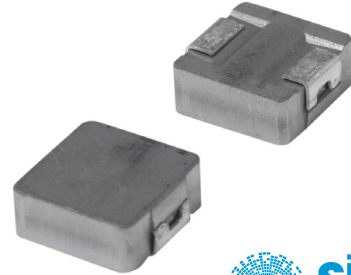


## SERIES: F1F1-0604 | DESCRIPTION: SHIELDED SMT INDUCTORS

### FEATURES

- Automotive reliability complies with AEC-Q200 grade 1
- Complies with MSL1
- High performance (I sat) realized by metal dust core
- Low loss realized with low DCR
- Operating temperature -55°C to 155°C



| MODEL          | Inductance<br>(Lo) | Tolerance | DC Resistance<br>(DCR) | Saturation Current<br>(Isat) |            | Temperature Rise Current<br>(Irms) |            |
|----------------|--------------------|-----------|------------------------|------------------------------|------------|------------------------------------|------------|
|                | [μH]               | [± %]     | max<br>[mΩ]            | min<br>[A]                   | typ<br>[A] | min<br>[A]                         | typ<br>[A] |
| F1F1-0604-2R2M | 2.20               | 20        | 14.5                   | 13.0                         | 15.0       | 9.00                               | 11.0       |
| F1F1-0604-4R7M | 4.70               | 20        | 30.8                   | 10.0                         | 11.0       | 6.50                               | 7.50       |
| F1F1-0604-100M | 10.0               | 20        | 63.0                   | 4.50                         | 5.00       | 4.00                               | 4.50       |
| F1F1-0604-150M | 15.0               | 20        | 87.0                   | 3.80                         | 4.50       | 3.60                               | 3.80       |
| F1F1-0604-220M | 22.0               | 20        | 170.0                  | 3.50                         | 4.00       | 2.70                               | 3.00       |
| F1F1-0604-330M | 33.0               | 20        | 200.0                  | 3.00                         | 3.60       | 2.60                               | 2.80       |

#### Notes:

- Referenced ambient temperature 25°C
- Test Condition: 100 kHz, 0.25 Vrms
- Saturation Current - Isat (typ): DC current (A) that will cause L0 to drop approximately 30%  
Isat (min): DC current (A) that will cause L0 to drop 30% max  
Temperature Rise Current - Irms (typ): DC current (A) that will cause an approximate ΔT of 40°C  
Irms (min): DC current (A) that will cause an approximate ΔT of 40°C max
- Operating temperature range includes self-temperature rise
- The rated current as listed is either the saturation current or the heating current depending on which value is lower.

### PART NUMBER KEY

**F1F1 - 0604 - XXX X**

Type / Product Series

**F1F1-0604** = High Performance Shielded SMD Inductors

Inductance Tolerance

**M** = ±20%

Inductance \*

**1R0** = 1.0 μH

\* Note: Inductance expressed by three figures. The unit is micro henry (μH). The first and second figures are significant digits, the third figure expresses the number of zeros which follow the two figures. If there is a decimal point, it is expressed by the capital letter "R" (3R8 = 3.8 μH). In that case, all figures are significant digits.

SAFETY AND COMPLIANCE

| Parameter        | Compliant                                               |
|------------------|---------------------------------------------------------|
| Safety approvals | Automotive reliability is qualified to AEC-Q200 grade 1 |
| RoHS             | Compliance with ROHS and Halogen Free                   |

ENVIROMENTAL

| Parameter             | Conditions                            | Min | Typ | Max | Units |
|-----------------------|---------------------------------------|-----|-----|-----|-------|
| Operating temperature | Including coils self-temeprature rise | -55 |     | 155 | °C    |

MECHANICAL

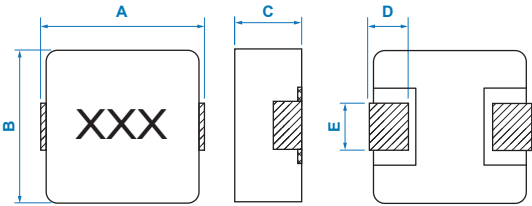
| Parameter     | Conditions             | Min | Typ | Max | Units |
|---------------|------------------------|-----|-----|-----|-------|
| Core material | Metal Powder           |     |     |     |       |
| Base material | Cu + Ni + Sn plating   |     |     |     |       |
| Wire material | Copper wire, EIW Class |     |     |     |       |
| Dimensions    | 7.10 x 6.60 x 3.80     |     |     |     | mm    |

MECHANICAL DIMENSIONS (mm)

| Product Series | A           | B           | C           | D           | E          | G    | H    | L    |
|----------------|-------------|-------------|-------------|-------------|------------|------|------|------|
| F1F1-0604      | 7.10 ± 0.20 | 6.60 ± 0.20 | 3.80 ± 0.20 | 1.60 ± 0.30 | 3.0 ± 0.50 | 3.70 | 3.50 | 8.00 |

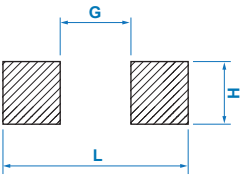
MECHANICAL DRAWING

Units: mm

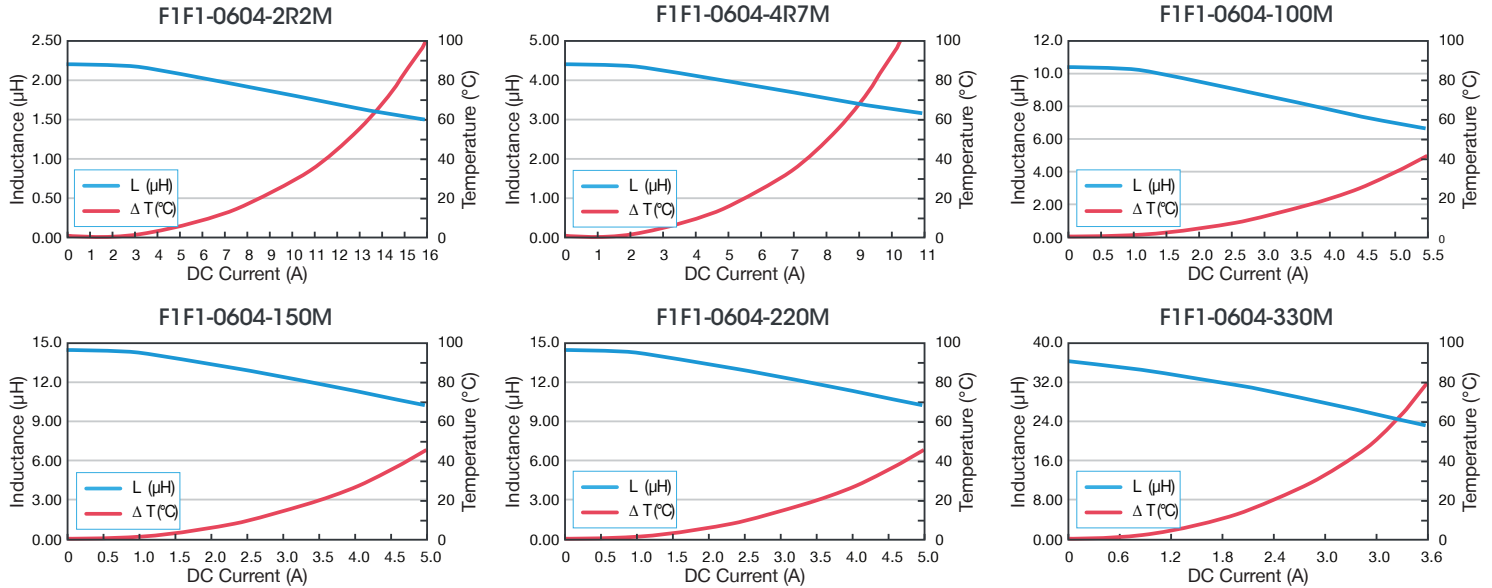


PAD LAYOUT

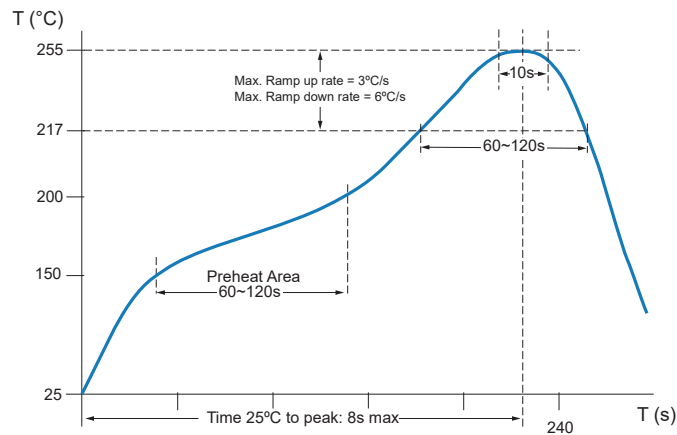
Units: mm



## PERFORMANCE CURVES



## REFLOW SOLDERING TEMPERATURE CURVE

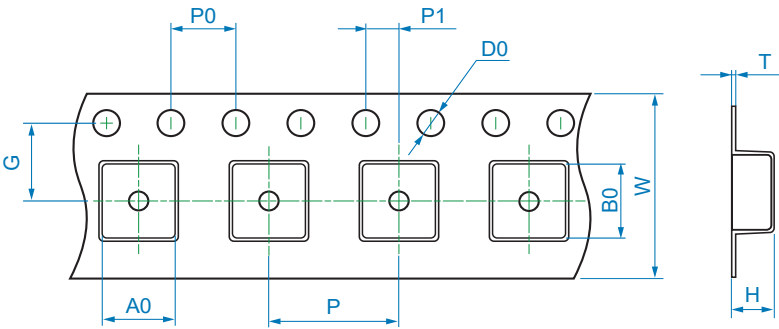


The recommended reflow conditions are set according to the soldering equipment used.

Since various manufactures may have different reflow soldering equipment, products, process conditions, set methods, etc., when setting the reflow conditions, please adjust and confirm according to users' environment/equipment.

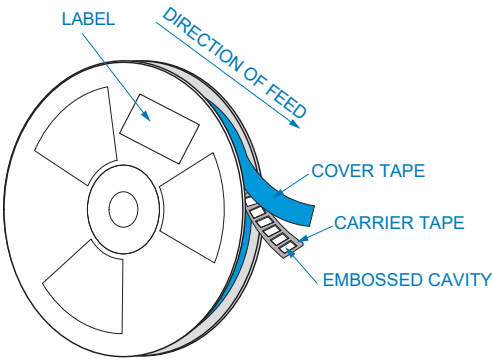
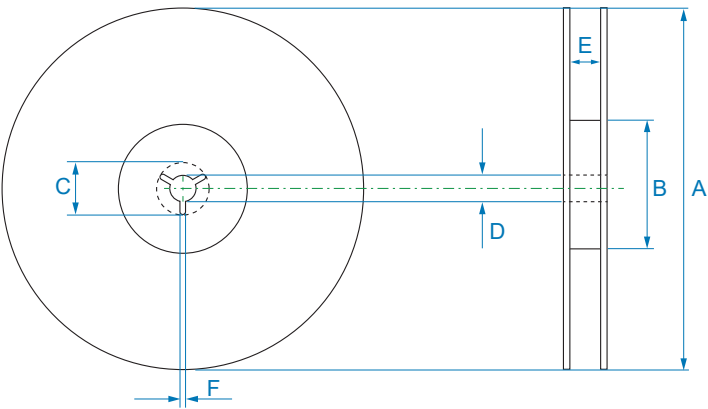
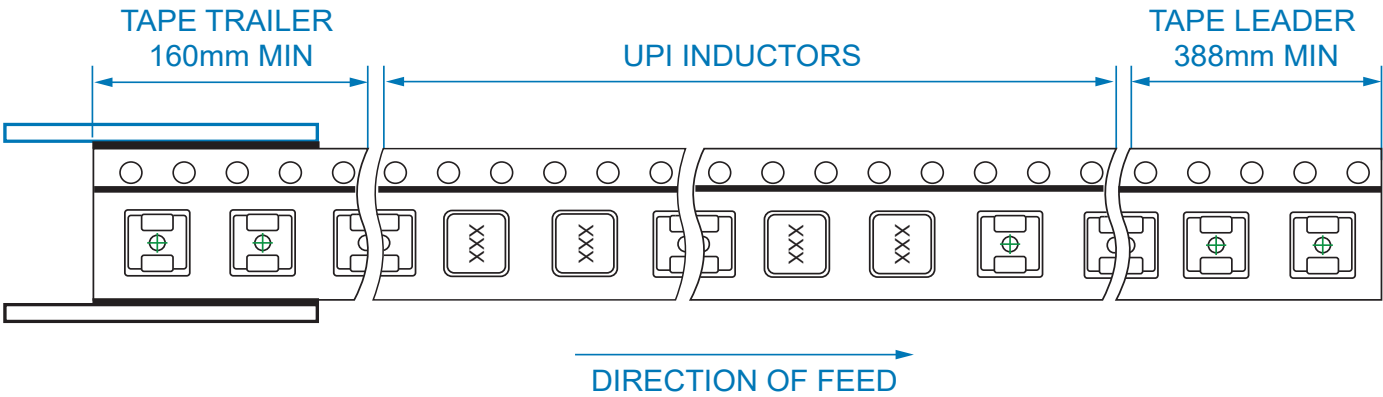
QUANTITY PER REEL & PACKING INFORMATION

Units: mm



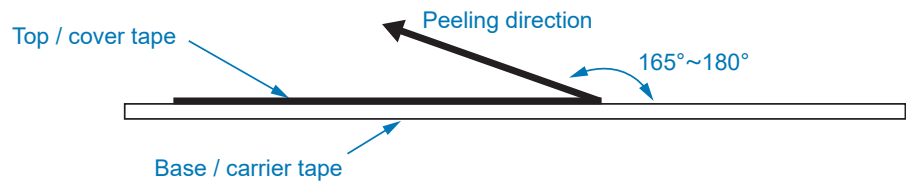
TAPE DIMENSIONS (mm)

| Product Series | G         | W        | P        | P0      | P1      | D0            | T           | A0        | B0        | H         |
|----------------|-----------|----------|----------|---------|---------|---------------|-------------|-----------|-----------|-----------|
| F1F1-0604      | 7.5 ± 0.1 | 16 ± 0.3 | 12 ± 0.1 | 4 ± 0.1 | 2 ± 0.1 | 1.5 +0.1/-0.0 | 0.40 ± 0.05 | 7.2 ± 0.1 | 7.2 ± 0.1 | 4.8 ± 0.1 |



REEL DIMENSIONS (mm)

| Product Series | A         | B         | C        | D              | E              | F         |
|----------------|-----------|-----------|----------|----------------|----------------|-----------|
| F1F1-0604      | 330 ± 1.0 | 100 ± 0.5 | 20.2 min | 13.0 +0.5/-0.2 | 16.4 +2.0/-0.0 | 2.5 ± 0.5 |

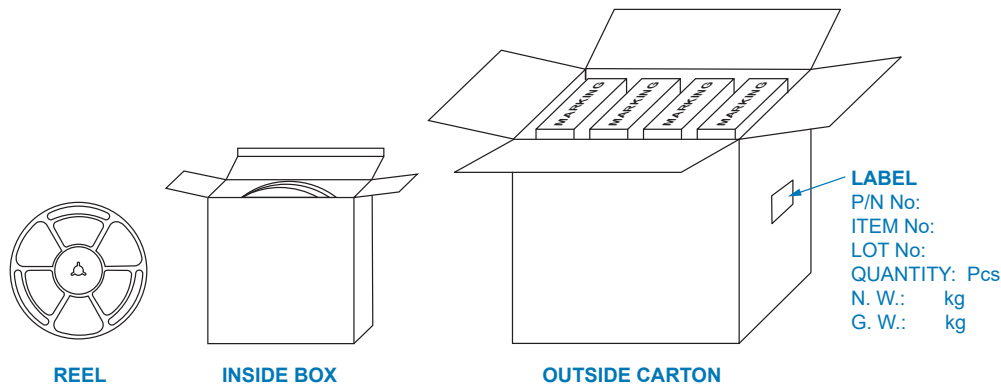


**Peel-off Force**

The peel-off speed shall be about 300 mm/min.  
The peel-off force of top cover tape shall be between 10g to 120g.  
Ensure no damage is done to the base/carrier tape when removing the top/cover tape.

**QUANTITY PER PACKAGE**

| Product Series | Pcs per Reel | Pcs per Inside Box | Pcs per Outside Carton |
|----------------|--------------|--------------------|------------------------|
| F1F1-0604      | 1000         | 2000               | 8000                   |



**Storage Conditions**

- a) Temperature conditions: <35°C.
- b) Humidity conditions between 35% - 65%.
- c) Storage of material to be in a sulfur and chlorine free environment.

REVISION HISTORY

| Rev. | Description     | Date             |
|------|-----------------|------------------|
| 1    | initial release | November/29/2024 |

**NUCLEAR AND MEDICAL APPLICATIONS** - Products are not designed or intended for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems.

**TECHNICAL REVISIONS** - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.



**Bel Fuse Inc.**  
300 Executive Drive, Suite 300  
West Orange, NJ 07052  
United States  
© 2024 Bel Fuse Inc.

Toll Free 866-239-5777  
Tel 516-239-5777 | Fax 516-239-7208  
sales@signaltransformer.com  
techhelp@signaltransformer.com  
[belfuse.com](http://belfuse.com)