

Commercial 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
- IHSR design; PATENT(S): www.vishay.com/patents
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

LINKS TO ADDITIONAL RESOURCES



APPLICATIONS

- Multiphase DC/DC converters for 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)

STANDARD ELECTRICAL SPECIFICATIONS

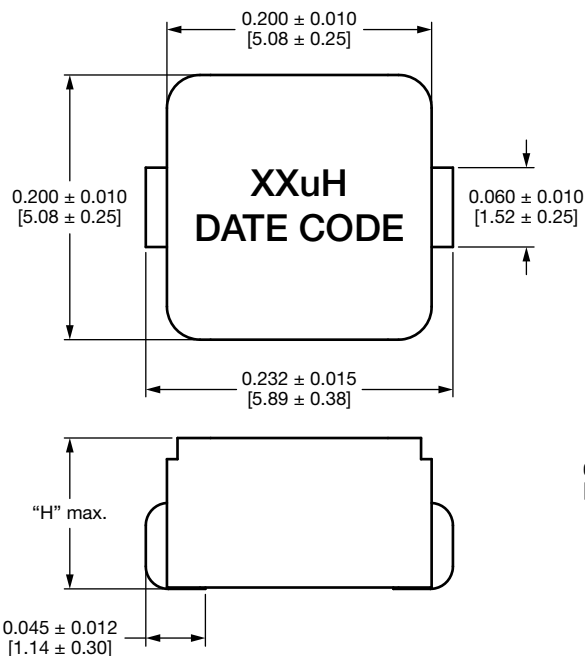
PART NUMBER	L ₀ INDUCTANCE ± 20 % AT 100 kHz, 0.25 V, 0 A (μH)	DCR TYP. AT 25 °C (mΩ)	DCR MAX. AT 25 °C (mΩ)	HEAT RATING CURRENT DC TYP. (A) ⁽¹⁾	SATURATION CURRENT DC TYP. ⁽²⁾ (A)		SRF TYP (MHz)
					20 % DROP	30 % DROP	
BEST SATURATION AND 2 mm HEIGHT							
IHSR2020BZEKR10M01	0.100	2.7	2.9	24	37	44	342
BEST SATURATION AND 3 mm HEIGHT							
IHSR2020CZEK56NM01	0.056	0.6	0.64	65	73	97	513
IHSR2020CZEK82NM01	0.082	1.0	1.14	41	57	76	375
IHSR2020CZEKR11M01	0.110	2.7	2.9	24	44	49	315
HIGHEST TEMPERATURE RATING (155 °C) AND 2 mm HEIGHT							
IHSR2020BZEKR12M31	0.120	2.7	2.9	23	20	30	197
HIGHEST TEMPERATURE RATING (155 °C) AND 3 mm HEIGHT							
IHSR2020CZEK68NM31	0.068	0.6	0.64	63	30	46	277
IHSR2020CZEKR10M31	0.100	1.0	1.14	37	26	39	205
IHSR2020CZEKR14M31	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 L₀ to drop approximately 20 % and 30 %, respectively

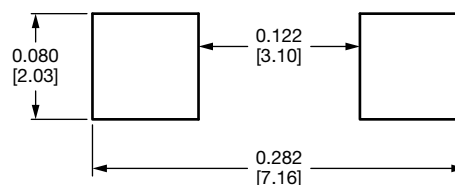
PATENT(S): www.vishay.com/patents

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-01	0.082 μH	± 20 %	EK	e3
MODEL	INDUCTANCE VALUE	INDUCTANCE TOLERANCE	PACKAGE CODE	JEDEC® LEAD (Pb)-FREE STANDARD

GLOBAL PART NUMBER

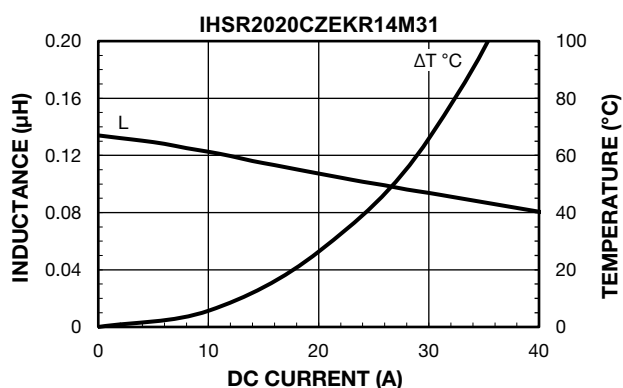
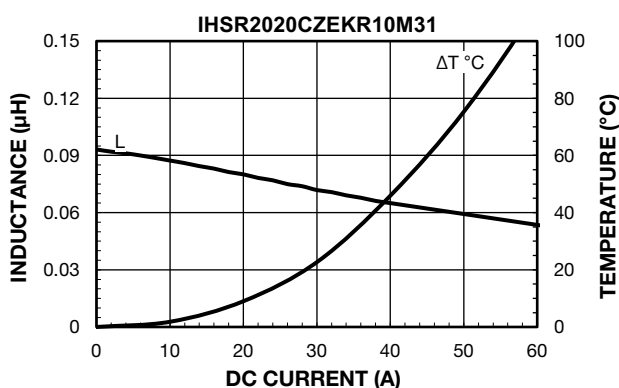
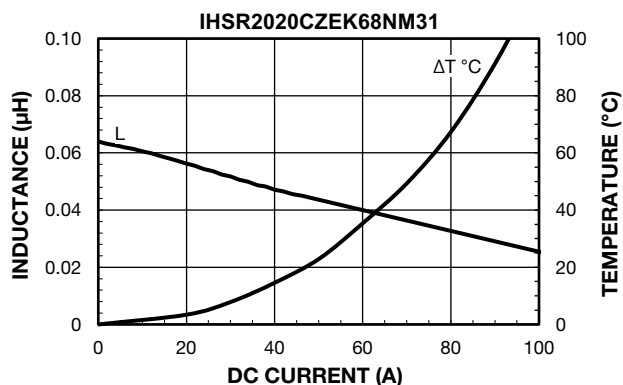
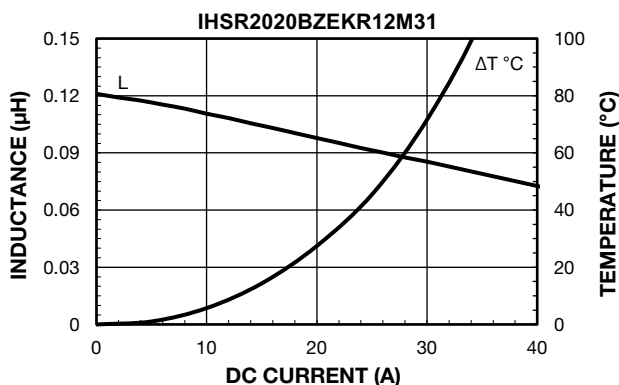
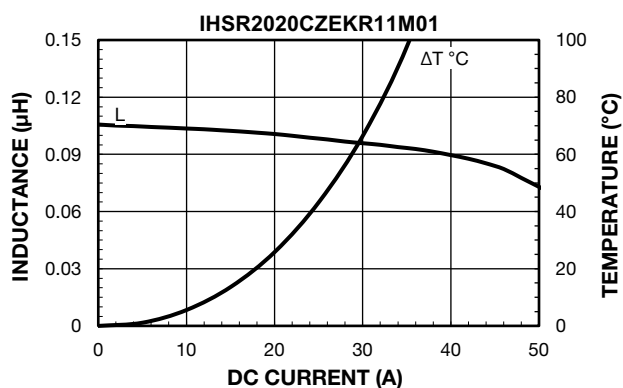
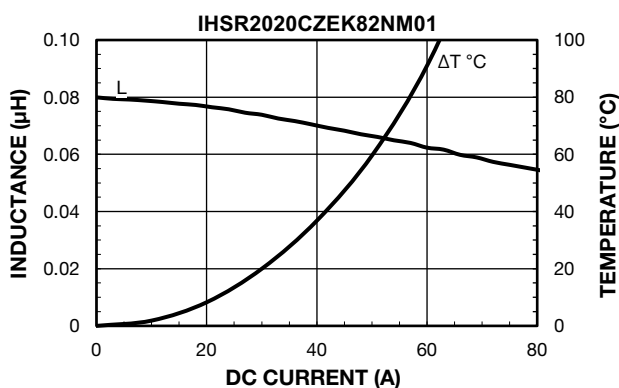
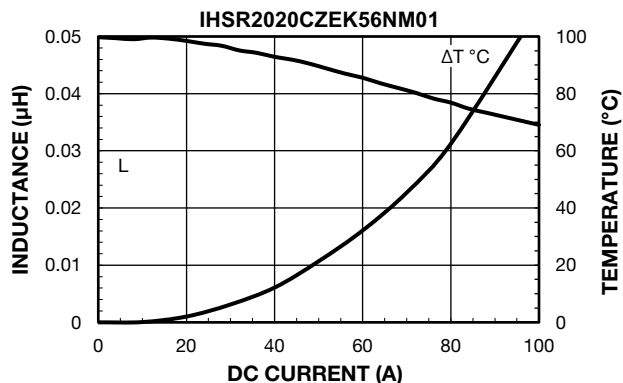
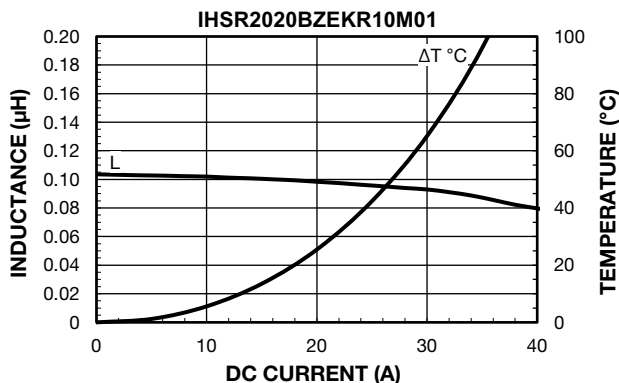
I H S R	2 0 2 0 C Z	E K	8 2 N	M	0 1
PRODUCT FAMILY	SIZE	PACKAGE CODE	INDUCTANCE VALUE	INDUCTANCE TOLERANCE	SERIES
		EK = tape and reel	82N = 0.082 μ H	M = ± 20 %	

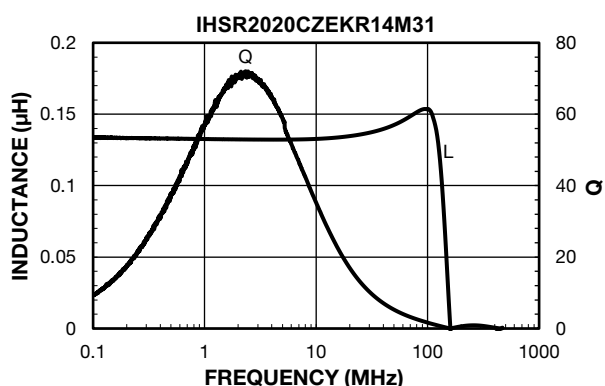
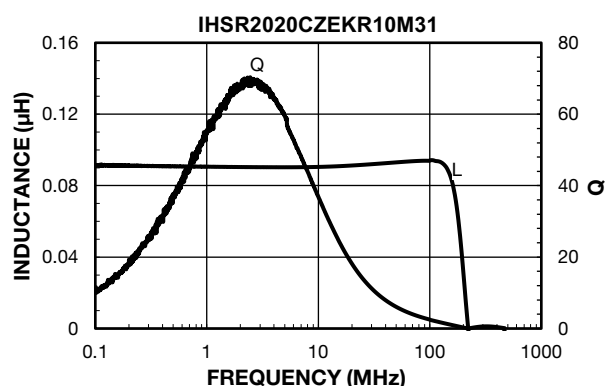
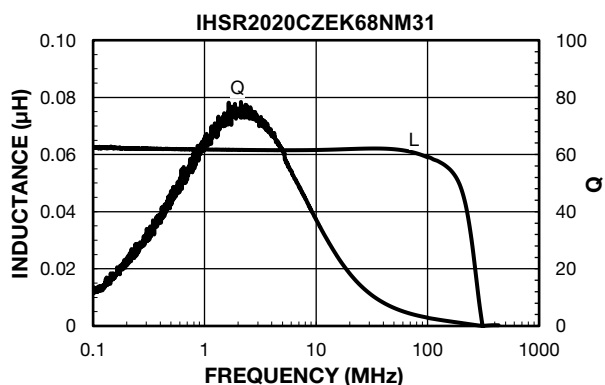
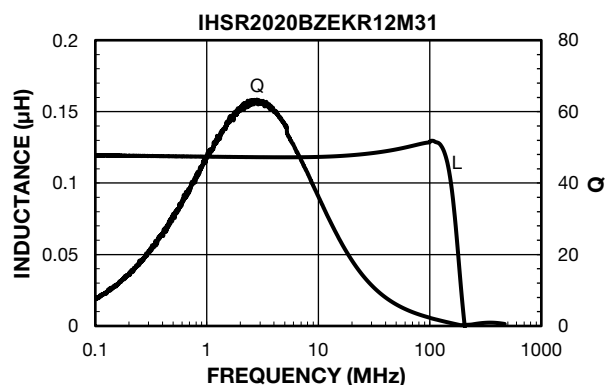
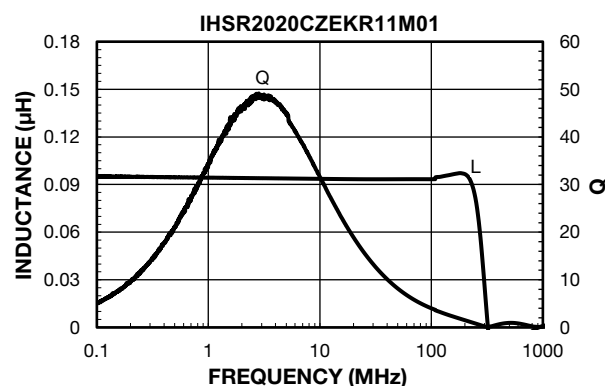
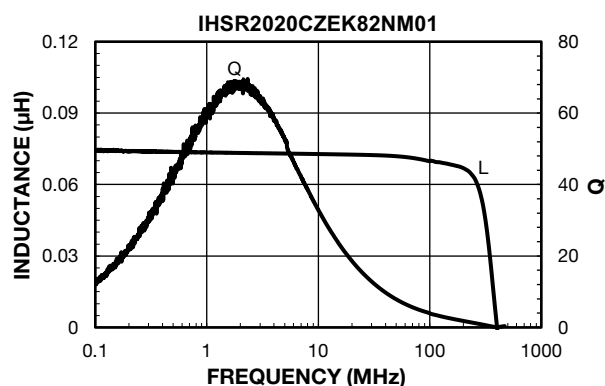
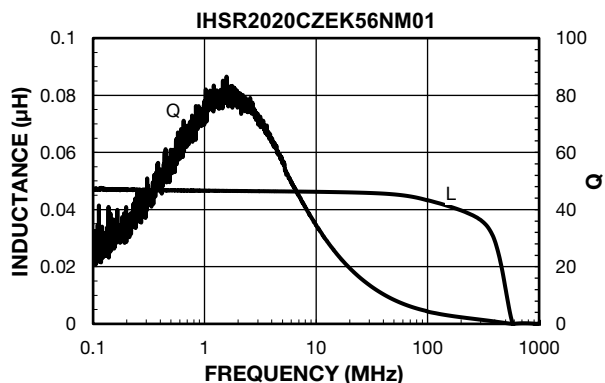
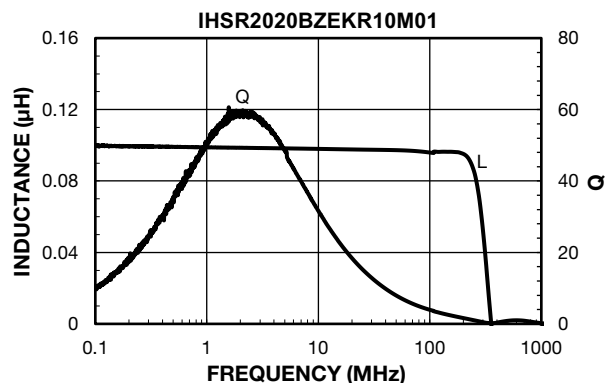
Note

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



PERFORMANCE GRAPHS



PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY




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