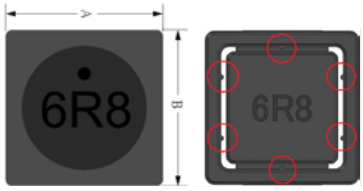
FUTURE-PROOF QS TYPE INDUCTORS

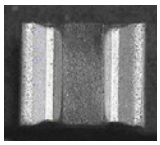
QS type is ABC's new development with regards to shielded SMD power inductors in middle size (4×4 mm ~ 5×5 mm later to 7×7 mm). It was developed specially for automatic production in order to reduce cost. The special construction with positioning knobs helps to increase production yield and further adds to reducing cost. By using PVD instead of plating for metallization, QS type is produced in a eco-friendly, energy-saving way.

INSIDE CHANGES



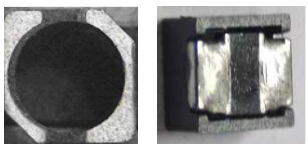
In order to reach an even distribution of inductance values during manufacturing process, it is necessary to control the air gap between DR core and shielding core precisely. The original design was changed from round shape to square shape. Positioning knobs in the shielding core are used to support exact alignment of cores and keep distance same all around. Besides the better production yield, this technique also enables ABC to specify their QS type coils with tighter tolerances compared to older design.

TERMINAL FORMING



For QS type, PVD (physical vapor deposition) is used to form the electrodes. The advantages are a very even and smooth surface and this method is considered eco-friendly compared with electro-plating because no chemical solvents are used.

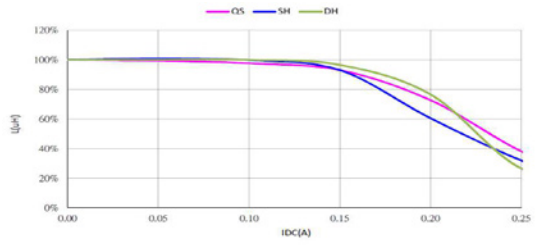
STANDARDIZED PCB PATTERN



Crescent PCB pattern is very popular by manufactures of mid sized inductors. This way of metallization is quite simple (for manual process – by dipping) and will give the coil a good solder connection on the PCB. By using PVD, ABC decided to change the PCB pattern from crescent shape to the square shape. Positive: easier for new design – compatible with crescent design (with limiation)

COMPARISON TO OTHER POPULAR TYPES

Series	QS3818	SH3018	DH3018
Value	100µH	100µH	100µH
DCR (Ω)	1,48	1,93	2.4
Isat (A)	0.20	0.18	0.20



QS coils are developed to solve all the problems that prior versions brough from technological point of view such as soldering, processability, manufacturing risk, etc and are meant to replace the older versions e.g. ABC's popular SH-; DH- or SU type that suffer from continuously cost increase due to most of their production processes being manual work. QS coils are suitable for easy pick and place, excellent soldering up to 260°C as well as RoHS and Reach compliant.

Due to automatic production process the quality will become very stable. On top of this, ABC uses auto soldering, auto marking, auto glueing and auto test & packaging. ABC set their quality goals high and add a double 100% outgoing inspection (manual and automatic) to their process. Parts are in top condition and passed successfully the AEC-Q200 tests and are therefore suggested to use in automotive applications.

ABC continues to develop new productions towards to the three directions high speed, high current, low profile. One example are coils with powder injection or amorphous core material. Regarding QS type the following items are under development to complete QS line up: QS3828 (3.8×3.8×2.8mm), QS5828 (5.8×5.8×2.8mm), QS6828 (6.8×6.8×2.8mm).

SAMPLE SETS AVAILABLE FROM Q4/2015:

- QS3818 – 3.8×3.8×1.8 mm: 1R0/2R2/3R3/4R7/6R8/100/220/470/680/101
- QS4818 – 4.8×4.8×1.8 mm: 1R0/2R2/3R3/4R7/6R8/100/220/470/680/101
- QS4828 – 4.8×4.8×2.8 mm: 1R2/4R7/100/220/470/680/101/221/471/561

Please ask for availability and price!

new

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