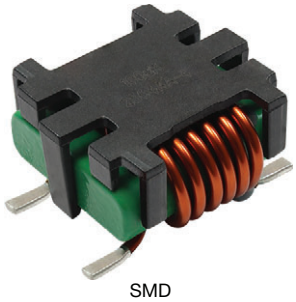
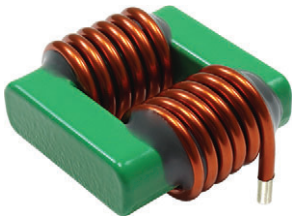
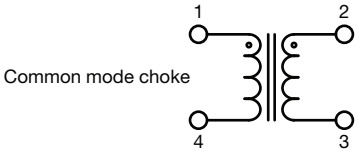
Common Mode Choke, High Current, High Voltage 1.5 kV, Temperature 150 °C



SMD



THT



FEATURES

- High current common mode choke with SMD and THT terminal options
- Compatible with automated pick-and-place assembly (clip is available for SMD design only; THT termination does not include pick and place clip)
- High temperature operation up to 150 °C
- Inductance range from 70 µH to 480 µH (current rating up to 20 A)
- Designed to filter common mode noise from 500 kHz to 10 MHz (up to 5 kΩ impedance)
- Dielectric withstand voltage rated to 1500 V_{DC} between coils
- Customizable for inductance, impedance, DCR and current rating
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

HALOGEN FREE GREEN (5-2008)

LINKS TO ADDITIONAL RESOURCES

Product Page

3D Models

MATERIAL SPECIFICATIONS

- Core: ferrite
- Wire: enameled copper
- Pick and place clip: glass fiber enhanced plastic polymer
- Terminal plating: solder dipped tin alloy (Sn99Ag0.3Cu0.7)

APPLICATIONS

- High current and high temperature applications
- DC/DC converters
- EMI Filters
- Motor noise suppression

STANDARD ELECTRICAL SPECIFICATIONS

PART NUMBER	L_0 INDUCTANCE AT 0 A, REF. (µH)	DCR TYP. 25 °C (mΩ)	DCR MAX. 25 °C (mΩ)	COMMON MODE IMPEDANCE ± 30 % TYP. AT 1 MHz (Ω)	COMMON MODE IMPEDANCE ± 30 % TYP. AT 10 MHz (Ω)	COMMON MODE IMPEDANCE ± 30 % TYP. AT 100 MHz (Ω)	HEAT RATING CURRENT DC TYP. (A) (1)		LEAKAGE MAX. (µH)
							40 °C RISE	100 °C RISE	
SMD STYLE									
ICMS2321AGFG700N10	70	1.3	1.5	540	345	220	20	30	1.7
ICMS2321AGFG101N10	100	1.9	2.1	780	600	240	18	26	2.4
ICMS2321AGFG281N10	280	6.6	7.4	2240	1230	380	10	15	6.7
ICMS2321AGFG481N10	480	13.4	15	3790	1920	410	7	10	11.5
SMD STYLE WITHOUT PICK-AND-PLACE CLIP (2)									
ICMS2321AFEG700N10	70	1.3	1.5	540	345	220	20	30	1.7
ICMS2321AFEG101N10	100	1.9	2.1	780	600	240	18	26	2.4
ICMS2321ADEG281N10	280	6.6	7.4	2240	1230	380	10	15	6.7
ICMS2321ACEG481N10	480	13.4	15	3790	1920	410	7	10	11.5

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STANDARD ELECTRICAL SPECIFICATIONS

PART NUMBER	L_0 INDUCTANCE AT 0 A, REF. (µH)	DCR TYP. 25 °C (mΩ)	DCR MAX. 25 °C (mΩ)	COMMON MODE IMPEDANCE ± 30 % TYP. AT 1 MHz (Ω)	COMMON MODE IMPEDANCE ± 30 % TYP. AT 10 MHz (Ω)	COMMON MODE IMPEDANCE ± 30 % TYP. AT 100 MHz (Ω)	HEAT RATING CURRENT DC TYP. (A) (1)		LEAKAGE MAX. (µH)
							40 °C RISE	100 °C RISE	
THROUGH-HOLE STYLE (PICK-AND-PLACE CLIP NOT AVAILABLE) (2)									
ICMS2321ABEH700N10	70	1.2	1.3	540	345	220	20	30	1.7
ICMS2321ABEH101N10	100	1.6	1.8	780	600	240	18	26	2.4
ICMS2321ABEH281N10	280	6.2	7	2240	1230	380	10	15	6.7
ICMS2321ABEH481N10	480	12.4	13.9	3790	1920	410	7	10	11.5

Notes

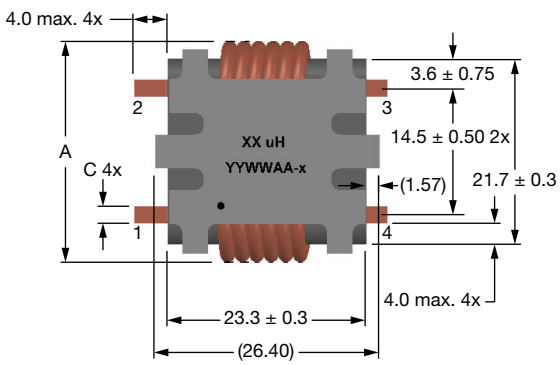
- All test data is referenced to 25 °C ambient
- Inductance and impedance test condition: 100 kHz, 0.25 V
- Operating temperature range -40 °C to +150 °C
- Dielectric withstand voltage (DWV) rating:
  - Core to coil: 500 V_{DC}, 1 mA max., 2 s
  - Coil to coil: 1500 V_{DC}, 1 mA max., 2 s

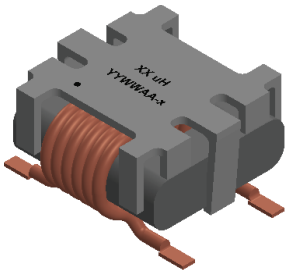
(1) DC current (A) that will cause an approximate ΔT of 40 °C and 100 °C, respectively

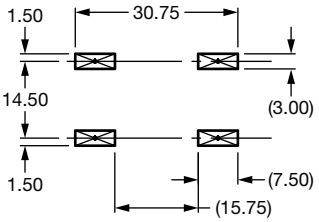
(2) Available in tray packaging only

DIMENSIONS in millimeters

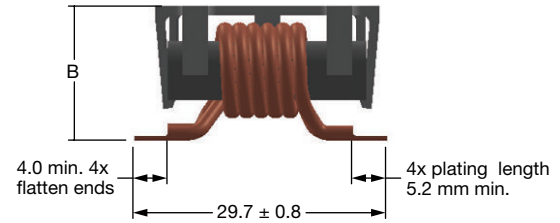
SURFACE-MOUNT STYLE (1)

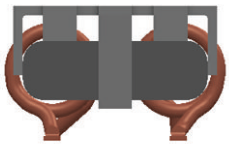


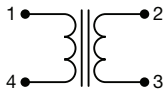




Typical Pad Layout







PART NUMBER	A MAX.	B MAX.	C ± 0.2 mm	WEIGHT (g)
ICMS2321AGFG700N10	27.7	17.5	2.2	17.3
ICMS2321AGFG101N10	27.3	17.2	2.2	26.1
ICMS2321AGFG281N10	26.1	15.65	1.5	19.6
ICMS2321AGFG481N10	25.8	15.5	1.5	17.1

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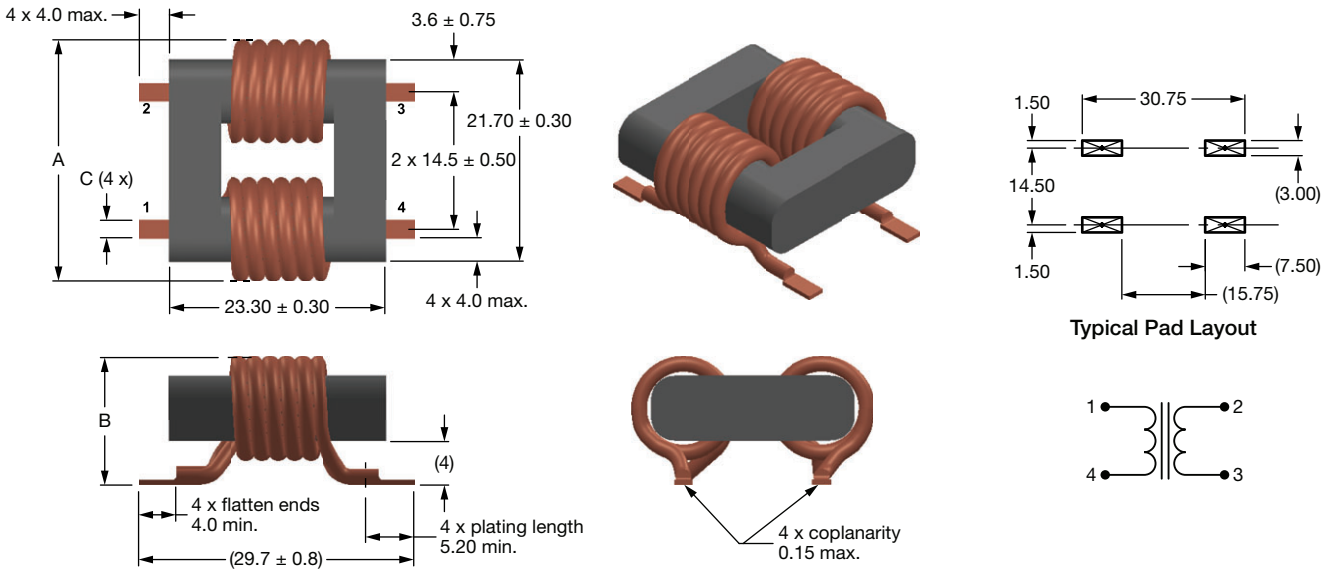
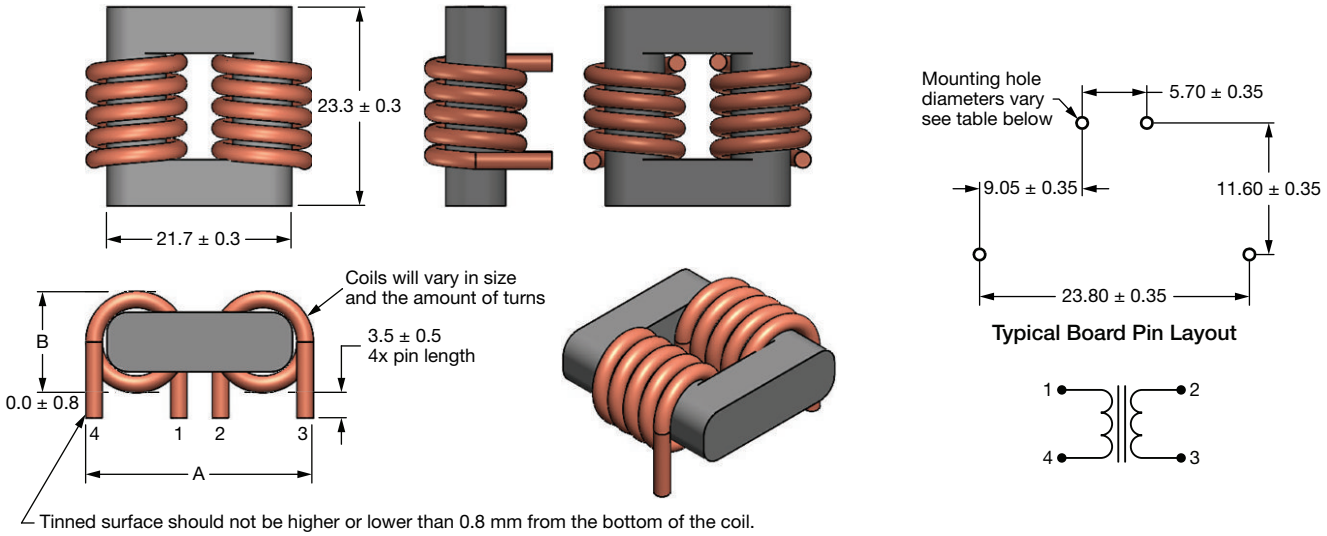
DIMENSIONS in millimeters

SURFACE-MOUNT STYLE WITHOUT PICK-AND-PLACE CLIP (1)



PART NUMBER	A MAX.	B MAX.	C ± 0.2 mm	WEIGHT (g)
ICMS2321AFEG700N10	27.7	16	2.2	16.0
ICMS2321AFEG101N10	27.3	15.9	2.2	24.8
ICMS2321ADEG281N10	26.1	13.9	1.5	18.3
ICMS2321ACEG481N10	25.8	13.4	1.5	15.8

THROUGH-HOLE MOUNT STYLE



PART NUMBER	A MAX.	B MAX.	MOUNTING HOLE DIAMETER	WEIGHT (g)
ICMS2321ABEH700N10	27.7	12.6	2.12	16.0
ICMS2321ABEH101N10	27.3	12.3	1.93	24.8
ICMS2321ABEH281N10	26.1	11.25	1.32	18.3
ICMS2321ABEH481N10	25.8	10.75	1.113	15.8

Note

(1) Coplanarity of four terminals = 0.15 mm max.

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DESCRIPTION

ICMS2321-10	100 µH	± 30 %	EG	e3
MODEL	INDUCTANCE VALUE	INDUCTANCE TOLERANCE	PACKAGE CODE	JEDEC® LEAD (Pb)-FREE STANDARD

GLOBAL PART NUMBER

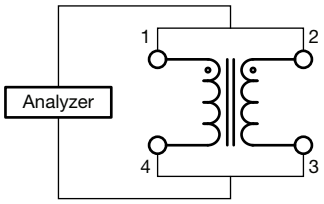
I C M S	2 3 2 1	A G	E G	1 0 1	N	1 0
PRODUCT FAMILY	CORE SIZE	HEIGHT	PACKAGE CODE / MOUNTING	INDUCTANCE	IMPEDANCE TOLERANCE	SERIES
	23 mm x 21 mm	**AG** = 17 mm **AF** = 16 mm **AD** = 14 mm **AC** = 13 mm **AB** = 12 mm	**FG** = SMD in tape and reel **EG** = SMD in trays **EH** = THT in trays	**101** = 100 µH	**N** = 30 %	

Note

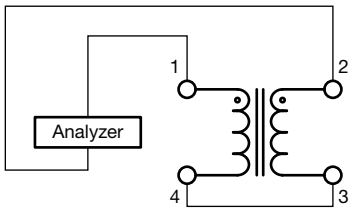
- For additional packaging details see "Packaging Methods"

SCHEMATICS

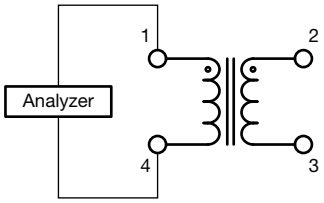
Common Mode Impedance



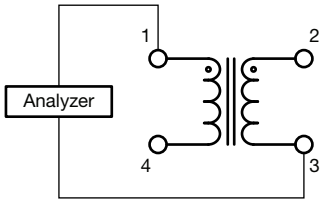
Differential Mode Impedance



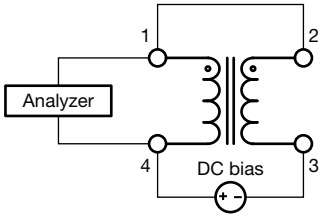
DC Resistance



DWV Test (coil to coil)



Saturation Test



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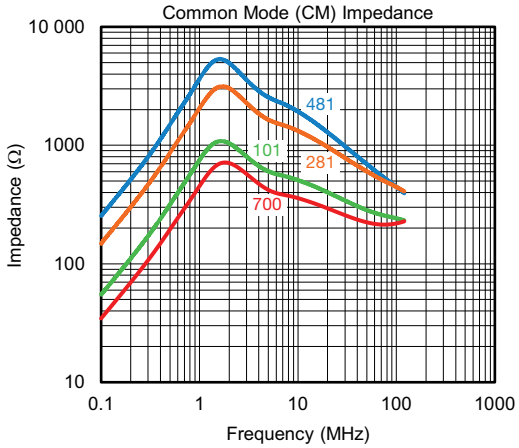
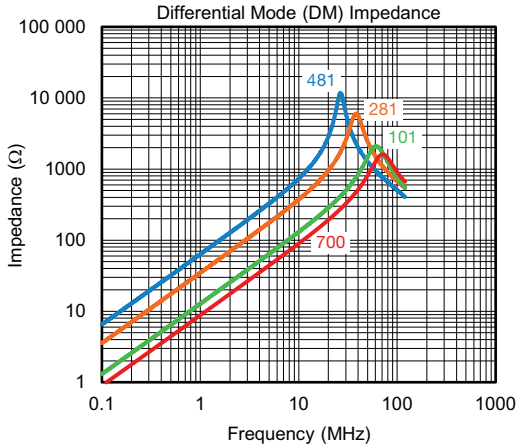
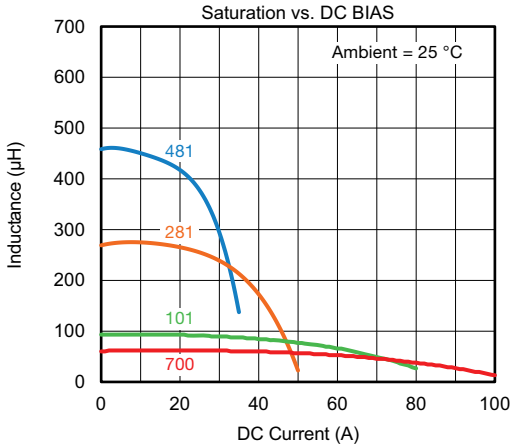
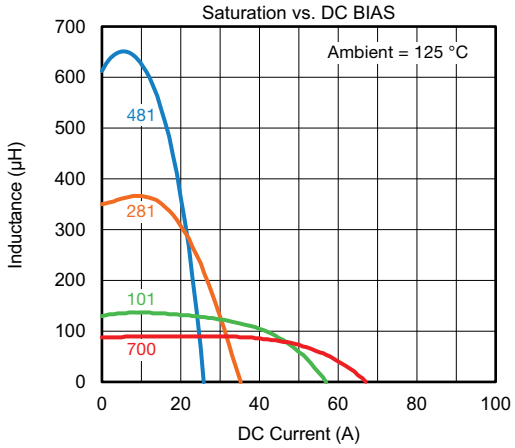
PERFORMANCE GRAPHS - FREQUENCY RESPONSE



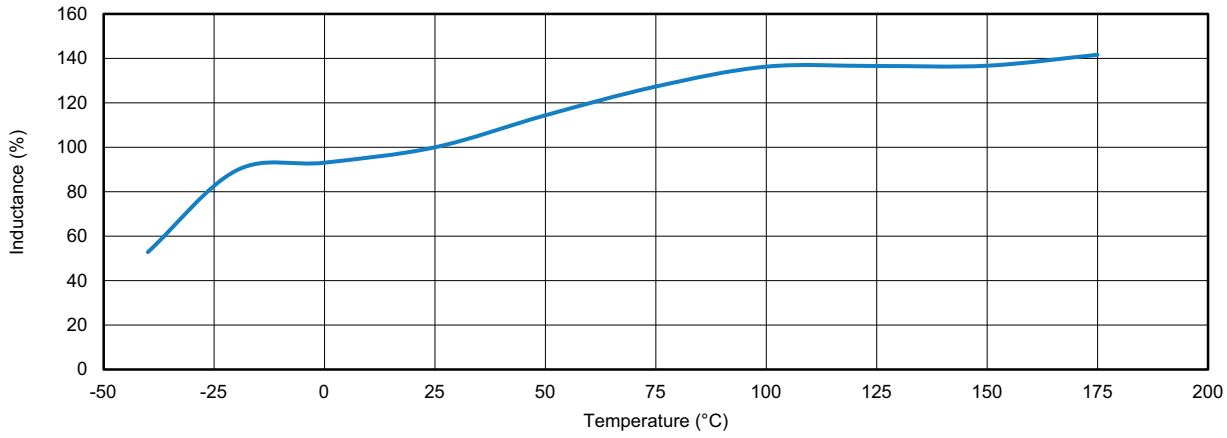


PERFORMANCE GRAPHS - SATURATION





PERFORMANCE GRAPHS - INDUCTANCE VS. COMPONENT TEMPERATURE



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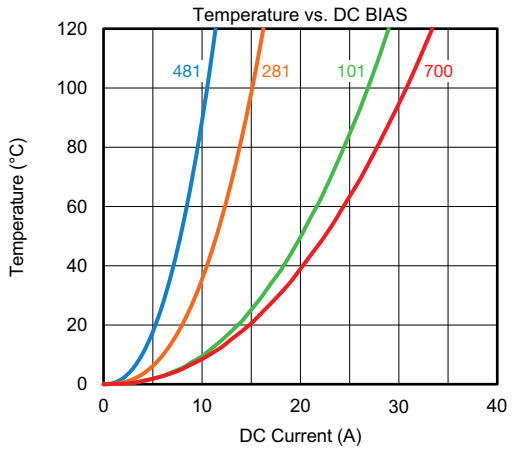
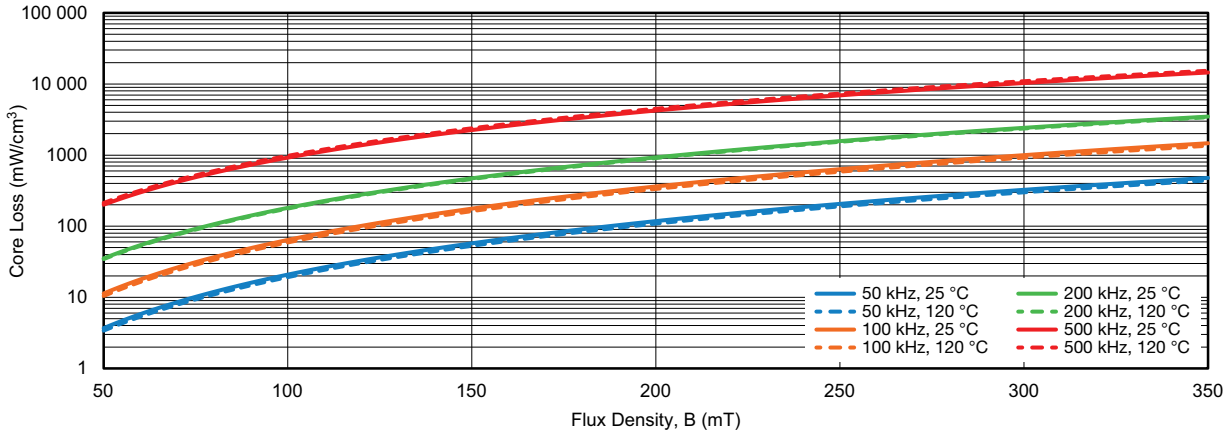
PERFORMANCE GRAPHS - TEMPERATURE RISE



PERFORMANCE GRAPHS - CORE LOSS VS. FLUX DENSITY VS. FREQUENCY VS. TEMPERATURE



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