

# 1. POWER INDUCTOR SPECIFICATION

**CIGB201610AG 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**   **2016**   **10**   **AG**   **R10**   **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.	
CIGB201610AGR10MPE	2016	1.0	0.10	±20	13	7	9	10.5	5.9	7.7	40
CIGB201610AGR15MPE	2016	1.0	0.15	±20	15	9	8	8.9	5.5	6.9	40
CIGB201610AGR24MPE	2016	1.0	0.24	±20	22	14	6	6.6	5	6.2	40
CIGB201610AGR33MPE	2016	1.0	0.33	±20	27	18	5.4	6	4.3	4.8	40
CIGB201610AGR47MPE	2016	1.0	0.47	±20	33	24	4.8	5.3	3.9	4.5	40
CIGB201610AGR68MPE	2016	1.0	0.68	±20	42	32	3.8	4.3	3.3	3.6	40
CIGB201610AG1R0MPE	2016	1.0	1.0	±20	60	50	3.3	3.7	3.1	3.4	40
CIGB201610AG1R5MPE	2016	1.0	1.5	±20	100	80	2.8	3.1	2.3	2.6	40
CIGB201610AG2R2MPE	2016	1.0	2.2	±20	150	128	2	2.2	1.9	2.1	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

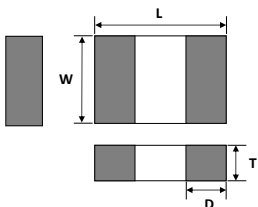
\* Isat : DC current value where the Inductance drops by 30%

\* 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.

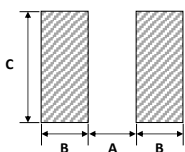
\* Measurement Temperature & Humidity : 20±15°C, 65±20%(RH), When accuracy of measurement results is required: 20±2°C, 65±5%(RH)

## DIMENSION



TYPE	DIMENSION [mm]			
	L	W	T max	D
2016	2.0 ±0.2	1.6 ±0.2	1.00	0.5 ±0.3

## RECOMMENDED LAND PATTERN



DIMENSION [mm]	
A	0.8
B	0.8
C	1.8

## UNIT WEIGHT

UNIT WEIGHT (g)
0.017

Please be advised that they are standard product specifications for reference only.



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## 2. POWER INDUCTOR CHARACTERISTICS

■ MODEL CIGB201610AGR10MPE

### ■ CHARACTERISTICS TABLE

Part no.	Size [mm]	Thickness [mm] (max)	Inductance [uH]	Inductance tolerance (%)	DC Resistance [mΩ]		Rated DC Current (Isat) [A]		Rated DC Current (Itemp) [A]		Rated Voltage [V]
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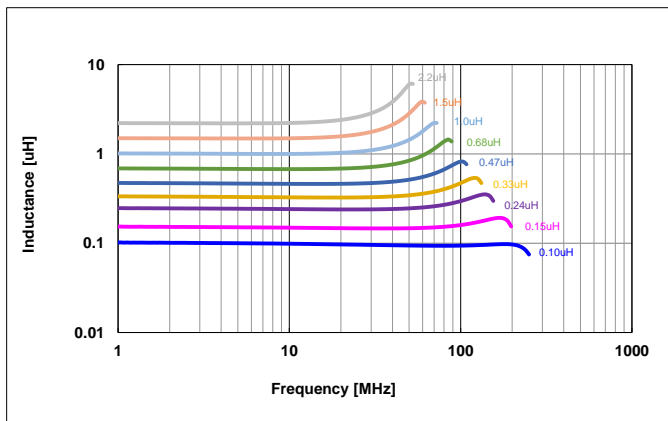
\* Applied current should be chosen at lower value between Isat Max and Itemp Max.

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

### ■ CHARACTERISTICS DATA (Reference Only)

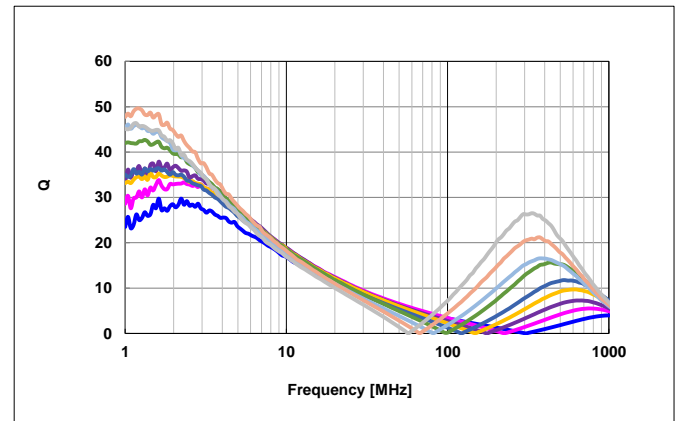
#### 1) Frequency characteristics (Ls)

Keysight E4991A , 1MHz to 1,000MHz

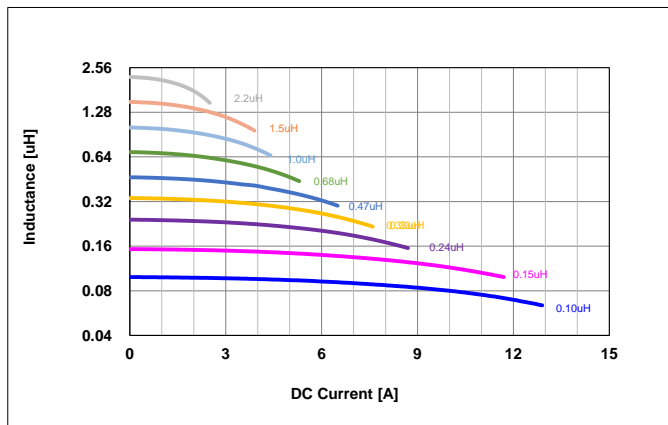


#### 2) Frequency characteristics (Q)

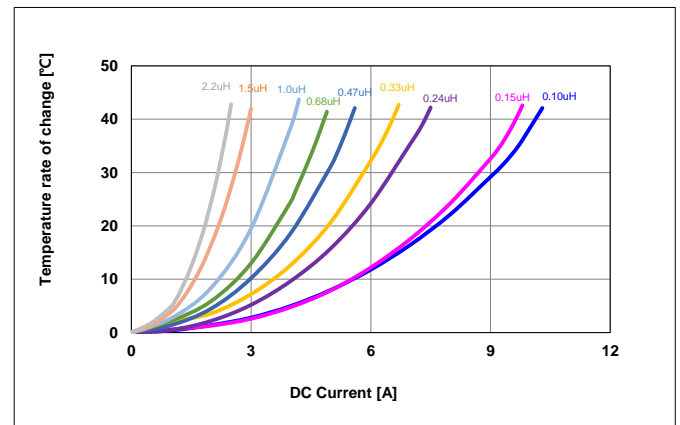
Keysight E4991A , 1MHz to 1,000MHz



#### 3) DC Bias characteristics (Typ.)



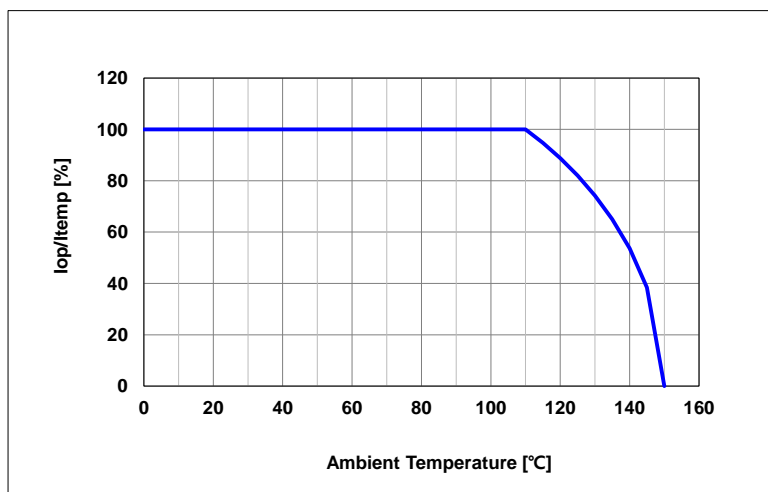
#### 4) Temperature characteristics (Typ.)



### 5) Derating Characteristics

Regarding the rated current at ambient temperature of 110°C or higher, the rated current temperature characteristic derating is applied. Using above the derating temperature is available, but not guaranteed.

Derating Current Curve



Iop : Derating current

Itemp : Rated Current

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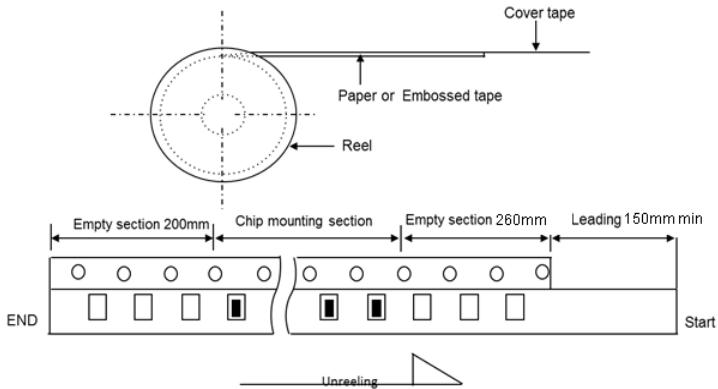


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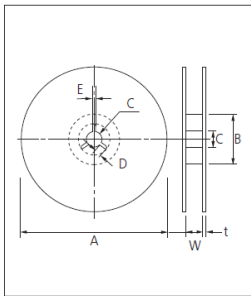
### 3. PACKAGING SPECIFICATIONS

#### ■ FIGURE



#### ■ REEL SIZES

• Reel dimensions



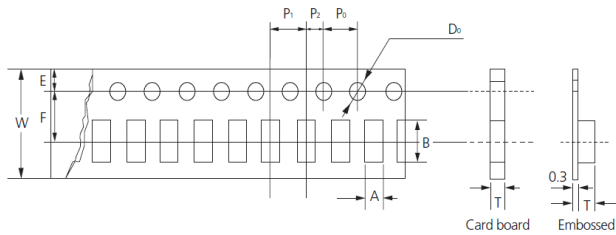
Unit: mm

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

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

#### ■ TAPE SIZE



Type	Tape	Chip Thickness	Chip Cavity		T	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>
			A	B								
2016	Embossed	1.0Max	$1.90\pm 0.05$	$2.25\pm 0.05$	$1.05\pm 0.05$	$8.00\pm 0.10$	$3.50\pm 0.05$	$1.75\pm 0.10$	$4.0\pm 0.10$	$2.0\pm 0.05$	$4.0\pm 0.10$	$\Phi 1.5+0.1/-0.0$

#### ■ UNIT WEIGHT & PACKAGING QUANTITY

UNIT WEIGHT (g)	QUANTITY (pcs/ 7" Reel)
0.017	3000

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- 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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