佳邦科技股份有限公司
INPAQ TECHNOLOGY CO., LTD.

WCA3225CG Series
Data Sheet

Product Name	WCA3225CG Series
Series	Chip Inductor
Size	EIAJ 3225
Version	A0

1. SCOPE

1.1. Ceramic core wire wound construction.

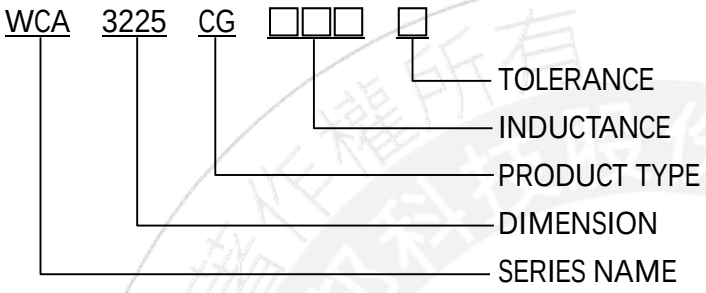
1.2. Gold-plated surface provides excellent solderability and electrical characteristics.

1.3. Inductance values from 4.7 to 3300 nH.

1.4. Exceptional Q and high SRF special for high frequency applications.

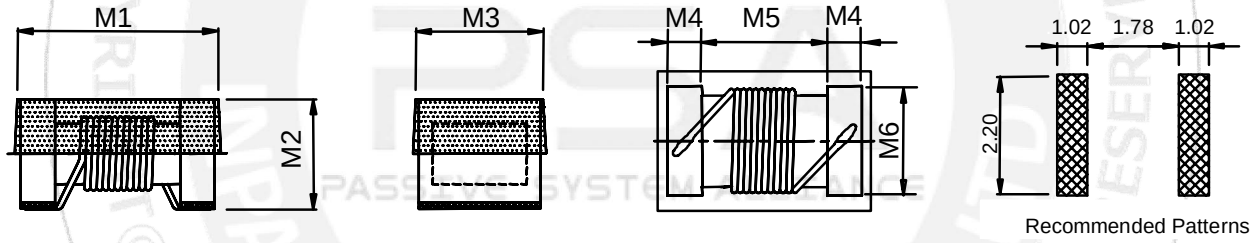
1.5. High reliability tests comply with AEC-Q200.

2. PART NUMBER IDENTIFICATION



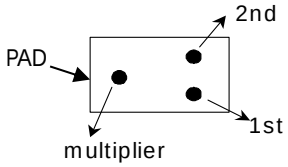
3. MECHANICAL DIMENSION

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



COLOR CODE

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

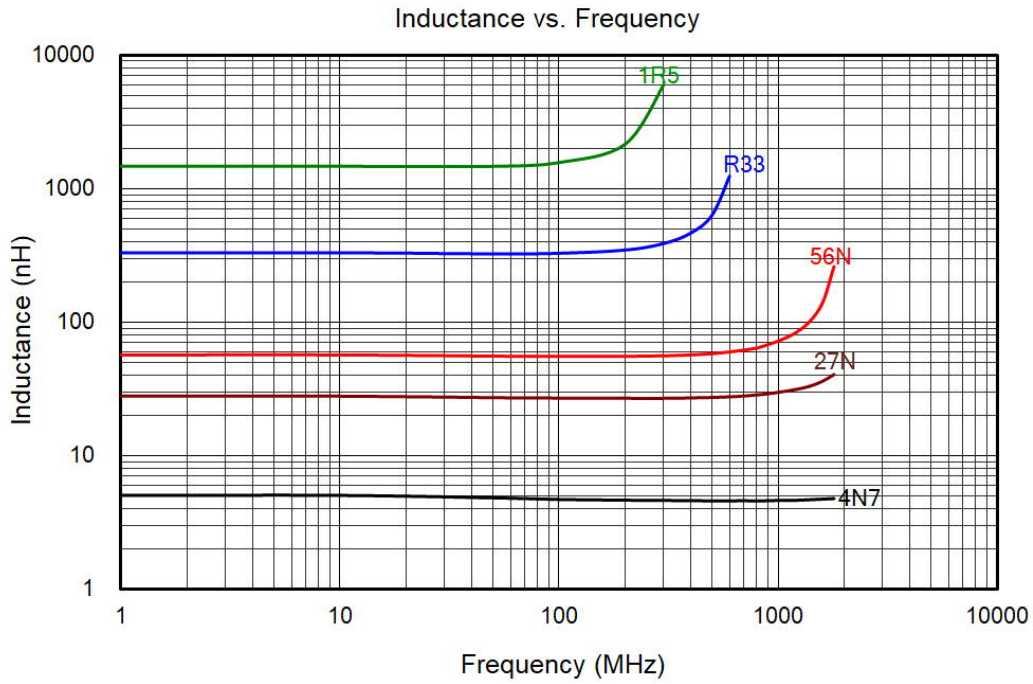
MARKING: Dots 1st and 2nd indicate the inductance in nano Henries.
(DOTS 1st: YELLOW，DOTS 2nd: VIOLET)
Dots 3 indicates number of zeroes to be added.
(DOTS 3multiplier: BLACK)

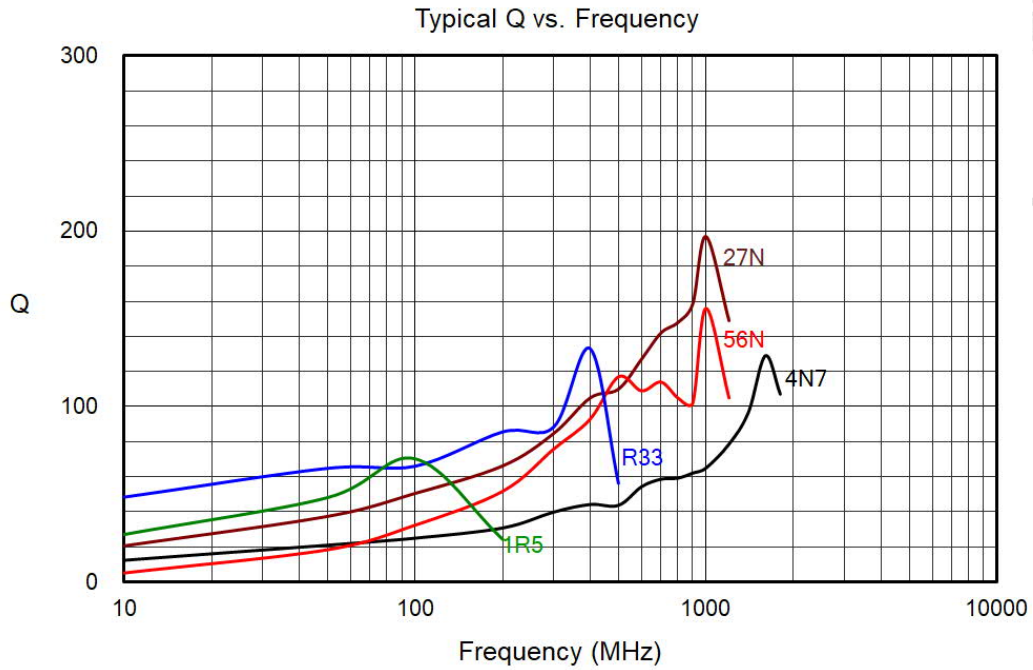
MARK COLOR CODE IN COMPOSITE ELECTRICAL SPECIFICATION.

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

6. ELECTRICAL CURVE

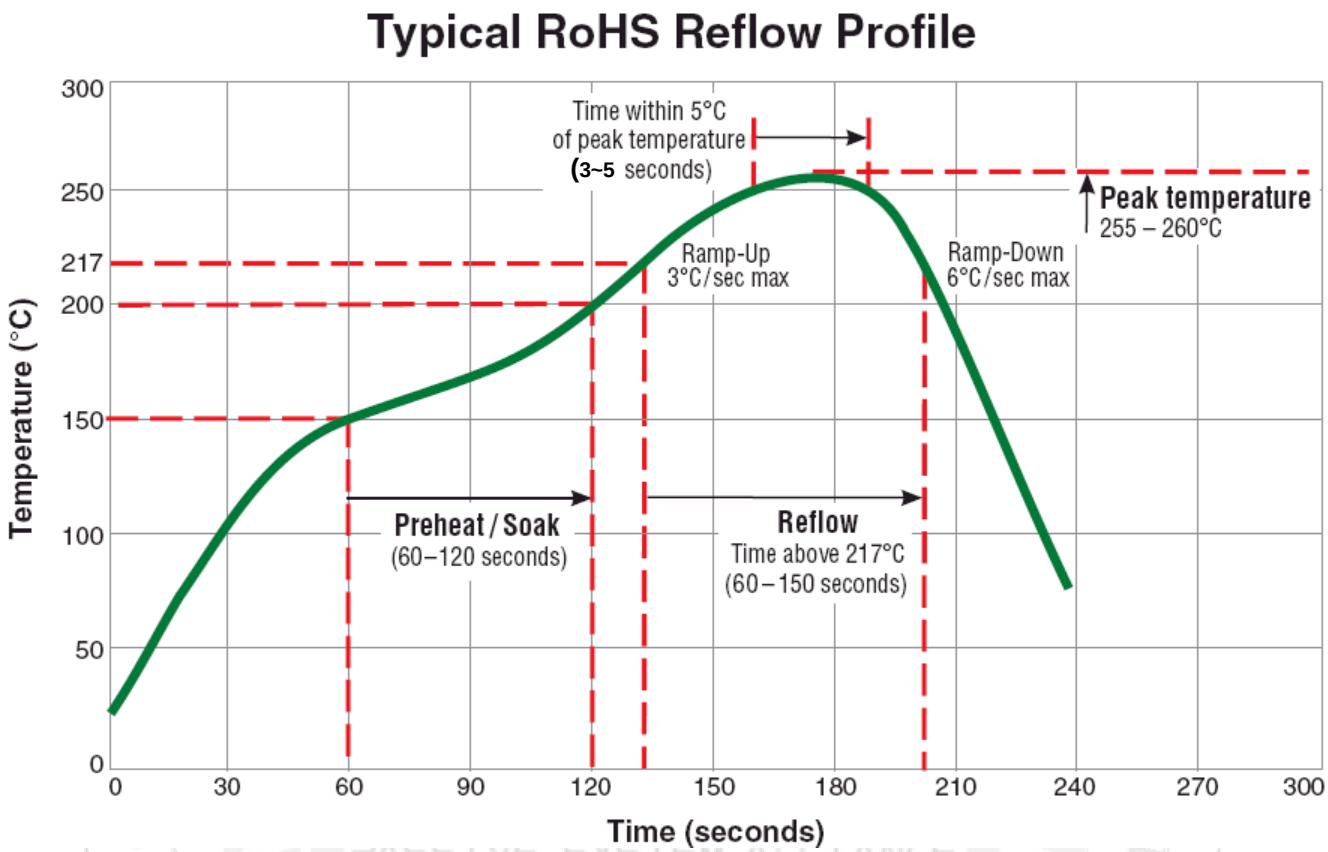




7. RELIABILITY PERFORMANCE

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℃, 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℃ dry heat, @235℃	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 Strength (SMD)	1.Component can't drop 2.no visible damage.	1.8Kg force, applied for 60 second.	AEC-Q200-006

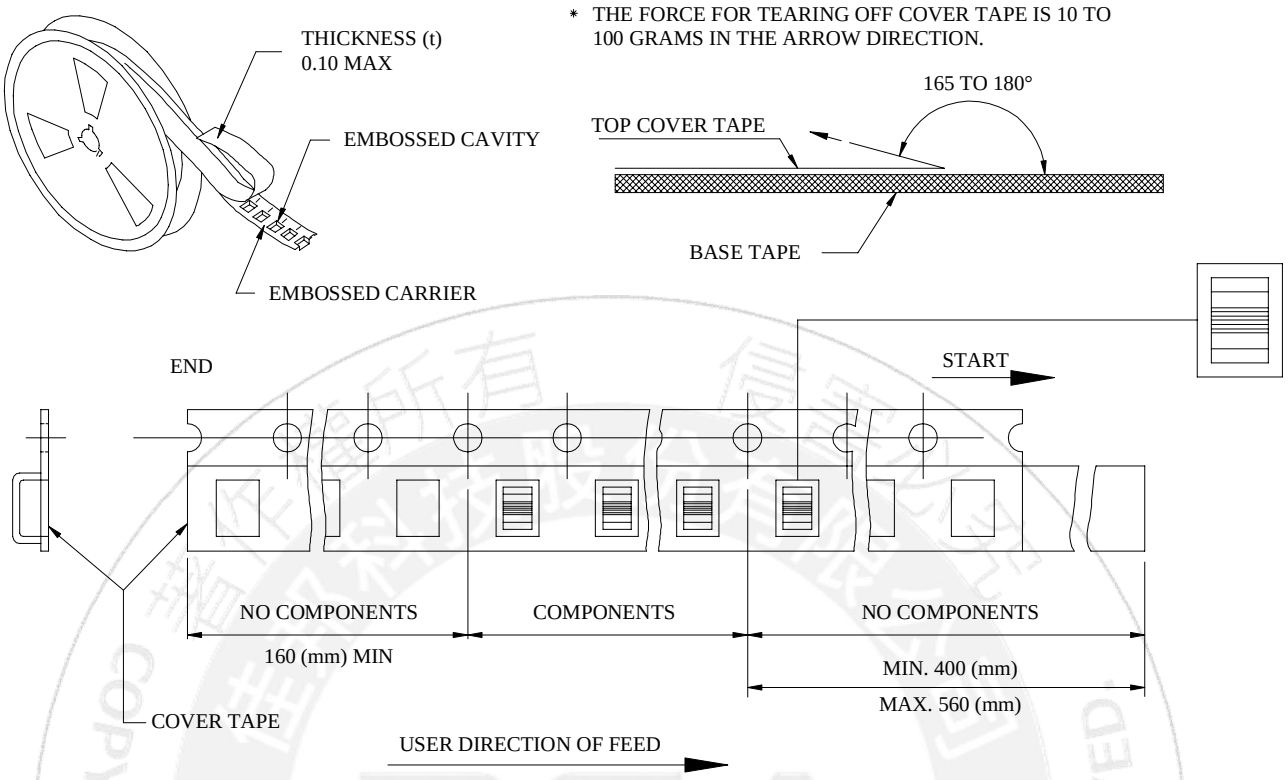
8. REFLOW CHART



9. NOTE

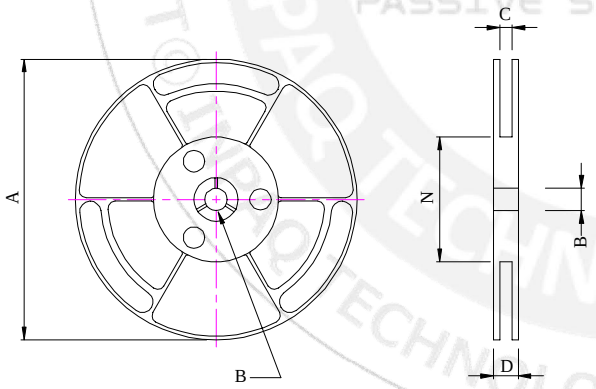
- TOLERANCE：J = ±5%
- INDUCTANCE AND Q MEASURED AN KEYSIGHT HP4991B OR EQUIVALENT.
- SRF MEASURED USING AN KEYSIGHT 5071C NETWORK ANALYZER AND A INPAQ TEST FIXTURE OR EQUIVALENT.
- DC RESISTANCE MESASURED USING A MICRO-OHM METER.
- CURRENT THAT CAUSES A 15°C TEMPERATURE RISE FROM 25°C AMBIENT.
- ELECTRICAL 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.

10. PACKING

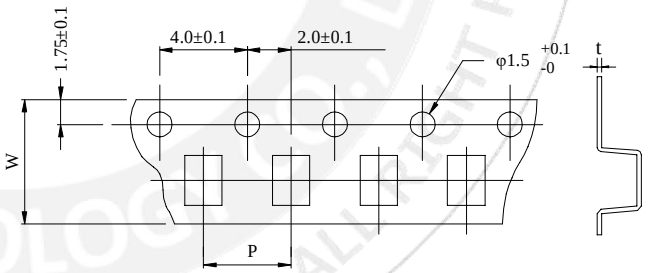


■ CARRIER TAPE REELS (mm)

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