

DATA SHEET

PRODUCT **CHIP INDUCTORS**

SERIES WCA3225CG

PART NO. _____

DESCRIPTION _____

ISSUE DATE 2023/07/18

REVISION DATE 2023/07/18

REFERENCE NO. ENS000181260

RoHS COMPLIANCE ITEM

Disclaimer:

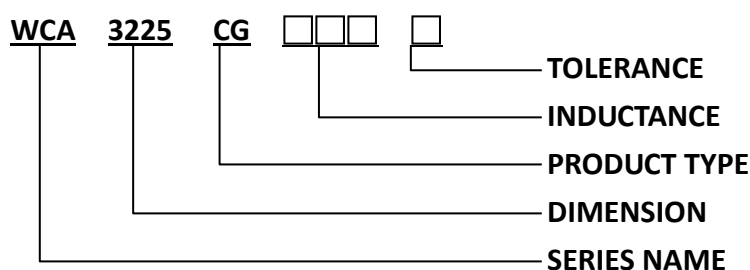
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CHIP INDUCTORS Engineering Specification

1. Scope

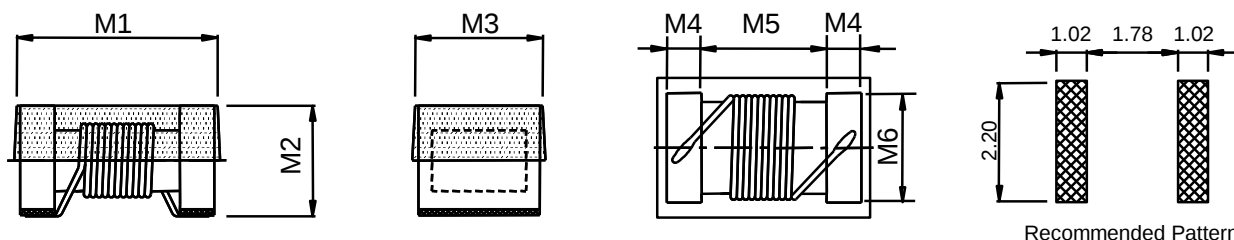
- Ceramic core wire wound construction.
- Gold-plated surface provides excellent solderability and electrical characteristics
- Inductance values from 4.7 to 3300 nH.
- Exceptional Q and high SRF special for high frequency applications..
- High reliability tests comply with AEC-Q200.

2. Explanation of Part Number



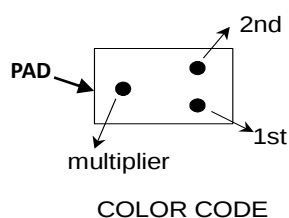
3. Shapes and Dimensions

UNIT:mm



Series	M1	M2	M3	M4	M5	M6
WCA3225CG	3.42 MAX.	2.30 MAX.	2.80 MAX.	0.5±0.1	2.05±0.1	2.10±0.1

4. Marking



Marking Direction: PAD on the left and right sides, color code 1st and 2nd on the right, color code 3 multiplier on the left.

Example : WCA3225CG4N7J

MARKING: Dots 1st and 2nd indicate the inductance in nano Henries.
(DOTS 1st: YELLOW , DOTS 2nd: VIOLET)
Dots 3 indicates number of zeroes to be added.
(DOTS 3multiplier: BLACK)

MARK COLOR CODE IN COMPOSITE ELECTRICAL SPECIFICATION.

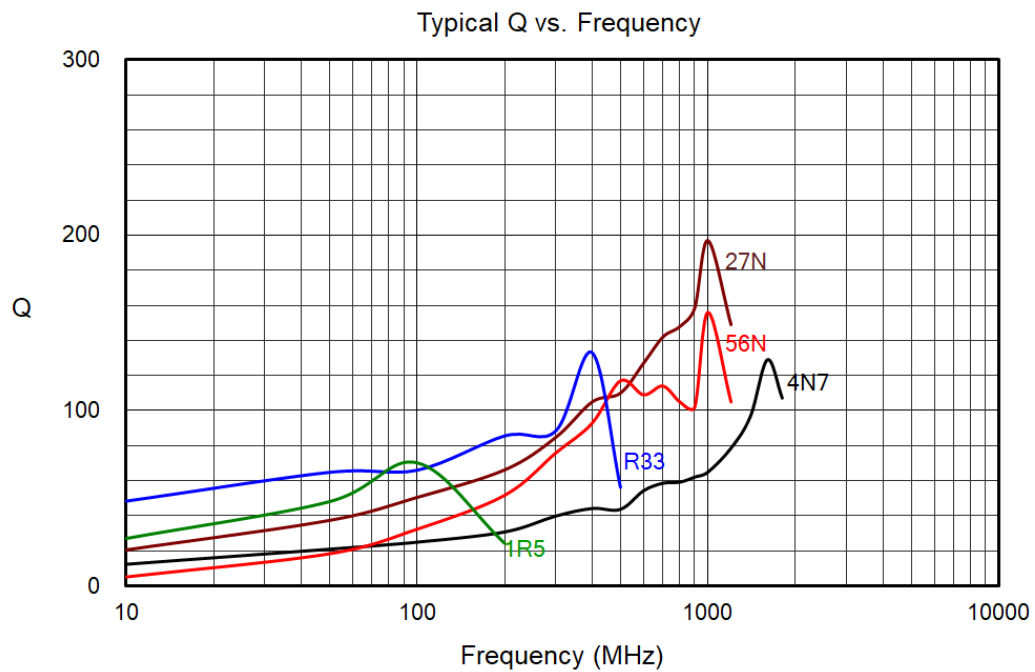
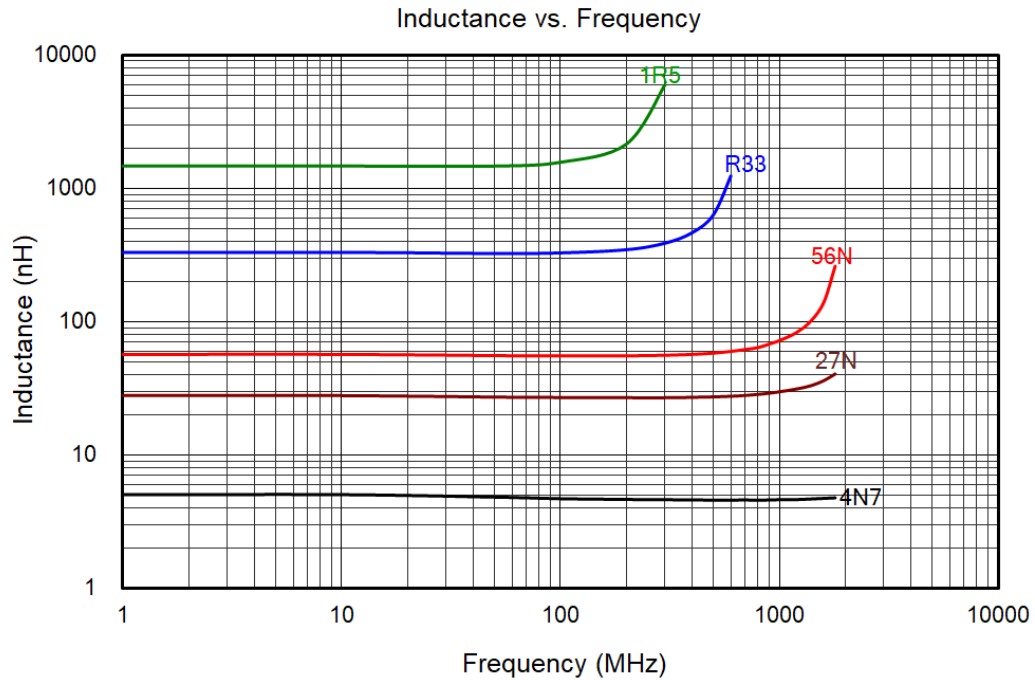
5. Electrical Specification

Part number	Inductance (nH)	Test Frequency (MHz)	Inductance Tolerance	Q MIN.	Test Frequency (MHz)	SRF (MHz) MIN.	DC Resistance (OHM) MAX.	Irms (mA)	COLOR CODE		
									1st	2nd	multiplier
WCA3225CG4N7J	4.7	100	J	50	1000	6000	0.06	600	Yellow	Violet	Black
WCA3225CG5N6J	5.6	100	J	50	1000	5500	0.08	600	Green	Blue	Black
WCA3225CG10NJ	10	100	J	60	500	4000	0.06	600	Brown	Black	Brown
WCA3225CG12NJ	12	100	J	60	500	3400	0.06	600	Brown	Red	Brown
WCA3225CG15NJ	15	100	J	60	500	3200	0.06	600	Brown	Green	Brown
WCA3225CG18NJ	18	100	J	60	300	2800	0.06	600	Brown	Gray	Brown
WCA3225CG22NJ	22	100	J	60	300	2300	0.08	600	Red	Red	Brown
WCA3225CG27NJ	27	100	J	60	300	2000	0.08	600	Red	Violet	Brown
WCA3225CG33NJ	33	100	J	60	300	1800	0.08	600	Orang	Orang	Brown
WCA3225CG39NJ	39	100	J	60	300	1800	0.08	600	Orang	White	Brown
WCA3225CG47NJ	47	100	J	60	300	1600	0.08	600	Yellow	Violet	Brown
WCA3225CG56NJ	56	100	J	60	300	1500	0.10	600	Green	Blue	Brown
WCA3225CG68NJ	68	100	J	60	300	1300	0.10	600	Blue	Gray	Brown
WCA3225CG82NJ	82	100	J	60	300	1200	0.10	600	Gray	Red	Brown
WCA3225CG91NJ	91	100	J	60	300	1100	0.10	1000	White	Brown	Brown
WCA3225CGR10J	100	100	J	60	300	1100	0.10	1000	Brown	Black	Red
WCA3225CGR12J	120	50	J	60	300	900	0.12	500	Brown	Red	Red
WCA3225CGR15J	150	50	J	60	300	800	0.18	500	Brown	Green	Red
WCA3225CGR18J	180	50	J	60	300	760	0.21	500	Brown	Gray	Red
WCA3225CGR22J	220	50	J	60	300	760	0.27	500	Red	Red	Red
WCA3225CGR27J	270	50	J	50	300	660	0.33	500	Red	Violet	Red
WCA3225CGR33J	330	50	J	50	100	650	0.37	500	Orang	Orang	Red
WCA3225CGR36J	360	50	J	50	100	500	0.63	600	Orang	Blue	Red
WCA3225CGR39J	390	50	J	50	100	600	0.63	500	Orang	White	Red
WCA3225CGR47J	470	50	J	50	100	550	0.69	400	Yellow	Violet	Red
WCA3225CGR56J	560	50	J	50	100	470	0.90	400	Green	Blue	Red
WCA3225CGR68J	680	25	J	50	100	450	1.05	400	Blue	Gray	Red
WCA3225CGR82J	820	25	J	50	100	400	1.45	350	Gray	Red	Red
WCA3225CG1R0J	1000	25	J	45	100	340	2.10	280	Brown	Black	Orange
WCA3225CG1R2J	1200	7.96	J	45	50	320	2.40	250	Brown	Red	Orange
WCA3225CG1R5J	1500	7.96	J	45	50	300	2.70	220	Brown	Green	Orange
WCA3225CG1R8J	1800	7.96	J	45	50	280	3.50	180	Brown	Gray	Orange
WCA3225CG2R2J	2200	7.96	J	45	50	260	3.80	150	Red	Red	Orange
WCA3225CG3R3J	3300	27	J	25	27	140	10	150	Orang	Orang	Orange

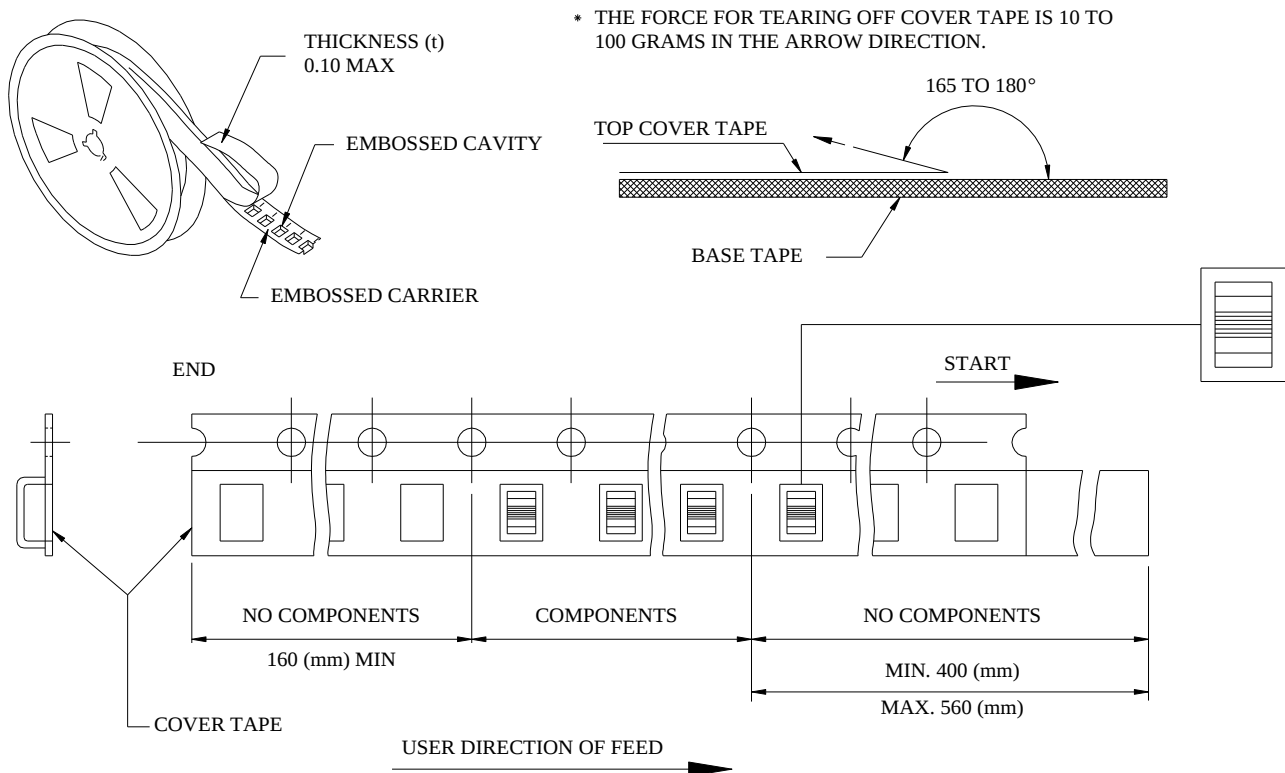
NOTE:

1. □Tolerance: J=±5%
2. MSL: Level 1

6. Electrical Curve

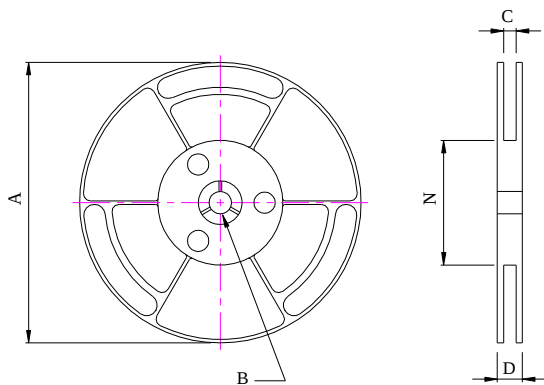


7. Packing

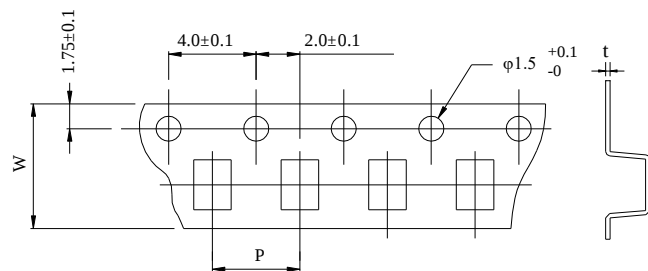


■ CARRIER TAPE REELS (mm)

MATERIAL: PLASTIC



■ DIMENSIONS OF CARRIER TAPE (mm)



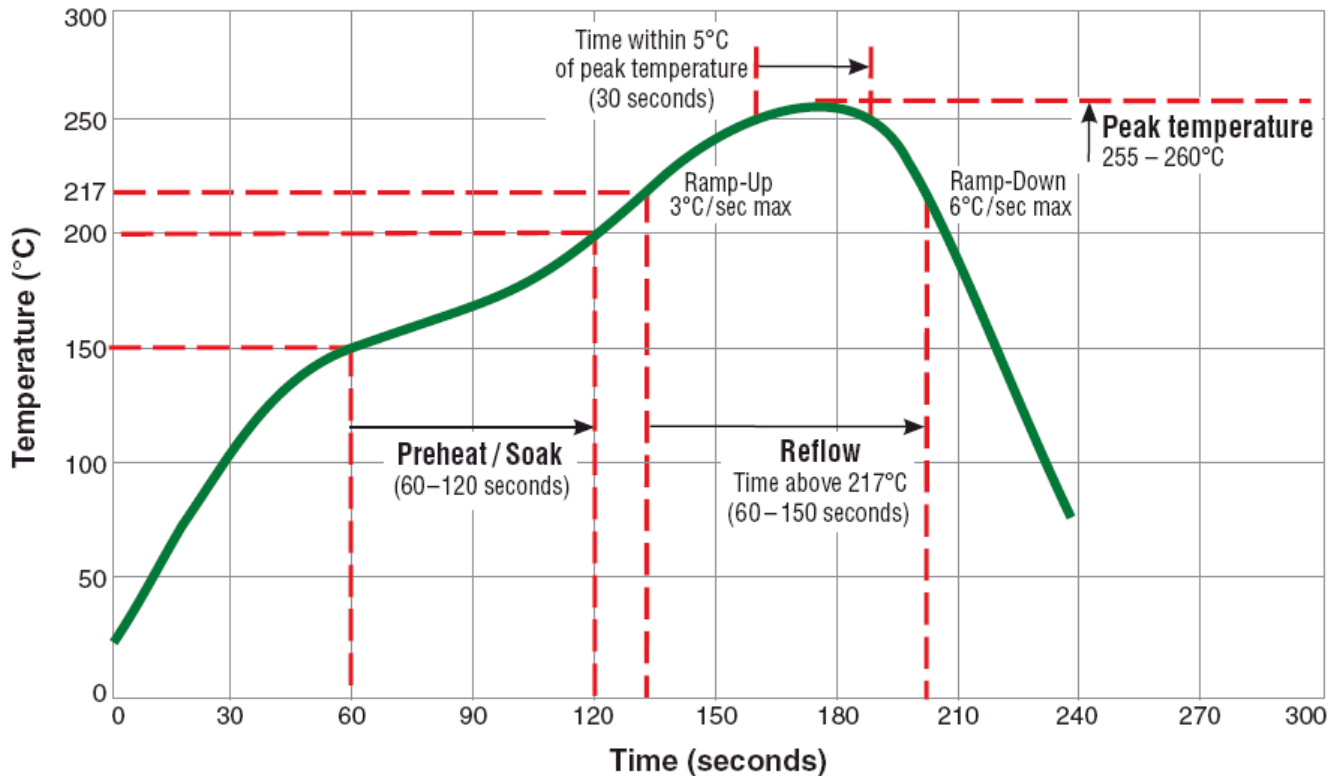
UNIT: mm

	A	B	C	D	N	P	W	t
DIM.	178	13.0	8.4	12.5	50	4.0	8.0	0.23
TOL.	±2.0	±0.8	+1.0-0	MAX	MIN	±0.10	±0.2	±0.05

Quantity : 1,500 Pcs/Reel

8. Recommended Soldering Conditions

Typical RoHS Reflow Profile



9. Note

- TOLERANCE: J = $\pm 5\%$
- INDUCTANCE AND Q MEASURED AN KEYSIGHT 4991B OR EQUIVALENT.
- SRF MEASURED USING AN KEYSIGHT 5071C NETWORK ANALYZER AND A INPAQ TEST FIXTURE OR EQUIVALENT.
- DC RESISTANCE MESASURED USING A MICRO-OHMMETER.
- CURRENT THAT CAUSES A 15°C TEMPERATURE RISE FROM 25°C AMBIENT.
- ELECTRICAL SPECIFICATIONS AT 25°C.
- OPERATING TEMPERATURE RANGE : -40°C TO +125°C.
- Storage temperature RANGE: Component: -40°C TO +125°C.
Tape and reel packaging: -40°C TO +80°C.
- MEAN TIME BETWEEN FAILURES (MTBF) 1 BILLION HOURS.
- MOISTURE SENSITIVITY LEVEL (MSL) 1 (UNLIMITED FLOOR LIFE AT < 30°C / 85% RELATIVE HUMIDITY).
- GRAPHIC IS ONLY FOR DIMENSIONALLY APPLICATION.
- THIS IS A RoHS AND REACH COMPLLIANT PRODUCT WHOSE RELATED DOCUMENTSS ARE AVAILABLE ON REQUEST.

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10. Reliability Performance

Test Item	Accept criteria	Test Condition	Standard Source
High Temperature Exposure (Storage)	1.Change from an initial value L:within±5% 2.no visible damage.	1000 hrs. at rated operating temperature (e.g. 125°C part can be stored for 1000 hrs. @ 125°C. Same applies for 105°C and 85°C. Unpowered. Measurement at 24±4 hours after test conclusion.	AEC-Q200 RevD Table 5
Temperature Cycling	1.Change from an initial value L:within±5% 2.no visible damage.	1000 cycles (-40°C to +125°C). Note: If 85°C part or 105°C part the 1000 cycles will be at that temperature. Measurement at 24±4 hours after test conclusion. 30min maximum dwell time at each temperature extreme. 1 min. maximum transition time.	AEC-Q200 RevD Table 5
Biased Humidity	1.Change from an initial value L:within±5% 2.no visible damage.	1000 hours 85°C/85%RH. Unpowered. Measurement at 24±4 hours after test conclusion.	AEC-Q200 RevD Table 5
Operational Life	1.Change from an initial value L:within±5% 2.no visible damage.	1000 hrs. @ 105°C. If 85°C or 125°C part will be tested at that temperature. Measurement at 24±4 hours after test conclusion.	AEC-Q200 RevD Table 5
Mechanical Shock	1.Change from an initial value L:within±5% 2.no visible damage.	Peak Value: 100g's, Duration: 6ms, Waveform: Half-sine Velocity Change: 12.3ft/sec.	MIL-STD-202 Method 213 Condition C
Vibration	1.Change from an initial value L:within±5% 2.no visible damage.	5g's for 20 minutes, 12 cycles each of 3 orientations. Note: Use 8"X5" PCB, .031" thick, 7 secure points on one long side and 2 secure points at corners of opposite sides. Parts mounted within 2" from any secure point. Test from 10-2000 Hz.	AEC-Q200 RevD Table 5
Resistance to Soldering Heat	1.no visible damage.	Condition K: Reflow temp:250±5°C, Peak time: 30±5sec, Temp ramp: 1°C/s-4°C/s; time above 183°C, 90 s - 120 s, Cycles: 3.	MIL-STD-202 Method 210
ESD	1.Change from an initial value L:within±5% 2.no visible damage.	Passive Component Human Body Model (HBM) direct contact discharge 8KV.	AEC-Q200-002 Or ISO/DIS10605
Solder ability	1. Lead must have 95% above coverage.	SMD: a) Method B, 4hrs@155°C dry heat, @235°C	AEC-Q200 RevD Table 5
Flammability	1.Meet UL-94 V0 or V1 request	V-0 or V-1 Acceptable.	UL-94
Board Flex	1.Change from an initial value L:within±5% 2.no visible damage.	100mmX40mm board mechanical means to apply a force which will bend the board (D) x = 2 mm minimum, applied forces shall be 60 (+ 5) Sec.	AEC-Q200-005
Terminal Strenh (SMD)	1.Component can't drop 2.no visible damage.	1.8Kg force, applied for 60 second.	AEC-Q200-006