



Ametherm's new Inrush Current Limiter provides big protection.

Ametherm's MegaSurge™ Inrush Current Limiter is an economical and space saving way to limit high inrush current. MegaSurge's rugged high temperature construction allows safe operation at high continuous currents. It is specially designed to withstand up to 50 amperes of continuous current and 900 joules of input energy.

The MegaSurge Inrush Current Limiter is useful in:

- AC Motors
- Power Supplies
- Motor Drives
- Audio Amplifiers
- Battery Chargers
- Frequency Generators
- Plasma Cutting Tools
- MRI Machines
- Toroidal Transformers up to 4.0KVA
- Other equipment that can be improved with inrush current protection

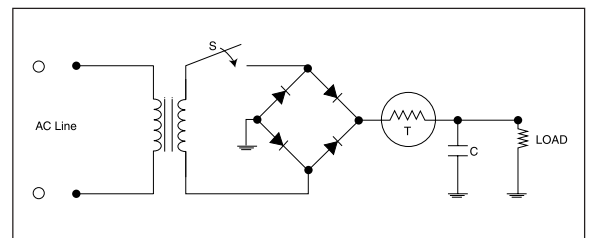
How does the MegaSurge Inrush Current Limiter work?

The MegaSurge Inrush Current Limiter absorbs high amounts of inrush current when electrical equipment is turned on by offering a high resistance to current and quickly decreasing in resistance once steady state current begins to flow through the thermistor. In a switching power supply, the instantaneous surge energy is caused by the large input filter capacitors and AC input voltage.

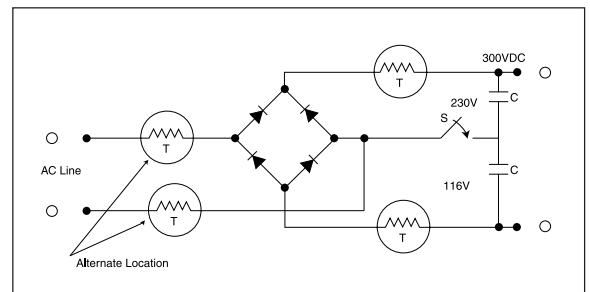
During the absorption of energy, the initial high resistance of the thermistor drops within milliseconds to a negligible resistance in preparation of allowing high levels of steady state current to flow with a minimal loss of power through the circuit. The MegaSurge Inrush Current Limiter will absorb up to 900 joules of input energy and carry 50 amperes of steady state current.

Specify the right MegaSurge Inrush Current Limiter for your application.

- Use the maximum allowable inrush current and Ohm's Law to determine the least allowable resistance at turn on for your application.
- Using the formula $J = \frac{1}{2}CV^2$, determine how much input energy the thermistor will absorb when the device is turned on.
- Determine the maximum steady state current that will flow through the Inrush Current Limiter.
- Select the Ametherm Inrush Current Limiter that will work for your application.



One example of a typical circuit for limiting inrush current.



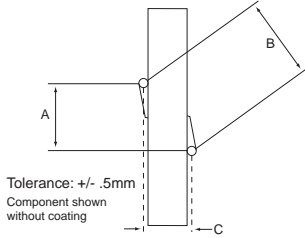
Another example of a typical circuit for limiting inrush current.

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Circuit Protection Thermistors

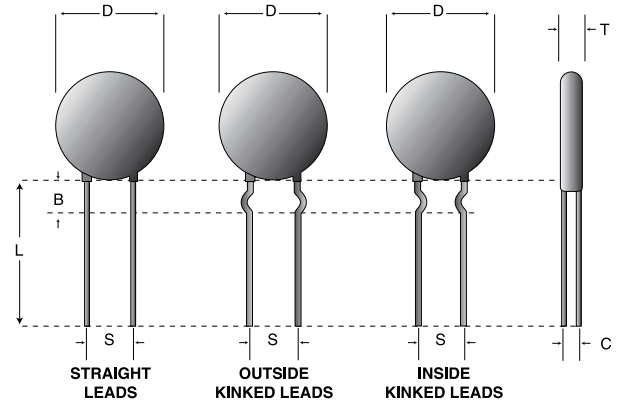
MegaSurge Footprint Specifications

Part Number	A	B	C
MS32 10015	7.8mm	9.6mm	5.6mm



Available Lead Configurations

Part Series	Straight	Inside Kink	Outside Kink
MS12	✓	✓	✓
MS15	✓	✓	✓
MS22	✓	✓	✓
MS32	✓		✓
MS35	✓		



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MegaSurge Inrush Current Limiter Specifications

Part Number	R @ 25°C (Ω)	Max SSI (Amp)	Max Energy (Joules)	Max Voltage (Volts)	Max Cap @ Max Voltage (μF)	Rhot @ 100% SSI	Rhot @ 75% SSI	Rhot @ 50% SSI	Rhot @ 25% SSI	Material Type
MS32 1R036-L	1	36	300	440	1500	0.012	0.015	0.030	0.070	B
MS32 2R025	2	25	350	440	1500	0.020	0.032	0.060	0.160	C
MS32 5R020	5	20	325	440	1250	0.035	0.060	0.100	0.300	G
MS32 10015	10	15	250	440	1250	0.060	0.100	0.190	0.500	H
MS32 20008	20	8	220	440	1250	0.200	0.330	0.570	1.360	I
MS22 20005	20	5	150	440	1000	0.320	0.500	0.720	2.000	H
MS15 40004	40	4	135	440	700	0.400	0.623	0.960	2.500	I
MS22 50004	50	4	240	440	1200	0.400	0.625	1.100	3.150	I
MS15 66003	66	3.5	125	440	600	0.400	0.824	1.730	2.950	H
MS22 75004	75	4	240	440	1200	0.500	0.770	1.350	3.540	M
MS22 12103	120	3	220	440	1100	0.950	1.400	2.500	6.400	M
MS12 15102	150	2	110	440	560	1.050	1.900	2.710	3.840	I
MS22 22103	220	3	100	440	775	1.000	1.670	3.000	8.000	L
MS35 0R550	0.5	50	900	680	2000	0.008	0.013	0.020	0.050	B
MS35 1R040	1	40	800	680	1700	0.012	0.020	0.030	0.080	B
MS35 2R035	2	35	750	680	1600	0.020	0.027	0.040	0.102	C
MS35 3R030	3	30	750	680	1250	0.030	0.052	0.080	0.200	G
MS35 5R025	5	25	600	680	1000	0.050	0.100	0.150	0.400	H
MS35 10018	10	18	500	680	1000	0.100	0.320	0.480	1.250	I
MS35 20010	20	10	500	680	1600	0.030	0.040	0.065	0.155	I

Mechanical Specifications

Part Series	D (mm)	T (mm)	Lead Dia (mm)	S (mm)	L (mm)	B (mm)	C (mm)
MS12	12.0 Nom	9.0 Nom	1.3 Nom	7.80 Nom	38.0 Nom	6.35 Nom	6.70 Nom
MS15	15.0 Nom	9.0 Nom	1.3 Nom	7.80 Nom	38.0 Nom	6.30 Nom	6.70 Nom
MS22	22.0 Nom	9.0 Nom	1.3 Nom	7.80 Nom	38.0 Nom	7.60 Nom	6.70 Nom
MS32	32.0 Nom	9.0 Nom	1.3 Nom	7.80 Nom	38.0 Nom	7.60 Nom	6.70 Nom
MS35	35.0 Nom	9.0 Nom	2.5 Nom	19.0 Nom	39.0 Nom	9.80 Nom	7.50 Nom

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Circuit Protection Thermistors

— ISO 9001: 2000 Certified —

Made in the U.S.A.