

# APPROVAL SHEET

## **WLQC1515 Series SMD Square Air Wound Coil Inductors**

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

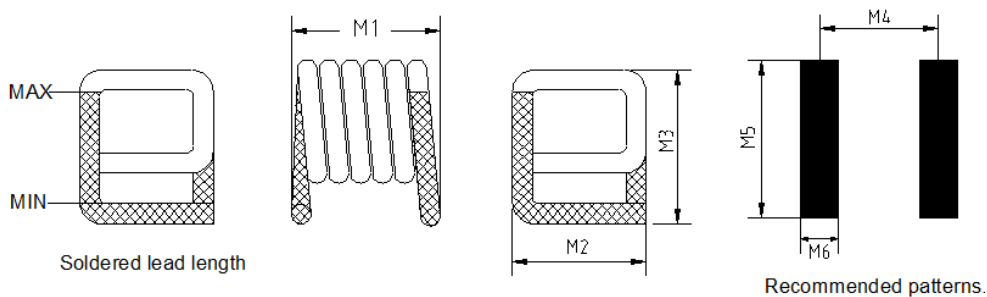
## FEATURES

1. Excellence Q and SRF characteristics for RF application.
2. Wide range inductance and various tolerance options.
3. RoHS compliant

## APPLICATIONS

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

## Shape and Dimension



Unit: mm

| WLQC1515 Series  | M1         | M2         | M3         | M4   | M5   | M6   |
|------------------|------------|------------|------------|------|------|------|
| WLQC1515H0□47NLB | 4.06±0.254 | 3.56±0.178 | 3.73±0.178 | 3.56 | 4.45 | 1.78 |
| WLQC1515H0□68NLB | 5.33±0.254 | 3.56±0.178 | 3.73±0.178 | 4.83 | 4.45 | 1.78 |
| WLQC1515H0□82NLB | 5.84±0.254 | 3.56±0.178 | 3.73±0.178 | 5.33 | 4.45 | 1.78 |

## Ordering Information

| WL                  | QC                                       | 1515              | H0                      | J                  | 47N          | L                               | B     |
|---------------------|--|-------------------|-------------------------|--------------------|--------------|---------------------------------|-------|
| <b>Product Code</b> | <b>Series</b>                            | <b>Dimensions</b> | <b>Series extension</b> | <b>Tolerance</b>   | <b>Value</b> | <b>Packing Code</b>             |       |
| WL:<br>Inductor     | Square<br>air wound<br>coil<br>inductor. | 1515              | H0                      | G: ± 2%<br>J: ± 5% | 47N = 47nH   | L=13" Reeled<br>(Embossed Tape) | B:STD |

### Electrical Characteristics

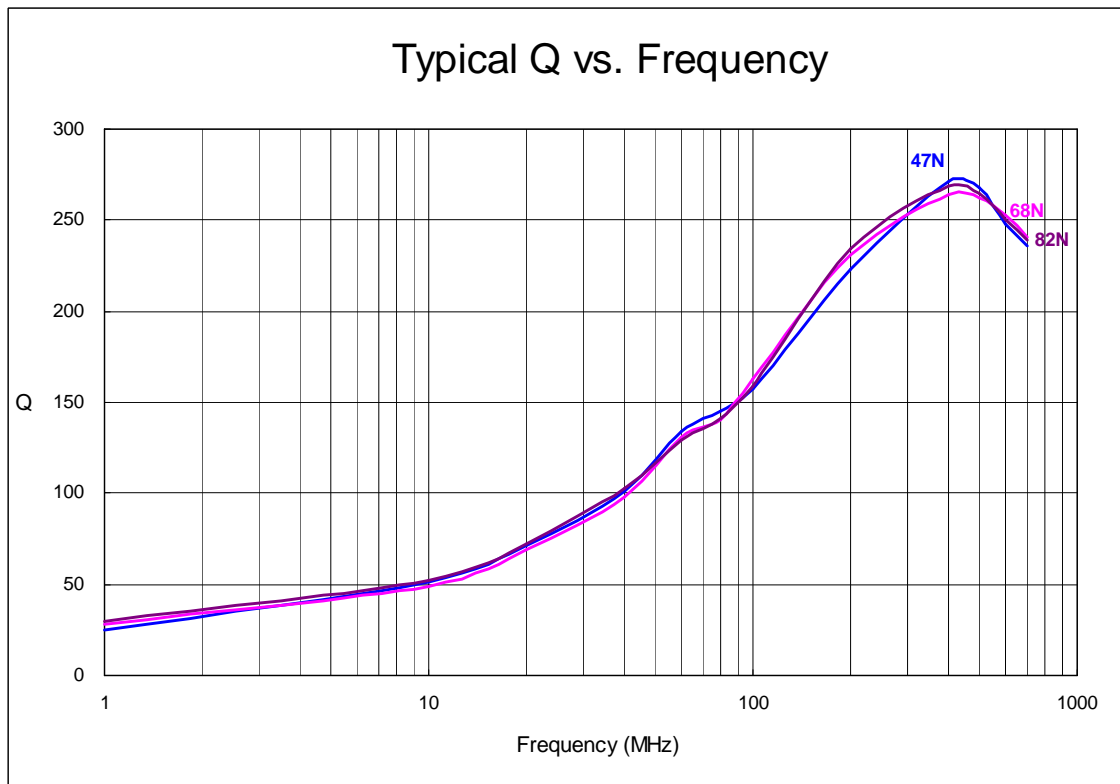
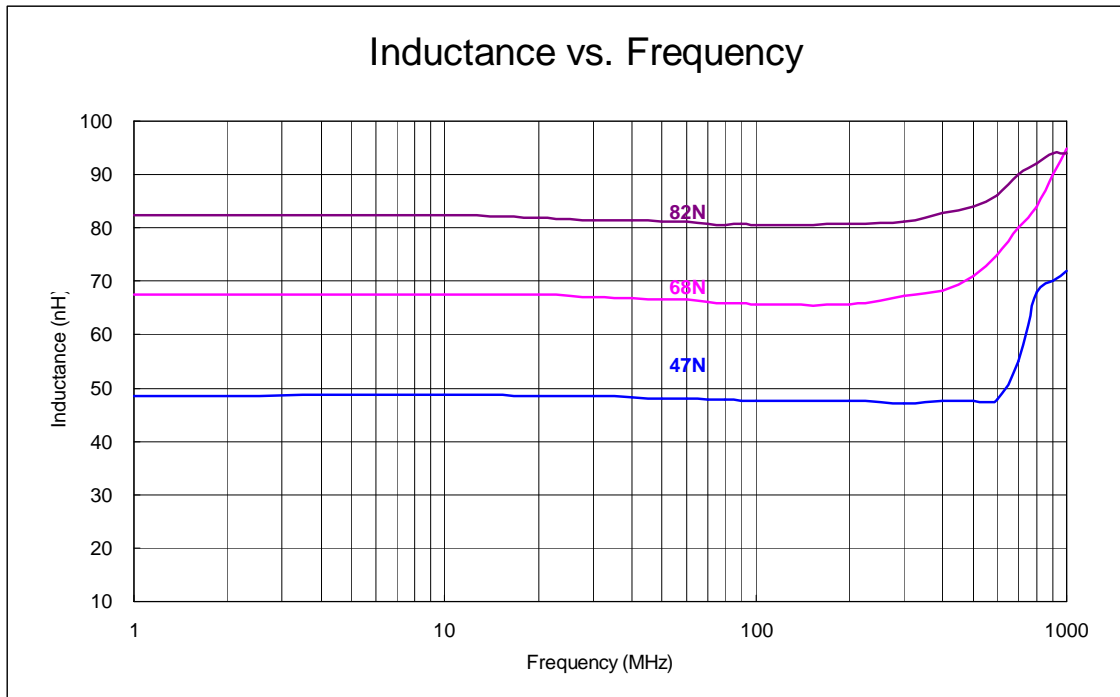
| WLQC1515<br>Series | Tolerance | L<br>(nH) | Q<br>(min) | Test Freq<br>(MHz) | DCR<br>(mΩ)Max | SRF<br>(GHz)<br>Typ | Irms<br>(A) |
|--------------------|-----------|-----------|------------|--------------------|----------------|---------------------|-------------|
| WLQC1515H0□47NLB   | G、J       | 47        | 230        | 400                | 6.35           | 1.87                | 4.9         |
| WLQC1515H0□68NLB   | G、J       | 68        | 230        | 400                | 8.60           | 2.13                | 5.5         |
| WLQC1515H0□82NLB   | G、J       | 82        | 230        | 400                | 9.40           | 1.79                | 5.6         |

TEST INSTRUMENT : HP4291B / FIXTURE HP16193A

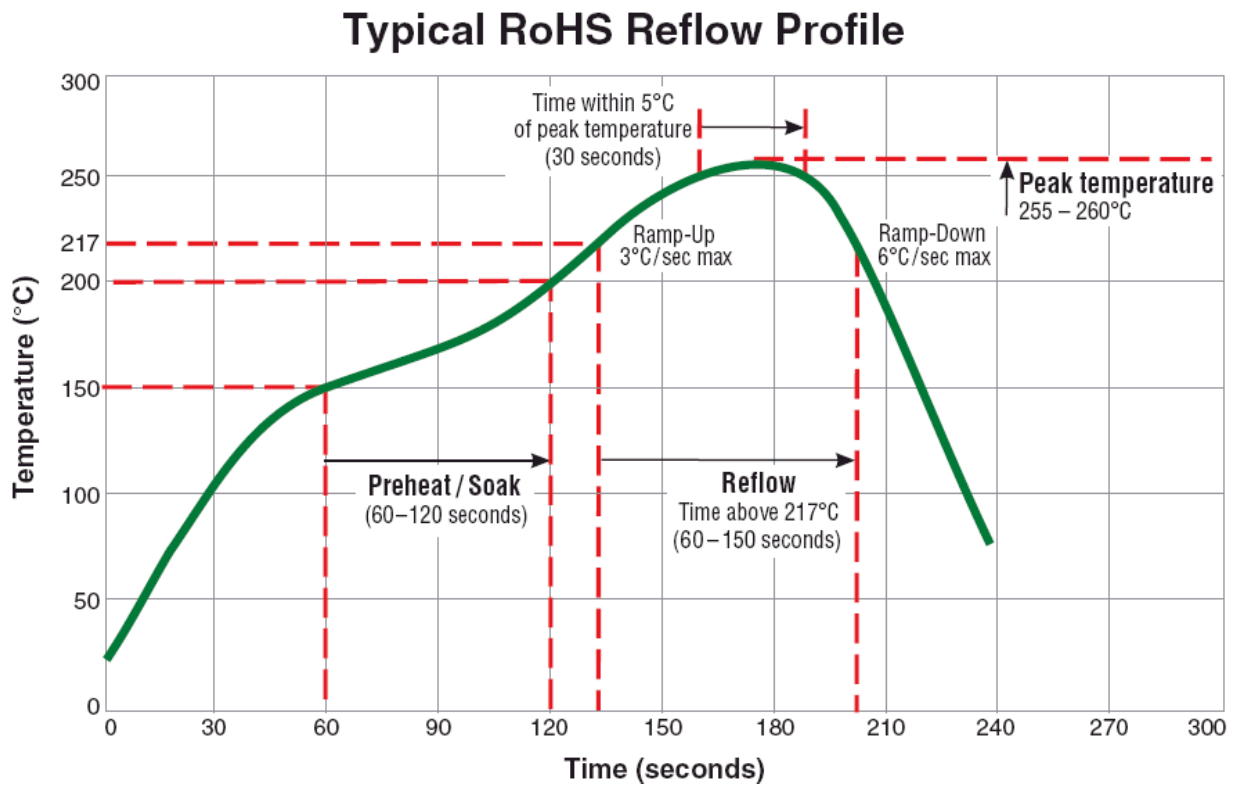
**NOTE :**

1. Inductance & Q measured on the HP4291B. With HP16193A test fixture.
2. Ambient temperature: -40°C to +125°C with I<sub>rms</sub> current, +125°C to +145°C with derated current.
3. Storage temperature Component: -40°C. TO +145°C, Packaging : -40°C. TO +80°C.
4. SRF measured using an Agilent/HP 8753 network analyzer.
5. Current that causes a 20°C temperature rise from 25°C ambient.
6. Tolerance: G=2%,J=5%
7. MSL:LEVEL 1

**ELECTRICAL Curve**



### TYPICAL RoHS REFLOW PROFILE



## RELIABILITY PERFORMANCE

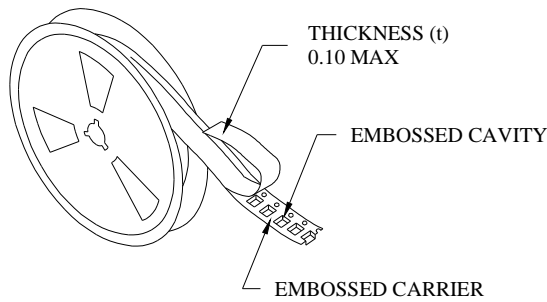
### Reliability Experiment For Electrical

| Test Item             | Test Condition   | Standard Source                                   |
|-----------------------|--|---|
| Humidity Test         | +40°C ± 2°C, humidity of 90% ± 5% (total 96 hours).  | MIL-STD-202G<br>Method 103B<br>Test Condition B   |
| High Temperature Test | 1. Temperature: +125°C ± 2°C<br>2. Test time: 48 ± 2hrs  | IEC 68-2<br>Test Condition B                      |
| Low Temperature Test  | 1. Temperature: -40°C ± 2°C<br>2. Test time: 48 ± 2hrs   | IEC 68-2<br>Test Condition A                      |
| Thermal Shock         | +125°C ± 5°C (30 minutes) ~ -40 ± 5°C (30 minutes),<br>temperature switch time: 5 minutes (total 50 cycles). | MIL-STD-202G<br>Method 107G<br>Test Condition B-2 |
| Life Test             | +70°C ± 5°C (250Hours)   | MIL-STD-202G<br>Method 108A<br>Test Condition B   |

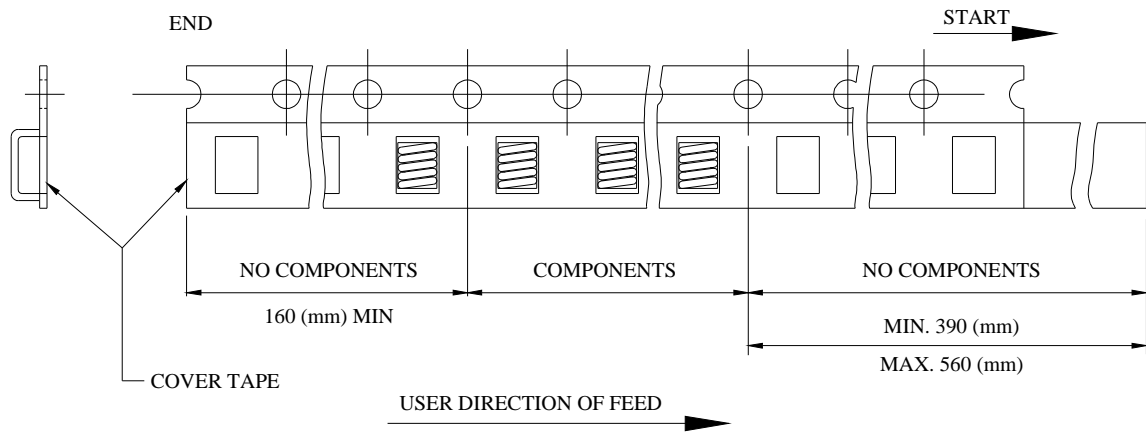
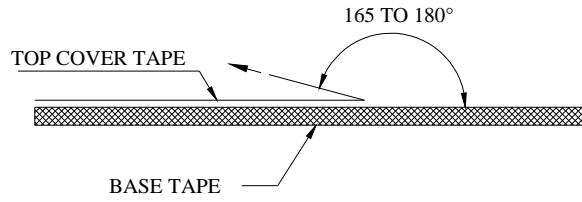
### Reliability Experiment For Physical

| Test Item                   | Test Condition   | Standard Source   |
|-----------------------------|--|---|
| Vibration Test              | 10-55-10HZ, amplitude: 1.5mm, direction: X, Y, Z axes,<br>each axis 2 hours (total 6 hours).   | MIL-STD-202G<br>Method 201A                               |
| Solder Heat Resistance Test | IR/convection reflow: Peak Temp 250 ± 5°C for 5Sec in<br>air, Through 2 Cycle. Temperature<br>Ramp: +1 ~ 4°C/sec; Above 183°C, must keep 90 s - 120<br>s | MIL-STD-202G<br>Method 210F<br>Test Condition<br>(Reflow) |
| Solder Ability Test         | Soak in 245 °C solder pot of 3Sec, PAD must have<br>95% above coverage.  | J-STD-003B  |

### Packaging Specification

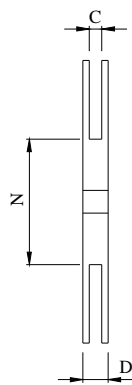
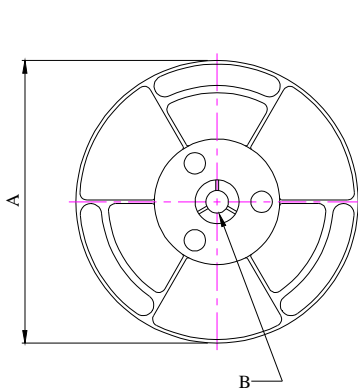


- THE FORCE FOR TEARING OFF COVER TAPE IS 10 TO 130 GRAMS IN THE ARROW DIRECTION.

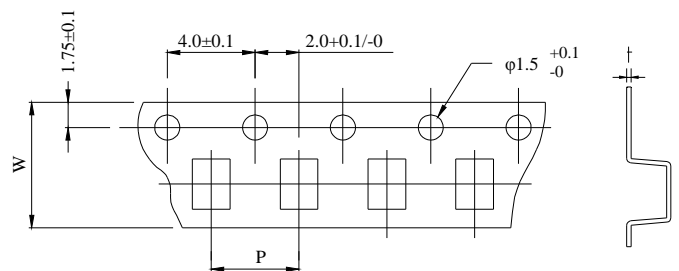


#### ■ CARRIER TAPE REELS (mm)

MATERIAL: PLASTIC



#### ■ DIMENSIONS OF CARRIER TAPE (mm)



Unit: mm

| ITEM | A    | B    | C    | D    | N    | P    | W    | t     |
|------|------|------|------|------|------|------|------|-------|
| DIM. | 330  | 13.0 | 12.4 | 18.4 | 100  | 8.0  | 12.0 | 0.4   |
| TOL. | MAX. | ±0.2 | ±0.2 | MAX. | ±0.5 | ±0.1 | ±0.3 | ±0.05 |

Quantity per reel : 2000 pcs