

1. POWER INDUCTOR SPECIFICATION

CIGB201210AG Series

Automotive

AEC-Q200

150°C

40V

Metal Composite

Thin Film

RoHS

REACH

FEATURES

- Manufactured by state-of-the-art facilities which are entitled to the registration of ISO/IATF16949
- Meet AEC-Q200 requirements
- Part Type: Metal Composite Power Inductor
- Package Type: Thin Film Type
- Shielding: Magnetically Shielded Type
- Operation Temp. Range: -55 to +150°C (Including self generated temperature rise)
- Storage Temp. Range: -55 to +150°C (After assembly)
- Termination: General Type
- ROHS-Free, Halogen-Free, Beryllium-Free

Application

Car Infotainment, ADAS ECU, in-Vehicle camera (view camera, sensing camera), radar, meter cluster xEV, automotive communication module Other power supply circuit uses

PRODUCT IDENTIFICATION

CIG **B** **2012** **10** **AG** **R24** **M** **P** **E**
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- ① Product : Power Inductor
- ② Package Type
- ③ Length & Width
- ④ Thickness
- ⑤ Series Code
- ⑥ Inductance
- ⑦ Tolerance
- ⑧ Internal Code
- ⑨ Packaging Style

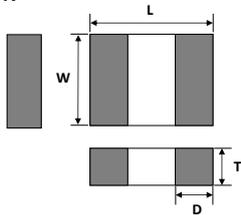
⑨	Winding Direction			
	Marking		No marking	
Reel Diameter	7"	13"	7"	13"
Paper Tape	P	R	C	D
Plastic Tape	M	N	E	F

CHARACTERISTIC TABLE

Part no.	Size [mm]	Thickness [mm] (max)	Inductance [uH]	Inductance tolerance [%]	DC Resistance [mΩ]		Rated Current (Isat) [A]		Rated Current (Itemp) [A]		Rated Voltage [V]
					Max.	Typ.	Max.	Typ.	Max.	Typ.	
CIGB201210AGR24MPE	0805/2012	1.0	0.24	±20	22	17	4.9	5.6	4.3	5.0	40
CIGB201210AGR33MPE	0805/2012	1.0	0.33	±20	30	25	4.5	5.1	3.7	4.0	40
CIGB201210AGR47MPE	0805/2012	1.0	0.47	±20	40	33	3.9	4.4	3.2	3.5	40
CIGB201210AGR56MPE	0805/2012	1.0	0.56	±20	49	39	3.0	3.4	3.0	3.3	40
CIGB201210AG1R0MPE	0805/2012	1.0	1.00	±20	81	69	2.7	3.1	2.2	2.4	40
CIGB201210AG1R5MPE	0805/2012	1.0	1.50	±20	130	110	2.0	2.3	1.8	2.0	40
CIGB201210AG2R2MPE	0805/2012	1.0	2.20	±20	282	240	1.2	1.4	1.1	1.3	40

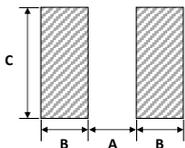
- * Inductance : Measured with a LCR meter 4991A(Keysight) or equivalent (Test Freq. 1MHz, Level 0.5V)
- * DC Resistance : Measured with a Resistance HI-TESTER RM3545(HIOKI) or equivalent
- * Isat : DC current value where the Inductance drops by 30%
- * Itemp : DC current value where the temperature of the inductor rises by 40°C
- * Applied current should be chosen at lower value between Isat Max and Itemp Max.
- * Measurement Temperature & Humidity : 20±15°C, 65±20%(RH), When accuracy of measurement results is required: 20±2°C, 65±5%(RH)

DIMENSION



TYPE	DIMENSION [mm]			
	L	W	T max	D
2012	2.0 ±0.2	1.25 ±0.2	1.0	0.5 ±0.3

RECOMMENDED LAND PATTERN



DIMENSION [mm]	
A	0.8
B	0.8
C	1.4

UNIT WEIGHT

UNIT WEIGHT (g)
0.013

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2. POWER INDUCTOR CHARACTERISTICS

MODEL CIGB201210AG Series

CHARACTERISTICS TABLE

Part no.	Size [mm]	Thickness [mm] (max)	Inductance [μ H]	Inductance tolerance (%)	DC Resistance [$m\Omega$]		Rated DC Current (Isat) [A]		Rated DC Current (Itemp) [A]		Rated Voltage [V]
					Max.	Typ.	Max.	Typ.	Max.	Typ.	
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CIGB201210AGR47MPE	0805/2012	1.0	0.47	± 20	40	33	3.9	4.4	3.2	3.5	40
CIGB201210AGR56MPE	0805/2012	1.0	0.56	± 20	49	39	3.0	3.4	3.0	3.3	40
CIGB201210AG1R0MPE	0805/2012	1.0	1.00	± 20	81	69	2.7	3.1	2.2	2.4	40
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CIGB201210AG2R2MPE	0805/2012	1.0	2.20	± 20	282	240	1.2	1.4	1.1	1.3	40

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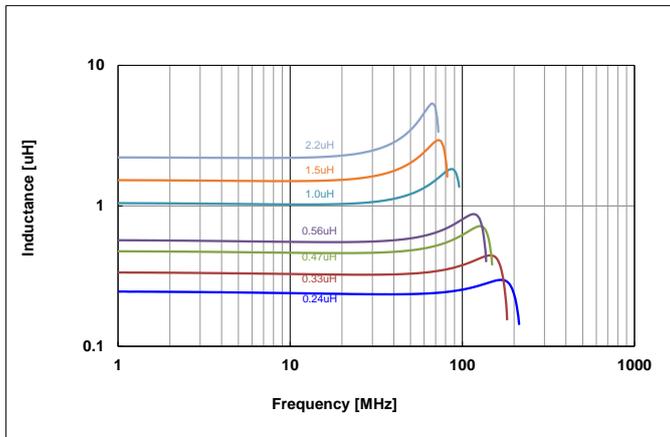
* Applied current should be chosen at lower value between Isat Max and Itemp Max.

* Measurement Temperature & Humidity : 20 \pm 15°C, 65 \pm 20%(RH), When accuracy of measurement results is required: 20 \pm 2°C, 65 \pm 5%(RH)

CHARACTERISTICS DATA (Reference Only)

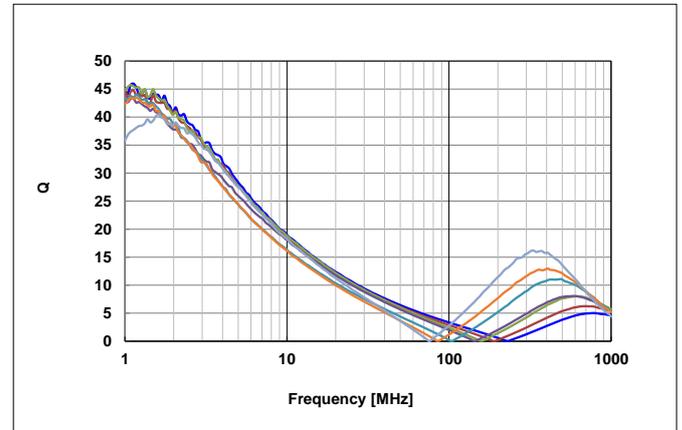
1) Frequency characteristics (Ls)

Keysight E4991A , 1MHz to 1,000MHz

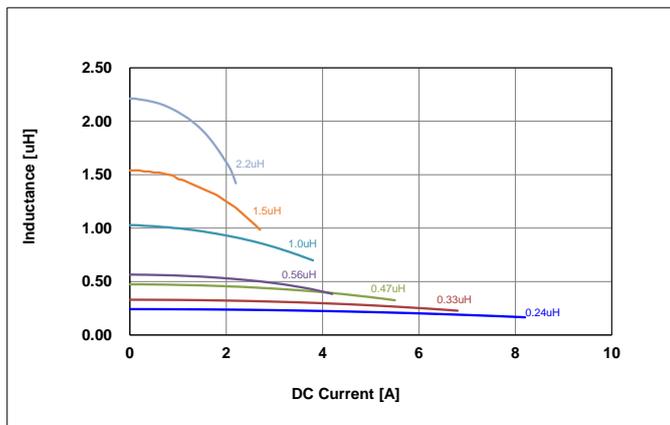


2) Frequency characteristics (Q)

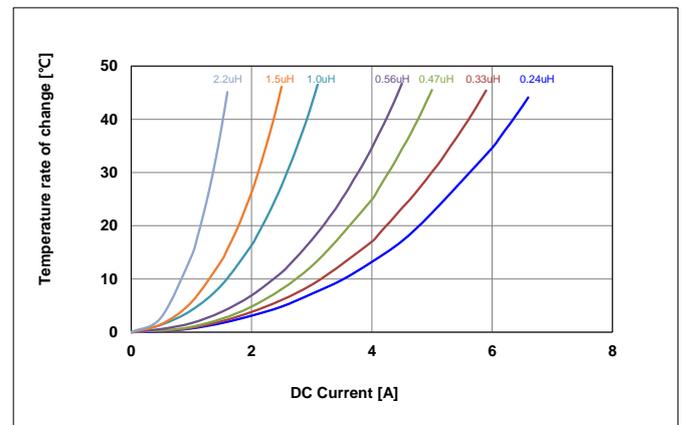
Keysight E4991A , 1MHz to 1,000MHz



3) DC Bias characteristics (Typ.)



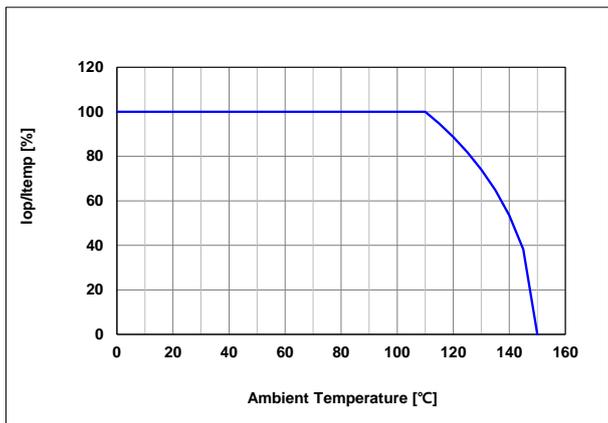
4) Temperature characteristics (Typ.)



5) Derating Characteristics

Regarding the rated current at ambient temperature of 110°C or higher, the rated current temperature characteristic derating is applied.

Derating Current Curve

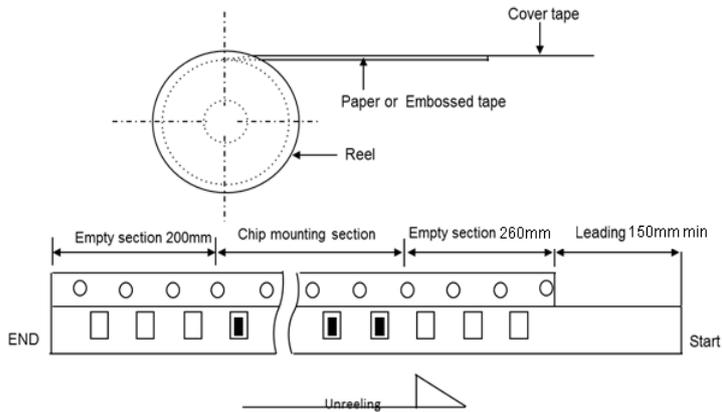


I_{op} : Derating current

I_{temp} : Rated Current

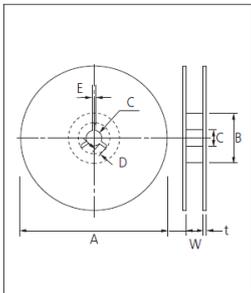
3. PACKAGING SPECIFICATIONS

■ FIGURE



■ REEL SIZES

• Reel dimensions

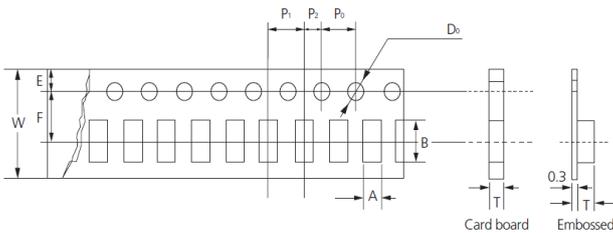


Unit: mm

Symbol	Tape Width	A	B	C	D
7" Reel	8mm	$\Phi 180+0/-3$	$\Phi 60+1/-0$	$\Phi 13\pm 0.3$	4 ± 0.2
	12mm	$\Phi 180+0/-3$	$\Phi 60+1/-0$	$\Phi 13\pm 0.3$	4 ± 0.2
10" Reel	8mm	$\Phi 258+0/-3$	$\Phi 80+1/-0$	$\Phi 13\pm 0.3$	4 ± 0.2
	12mm	$\Phi 330+0/-3$	$\Phi 80\pm 1$	$\Phi 13\pm 0.3$	4 ± 0.2

Symbol	Tape Width	E	W	t
7" Reel	8mm	2.0 ± 0.5	9 ± 0.5	1.2 ± 0.2
	12mm	2.0 ± 0.5	13 ± 0.5	1.2 ± 0.2
10" Reel	8mm	2.0 ± 0.5	9 ± 0.5	1.8 ± 0.2
	12mm	2.0 ± 0.5	13 ± 0.5	2.2 ± 0.2

■ TAPE SIZE



Type	Tape	Chip Thickness	Chip Cavity		T	W	F	E	P ₁	P ₂	P ₀	D ₀
			A	B								
2012	EMBOSSSED	1.0 max	1.52 ± 0.05	2.27 ± 0.05	1.10 ± 0.05	8.00 ± 0.10	3.50 ± 0.05	1.75 ± 0.10	4.0 ± 0.10	2.0 ± 0.05	4.0 ± 0.10	$\Phi 1.5+0.1/-0.0$

■ UNIT WEIGHT & PACKAGING QUANTITY

UNIT WEIGHT (g)	QUANTITY (pcs/ 7" Reel)
0.0130	3000

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CAUTION OF APPLICATION

Disclaimer & Limitation of Use and Application

The products listed in this Specification sheet are NOT designed and manufactured for any use and applications set forth below.

Please note that any misuse of the products deviating from products specifications or information provided in this spec & data sheet may cause serious property damages or personal injury.

We will NOT be liable for any damages resulting from any misuse of the products, specifically including using the products for high reliability applications as listed below.

If you have any questions regarding this 'Limitation of Use and Application', you should first contact our sales personnel or application engineers.

- ① Aerospace/Aviation equipment
 - ② Medical equipment
 - ③ Military equipment
 - ④ Disaster prevention/crime prevention equipment
 - ⑤ Power plant control equipment
 - ⑥ Atomic energy-related equipment
 - ⑦ Undersea equipment
 - ⑧ Traffic signal equipment
 - ⑨ Data-processing equipment
 - ⑩ Traffic signal equipment
 - ⑪ Electric heating apparatus, burning equipment
 - ⑫ Any other applications with the same as or similar complexity or reliability to the applications
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