

DATA SHEET

PRODUCT **POWER CHOKE**

SERIES CSMEA0540D

PART NO. _____

DESCRIPTION _____

ISSUE DATE 2023/08/01

REVISION DATE 2023/08/01

REFERENCE NO. ENS000181920

RoHS COMPLIANCE ITEM

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POWER CHOKES Engineering Specification

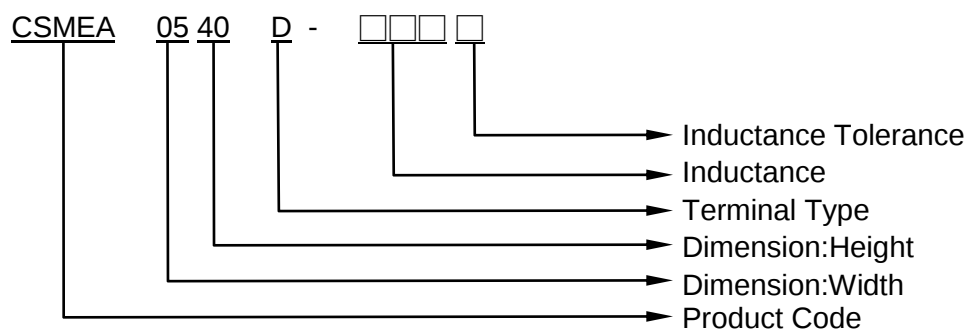
1. Feature

- High saturation current realized by material properties and structure design.
- Low DC resistance to achieve high conversion efficiency and lower temperature rising.
- Low Profile: 5.0 mm × 5.0 mm × 4.0 mm.
- Magnetically shielded structure to accomplish high resolution in EMC protection.
- Halogen free, Lead Free, RoHS Compliance.
- Surface marking: Have.
- The moisture sensitivity level (MSL) of products is level 1.

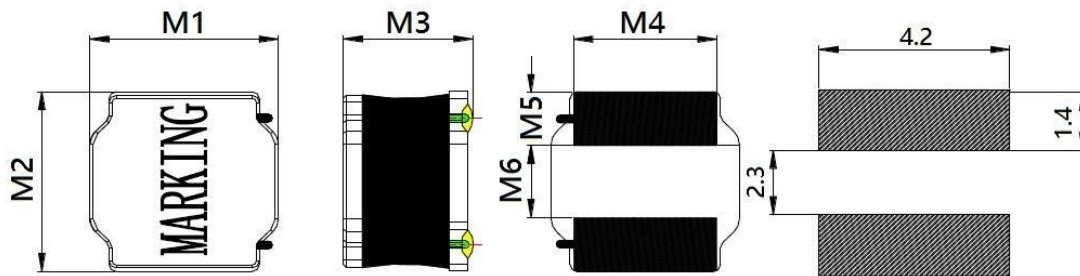
2. Applications

- Smart phone, PAD
- DC/DC converter
- Thin-type power supply module,

3. Explanation of Part Number



4. Shapes and Dimensions (Unit:mm)



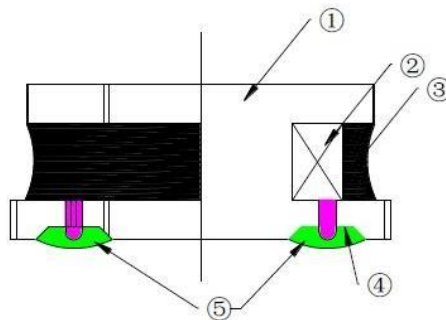
ITEM	M1	M2	M3	M4	M5	M6
DIM	5.0	5.0	4.0	4.0	1.25	2.5
TOL	±0.2	±0.2	MAX.	±0.2	±0.3	±0.3

5. Temperature Specifications

Operating Temperature range : - 40°C to +125°C(Including coil's self temperature rise)

Storage Temperature range : - 40°C to + 105°C

6. Structure



7. Material List

No.	Components	Material
1	Drum core	Ni-Zn ferrite core
2	Wire	Polyurethane enameled copper wire
3	Adhesive	Epoxy resin magnetic powder
4	Plating electrode	Ag/Ni/Sn
5	Outer electrode	Sn-Ag-Cu alloy

8. Electrical Specification

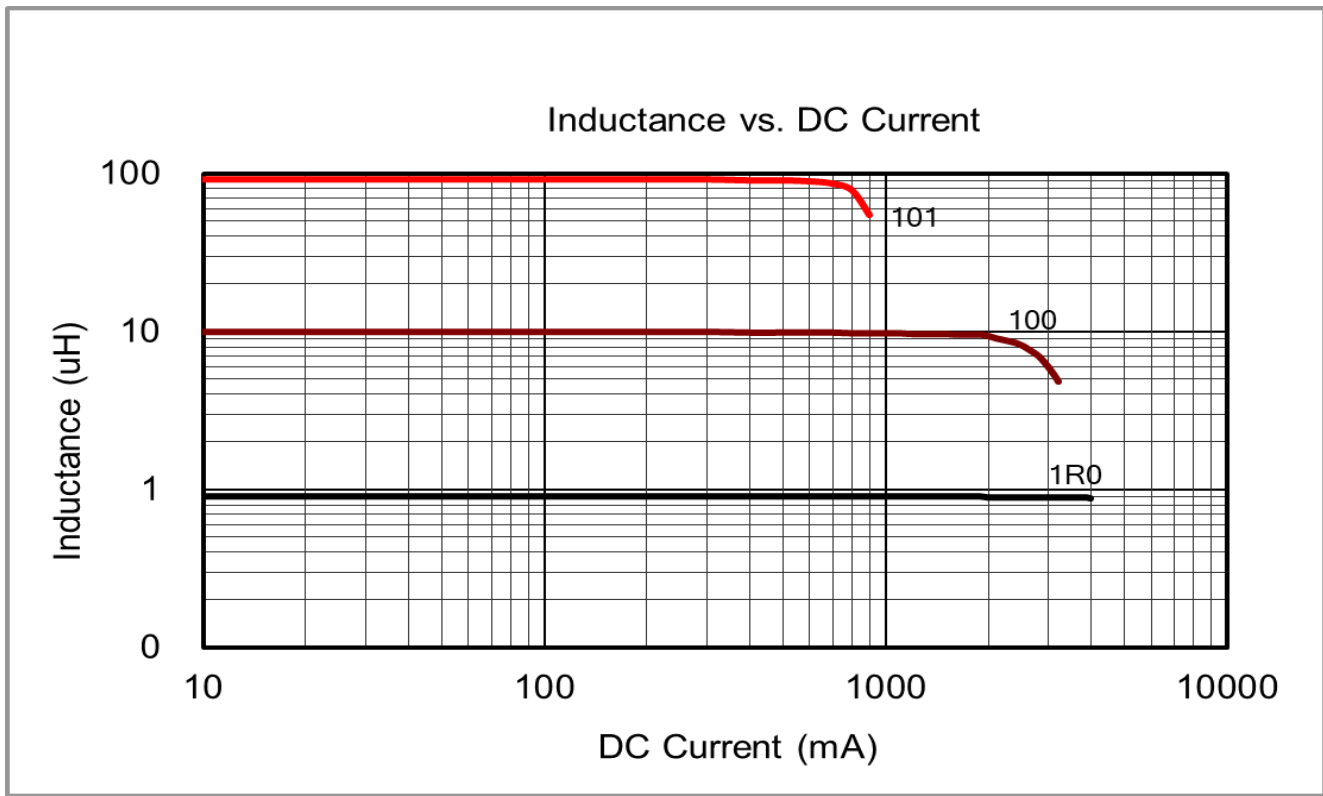
● Specifications

Part Number.	Mark	Inductance (uH)	Inductance Tolerance	DC Resistance (mΩ) ±30%	Isat (A) MAX.	Irms (A) MAX.
CSMEA0540D-1R0□	1R0	1.0	N	13	7.35	4.90
CSMEA0540D-1R5□	1R5	1.5	N	17	6.40	4.50
CSMEA0540D-2R2□	2R2	2.2	N, M	22	5.00	3.70
CSMEA0540D-3R3□	3R3	3.3	N, M	27	4.00	3.30
CSMEA0540D-4R7□	4R7	4.7	N, M	29	3.30	3.10
CSMEA0540D-6R8□	6R8	6.8	N, M	49	2.80	2.40
CSMEA0540D-100□	100	10	N, M	56	2.30	2.10
CSMEA0540D-150□	150	15	N, M	80	2.00	1.80
CSMEA0540D-220□	220	22	N, M	126	1.50	1.40
CSMEA0540D-330□	330	33	N, M	180	1.30	1.20
CSMEA0540D-470□	470	47	N, M	310	1.10	0.90
CSMEA0540D-101□	101	100	N, M	560	0.75	0.70

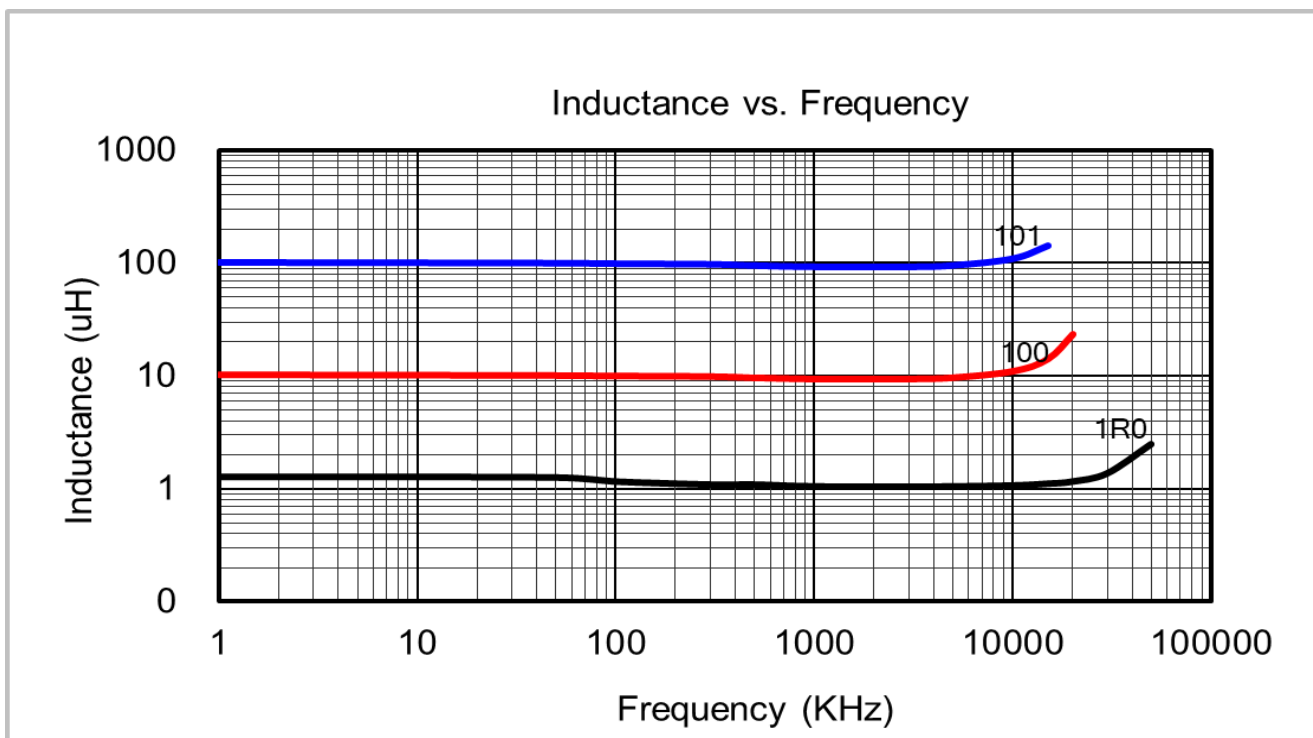
Notes

1. □Tolerance: N: ±30%, M: ±20%
2. Test frequency: 100KHz/0.25V
3. Inductance: CH3302
4. DC Resistance: CH16502
5. Isat/Irms: CH3302+CH1320
6. Isat: DC saturation current that will cause initial inductance to drop approximately 30% max.
7. Irms: DC current that will cause an approximate ΔT of 40°C.
8. MSL: Level 1
9. AEC-Q200 qualified

- Current Characteristic

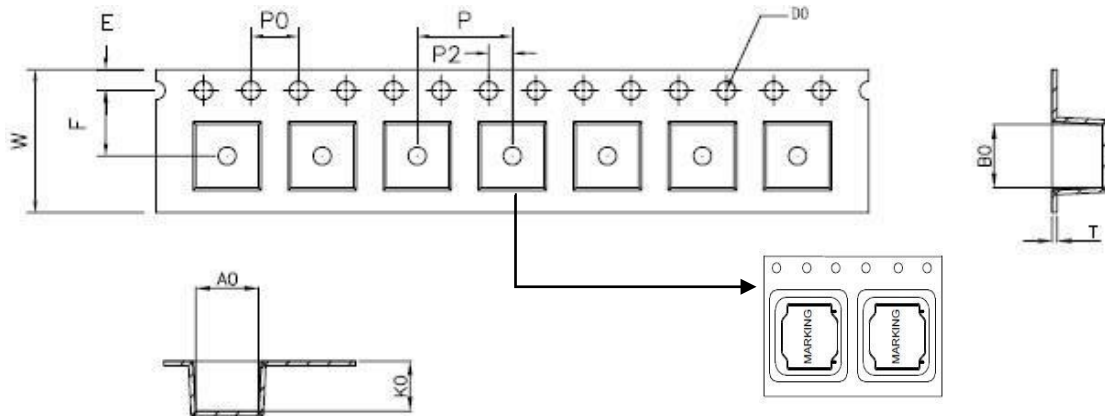


- Frequency Characteristic



10. Packing

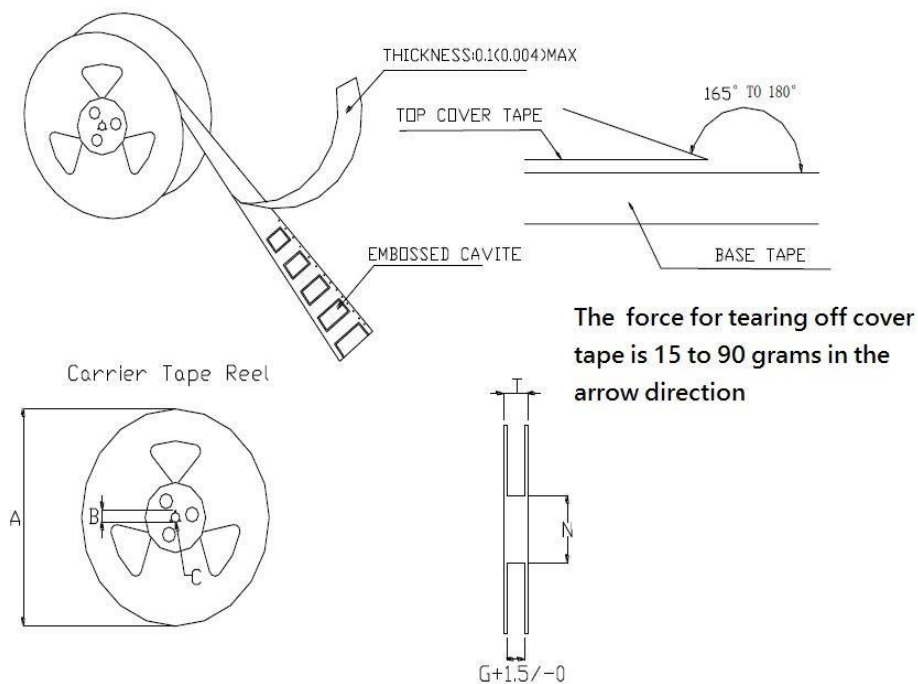
● Carrier Tape Dimensions



Unit:mm

ITEM	W	P	F	E	D0	P0	P2	T	A0	B0	K0
DIM	12.0	8.00	5.50	1.75	1.50	4.00	2.00	0.4	5.3	5.3	4.3
TOLE	±0.3	±0.1	±0.15	±0.1	+0.1	±0.1	±0.1	±0.05	±0.1	±0.1	±0.15

● Carrier Reel Dimension



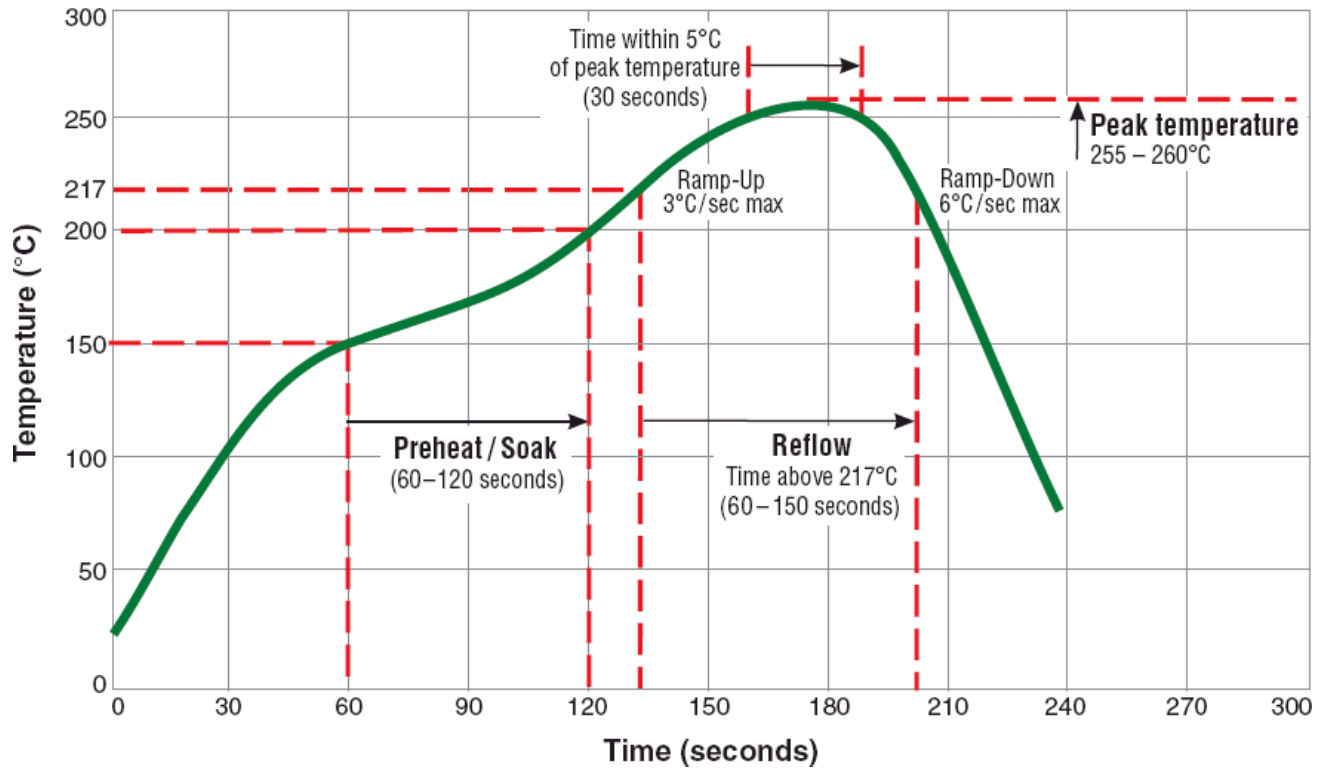
Type	A	B	C	G	N	T
12mm	330	21±0.8	13±0.4	12.4	100	16.4

● Packaging Quantity

1.5KPCS/ Reel

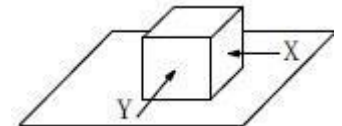
11. Recommended Soldering Conditions

Typical RoHS Reflow Profile



12. Reliability and Test Condition

- External appearance : No external defects can be found in the visual inspection.
- Electrode strength : No electrode detachment should be found when the device is pushed in two directions of X and Y with the force of 10.0N for 60 ± 2 seconds after soldering between copper plate and the electrodes. (Refer to figure at right)



- Vibration test: Inductance deviation is within $\pm 10.0\%$ after 1 hour sweeping vibration in each three directions, namely, forward and backward, up and down, right and left. The frequency is $10 \sim 55 \sim 10\text{Hz}$ and the amplitude of 1 minute cycle is 1.5mm PP.
- Humidity test : Inductance deviation is within $\pm 5.0\%$ after 96 ± 4 hours test under the condition of relative humidity of $90 \sim 95\%$ and temperature of $60 \pm 2^\circ\text{C}$, and 1 hour storage under room ambient conditions after the device is wiped with dry cloth.