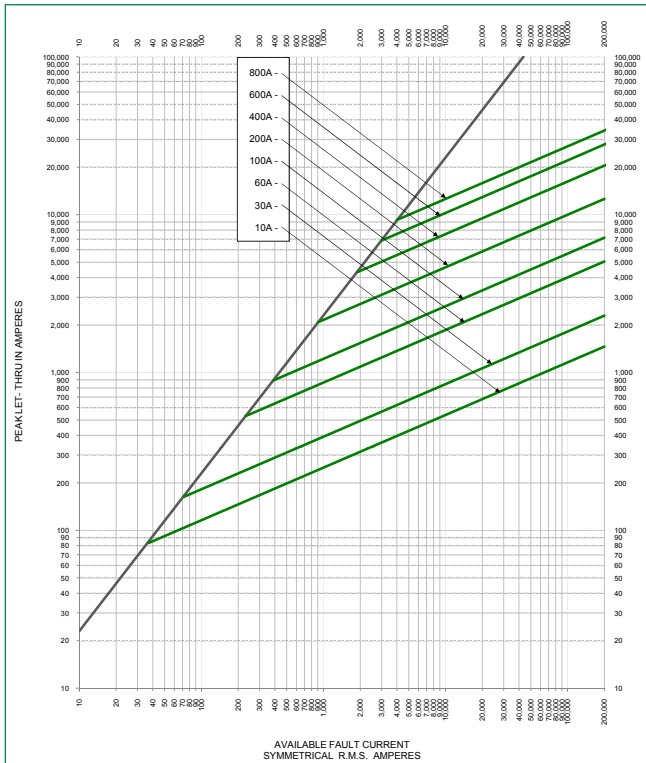
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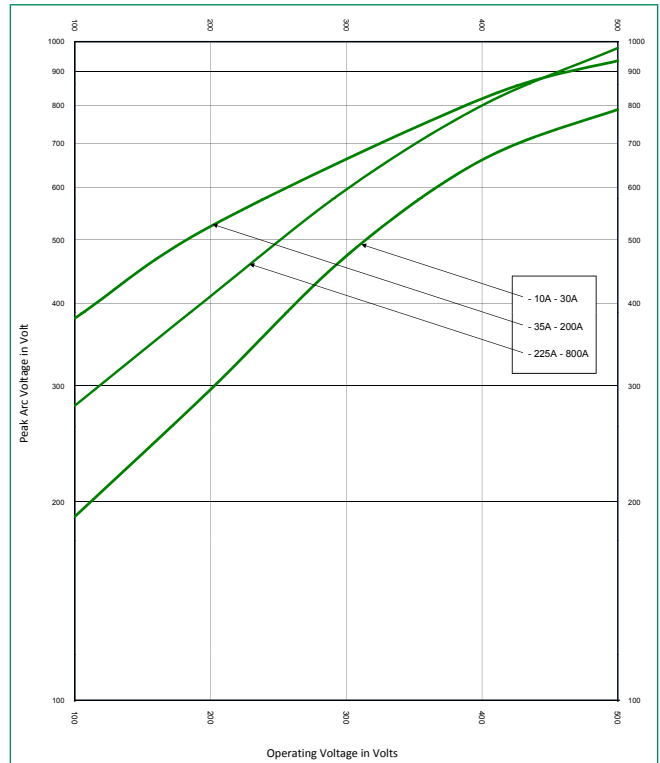
### Time Current Curves



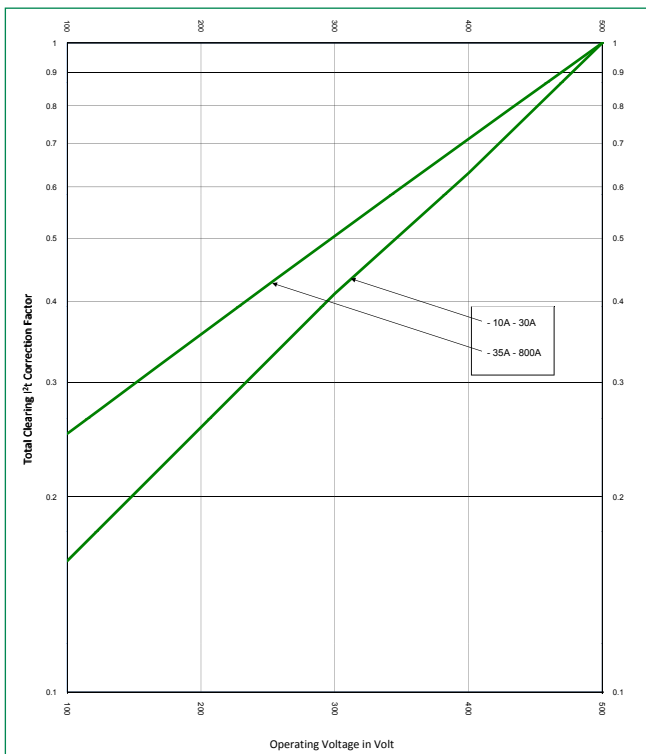
### Peak Let-Through Curve



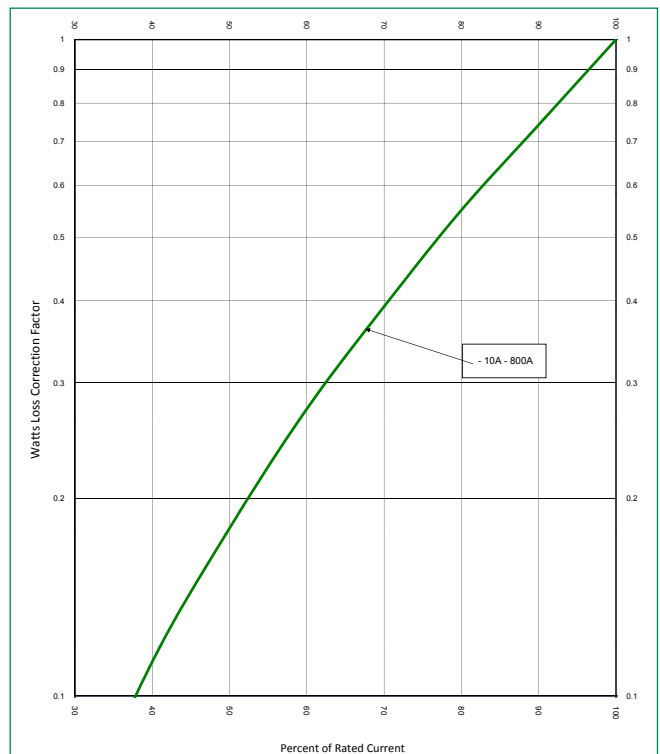
### Peak Arc Voltage Curve



### Total Clearing I<sup>2</sup>t Correction Factor Curve



### Watts Loss Correction Factor Curve



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