POWER INDUCTORS

MODEL NO. : VSPI-042018 SERIES

Features :

- ∗ SMD version.
- ∗ Low profile and high power.
- ∗ Magnetically shielded.
- ∗ Compliant with RoHS and REACH.

Application :

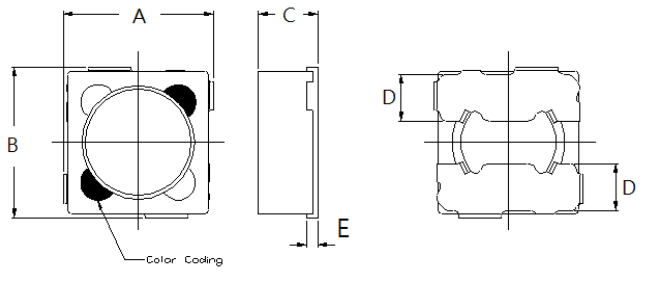
- ∗ Automotive.

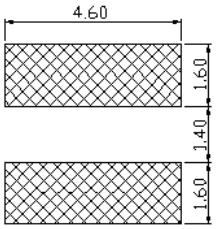
Electrical Specification :

PART NO	Inductance (uH) NOTE(1)	Tolerance NOTE(2)		DCR ±30% (Ω) NOTE(3)	Saturation current (mA) NOTE(4)	Temperature rise current (mADC) (NOTE 5)		Color Coding
						@25℃	@125℃	
VSPI-042018-R27	0.27		N	0.019	5000	4600	3200	Red
VSPI-042018-R47	0.47		N	0.029	4000	3600	2500	Blue
VSPI-042018-R68	0.68		N	0.032	3500	3000	2200	Gray
VSPI-042018-1R0	1.0		N	0.038	3200	2400	1650	Black
VSPI-042018-1R2	1.2		N	0.044	3000	2200	1400	Brown
VSPI-042018-1R5	1.5		N	0.050	2700	2200	1400	Red
VSPI-042018-1R8	1.8		N	0.058	2400	2000	1300	Orange
VSPI-042018-2R2	2.2		N	0.062	2200	1900	1200	Yellow
VSPI-042018-2R7	2.7		N	0.068	2100	1800	1150	Green
VSPI-042018-3R3	3.3		N	0.080	1880	1650	1050	Blue
VSPI-042018-3R9	3.9		N	0.084	1800	1560	1000	Violet
VSPI-042018-4R7	4.7		N	0.099	1460	1400	900	Gray
VSPI-042018-5R6	5.6	M	N	0.110	1480	1300	800	White
VSPI-042018-6R8	6.8	M	N	0.128	1260	1200	740	Black
VSPI-042018-8R2	8.2	M	N	0.146	1240	1150	700	Brown
VSPI-042018-100	10	M	N	0.165	1100	1050	650	Red
VSPI-042018-120	12	M	N	0.254	1000	800	450	Orange
VSPI-042018-150	15	M	N	0.320	880	720	400	Yellow
VSPI-042018-180	18	M	N	0.360	840	680	370	Green
VSPI-042018-220	22	M	N	0.418	740	650	350	Blue
VSPI-042018-270	27	M	N	0.450	700	600	330	Violet
VSPI-042018-330	33	M	N	0.620	580	580	310	Gray
VSPI-042018-390	39	M	N	0.650	560	480	260	White
VSPI-042018-470	47	M	N	0.790	520	450	225	Black
VSPI-042018-560	56	M	N	0.862	480	400	200	Brown
VSPI-042018-680	68	M	N	1.00	400	360	180	Red
VSPI-042018-101	100	M	N	1.38	320	360	180	Yellow
VSPI-042018-151	150	M	N	2.41	240	320	145	Yellow
VSPI-042018-181	180	M	N	3.42	240	290	130	Violet
VSPI-042018-221	220	M	N	3.90	230	290	130	Red
VSPI-042018-331	330	M	N	5.17	180	240	105	Orange
VSPI-042018-471	470	M	N	8.42	150	190	85	Green
VSPI-042018-681	680	M	N	10.30	130	160	70	Blue
VSPI-042018-102	1000	M	N	15.20	100	130	55	Black
VSPI-042018-152	1500	M	N	25.00	90	100	45	Black

NOTE(1): Measuring condition : 1 KHZ, 1.0Vrms.
NOTE(2): Tolerance: M = ±20% , N = ±30%.
NOTE(3): DCR :Chroma 16502, or equivalent.
NOTE(4): Saturation current for inductance drop 35% from its value without current.
NOTE(5): ΔT=40℃ approximately under the Temperature rise current.
NOTE(6): Operating temperature range from -40℃ to 125℃ (ambient temperature plus self generation of heat).
NOTE(7): Storage time :The recommended storage time of power inductors is maximum 6 months, and don't suggest to use the parts over 6 months.

Physical Dimension : (unit :mm)





PCB PATTERN

A	4.2 ± 0.2
B	4.2 ± 0.2
C	1.80 max
D	1.3 ref.
E	0.3 ref

PACKAGING SPEC:

1. REEL SIZE & UNITS PER REEL :7",1000PCS.
2. TAPE WIDTH:12mm.
3. REEL WIDTH:16.2mm.
4. COMPONENT PITCH:8mm.

Cautions and warnings

● Please note the recommendations in our product specification (latest edition) and in the data sheets.

- Particular attention should be paid to the derating curves given there.
- The soldering conditions should also be observed. Temperatures quoted in relation to wave soldering refer to the pin, not the housing.

● If the components are to be washed with varnish it is necessary to check whether the washing varnish agent used has a negative effect on the wire insulation, any plastics that are used, or on glued joints. In particular, it is possible for washing varnish agent residues to have a negative effect in the long-term on wire insulation.

Washing processes may damage the product due to the possible static or cyclic mechanical loads (e.g. ultrasonic cleaning). They may cause cracks to develop on the product and its parts, which might lead to reduced reliability or lifetime.

● The following points must be observed if the components are potted in customer applications:

- Many potting materials shrink as they harden. They therefore exert a pressure on the plastic housing or core. This pressure can have a deleterious effect on electrical properties, and in extreme cases can damage the core or plastic housing mechanically.
- It is necessary to check whether the potting material used attacks or destroys the wire, wire insulation plastics or glue.
- The effect of the potting material can change the high-frequency behavior of the components.
- Many coating material have a negative effect (chemically and mechanically) on the winding wires, insulation materials and connecting points. Customers are always obligated to determine whether and to what extent their coating material influence the component. Customers are responsible and bear all risk for the use of the coating material.

● Ceramics / Ferrites are sensitive to direct impact. This can cause the core material to flake, or lead to breakage of the core.

● Even for customer-specific products, conclusive validation of the component in the circuit can only be carried out by the customer.

Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statement about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule, we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.

2. We also point out that **in individual cases, a malfunction of electronic components of failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.

3. **The warnings, cautions and product-specific notes must be observed.**

4. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.
   We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

5. **Our manufacturing sites serving the automotive business apply the IATF 16949 standard**. The IATF certifications confirm our compliance with requirements regarding the quality management system in the automotive industry. Referring to customer requirements and customer specific requirements (“CSR”) PEC always has and will continue to have the policy of respecting individual agreements. Even if IATF 16949 may appear to support the acceptance of unilateral requirements, we hereby like to emphasize that **only requirements mutually agreed upon can and will be implemented in our Quality Management System**. For clarification purposes we like to point out that obligations from IATF 16949 shall only become legally binding if individually agreed upon.