

# APPROVAL SHEET

## **WQCW2012 SMD Wire Wound Ceramic Chip Inductors AEC-Q200**

\*Contents in this sheet are subject to change without prior notice.

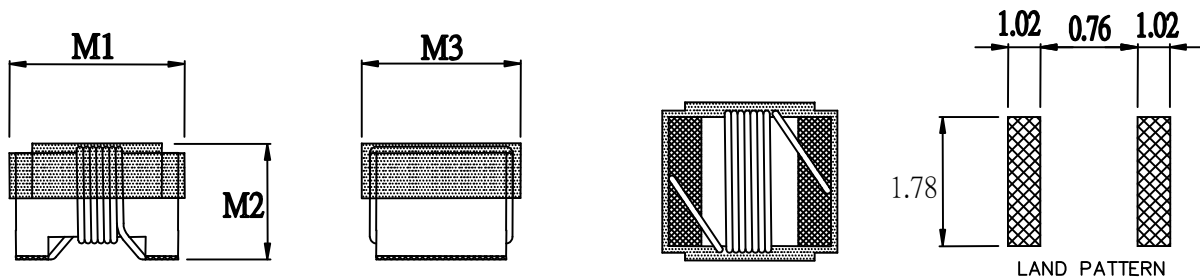
**FEATURES**

1. Ceramic structure provides high reliability · high productivity
2. Excellence Q and SRF characteristics for RF application
3. Wide range inductance and various tolerance options.
4. RoHS compliant
5. AEC-Q200

**APPLICATIONS**

1. Communication: GSM/3G/LTE, Wi-Fi, GPS
2. Consumer: Cabel/Terrestrial/BS Tuner, Bluetooth, Wireless Audio, Remote control
3. M2M: ZigBee, Proprietary wireless
4. EMI solution in high frequency circuits.
5. Automotive

**SHAPE and DIMENSION**



Unit: mm

Series	M1	M2	M3
WQCW2012	2.29 (MAX)	1.52(MAX)	1.73(MAX)

**Ordering Information**

WQ	CW	2012	Z0	K	2N2	P	B
<b>Product Code</b> WQ: Inductor AEC-Q200	<b>Series</b> SMD Wire Wound Ceramic Chip inductor.	<b>Dimensions</b> 2.0 * 1.2 mm 2012 :EIA 0805	<b>Series extension</b> Z0	<b>Tolerance</b> G: ± 2% J: ± 5% K: ± 10%	<b>Value</b> 2N2 =2.2nH 10N=10nH R10=100nH =0.1uH	<b>Packing Code</b> P= 7" Plastic Tape	<b>B</b> B:STD

## Electrical Characteristics

### ● WQCW2012 series

Walsin Part Number	L (nH)	Test Freq. (MHz) for L	Tolerance	Q (Min)	Test Freq. (MHz) for Q	SRF (MHz) Min	RDC Max ( $\Omega$ )	I <sub>rms</sub> (mA)	COLOR CODE
WQCW2012Z0□2N2PB	2.2	250	K、J	35	1500	3000	0.08	600	WHITE
WQCW2012Z0□2N7PB	2.7	250	K、J	80	1500	7900	0.03	600	BROWN
WQCW2012Z0□2N8PB	2.8	250	K、J	80	1500	7900	0.06	800	RED
WQCW2012Z0□2N9PB	2.9	250	K、J	50	1500	4700	0.05	600	BLUE
WQCW2012Z0□3N0PB	3.0	250	K、J	65	1500	7900	0.06	800	VIOLET
WQCW2012Z0□3N3PB	3.3	250	K、J	50	1500	7900	0.08	600	BLACK
WQCW2012Z0□5N6PB	5.6	250	K、J	65	1000	5500	0.08	600	VIOLET
WQCW2012Z0□6N8PB	6.8	250	K、J	50	1000	5500	0.11	600	BROWN
WQCW2012Z0□7N5PB	7.5	250	K、J	50	1000	5500	0.10	600	BLACK
WQCW2012Z0□8N2PB	8.2	250	K、J、G	50	1000	4700	0.12	600	RED
WQCW2012Z0□8N7PB	8.7	250	K、J、G	50	1000	4700	0.10	400	WHITE
WQCW2012Z0□10NPB	10	250	K、J、G	60	500	4200	0.10	600	RED
WQCW2012Z0□12NPB	12	250	K、J、G	50	500	4000	0.15	600	ORANGE
WQCW2012Z0□15NPB	15	250	K、J、G	50	500	3400	0.17	600	YELLOW
WQCW2012Z0□18NPB	18	250	K、J、G	50	500	3300	0.20	600	GREEN
WQCW2012Z0□22NPB	22	250	K、J、G	55	500	2600	0.22	500	BLUE
WQCW2012Z0□24NPB	24	250	K、J、G	50	500	2000	0.22	500	RED
WQCW2012Z0□27NPB	27	250	K、J、G	55	500	2500	0.25	500	VIOLET
WQCW2012Z0□33NPB	33	250	K、J、G	60	500	2050	0.27	500	GRAY
WQCW2012Z0□36NPB	36	250	K、J、G	55	500	1700	0.27	500	YELLOW
WQCW2012Z0□39NPB	39	250	K、J、G	60	500	2000	0.29	500	WHITE
WQCW2012Z0□43NPB	43	200	K、J、G	60	500	1650	0.34	500	YELLOW
WQCW2012Z0□47NPB	47	200	K、J、G	60	500	1650	0.31	500	BLACK
WQCW2012Z0□56NPB	56	200	K、J、G	60	500	1550	0.34	500	BROWN
WQCW2012Z0□68NPB	68	200	K、J、G	60	500	1450	0.38	500	RED
WQCW2012Z0□82NPB	82	150	K、J、G	65	500	1300	0.42	400	ORANGE
WQCW2012Z0□91NPB	91	150	K、J、G	65	500	1200	0.48	400	BLUE
WQCW2012Z0□R10PB	100	150	K、J、G	65	500	1200	0.46	400	YELLOW
WQCW2012Z0□R11PB	110	150	K、J、G	50	500	1000	0.48	400	VIOLET
WQCW2012Z0□R12PB	120	150	K、J、G	50	250	1100	0.51	400	GREEN
WQCW2012Z0□R15PB	150	100	K、J、G	50	250	920	0.56	400	BLUE
WQCW2012Z0□R18PB	180	100	K、J、G	50	250	870	0.64	400	VIOLET
WQCW2012Z0□R20PB	200	100	K、J、G	50	250	860	0.68	400	RED
WQCW2012Z0□R22PB	220	100	K、J、G	50	250	850	0.70	400	GRAY
WQCW2012Z0□R24PB	240	100	K、J、G	44	250	690	1.00	350	BLACK

Walsin Part Number	L (nH)	Test Freq. (MHz) for L	Tolerance	Q (Min)	Test Freq. (MHz) for Q	SRF (MHz) Min	RDC Max ( $\Omega$ )	I <sub>rms</sub> (mA)	COLOR CODE
WQCW1608Z0□R25PB	250	100	K、J、G	50	250	680	1.00	350	YELLOW
WQCW1608Z0□R27PB	270	100	K、J、G	48	250	650	1.00	350	WHITE
WQCW1608Z0□R30PB	300	100	K、J、G	48	250	620	1.20	310	GRAY
WQCW1608Z0□R33PB	330	100	K、J、G	48	250	600	1.40	300	BLACK
WQCW1608Z0□R36PB	360	100	K、J、G	35	250	460	0.90	300	ORANGE
WQCW1608Z0□R39PB	390	100	K、J、G	48	250	560	1.50	290	BROWN
WQCW1608Z0□R43PB	430	100	K、J、G	33	100	430	1.70	190	WHITE
WQCW1608Z0□R47PB	470	50	K、J	33	100	380	1.70	250	VIOLET
WQCW1608Z0□R56PB	560	25	K、J	23	50	340	1.90	230	ORANGE
WQCW1608Z0□R62PB	620	25	K、J	23	50	200	2.00	190	ORANGE
WQCW1608Z0□R68PB	680	25	K、J	23	50	188	2.20	190	GREEN
WQCW1608Z0□R82PB	820	25	K、J	23	50	215	2.35	180	BROWN
WQCW1608Z0□1R0PB	1000	25	K、J	23	50	100	2.7	170	BLACK

Tolerance : K :  $\pm 10\%$ 、J :  $\pm 5\%$ 、G :  $\pm 2\%$

TEMPERATURE RISE : Below 15°C at Rated Current

Operating Temperature Range. : -40°C ~ +150°C

Storage temperature Component: -40°C to +100°C. Tap e and reel packaging: -40°C to +80°C.

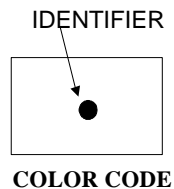
L AND Q MEASURED AN AGILENT 4291B IMPEDANCE ANALYZER WITH AN AGILENT/HP16193A TEST FIXTURE.

SRF MEASURED USING AN AGILENT/HP 5071C NETWORK ANALYZER AND A WTC TEST FIXTURE.

DCR MESASURED USING A MICRO-OHMMETER.

※MSL : LEVEL 1

## MARKING



Example: WQCW2012Z0□2N2PB

MARKING : WHITE

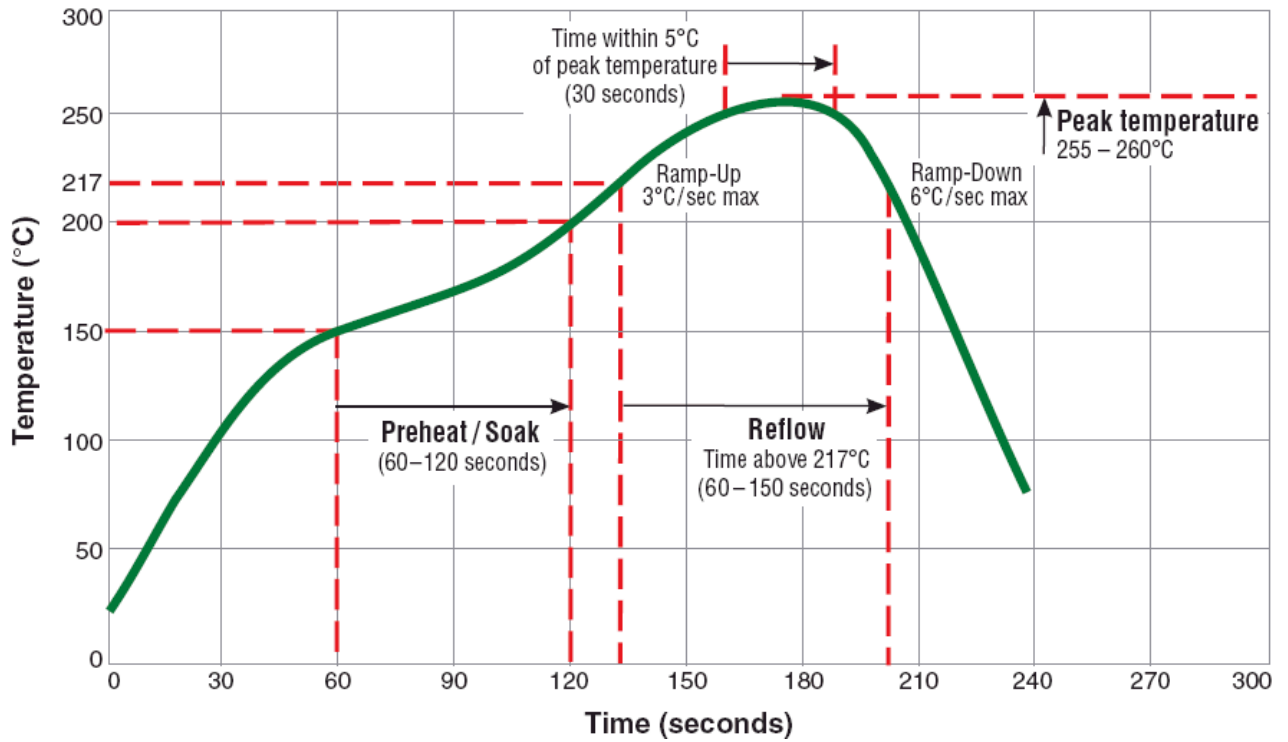
MARK COLOR CODE IN COMPOSITE SPECIFICATION

## RELIABILITY PERFORMANCE

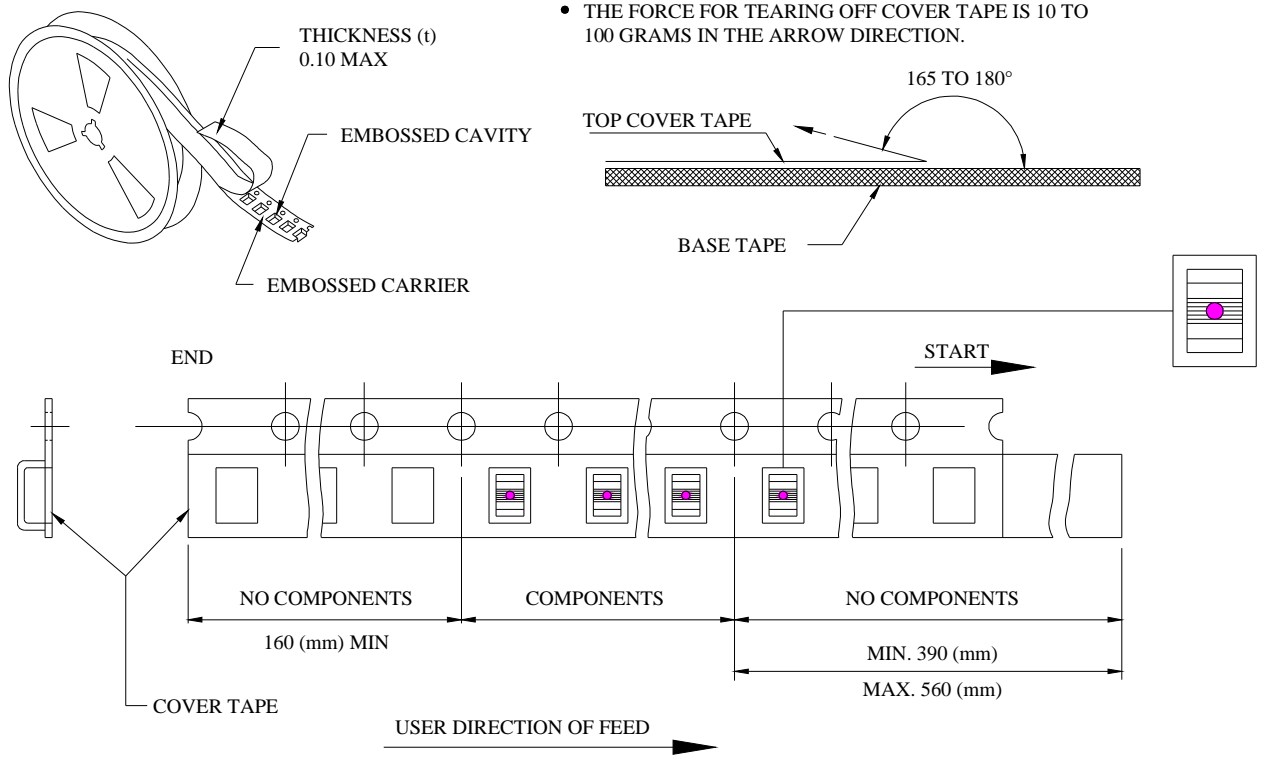
Test Item	Test Condition	Standard Source
High Temperature Exposure (Storage)	1000 hrs. at rated operating temperature (e.g. 125°C part can be stored for 1000 hrs. @ 125°C. Same applies for 105°C and 85°C. Unpowered. Measurement at 24±4 hours after test conclusion.	MIL-STD-202 Method 108
Temperature Cycling	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.	JESD22 Method JA-104
Biased Humidity	1000 hours 85°C/85%RH. Unpowered. Measurement at 24±4 hours after test conclusion.	MIL-STD-202 Method 103
Operational Life	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.	MIL-PRF-27
Mechanical Shock	Method 213. Condition C, Peak Value: 100g's, Duration: 6ms, Waveform: Half-sine Velocity Change: 12.3ft/sec	MIL-STD-202 Method 213
Vibration	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.	MIL-STD-202 Method 204
Resistance to Soldering Heat	Condition B No pre-heat of samples. Note: Single Wave Solder - Procedure 2 for SMD and Procedure 1 for Leaded with solder within 1.5mm of device body.	MIL-STD-202 Method 210
ESD	Passive Component Human Body Model (HBM) Electrostatic Discharge (ESD) Test. Only direct contact discharge, record the voltage value what the sample can pass.	AEC-Q200-002 Or ISO/DIS10605
Solderability	For both Leaded & SMD. Electrical Test not required. Magnification 50X. Conditions: Leaded: Method A @ 235°C, category 3. SMD: a) Method B, 4 hrs @ 155°C dry heat @ 235°C b) Method B @ 215°C category 3. c) Method D category 3 @ 260°C.	J-STD-002
Flammability	V-0 or V-1 Acceptable	UL-94
Board Flex	60 sec minimum holding time.	AEC-Q200-005
Terminal Strength (SMD)	Force of 1.2kg for 60 seconds.	AEC-Q200-006

### Typical RoHS Reflow Profile

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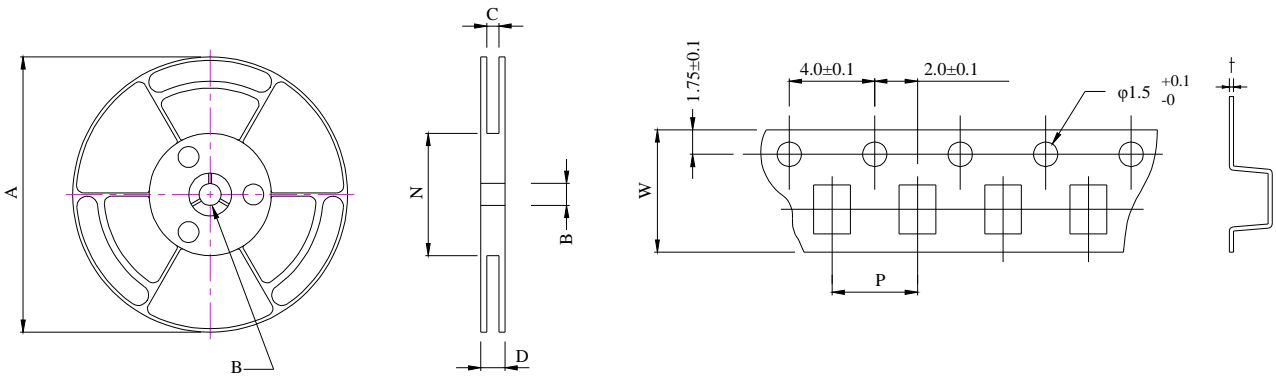
### Packaging Specification



#### ■ 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	0.25
TOL.	±2.0	±0.8	+1.0-0	MAX	MIN	±0.1	±0.2	±0.05

Quantity per reel : 3K pcs / reel