

# 1. POWER INDUCTOR SPECIFICATION

**CIGB322512AG Series**

Automotive 

AEC-Q200

150°C

40V

Metal Composite

RoHS

REACH

Thin Film

## 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**   **3225**   **12**   **AG**   **R15**   **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

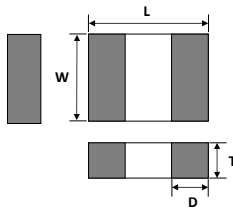
⑨	Winding Direction			
	Marking		No marking	
Reel Diameter	7"	13"	7"	13"
Paper Tape	P	R	C	D
Plastic Tape	M	N	E	F

## 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.	
CIGB322512AGR15MPE	3225	1.2	0.15	±20	9	5	12.0	14	8	11.0	40
CIGB322512AGR22MPE	3225	1.2	0.22	±20	11	6	10.0	12	7	9.5	40
CIGB322512AGR33MPE	3225	1.2	0.33	±20	15	10	8.6	9.5	6	7.3	40
CIGB322512AGR47MPE	3225	1.2	0.47	±20	21	16	7.0	7.7	5.3	6.1	40
CIGB322512AGR68MPE	3225	1.2	0.68	±20	30	23	5.6	6.2	4.4	5.0	40
CIGB322512AG1R0MPE	3225	1.2	1.0	±20	36	29	4.6	5.1	4	4.4	40
CIGB322512AG1R5MPE	3225	1.2	1.5	±20	54	43	4.0	4.5	3.2	3.5	40
CIGB322512AG2R2MPE	3225	1.2	2.2	±20	75	62	3.3	3.6	2.7	3.0	40
CIGB322512AG3R3MPE	3225	1.2	3.3	±20	113	97	2.5	2.8	2.3	2.5	40
CIGB322512AG4R7MPE	3225	1.2	4.7	±20	151	127	2.2	2.5	1.9	2.1	40
CIGB322512AG6R8MPE	3225	1.2	6.8	±20	260	220	2.0	2.3	1.4	1.6	40
CIGB322512AG100MPE	3225	1.2	10	±20	360	305	1.6	1.8	1.2	1.4	40

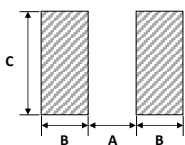
- \* Inductance : Measured with a LCR meter 4991A(Keysight) or equivalent (Test Freq. 1MHz, Level 0.5V)
- \* DC Resistance : Measured with a Resistance HI-TESTER RM3545(HIOKI) or equivalent
- \* Isat : DC current value where the Inductance drops by 30%
- \* Itemp : DC current value where the temperature 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
3225	3.2 ±0.2	2.5 ±0.2	1.20	0.6 ±0.4

## RECOMMENDED LAND PATTERN




DIMENSION [mm]	
A	1.80
B	0.95
C	2.80

## UNIT WEIGHT

UNIT WEIGHT (g)
0.0540

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

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## 2. POWER INDUCTOR CHARACTERISTICS

■ MODEL CIGB322512AGR15MPE

### ■ 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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\* 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

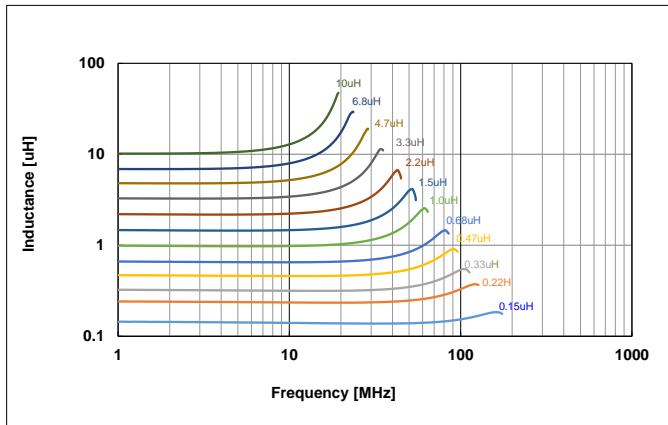
\* Applied current should be chosen at lower value between Isat Max and Itemp Max.

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

### ■ CHARACTERISTICS DATA (Reference Only)

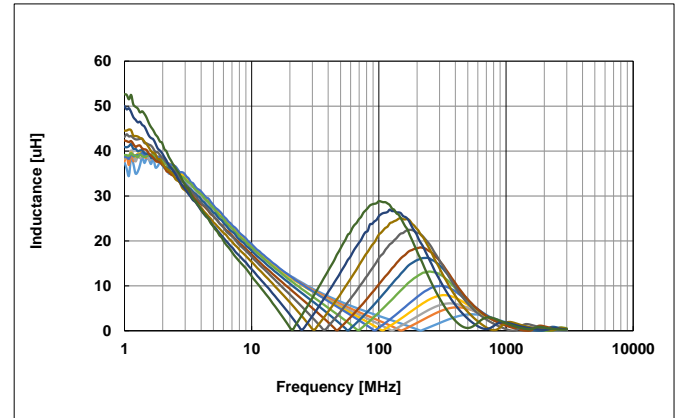
#### 1) Frequency characteristics (Ls)

Keysight E4991A , 1MHz to 1,000MHz

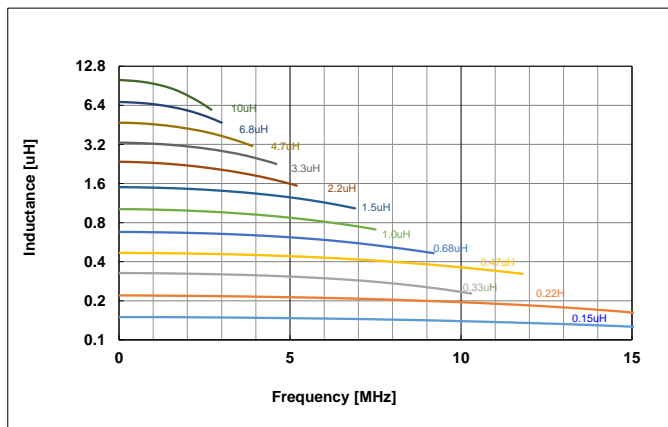


#### 2) Frequency characteristics (Q)

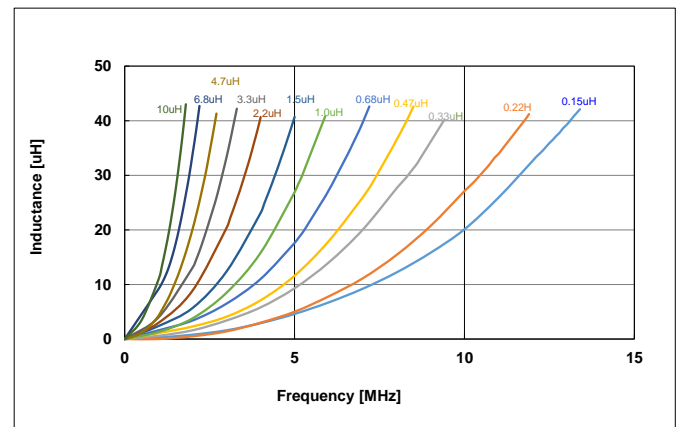
Keysight E4991A , 1MHz to 1,000MHz



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



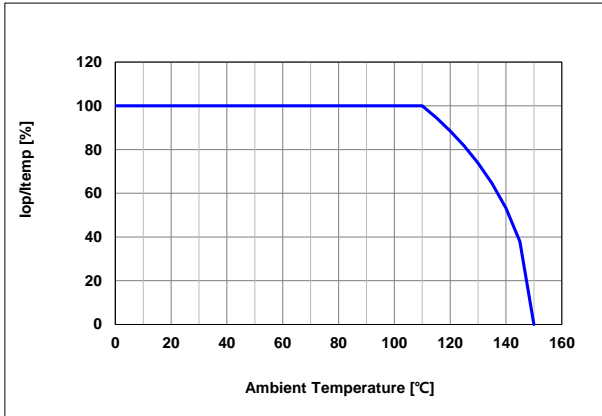
#### 4) Temperature characteristics (Typ.)



**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.

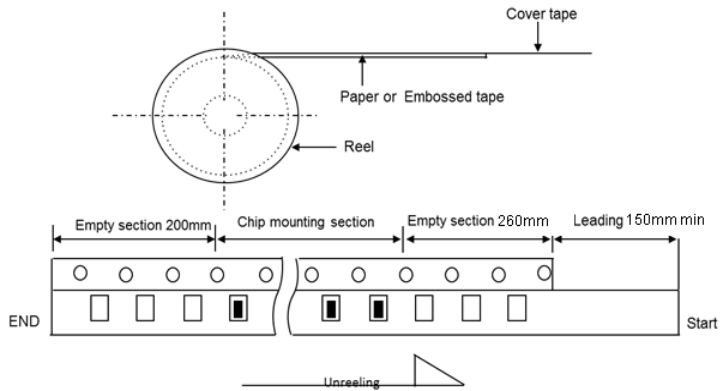
**Derating Current Curve**



Iop : Derating current  
Itemp : Rated Current

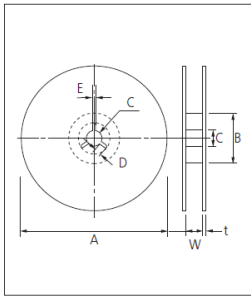
### 3. PACKAGING SPECIFICATIONS

#### ■ FIGURE



#### ■ REEL SIZES

• Reel dimensions



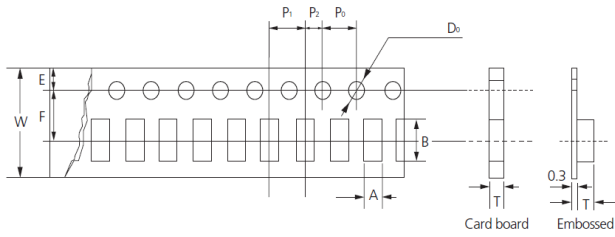
Unit: mm

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	$2.0\pm 0.5$	$9\pm 0.5$	$1.8\pm 0.2$
13" Reel	8mm	$2.0\pm 0.5$	$9\pm 0.5$	$2.2\pm 0.2$
	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								
3225	EMBOSSSED	1.2	$2.90\pm 0.05$	$3.60\pm 0.05$	$1.34\pm 0.05$	$8.00\pm 0.10$	$3.50\pm 0.05$	$1.75\pm 0.1$	$4.00\pm 0.10$	$2.00\pm 0.05$	$4.00\pm 0.10$	$1.50+0.10$

#### ■ UNIT WEIGHT & PACKAGING QUANTITY

UNIT WEIGHT (g)	QUANTITY (pcs/ 7" Reel)
0.0540	2000

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  - ② Medical equipment
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  - 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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