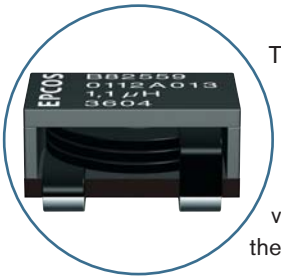
EPCOS

High-Power Inductor Innovation

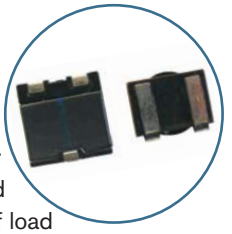
EPCOS's HPIs feature big performance and a small footprint.



The EPCOS family of high power inductors (HPI) provides exceptional electrical performance in a package that saves board space. With HPI, circuit designers can optimize converter power density and minimize the number of phases required.

Based on an optimized ferrite core and flat-wire winding technology self-terminated under the core, HPI devices have a compact footprint and the highest storage density in the industry. This inductor innovation is characterized by:

- High current rating
- Extremely low resistance / high conversion efficiency
- Compact size / high energy-storage density
- Lowest losses at high frequency



HPI devices extend the EPCOS inductor range to current ratings up to 30 A.

Although there are many applications for HPI, these devices are particularly suited for DC-DC converters, including point of load (POL) and voltage-regulator modules (VRM). HPI serves as the output inductor, and because the performance of the output inductor directly impacts overall performance, HPI's size and electrical characteristics are advantages.

Flat Wire Means Low Resistance, High Efficiency, High Current Ratings

HPI could also stand for "helical power inductor" because flat wire is used for the coils, resulting in a helical shape. Flat wire allows for more complete copper utilization in the core window. There is more room for copper inside the core, and more copper means less resistance and higher circuit efficiency. Less resistance also allows for higher current ratings of the inductor itself.

Ferrite Material Provides Lower Core Losses

The EPCOS HPI family uses a ferrite core material. Although alternative materials can result in a higher (saturation) current rating, ferrite has significantly lower core losses than other materials such as iron powder.

Lower core losses are an advantage when the output inductor is exposed to significant ripple currents. In addition, ferrite often is less expensive than other materials, and the core can be gapped to more specific inductance values.

Gaining a Space-saving Advantage

HPI devices save space. Self leads from the coil are rolled under the body or core of the part and minimize board space required for the inductor. A specially designed insulator on the bottom core surface holds the leads in position and isolates them from the core body.

The new HPI product family offers eight standard inductance values in two package height options:

- 4.95 mm height package with a range of .50 uH at 30 Amps to 3.0 uH at 13 Amps
- 5.95 mm height package with a range of .95 uH at 25 Amps to 3.90 uH at 12 Amps

And because the HPI family utilizes a gapped ferrite core, we offer unique inductance values as well.

The saturation current rating (Isat) in the table is only a reference, because parameters such as air flow, PCB layout, self heating, and core losses can impact current value. EPCOS recommends that design engineers evaluate performance in the final application.

Also, because there is no clear standard and information provided by suppliers can vary significantly, we recommend direct comparisons in the application.

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Order Number	L_R[nH]	I_{SAT}[A]	R_{max}[mOhm]
B82559A0501A013	500	30	1.1
B82559A0951A013	950	25	1.4
B82559A0112A013	1100	20	2.2
B82559A0142A013	1400	22	1.8
B82559A0222A013	2200	15	4.2
B82559A0242A013	2400	16.5	3.2
B82559A0302A013	3000	13	5.1
B82559A0392A013	3900	12	6.0

For more product information, please visit www.arrownac.com/resource. Or, call 800-777-2776 to speak with an Arrow representative.

For product pricing and availability, contact your local Arrow sales representative at 800-777-2776.