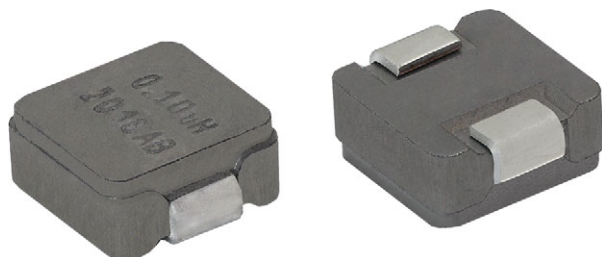


# Automotive Inductors, Low Inductance Design, Ultra Low DCR, Options for High Temperature 155 °C or High Saturation Rating



## LINKS TO ADDITIONAL RESOURCES



## FEATURES

- Size: 6.65 mm x 6.65 mm x 3.0 mm
- Core material options for high temperature or high saturation rating
- Magnetically shielded construction
- Ideal for high frequency switching converters with high current load demands
- Patented coil design achieves ultra low DCR and robust design
- Handles high transient in-rush currents without saturation
- AEC-Q200 qualified
- IHSR design; PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

AUTOMOTIVE  
GRADE

**RoHS**  
COMPLIANT

**HALOGEN**  
**FREE**
**GREEN**  
(5-2008)

## APPLICATIONS

- Multiphase DC/DC converters for ADAS microprocessors
- High current LC filters
- LiDAR boost inductor for laser diode with GaN FETs
- Energy storage inductor for high frequency, low voltage converters (12 V to 1 V) for automotive domain control units (DCU)

## STANDARD ELECTRICAL SPECIFICATIONS

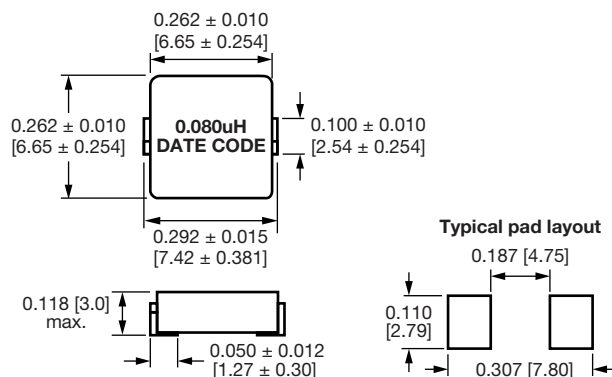
| PART NUMBER                         | L <sub>0</sub> INDUCTANCE<br>± 20 % AT 100 kHz,<br>0.25 V, 0 A<br>(μH) | DCR TYP.<br>AT 25 °C<br>(mΩ) | DCR MAX.<br>AT 25 °C<br>(mΩ) | HEAT RATING<br>CURRENT<br>DC TYP.<br>(A) <sup>(1)</sup> | SATURATION CURRENT<br>DC TYP. <sup>(2)</sup><br>(A) |           | SRF TYP<br>(MHz) |
|-------------------------------------|------------------------------------------------------------------------|------------------------------|------------------------------|---------------------------------------------------------|-----------------------------------------------------|-----------|------------------|
|                                     |                                                                        |                              |                              |                                                         | 20 % DROP                                           | 30 % DROP |                  |
|                                     |                                                                        |                              |                              |                                                         | BEST SATURATION                                     |           |                  |
| IHSR2525CZER80NMA1                  | 0.080                                                                  | 0.62                         | 0.65                         | 45                                                      | 62                                                  | 87        | 315              |
| HIGHEST TEMPERATURE RATING (155 °C) |                                                                        |                              |                              |                                                         |                                                     |           |                  |
| IHSR2525CZER56NM5A                  | 0.056                                                                  | 0.38                         | 0.40                         | 58                                                      | 45                                                  | 64        | 535              |
| IHSR2525CZERR10M5A                  | 0.100                                                                  | 0.97                         | 1.02                         | 46                                                      | 31                                                  | 46        | 186              |

### Notes

- All test data is referenced to 25 °C ambient
- Operating temperature range -55 °C to +125 °C (for -A1 models) and up to +155 °C (for -5A models)
- <sup>(1)</sup> DC current (A) that will cause an approximate ΔT of 40 °C
- <sup>(2)</sup> DC current (A) that will cause L<sub>0</sub> to drop approximately 20 % and 30 %, respectively

PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)

This Vishay product is protected by one or more United States and international patents.

**DIMENSIONS** in inches [millimeters]

**DESCRIPTION**

|                      |                                |                              |              |                                |
|----------------------|--------------------------------|------------------------------|--------------|--------------------------------|
| <b>IHSR2525CZ-A1</b> | <b>0.080 <math>\mu</math>H</b> | <b><math>\pm 20</math> %</b> | <b>ER</b>    | <b>e3</b>                      |
| MODEL                | INDUCTANCE VALUE               | INDUCTANCE TOLERANCE         | PACKAGE CODE | JEDEC® LEAD (Pb)-FREE STANDARD |

**GLOBAL PART NUMBER**

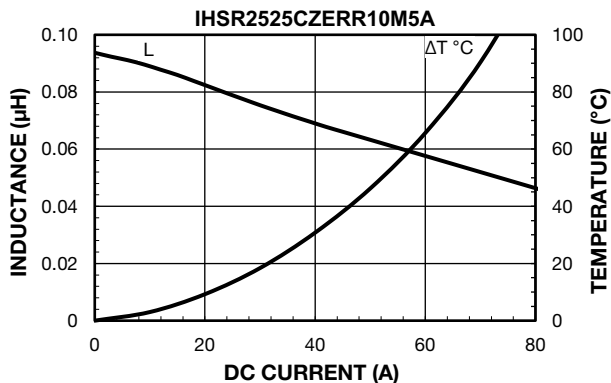
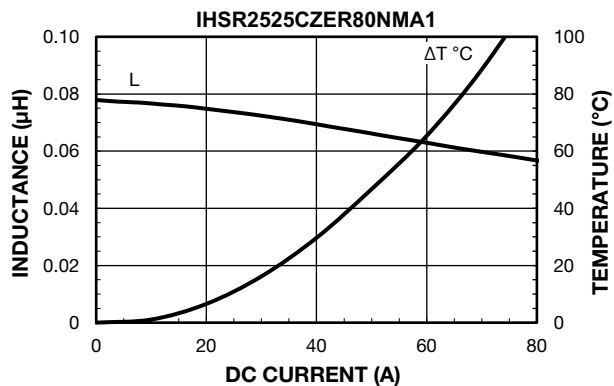
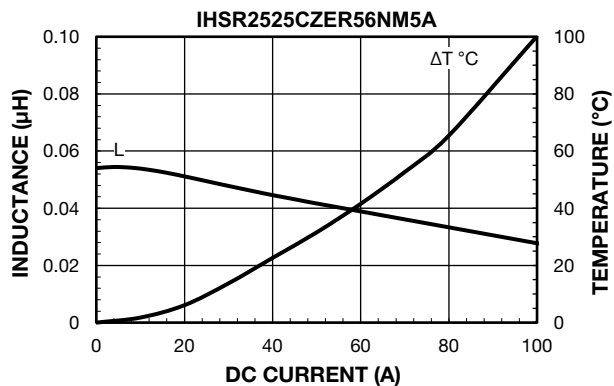
|                |                    |                    |                     |                      |            |
|----------------|--------------------|--------------------|---------------------|----------------------|------------|
| <b>I H S R</b> | <b>2 5 2 5 C Z</b> | <b>E R</b>         | <b>8 0 N</b>        | <b>M</b>             | <b>A 1</b> |
| PRODUCT FAMILY | SIZE               | PACKAGE CODE       | INDUCTANCE VALUE    | INDUCTANCE TOLERANCE | SERIES     |
|                |                    | ER = tape and reel | 80N = 0.080 $\mu$ H | M = $\pm 20$ %       |            |

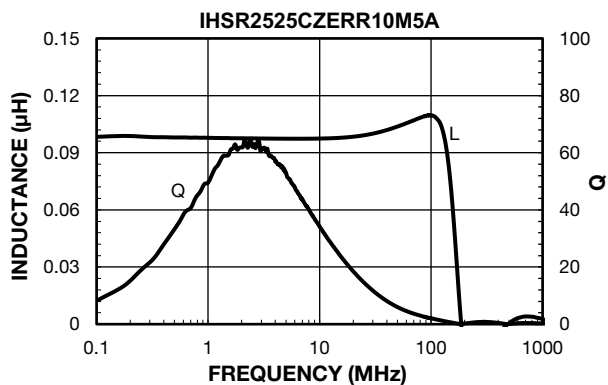
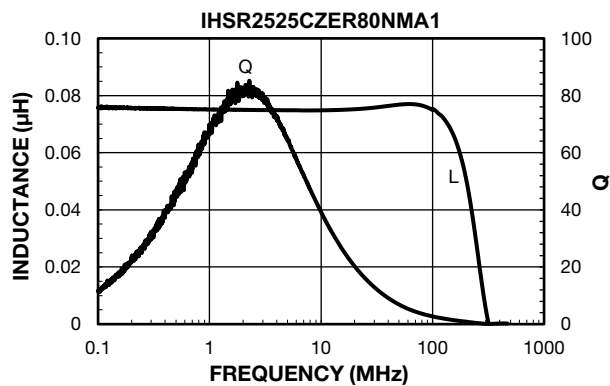
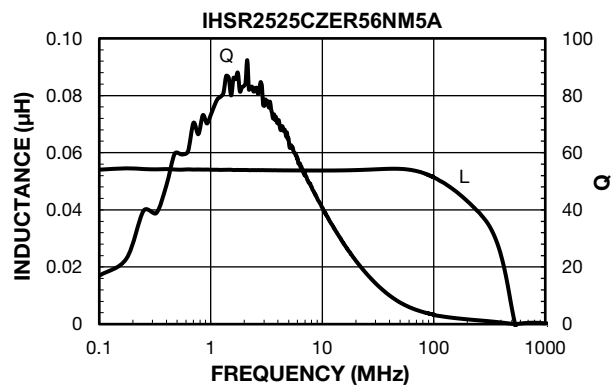
**Note**

- For additional packaging details see [“Packaging Methods”](#)



PERFORMANCE GRAPHS



**PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY**




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