



Inductors

SMT power inductors Selection guide, General

Date: October 2008

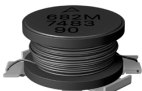
SMT power inductors

Selection guide

Design	Type	Dimensions (mm) Length × width × height	L_R μH	I_R A
	B82466G0	$2.0 \times 2.0 \times 1.0$	0.56 ... 22	0.25 ... 1.3
	B82467G0	$2.8 \times 2.6 \times 1.0$	0.5 ... 22	0.38 ... 2.25
	B82468A4	$3.0 \times 3.0 \times 1.4$	1 ... 22	0.48 ... 1.95
	B82469G1	$3.8 \times 3.6 \times 1.2$	0.5 ... 22	0.53 ... 2.8
	B82470A0	$4.8 \times 4.8 \times 1.04$	1 ... 47	0.32 ... 1.8
	B82470A1	$4.8 \times 4.8 \times 1.2$	1 ... 47	0.32 ... 1.8
	B82462A2	$6.0 \times 6.0 \times 2.5$	1 ... 330	0.17 ... 3.0
	B82462G2	$6.3 \times 6.3 \times 2.5$	0.82 ... 330	0.22 ... 3.25
	B82462A4	$6.0 \times 6.0 \times 3.0$	1 ... 1000	0.11 ... 3.0
	B82462G4	$6.3 \times 6.3 \times 3.0$	0.82 ... 1000	0.16 ... 3.45
	B82471A1	$6.1 \times 5.6 \times 4.9$	10 ... 220	0.35 ... 1.44
	B82471B1	$6.1 \times 5.5 \times 4.9$	10 ... 220	0.35 ... 1.44

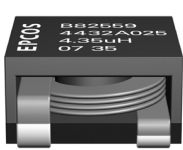
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Design	Type	Dimensions (mm) Length × width × height	L _R μH	I _R A
	B82472G4	7.3 × 7.3 × 3.5	1 ... 1000	0.18 ... 3.45
	B82472G6	7.3 × 7.3 × 4.5	1 ... 1000	0.2 ... 3.6
	B82472P6	7.3 × 7.3 × 4.5	1 ... 1000	0.2 ... 3.6
	B82473A1	8.3 × 7.5 × 5.5	10 ... 470	0.34 ... 2.3
	B82475A1	10.4 × 9.4 × 5.8	10 ... 680	0.28 ... 2.6
	B82464A2	10.4 × 10.4 × 3.0	1 ... 330	0.43 ... 6.8
	B82464G2	10.4 × 10.4 × 3.0	0.82 ... 330	0.41 ... 6.2
	B82464A4	10.4 × 10.4 × 4.8	1 ... 1000	0.33 ... 7.0
	B82464G4	10.4 × 10.4 × 4.8	0.82 ... 1000	0.34 ... 7.6
	B82464Z4	10.4 × 10.4 × 4.8	0.82 ... 1000	0.34 ... 7.6

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Design	Type	Dimensions (mm) Length × width × height	L _R μH	I _R A
	B82464P4	10.4 × 10.4 × 4.8	0.82 ... 1000	0.34 ... 7.5
	B82477G2	12.3 × 12.3 × 6.0	1 ... 1000	0.4 ... 9.0
	B82477G4	12.8 × 12.8 × 8.0	1 ... 1000	0.55 ... 9.8
	B82477P4	12.5 × 12.5 × 8.5	0.82 ... 1000	0.6 ... 11
	B82477P1	12.5 × 12.5 × 4.8		
	B82477P2 (on request)	12.5 × 12.5 × 6.5		
	B82477D4	12.5 × 12.5 × 8.5	10 ... 100	0.96 ... 2.7
	B82476B1	12.95 × 9.4 × 5.08	1 ... 1000	0.3 ... 6.8
	B82479A1	18.54 × 15.24 × 7.11	1 ... 1000	0.56 ... 8.6
	B82479G1	18.5 × 15.24 × 7.25	10 ... 1000	0.53 ... 3.9
	B82559*A013 HPI 13 (ERU 13)	13.2 × 11 × 4.95 13.2 × 11 × 5.95	0.5 ... 3.9	I _{sat} 12 ... 30
	B82559*A025 ERU 25	25.3 × 23.5 × 8.95 ... 12.85	0.44 ... 10	I _{sat} 24 ... 71

SMT power inductors

General

1 General

There is an increasing demand for switch-mode power supplies and DC/DC converters in virtually all sectors of the electronics industry. At the same time this means greater demand for power inductors, which are used primarily as chokes in step-up/step-down controllers. They are also to be found in filter circuits or for coupling/decoupling in a variety of applications.

The major characteristics of power inductors are:

- high rated current,
- low DC resistance.

SMT power inductors from EPCOS come in 17 footprints with different heights, in magnetically shielded or non-shielded versions.

They consist of a ferrite drum core with a copper wire winding and with magnetic shielding depending on the version.

The range of power inductors is completed by ERU and HPI variants. These are special E cores with a strip winding. The design produces an optimized copper space factor and thus an extremely low DC resistance.

2 Manufacture

SMT power inductors are manufactured by two different processes:

2.1 Fully automated manufacture

Manufacture of the B82462A/G and B82464A/G series is on fully automatic production lines based on the carrier band principle. Different welding methods are used to join the winding wires (copper) to the terminals. The result is excellent endurance in high and changing temperatures, as required by the automobile industry.

2.2 Semi-automated manufacture

All other SMT power inductors are manufactured in a semi-automated process. This flexible process allows different designs and thus different geometries. Some inductors are constructed on a plastic carrier, others with a baseplate or with directly metallized terminals. The product range thus covers the very different demands of the market: from low-profile versions with a height of only 1 mm through to especially rugged versions with an insulated baseplate. The winding wires (varnished copper wire) are either welded or soldered.

SMT power inductors

General

3 Marking of SMT power inductors

The data specified on components and reel are given in the data sheets. Inductance, tolerance and date of manufacture are encoded on the component as follows.

Inductance:

- B82462A/G and B82464A/G: coded in nH
Example: 683 = $68 \times 10^3 \text{ nH} = 68000 \text{ nH} = 68 \text{ }\mu\text{H}$
- All other series: coded in μH
Example: 101 = $10 \times 10^1 \text{ }\mu\text{H} = 100 \text{ }\mu\text{H}$

Tolerance:

B82462A/G and B82464A/G are marked with the inductance tolerance which is encoded to IEC 60062.

$\pm 10\% \triangleq \text{K}$; $\pm 20\% \triangleq \text{M}$

Date of manufacture:

The date of manufacture is coded by 4 digits: YWWD

Example: 8223

8 = calendar year 2008

22 = calendar week 22

3 = 3rd day (Wednesday)

For series B82464A and B82464G the last two digits of the work order are added.