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Current Surge Suppression Using Inductors

Inductors convert and store electrical energy into magnetic energy and back, similar to how a capicator stores electrical energy. When DC current is applied across an inductor, it charges and lets the rest pass. When there is a current change like in AC current, the inductor will charge and discharge and provide resistance to change. This will make the current lag 90degrees out of phase with the voltage in a purely inductive circuit. In a DC circuit this can be desirable to help clamp down on transient surges that may damage parts. In a surge situation, the inductor will typically absorb most of the energy, convert it to a magnetic field, then more slowly dissipate that energy. This resistance is called inductive reactance and is measured in ohms.
Formula: X[L] = 2 * PI * f * L
where f is frequency and L is measured in Henries. When frequency rises, resistance also rises. A very short "pop" will have far more resistance than a gradual current increase. This makes inductors suitable for high frequency filtering. Multiple inductors can be paralleled to handle higher current. The higher the Henry rating the higher the high frequency resistance will be. If a diode bridge is used, the filtering inductors should go after the filtering capicators as there is possibility of the coil forming a small transmitter.
Remember that inductors resist change, not straight and pure DC.
Inductors in series just have their Henry numbers added up.
Inductors in parallel: Henries = 1/(1/L1 + 1/L2 + 1/L3...)