Second-Generation Automotive Grade IHLE® Inductor With Integrated EMI Shield in 4040 Case Size Delivers Improved Shield Design, Higher Voltage Ratings, and Polarity Markings for Additional EMI Control

Product Benefits:

- Reduces radiated E-field by up to 20 dB
- Reduces crosstalk and magnetic B-field leakage by 6 dB to nearby components
- High temperature operation up to +155 °C
- Improved shield design over standard IHLE inductors
- Higher operating voltage (75 V) and isolation voltage (100 V) ratings than previous-generation devices
- Polarity marked for more consistent EMI performance
- Shielded from external noise
- Four terminals provide improved mounting stability in 50G applications
- Integrated E-field shield eliminates the need for separate shielding
- AEC-Q200 qualified
- Patented shield construction
- RoHS-compliant, halogen-free, and Vishay Green

Market Applications:

- Automotive domain control units (DCU) and transmission / engine control
- DC/DC converters for infotainment, navigation, and braking systems
- Noise suppression for motors, windshield wipers, audio, and power supplies
- LED lighting drivers

The News:

Vishay Intertechnology expands its IHLE® series of low profile, high current inductors featuring integrated E-field shields with a new second-generation Automotive Grade device in the 10 mm by 10 mm 4040 case size. Offering an improved shield design over previous-generation solutions, and polarity marked for more consistent EMI performance, the Vishay Dale IHLE-4040DDEW-5A lowers costs and saves board space by potentially eliminating the need for separate board-level Faraday shielding.

- Compared to traditional composite inductors, the IHLE-4040DDEW-5A contains the electric and magnetic fields associated with EMI in a tin-plated copper integrated shield
  - When the shield is connected to ground, the device provides up to 20 dB reduction in radiated noise interference, and a further 6 dB reduction in magnetic flux leakage to minimize crosstalk to nearby board components
- Packaged in a 100 % lead (Pb)-free, magnetically shielded, iron alloy encapsulant
- The IHLE-4040DDEW-5A offers high resistance to thermal shock, moisture, and mechanical shock from the additional mounting support provided by its two shield terminals

The Key Specifications:

	Low End	High End
Inductance @ 100 kHz (µH)	0.47	68
DCR typ. @ 25 °C (mΩ)	1.55	240
DCR max. @ 25 °C (mΩ)	1.66	252
Heat rating current typ. (A)(1)	32	2.6
Saturation current typ. (A)(2)	28	3.5
Saturation current typ. (A)(3)	40.1	4.9
SRF typ. (MHz)	32.0	3.5
Case size	4040	4040
Part number	IHLE4040DDEWR47M5A	IHLE4040DDEW680M5A

(1) DC current (A) that will cause an approximate ΔT of 40 °C
(2) DC current (A) that will cause L_0 to drop approximately 20 %
(3) DC current (A) that will cause L_0 to drop approximately 30 %

Availability:
Samples and production quantities of the IHLE-4040DDEW-5A are available now, with lead times of 16 weeks.

To access the product datasheet on the Vishay Website, go to
http://www.vishay.com/ppg?34587 (IHLE-4040DDEW-5A)

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