

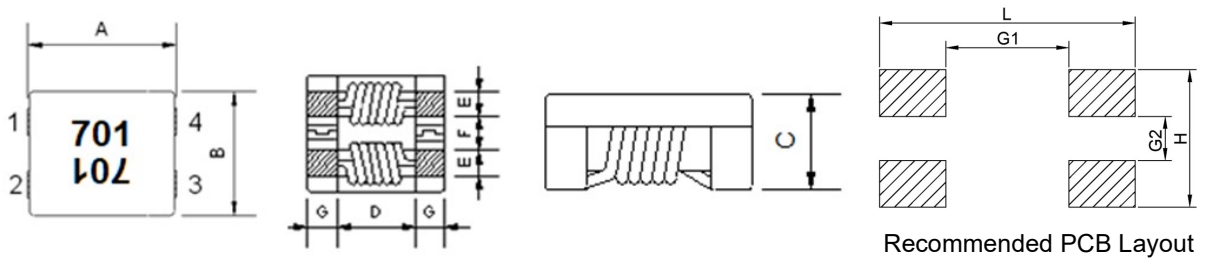
## 1. Part No. Expression

**W Q F F A S 5 0 1 - R V - 1 0**

(a) (b) (c) (d) (e) (f) (g) (h)

- |                    |                     |
|--------------------|---------------------|
| (a) Series Code    | (e) Inductance Code |
| (b) Dimension Code | (f) Packaging Code  |
| (c) Material Code  | (g) Current Code    |
| (d) Type Code      | (h) Internal Code   |

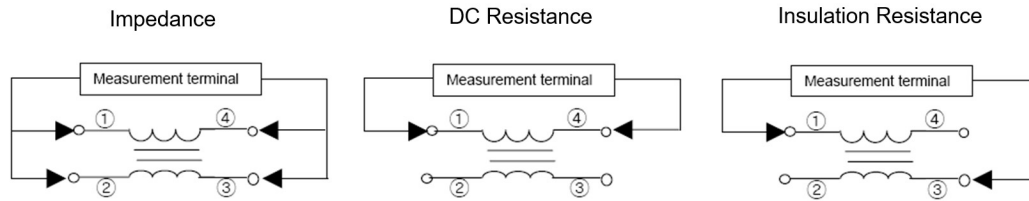
## 2. Configuration & Dimensions (Unit: mm)



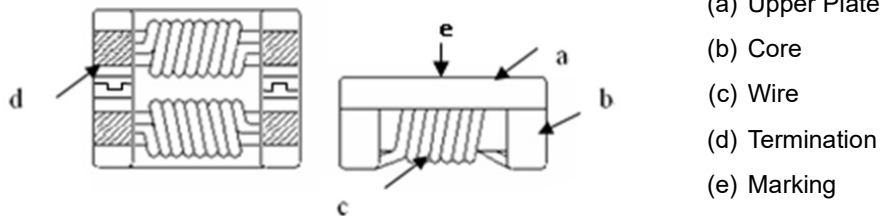
| A       | B        | C       | D       | E       | F       |
|---------|----------|---------|---------|---------|---------|
| 9.0±0.5 | 7.0±0.2  | 4.5 Max | 5.3 Typ | 1.5±0.5 | 2.1±0.5 |
| G       | L        | H       | G1      | G2      | -       |
| 1.8±0.5 | 11.0 Ref | 5.0 Ref | 6.0 Ref | 2.0 Ref | -       |

NOTE: Specifications subject to change without notice. Please check our website for latest information.

## 3. Schematic



## 4. Material List



## 5. General Specifications

- (a) Reliability test for this part meets AEC-Q200 standard.
- (b) Operating Temp.: -40°C to +125°C (including self-temperature rise)
- (c) Storage Temp.: -40°C to +125°C (on board)
- (d) All test data referenced to 25°C ambient.
- (e) Rated Current will cause the coil temperature rise approximately  $\Delta T$  of 40°C Max.
- (f) Storage Condition (Component in its packaging)
  - i) Temperature: Less than 40°C
  - ii) Humidity: Less than 60% RH

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## 6. Electrical Characteristics

| Part Number     | Impedance ( $\Omega$ ) |      | Test Frequency (MHz) | DCR (m $\Omega$ ) Max | Rated Current (A) Max | Rated Voltage (V <sub>DC</sub> ) Max | IR (M $\Omega$ ) Min |
|-----------------|------------------------|------|----------------------|-----------------------|-----------------------|--------------------------------------|----------------------|
|                 | Min                    | Typ  |                      |                       |                       |                                      |                      |
| WQFFAS501-RV-10 | 300                    | 500  | 100                  | 6                     | 8.0                   | 80                                   | 10                   |
| WQFFAS701-RT-10 | 500                    | 700  | 100                  | 9                     | 6.0                   | 80                                   | 10                   |
| WQFFAS102-RR-10 | 750                    | 1000 | 100                  | 10                    | 5.0                   | 80                                   | 10                   |
| WQFFAS152-RQ-10 | 1000                   | 1500 | 100                  | 15                    | 4.5                   | 80                                   | 10                   |
| WQFFAS222-RP-10 | 1700                   | 2200 | 100                  | 25                    | 4.0                   | 80                                   | 10                   |
| WQFFAS272-RO-10 | 2000                   | 2700 | 100                  | 32                    | 3.5                   | 80                                   | 10                   |

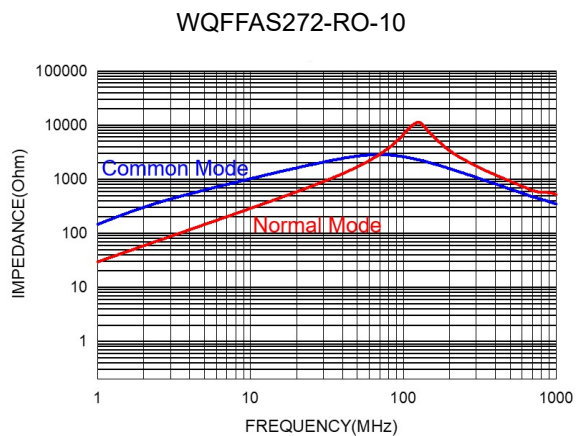
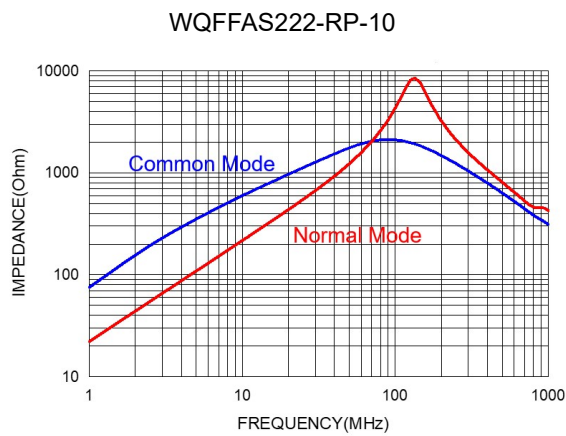
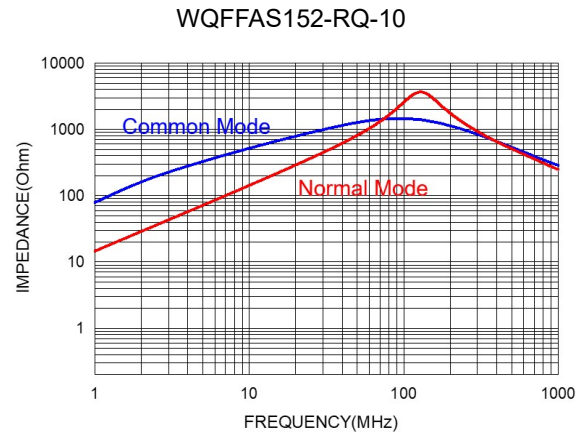
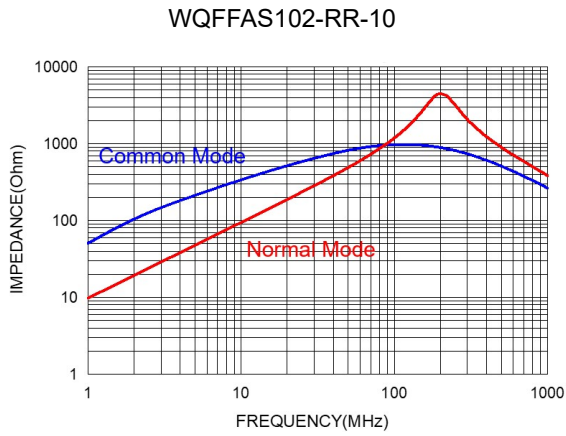
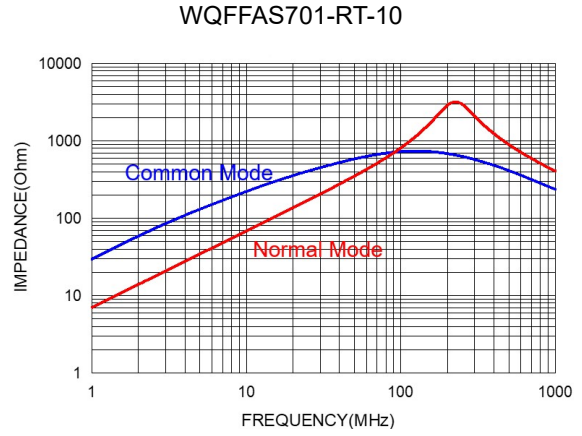
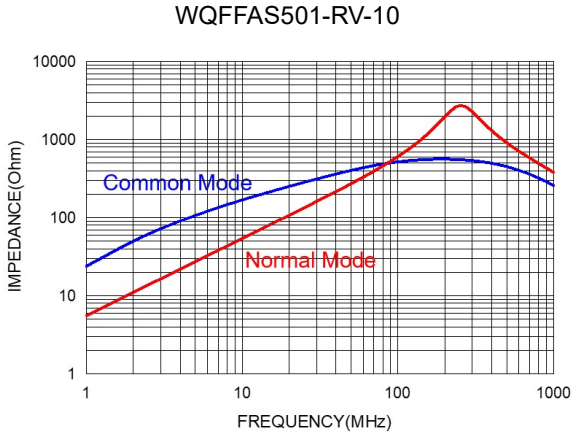
## Note:

Measurement Board Data  
 Material: FR4  
 Board Dimensions: 100 X 50 X 1.6t mm  
 Pattern Dimensions: 45 X 30 mm (Double side board)  
 Pattern thickness: 50  $\mu$ m

NOTE: Specifications subject to change without notice. Please check our website for latest information.



## 7. Characteristics Curve



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## 8. Soldering Specification

Mildly activated rosin fluxes are preferred. Our terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

### 8-1. IR Soldering Reflow

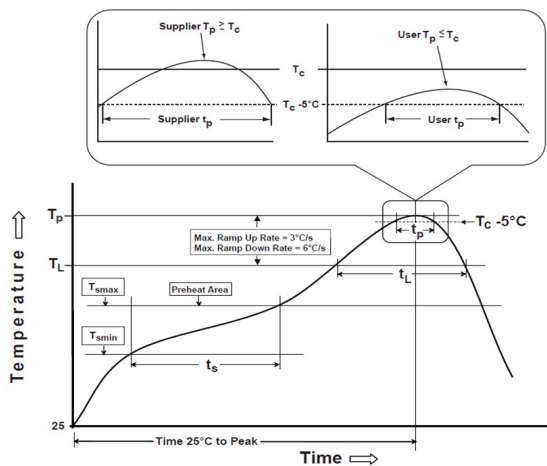
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

### 8-2. Iron Reflow

Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended (Figure 2).

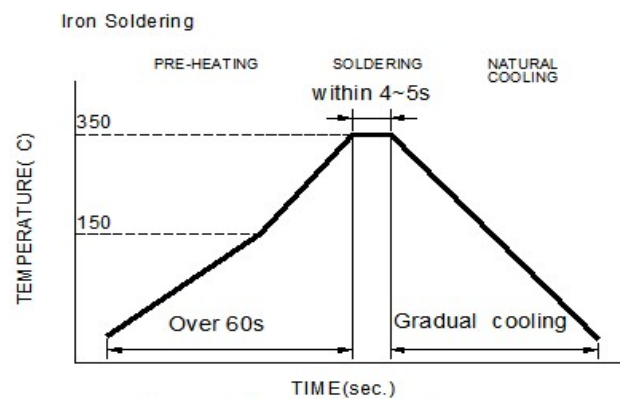
Note:

- (a) Preheat circuit and products to 150°C.
- (b) 355°C tip temperature (Max.)
- (c) Never contact the ceramic with the iron tip
- (d) 1.0mm tip diameter (Max.)
- (e) Use a 20 watt soldering iron with tip diameter of 1.0mm
- (f) Limit soldering time to 4~5 sec.



Reflow times: 3 times Max

Figure 1: IR Soldering Reflow



Iron Soldering times: 1 times max.

Soldering iron method: 350±5°C Max

Figure 2: Iron soldering temperature profiles

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**Table (1.1) Reflow Profiles**

|  |                  |
|--|------------------|
| Profile Type:  | Pb-Free Assembly |
| Preheat  |                  |
| -Temperature Min ( $T_{smin}$ )  | 150°C            |
| -Temperature Max ( $T_{smax}$ )  | 200°C            |
| -Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )  | 60-120seconds    |
| Ramp-up rate ( $T_L$ to $T_p$ )  | 3°C /second max. |
| Liquids temperature ( $T_L$ )  | 217°C            |
| Time ( $t_L$ ) maintained above $T_L$  | 60-150 seconds   |
| Classification temperature ( $T_c$ )   | See Table (1.2)  |
| Time ( $t_p$ ) at $T_c - 5^\circ\text{C}$ ( $T_p$ should be equal to or less than $T_c$ .) | * < 30 seconds   |
| Ramp-down rate ( $T_p$ to $T_L$ )  | 6°C /second max. |
| Time 25°C to peak temperature  | 8 minutes max.   |

**T<sub>p</sub>**: maximum peak package body temperature, **T<sub>c</sub>**: the classification temperature.

For user (customer) **T<sub>p</sub>** should be equal to or less than **T<sub>c</sub>**.

\*Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

**Table (1.2) Package Thickness/Volume and Classification Temperature ( $T_c$ )**

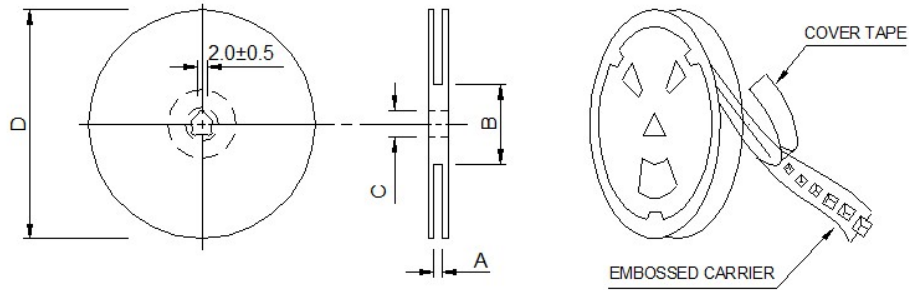
|                  | Package Thickness | Volume mm <sup>3</sup> <350 | Volume mm <sup>3</sup> 350-2000 | Volume mm <sup>3</sup> >2000 |
|------------------|-------------------|-----------------------------|---------------------------------|------------------------------|
| PB-Free Assembly | <1.6mm            | 260°C                       | 260°C                           | 260°C                        |
|                  | 1.6-2.5mm         | 260°C                       | 250°C                           | 245°C                        |
|                  | ≥2.5mm            | 250°C                       | 245°C                           | 245°C                        |

Reflow is referred to standard IPC/JEDEC J-STD-020E.

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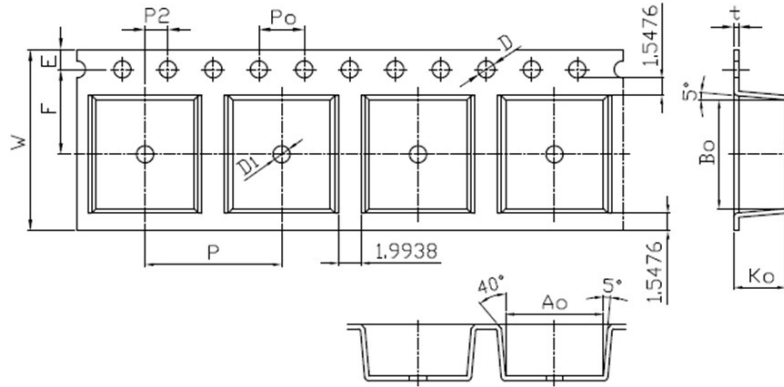
9. Packaging Information

9-1. Reel Dimension (Unit: mm)



| Type       | A(mm)    | B(mm)     | C(mm)    | D(mm) |
|------------|----------|-----------|----------|-------|
| 13" x 16mm | 16.0±0.5 | 100.0±2.0 | 13.5±0.5 | 330.0 |

9-2. Tape Dimension (Unit: mm)



| W          | P          | E         | F               | Po        | P2        |
|------------|------------|-----------|-----------------|-----------|-----------|
| 16.00±0.30 | 12.00±0.10 | 1.75±0.10 | 7.50±0.10       | 4.00±0.10 | 2.00±0.10 |
| Bo         | Ao         | Ko        | D               | D1        | t         |
| 9.60±0.10  | 8.60±0.10  | 4.60±0.10 | 1.50+0.10/-0.00 | 1.50±0.10 | 0.40±0.05 |

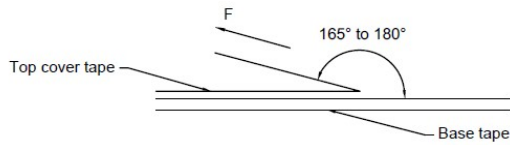
NOTE: Specifications subject to change without notice. Please check our website for latest information.



### 9-3. Packaging Quantity (Unit: Pcs)

|            |        |
|------------|--------|
| Chip/ Reel | 800    |
| Inner Box  | 1,600  |
| Carton     | 12,800 |

### 9-4. Tearing Off Force



The force for tearing off cover tape is according to the follow table, in the arrow direction under the following conditions.

(Referenced ANSI/EIA-481-D-2008 of 4.11 standard)

| Room Temp. (°C) | Room Humidity (%) | Room atm (hPa) | Tearing Speed (mm/min) |
|-----------------|-------------------|----------------|------------------------|
| 5~35            | 45~85             | 860~1060       | 300±10                 |

| Tape Size                 | 8 mm   | 12 to 56 mm | 72 mm or Wider |
|---------------------------|--------|-------------|----------------|
| Tearing Off Force (grams) | 10~100 | 10~130      | 10~150         |

## Application Notice

#### 1. Storage Conditions

To maintain the solderability of terminal electrodes:

- (a) Recommended products should be used within 12 months from the time of delivery.
- (b) The packaging material should be kept where no chlorine or sulfur exists in the air.

#### 2. Transportation

- (a) Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
- (b) Vacuum pick up is strongly recommended for individual components.
- (c) Bulk handling should ensure that abrasion and mechanical shock are minimized.

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