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

FEATURES

- Size: 5.08 mm x 5.08 mm footprint (2.0 mm and 3.0 mm height options)
- 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
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE GRADE

Pb-free

RoHS COMPLIANT

HALOGEN FREE

GREEN (5-2008)

LINKS TO ADDITIONAL RESOURCES

Product Page Design Tools

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_0 INDUCTANCE ± 20 % AT 100 kHz, 0.25 V, 0 A (µH)	DCR TYP. AT 25 °C (mΩ)	DCR MAX. AT 25 °C (mΩ)	HEAT RATING CURRENT DC TYP. (A) (1)	SATURATION CURRENT DC TYP. (2) (A)		SRF TYP. (MHz)
					20 % DROP	30 % DROP	
BEST SATURATION AND 2 mm HEIGHT							
IHSR2020BZEKR10MA1	0.100	2.7	2.9	24	37	44	342
BEST SATURATION AND 3 mm HEIGHT							
IHSR2020CZEK56NMA1	0.056	0.6	0.6	65	73	97	513
IHSR2020CZEK82NMA1	0.082	1.0	1.0	41	57	76	375
IHSR2020CZEKR11MA1	0.110	2.7	2.9	24	44	49	315
HIGHEST TEMPERATURE RATING (155 °C) AND 2 mm HEIGHT							
IHSR2020BZEKR12M3A	0.120	2.7	2.9	23	20	30	197
HIGHEST TEMPERATURE RATING (155 °C) AND 3 mm HEIGHT							
IHSR2020CZEK68NM3A	0.068	0.6	0.6	63	30	46	277
IHSR2020CZEKR10M3A	0.100	1.0	1.0	37	26	39	205
IHSR2020CZEKR14M3A	0.140	2.7	2.9	23	20	30	158

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 -3A models)

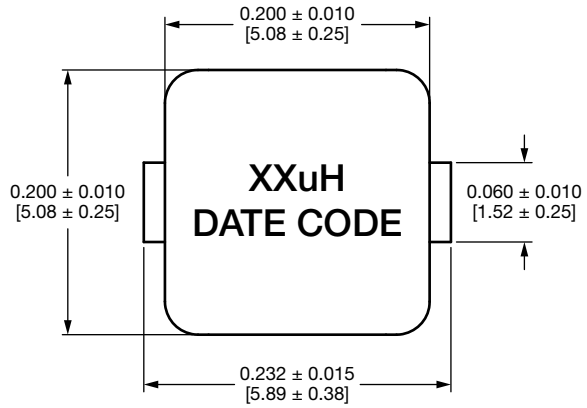
(1) DC current (A) that will cause an approximate ΔT of 40 °C

(2) DC current (A) that will cause L_0 to drop approximately 20 % and 30 %, respectively

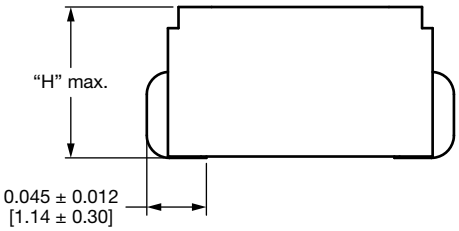
PATENT(S): www.vishay.com/patents

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

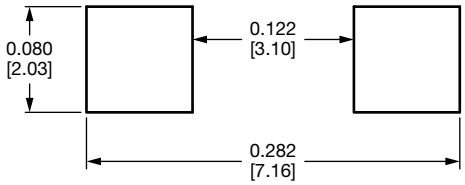
DIMENSIONS in inches [millimeters]



SIZE	"H"
2020BZ	0.078" [2.0 mm]
2020CZ	0.118" [3.0 mm]



Typical PAD layout



DESCRIPTION

IHSR2020CZ-A1	0.082 µH	± 20 %	EK	e3
MODEL	INDUCTANCE VALUE	INDUCTANCE TOLERANCE	PACKAGE CODE	JEDEC® LEAD (Pb)-FREE STANDARD

GLOBAL PART NUMBER

I	H	S	R	2	0	2	0	C	Z	E	K	8	2	N	M	A	1
PRODUCT FAMILY				SIZE						PACKAGE CODE		INDUCTANCE VALUE			INDUCTANCE TOLERANCE	SERIES	

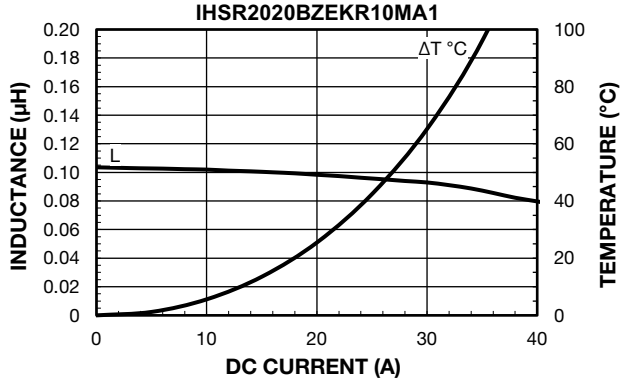
EK = tape and reel **82N** = 0.082 µH **M** = ± 20 %

Note

- For additional packaging details see "Packaging Methods"

PERFORMANCE GRAPHS

IHSR2020BZEKR10MA1



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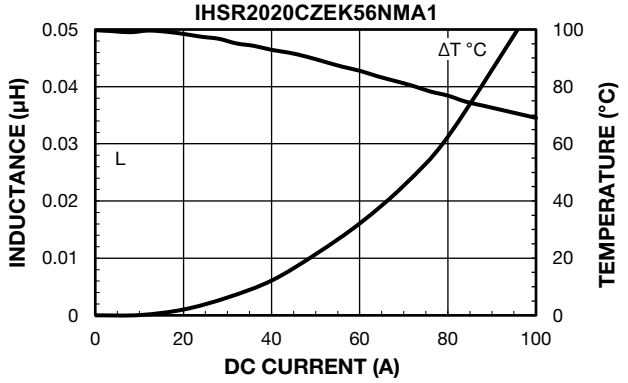

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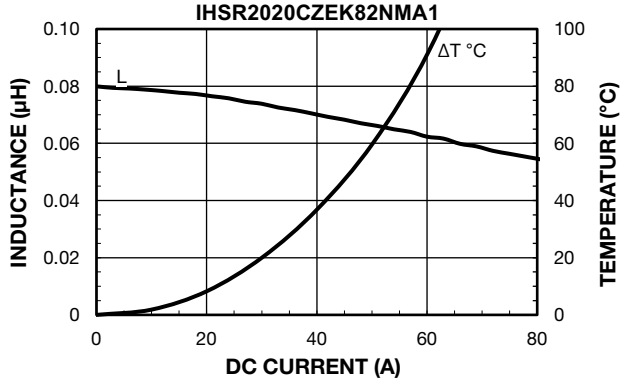

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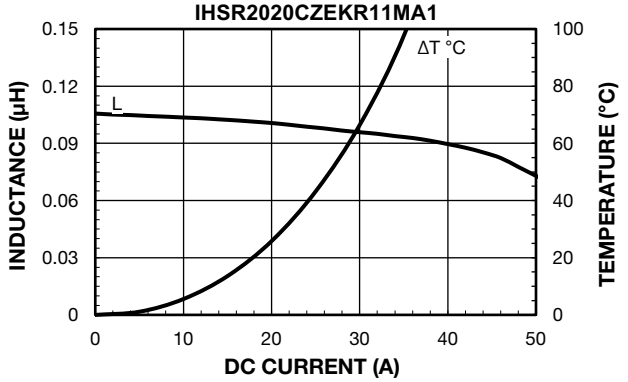

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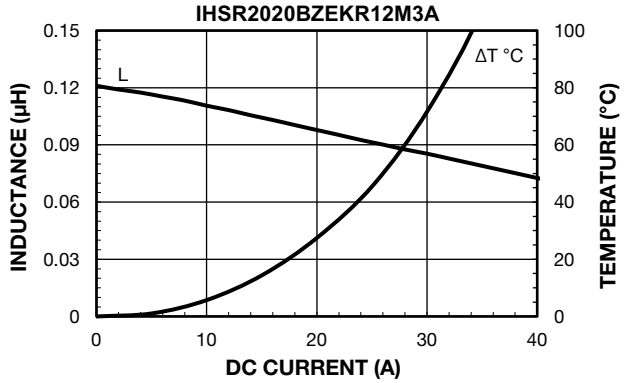

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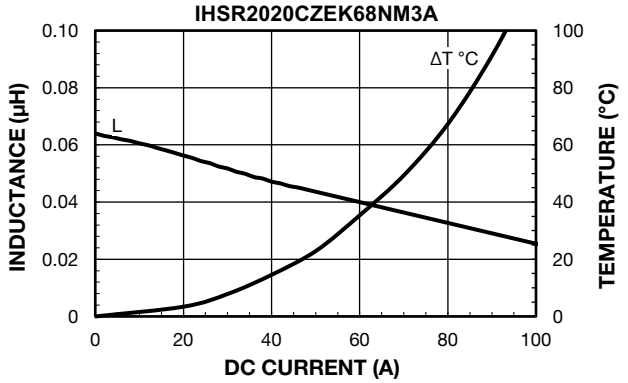

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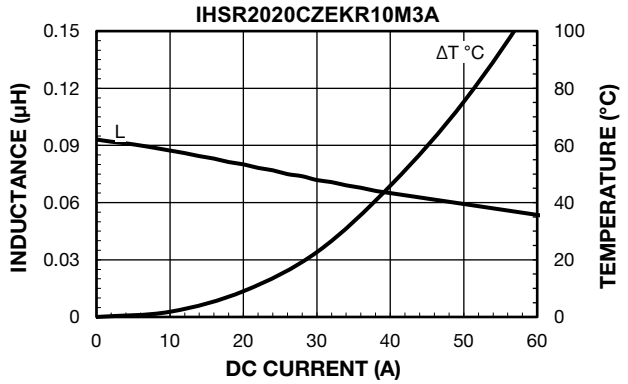

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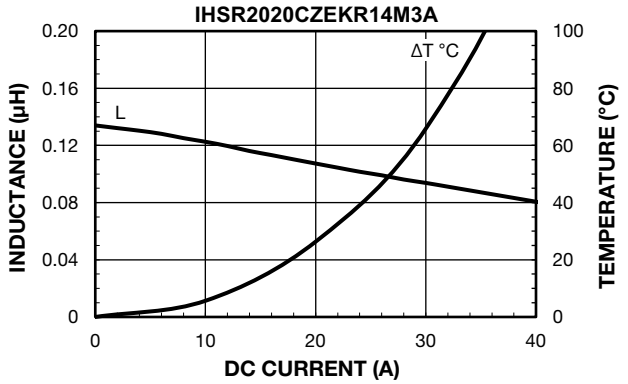
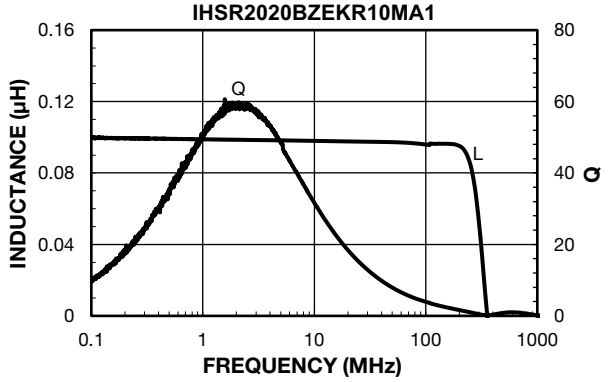


PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY

IHSR2020BZEKR10MA1



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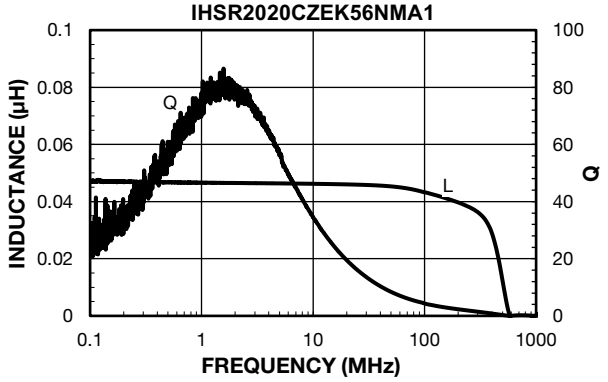

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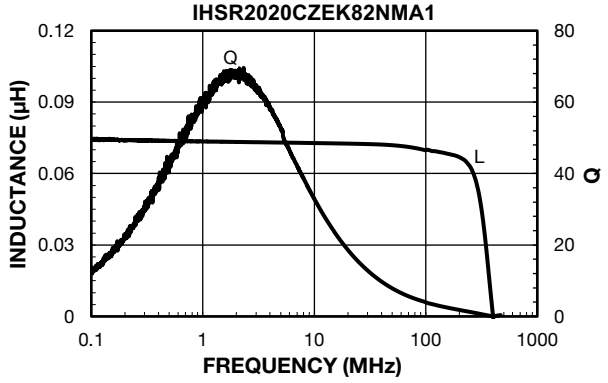

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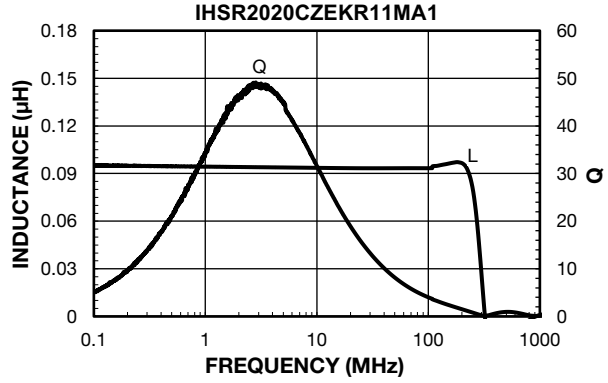

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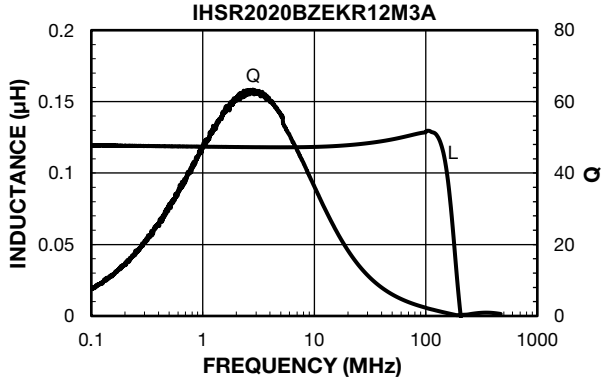

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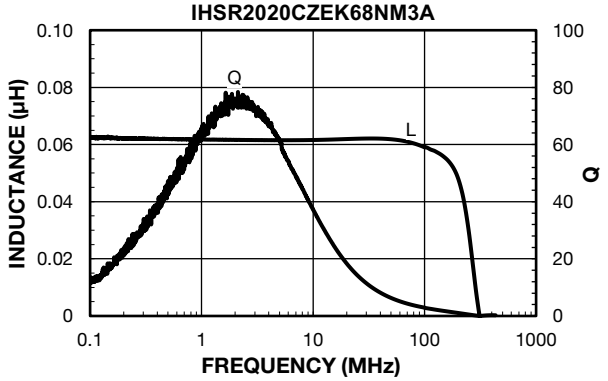

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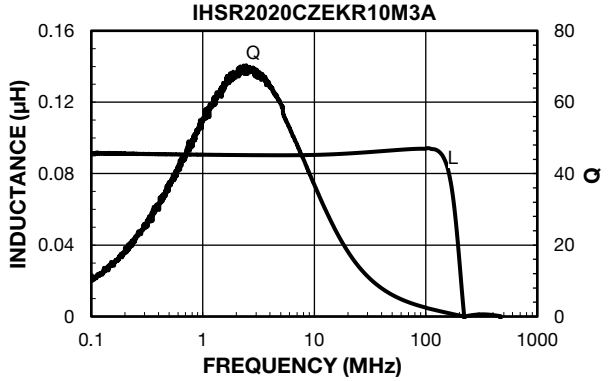

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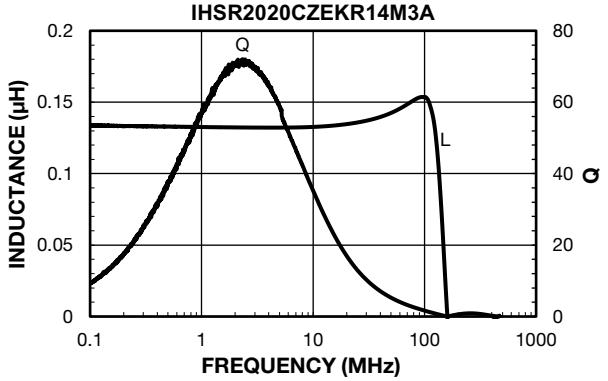

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