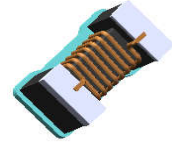


# Wire Wound Chip Ferrite Inductors MLW-RF Series

## FEATURES

- Small chip suitable for surface mounting
- Large inductance with ferrite material
- Operate temperature range ....  $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$  (Including self temp. rise)
- RoHS compliant



## APPLICATIONS

- Mobile phones and other electronic devices
- Bluetooth modules and TWS earphones

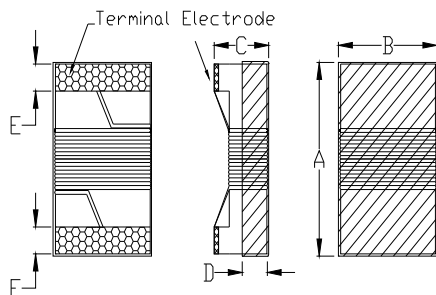
## Explanation of Part Number

MLW 1608 RF 1R0 K T

1 2 3 4 5 6

- ◆ 1:Product Series:Wire Wound Chip Ceramic Inductors
- ◆ 2:Dimensions:
- ◆ 3: Material Code : RF Ferrite
- ◆ 4:Nominal Inductance:1R0==>1.0uH
- ◆ 5.Inductance Tolerance:K $\pm$ 10%,M $\pm$ 20%
- ◆ 6:Packing :Tape & Reel

## Dimensions: [mm]



| Series    | A        | B        | C        | D Typ. | E Typ. |
|-----------|----------|----------|----------|--------|--------|
| MLW1608RF | 1.80 Max | 1.25 Max | 1.20 Max | 1.02   | 0.30   |
| MLW2012RF | 2.29 Max | 1.73 Max | 1.52 Max | 1.28   | 0.48   |

## Electrical Characteristics List

### MLW1608RF Series

| Part Number     | Inductance | Tolerance | L Test Freq. | DC Resistance | Typ. Rated Current | Typ. Self-resonant Frequency |
|-----------------|------------|-----------|--------------|---------------|--------------------|------------------------------|
| Units           | μH         | -         | MHz          | Ω             | mA                 | MHz                          |
| Symbol          | L          | -         | Freq.        | DCR           | I <sub>r</sub>     | S.R.F                        |
| MLW1608RF-1R0□T | 1.0        | K,M       | 7.9          | 0.32±30%      | 860                | 390                          |
| MLW1608RF-1R5□T | 1.5        | K,M       | 7.9          | 0.40±30%      | 720                | 160                          |
| MLW1608RF-1R8□T | 1.8        | K,M       | 7.9          | 0.43±30%      | 640                | 121                          |
| MLW1608RF-2R2□T | 2.2        | K,M       | 7.9          | 0.56±30%      | 600                | 103                          |
| MLW1608RF-2R7□T | 2.7        | K,M       | 7.9          | 0.62±30%      | 540                | 72                           |
| MLW1608RF-3R3□T | 3.3        | K,M       | 7.9          | 0.70±30%      | 500                | 66                           |
| MLW1608RF-3R9□T | 3.9        | K,M       | 7.9          | 0.83±30%      | 460                | 61                           |
| MLW1608RF-4R7□T | 4.7        | K,M       | 7.9          | 0.97±30%      | 420                | 51                           |
| MLW1608RF-5R6□T | 5.6        | K,M       | 7.9          | 1.10±30%      | 380                | 47                           |
| MLW1608RF-6R8□T | 6.8        | K,M       | 7.9          | 1.50±30%      | 340                | 43                           |
| MLW1608RF-8R2□T | 8.2        | K,M       | 7.9          | 1.68±30%      | 300                | 40                           |
| MLW1608RF-100□T | 10         | K,M       | 2.5          | 1.85±30%      | 280                | 36                           |
| MLW1608RF-120□T | 12         | K,M       | 2.5          | 2.28±30%      | 260                | 32                           |
| MLW1608RF-150□T | 15         | K,M       | 2.5          | 2.60±30%      | 240                | 29                           |
| MLW1608RF-180□T | 18         | K,M       | 2.5          | 2.90±30%      | 220                | 28                           |
| MLW1608RF-220□T | 22         | K,M       | 2.5          | 3.61±30%      | 200                | 24                           |
| MLW1608RF-270□T | 27         | K,M       | 2.5          | 5.20±30%      | 140                | 20                           |
| MLW1608RF-330□T | 33         | K,M       | 2.5          | 6.60±30%      | 120                | 15                           |
| MLW1608RF-470□T | 47         | K,M       | 2.5          | 9.65±30%      | 100                | 14                           |

### MLW2012RF Series

| Part Number     | Inductance | Tolerance | L Test Freq. | DC Resistance | Typ. Rated Current | Typ. Self-resonant Frequency |
|-----------------|------------|-----------|--------------|---------------|--------------------|------------------------------|
| Units           | μH         | -         | MHz          | Ω             | mA                 | MHz                          |
| Symbol          | L          | -         | Freq.        | DCR           | I <sub>r</sub>     | S.R.F                        |
| MLW2012RF-R47□T | 0.47       | K,M       | 7.9          | 0.12±30%      | 1500               | 850                          |
| MLW2012RF-R68□T | 0.68       | K,M       | 7.9          | 0.15±30%      | 1300               | 765                          |
| MLW2012RF-1R0□T | 1.0        | K,M       | 7.9          | 0.13±30%      | 1300               | 208                          |
| MLW2012RF-1R2□T | 1.2        | K,M       | 7.9          | 0.16±30%      | 1270               | 159                          |
| MLW2012RF-1R5□T | 1.5        | K,M       | 7.9          | 0.17±30%      | 1260               | 159                          |
| MLW2012RF-1R8□T | 1.8        | K,M       | 7.9          | 0.20±30%      | 1080               | 112                          |
| MLW2012RF-2R2□T | 2.2        | K,M       | 7.9          | 0.22±30%      | 1040               | 87                           |
| MLW2012RF-2R7□T | 2.7        | K,M       | 7.9          | 0.25±30%      | 1040               | 72                           |
| MLW2012RF-3R3□T | 3.3        | K,M       | 7.9          | 0.28±30%      | 1020               | 70                           |
| MLW2012RF-3R9□T | 3.9        | K,M       | 7.9          | 0.38±30%      | 960                | 61                           |
| MLW2012RF-4R7□T | 4.7        | K,M       | 7.9          | 0.43±30%      | 840                | 51                           |
| MLW2012RF-5R6□T | 5.6        | K,M       | 7.9          | 0.50±30%      | 800                | 47                           |
| MLW2012RF-6R8□T | 6.8        | K,M       | 7.9          | 0.68±30%      | 700                | 46                           |
| MLW2012RF-8R2□T | 8.2        | K,M       | 7.9          | 0.73±30%      | 680                | 33                           |

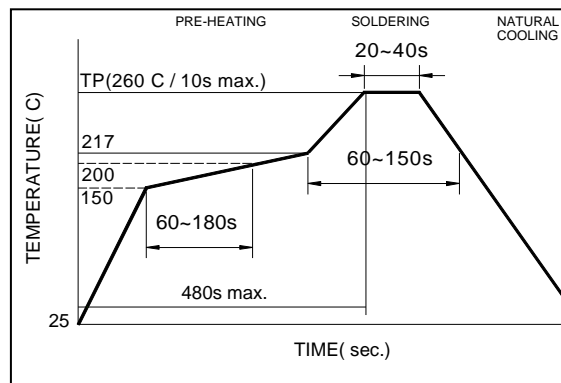
## Wire Wound Chip Ferrite Inductors MLW-RF Series

| Part Number      | Inductance | Tolerance | L Test Freq. | DC Resistance | Typ. Rated Current | Typ. Self-resonant Frequency |
|------------------|------------|-----------|--------------|---------------|--------------------|------------------------------|
| Units            | μH         | -         | MHz          | Ω             | mA                 | MHz                          |
| Symbol           | L          | -         | Freq.        | DCR           | I <sub>r</sub>     | S.R.F                        |
| MLW2012RF-100 □T | 10         | K,M       | 2.5          | 0.85±30%      | 560                | 31                           |
| MLW2012RF-120 □T | 12         | K,M       | 2.5          | 0.90±30%      | 460                | 30                           |
| MLW2012RF-150 □T | 15         | K,M       | 2.5          | 1.40±30%      | 380                | 28                           |
| MLW2012RF-180 □T | 18         | K,M       | 2.5          | 1.55±30%      | 360                | 27                           |
| MLW2012RF-220 □T | 22         | K,M       | 2.5          | 1.76±29%      | 340                | 20                           |
| MLW2012RF-270 □T | 27         | K,M       | 2.5          | 2.00±30%      | 300                | 17                           |
| MLW2012RF-330 □T | 33         | K,M       | 2.5          | 2.35±30%      | 300                | 17                           |
| MLW2012RF-470 □T | 47         | K,M       | 2.5          | 3.40±30%      | 280                | 15                           |
| MLW2012RF-560 □T | 56         | K,M       | 2.5          | 4.42±30%      | 240                | 10                           |
| MLW2012RF-680 □T | 68         | K,M       | 2.5          | 4.45±30%      | 240                | 10                           |
| MLW2012RF-820 □T | 82         | K,M       | 2.5          | 7.50±30%      | 180                | 10                           |
| MLW2012RF-101 □T | 100        | K,M       | 1.0          | 7.50±30%      | 180                | 9                            |

※ □: Please specify the inductance tolerance code (K=±10%, M=±20%).

## SOLDERING CONDITIONS

**Figure 1.  
Re-flow  
Soldering (Lead  
Free)**

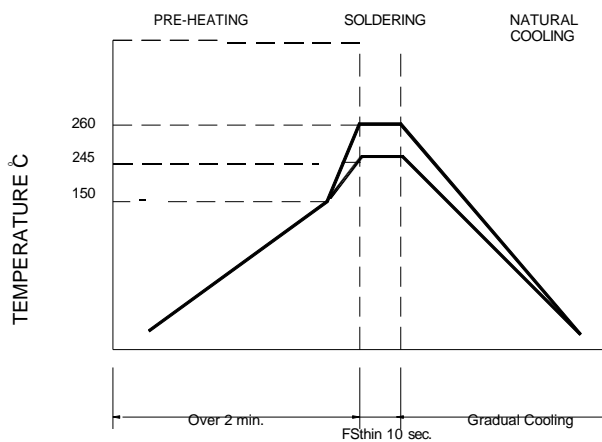


Note:

☐ Preheat circuit and products to 150°C

☐ 280°C tip temperature (max)

**Figure 2.  
Wave Soldering**

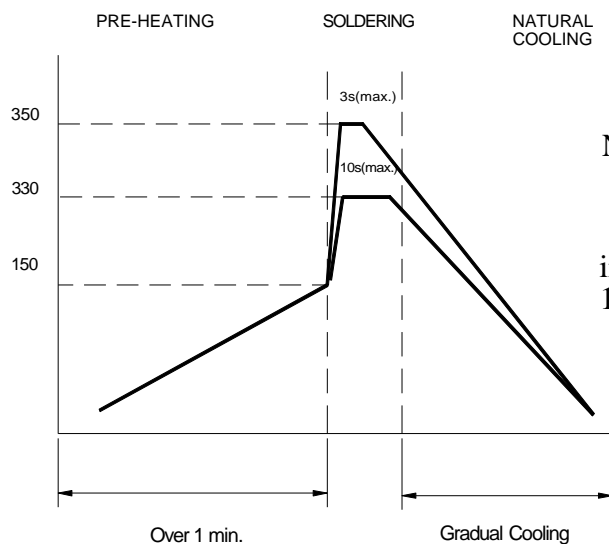


Note:

☐ Never contact the ceramic FSth the iron tip

☐

**Figure 3.  
Hand Soldering**



Note:

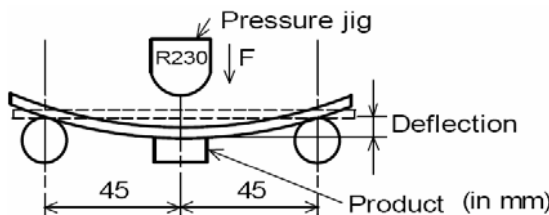
☐ Use a 20 watt soldering iron FSth tip diameter of 1.0mm

☐

Limit soldering time to 3 sec.

**RELIABILITY TEST**

| TEST ITEM                    | SPECIFICATION  | TEST CONDITION   |
|------------------------------|--|--|
| Rating current               | According to product specifications  | Current sources:33010D   |
| Inductance                   | According to product specifications  | Test Frequency:0.252~250MHz Test Equipment:HP4291A、HP4286A、HP4287A、HP4284A Test Fixture:16193Aor16334A |
| Q                            | According to product specifications  | Test Frequency:0.252~1500MHz Test Equipment:HP4291A、HP4286A、HP4287A、Test Fixture:16193Aor16334A        |
| RDC                          | According to product specifications  | Test Equipment:HP4263B   |
| SRF                          | According to product specifications  | Test Equipment:HP4291A<br>Test Fixture:16193A  |
| Solderability                | The metalized area must have more then 90%of solder coverage   | Soldering Temp:230±5℃<br>Dipping time:5±1S   |
| Resistance to soldering heat | No evidence of mechanical damage The mealized arer must have more then 75%of solder coverage Inductance change,less than±5% Q change less than±10% | Soldering Temp:260±5℃<br>Dipping time:10±1S  |
| Thermal Shock                | No evidence of mechanical damage, Inductance change less than±5%, Q change less than±10%   | A cycle contain:Step1:-40℃, 30Min<br>Step 2:85℃, 30Min<br>Cycle Times:10                               |

| TEST ITEM                | SPECIFICATION   | TEST CONDITION   |
|--------------------------|---|--|
| High Temperature Storage | No evidence of mechanical damage,<br>Inductance change less than $\pm 5\%$ ,<br>Q change less than $\pm 10\%$ | Test Temperature: $125\pm 2^{\circ}\text{C}$ (Ceramic core) $85\pm 2^{\circ}\text{C}$ (Ferrite core)<br>Test Time: $96\pm 2$ Hours                   |
| Low Temperature Storage  | No evidence of mechanical damage,<br>Inductance change less than $\pm 5\%$ ,<br>Q change less than $\pm 10\%$ | Test Temperature: $-40\pm 2^{\circ}\text{C}$<br>Test Time: $96\pm 2$ Hours   |
| Moisture Resistance      | No evidence of mechanical damage,<br>Inductance change less than $\pm 5\%$ ,<br>Q change less than $\pm 10\%$ | Test Temperature: $50\pm 2^{\circ}\text{C}$<br>Test Time:100Hours<br>relative humidity:90~95%  |
| Vibration                | No evidence of mechanical damage,<br>Inductance change less than $\pm 5\%$ ,<br>Q change less than $\pm 10\%$ | Amplitude:1.5mm X、Y、Z each direction for<br>1Hour and 45min<br>Frequency range:10~55~10Hz(min)   |
| Component Adhesion       | No evidence of mechanical damage<br>No evidence of peel off or broken<br>Keep continuity of FSnding           | Force:2Kg<br>Test Time: $5\pm 1$ sec   |
| Resistance to bend       | No evidence of mechanical damage  | Camber:20mm<br>Test Board:Glass-Epoxy board<br>Thickness:8mm<br> |
| Life                     | No evidence of mechanical damage,<br>Inductance change less than $\pm 5\%$ ,<br>Q change less than $\pm 10\%$ | Test Temperature: $85\pm 2^{\circ}\text{C}$<br>Test Time:1000Hours FSth rating current   |

## Packaging

(PACKAGING QUANTITY)

|         |       |      |      |      |      |
|---------|-------|------|------|------|------|
| 规格      | 0402  | 0603 | 0805 | 1008 | 1210 |
| 数量(pcs) | 10000 | 4000 | 2000 | 2000 | 2000 |

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