

## SERIES: F1C2-0606 | DESCRIPTION: HIGH POWER SHIELDED SMD INDUCTORS

### FEATURES

- Magnetically shielded construction
- Unique metal dust core providing improved Isat
- Low DCR resulting in lower power losses

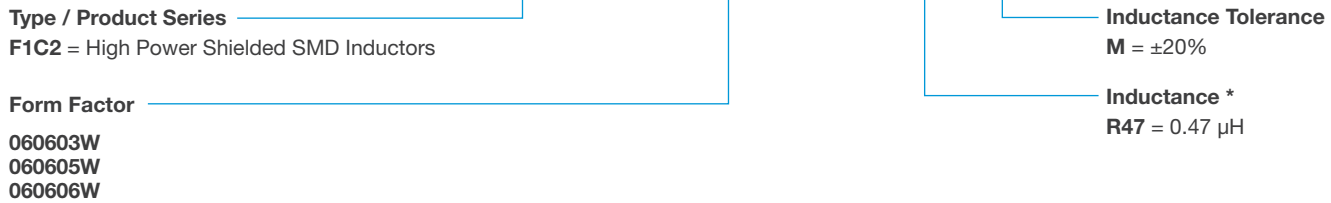


| MODEL             | Inductance<br>(L0)<br>[μH] | Tolerance<br>[± %] | DC Resistance<br>(DCR) |            | Saturation Current<br>(Isat) |            | Temperature Rise Current<br>(Irms) |      | E<br>[± 0.3 mm] |
|-------------------|----------------------------|--------------------|------------------------|------------|------------------------------|------------|------------------------------------|------|-----------------|
|                   |                            |                    | max<br>[mΩ]            | typ<br>[A] | max<br>[A]                   | typ<br>[A] |                                    |      |                 |
| F1C2-060603W-R18M | 0.18                       | 20                 | 1.75                   | 40.0       | 36.0                         | 24.0       | 32.0                               | 5.30 |                 |
| F1C2-060603W-R33M | 0.33                       | 20                 | 2.50                   | 32.0       | 28.0                         | 20.0       | 25.0                               | 5.55 |                 |
| F1C2-060603W-R56M | 0.56                       | 20                 | 3.31                   | 29.0       | 25.0                         | 17.0       | 22.0                               | 5.30 |                 |
| F1C2-060603W-R68M | 0.68                       | 20                 | 5.17                   | 25.0       | 21.0                         | 15.0       | 20.0                               | 5.30 |                 |
| F1C2-060603W-1R0M | 1.00                       | 20                 | 6.05                   | 22.0       | 18.0                         | 13.0       | 18.0                               | 5.20 |                 |
| F1C2-060603W-1R2M | 1.20                       | 20                 | 7.40                   | 21.0       | 16.0                         | 12.0       | 16.0                               | 5.15 |                 |
| F1C2-060603W-1R5M | 1.50                       | 20                 | 9.13                   | 17.5       | 13.5                         | 11.0       | 15.0                               | 5.15 |                 |
| F1C2-060603W-1R8M | 1.80                       | 20                 | 10.2                   | 16.0       | 13.0                         | 10.0       | 14.0                               | 5.10 |                 |
| F1C2-060603W-2R2M | 2.20                       | 20                 | 12.2                   | 15.9       | 11.0                         | 7.00       | 10.0                               | 5.05 |                 |
| F1C2-060603W-3R3M | 3.30                       | 20                 | 20.8                   | 12.2       | 9.00                         | 6.00       | 8.00                               | 5.00 |                 |
| F1C2-060603W-4R5M | 4.50                       | 20                 | 25.3                   | 10.0       | 8.00                         | 5.00       | 7.00                               | 5.00 |                 |
| F1C2-060605W-R82M | 0.82                       | 20                 | 4.18                   | 23.0       | 18.0                         | 16.0       | 21.0                               | 5.30 |                 |
| F1C2-060605W-1R0M | 1.00                       | 20                 | 4.52                   | 23.0       | 18.0                         | 15.0       | 20.0                               | 5.30 |                 |
| F1C2-060605W-1R2M | 1.20                       | 20                 | 5.83                   | 20.5       | 16.0                         | 14.0       | 18.0                               | 5.30 |                 |
| F1C2-060605W-1R5M | 1.50                       | 20                 | 6.30                   | 19.5       | 14.5                         | 13.0       | 17.0                               | 5.30 |                 |
| F1C2-060605W-1R8M | 1.80                       | 20                 | 7.10                   | 17.5       | 13.5                         | 12.0       | 16.0                               | 5.30 |                 |
| F1C2-060605W-2R2M | 2.20                       | 20                 | 8.50                   | 14.5       | 12.0                         | 10.0       | 13.0                               | 5.20 |                 |
| F1C2-060605W-3R3M | 3.30                       | 20                 | 12.5                   | 12.5       | 10.0                         | 8.5        | 11.0                               | 5.20 |                 |
| F1C2-060605W-4R3M | 4.30                       | 20                 | 16.2                   | 11.0       | 8.5                          | 7.0        | 9.0                                | 5.20 |                 |
| F1C2-060605W-4R7M | 4.70                       | 20                 | 18.4                   | 10.5       | 8.0                          | 6.5        | 8.5                                | 5.20 |                 |
| F1C2-060606W-1R0M | 1.0                        | 20                 | 4.4                    | 24.0       | 19.0                         | 16.0       | 21.0                               | 5.30 |                 |
| F1C2-060606W-1R5M | 1.5                        | 20                 | 6.1                    | 20.0       | 15.0                         | 13.5       | 17.5                               | 5.30 |                 |
| F1C2-060606W-2R2M | 2.2                        | 20                 | 8.1                    | 15.5       | 12.5                         | 11.0       | 14.0                               | 5.30 |                 |
| F1C2-060606W-3R3M | 3.3                        | 20                 | 12.3                   | 13.0       | 11.0                         | 9.0        | 12.0                               | 5.30 |                 |
| F1C2-060606W-4R7M | 4.7                        | 20                 | 14.4                   | 10.5       | 9.3                          | 8.5        | 11.0                               | 5.30 |                 |
| F1C2-060606W-5R6M | 5.6                        | 20                 | 15.9                   | 9.9        | 8.7                          | 7.6        | 10.0                               | 5.30 |                 |
| F1C2-060606W-6R8M | 6.8                        | 20                 | 20.8                   | 9.2        | 8.1                          | 7.0        | 9.0                                | 5.30 |                 |
| F1C2-060606W-8R2M | 8.2                        | 20                 | 26.4                   | 8.4        | 8.0                          | 6.0        | 8.0                                | 5.30 |                 |
| F1C2-060606W-100M | 10.0                       | 20                 | 29.82                  | 7.6        | 6.8                          | 5.0        | 7.0                                | 5.30 |                 |
| F1C2-060606W-150M | 15.0                       | 20                 | 43.75                  | 5.8        | 5.0                          | 4.5        | 6.0                                | 5.30 |                 |
| F1C2-060606W-220M | 22.0                       | 20                 | 60.63                  | 5.6        | 4.8                          | 3.8        | 5.0                                | 5.30 |                 |

- Notes:
1. Referenced ambient temperature 25°C
  2. Test Condition: 100 kHz, 0.1 Vrms
  3. Saturation Current - Isat: DC current (A) that will cause L0 to drop approximately 30%  
Temperature Rise Current - Irms: DC current (A) that will cause an approximate ΔT of 40°C
  4. Operating temperature range includes self-temperature rise
  5. Operating Temperature: -55°C to 125°C
  6. The products' temperature (ambient + temp rise) should not exceed 125 °C under the worst case operating condition.  
Circuit design, component, PCB trace size and thickness, airflow and other cooling provisions all could affect the operating temperature, which should be verified in the end application.

## PART NUMBER KEY

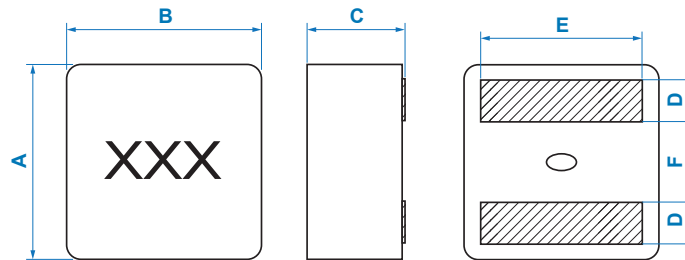
**F1C2 - 060603W - XXX X**



\* 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.

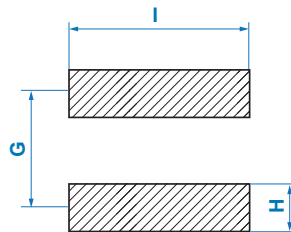
## MECHANICAL DRAWING

Units: mm



## PAD LAYOUT

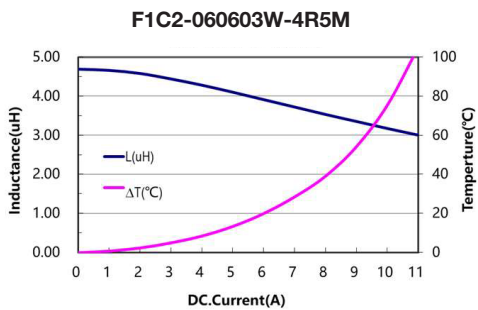
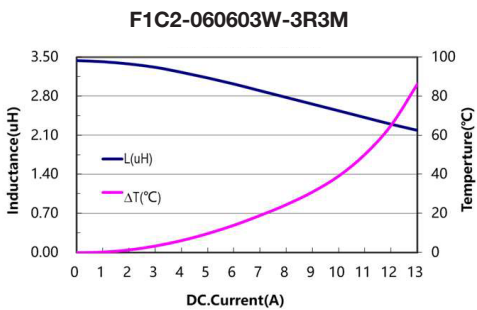
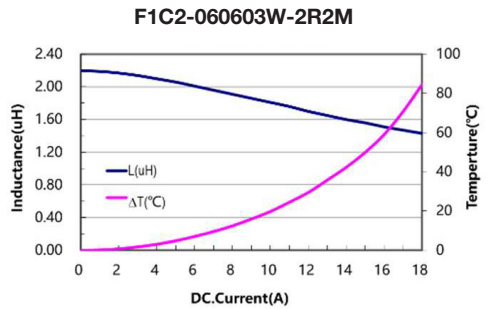
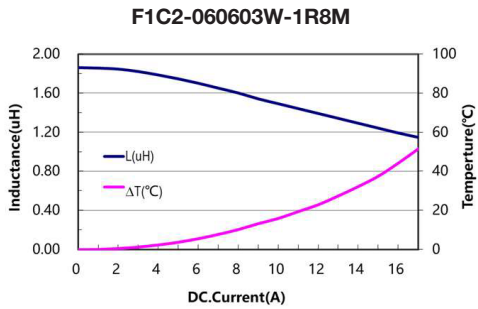
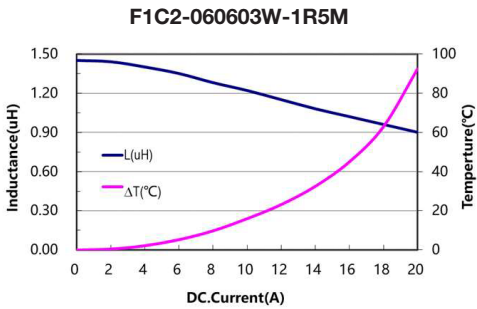
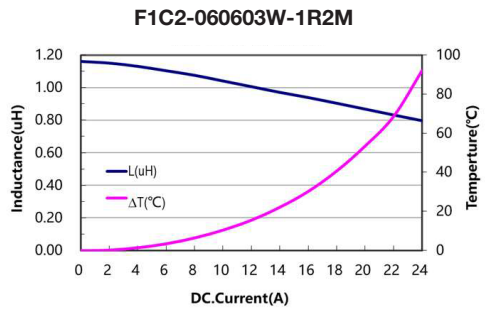
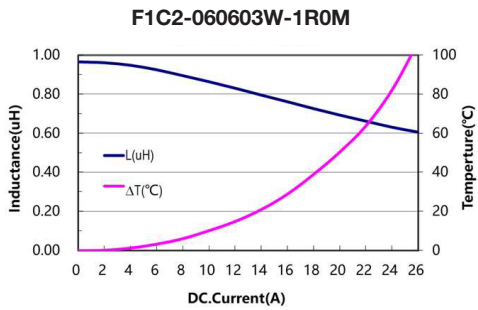
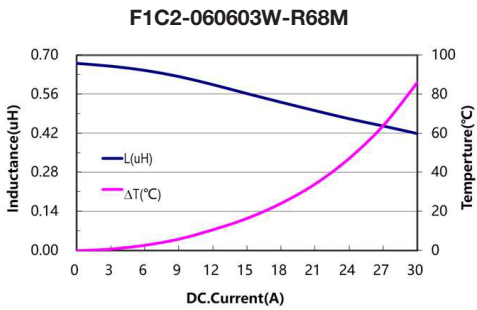
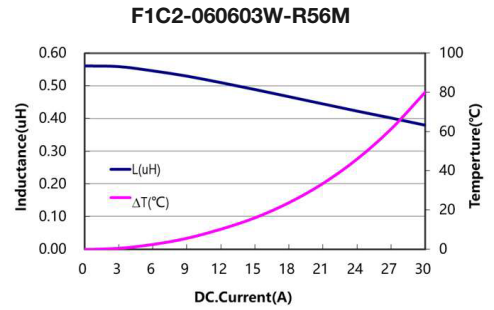
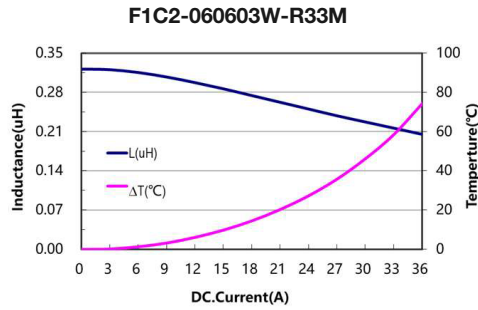
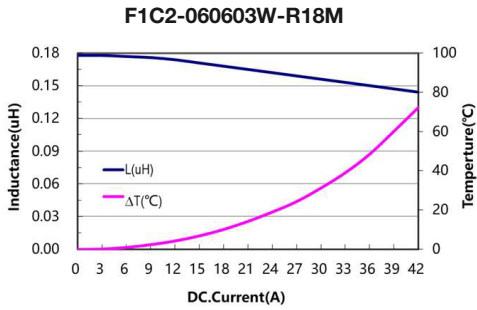
Units: mm



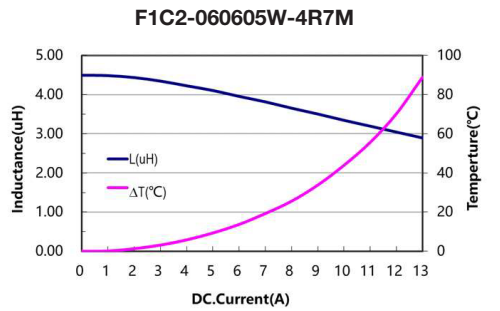
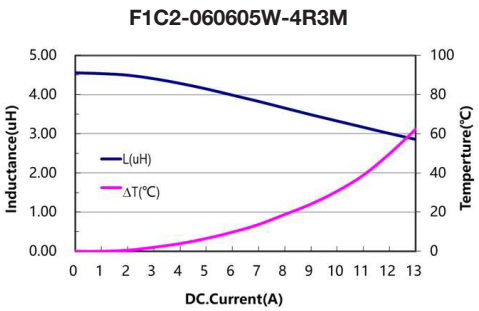
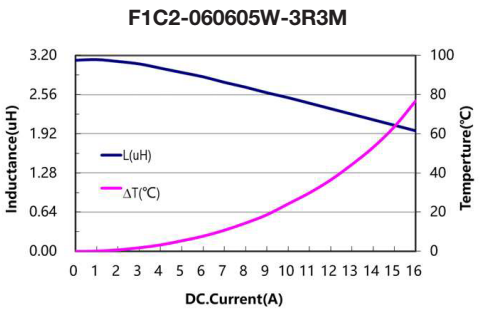
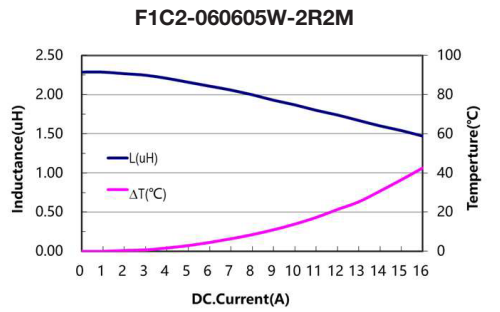
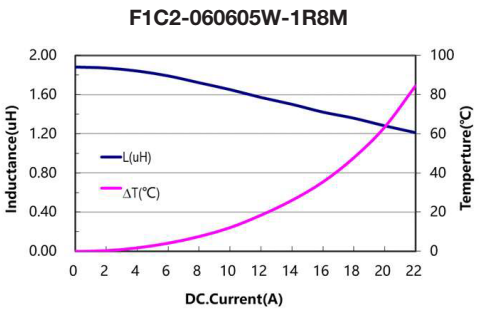
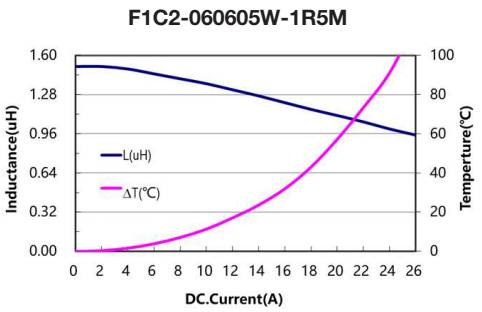
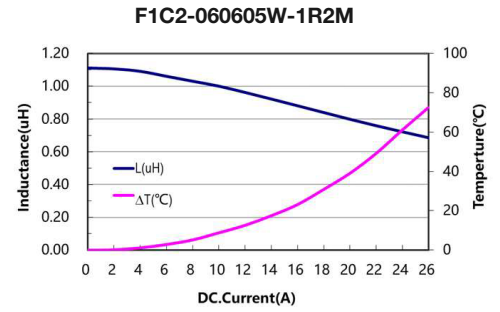
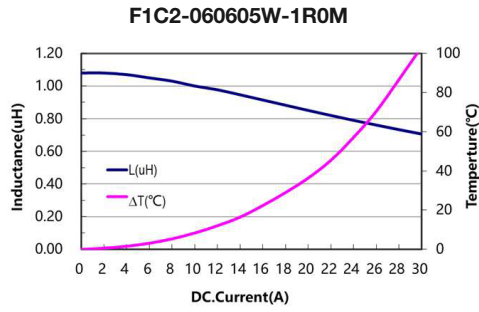
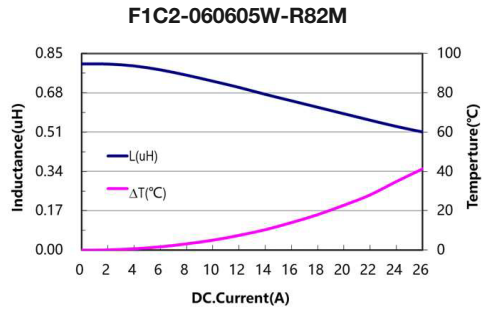
### MECHANICAL DIMENSIONS (mm)

| Product Series | A          | B          | C        | D          | E          | F          | G    | H    | I    |
|----------------|------------|------------|----------|------------|------------|------------|------|------|------|
| F1C2-060603W   | 6.40 ± 0.2 | 6.60 ± 0.2 | 3.10 max | 1.40 ± 0.3 | See table  | 2.60 ± 0.3 | 4.05 | 1.55 | 5.60 |
| F1C2-060605W   | 6.40 ± 0.2 | 6.60 ± 0.2 | 5.00 max | 1.40 ± 0.3 | See table  | 2.60 ± 0.3 | 4.05 | 1.55 | 5.60 |
| F1C2-060606W   | 6.40 ± 0.2 | 6.60 ± 0.2 | 6.00 max | 1.40 ± 0.3 | 5.30 ± 0.3 | 2.60 ± 0.3 | 4.05 | 1.55 | 5.60 |

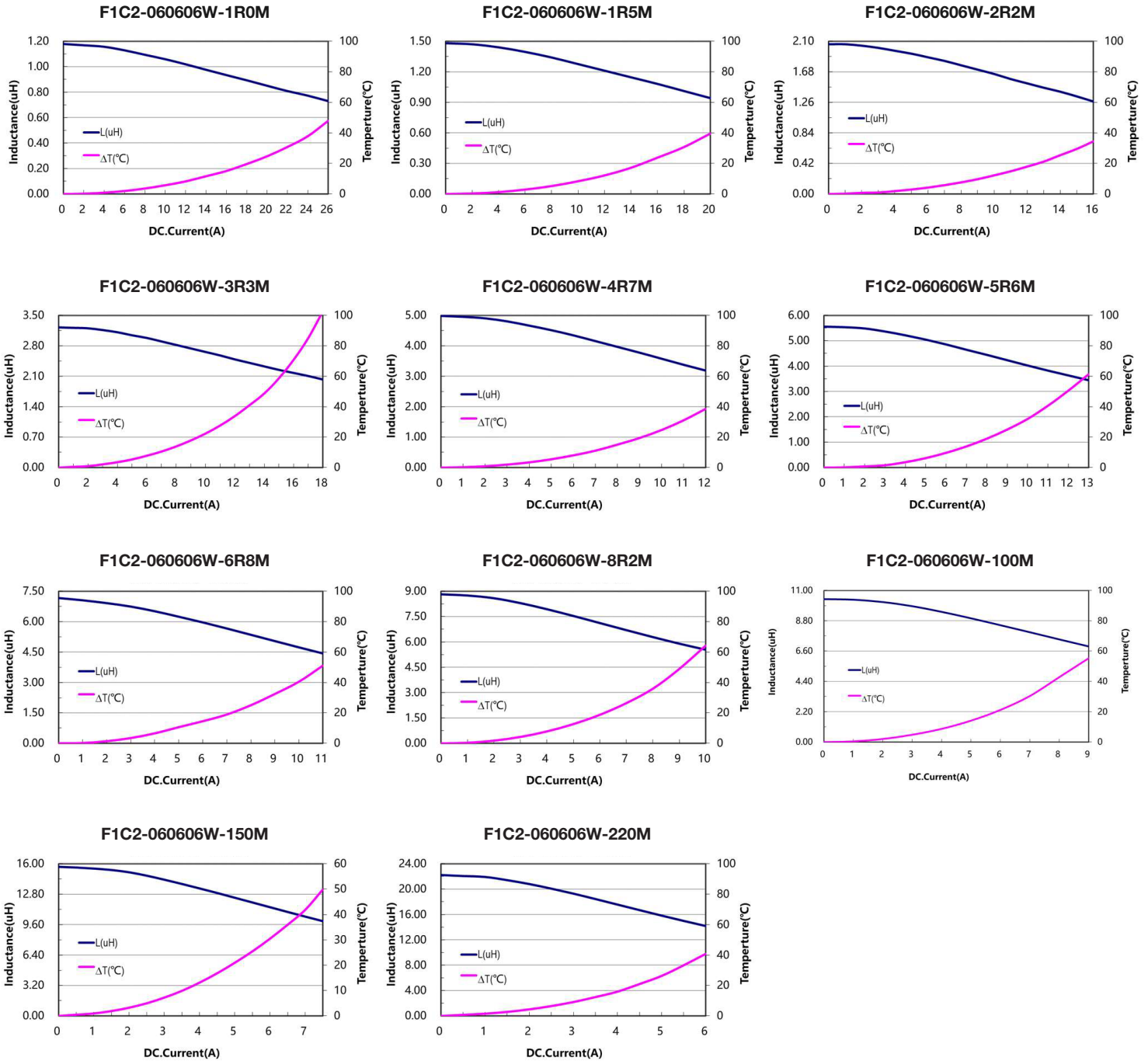
## PERFORMANCE CURVES



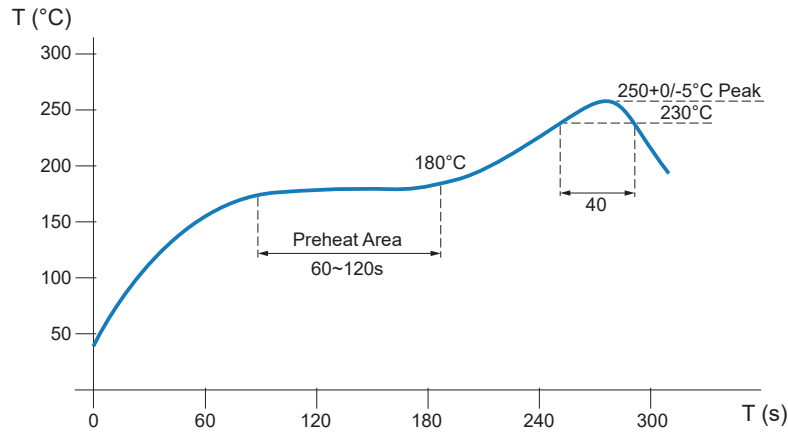
## PERFORMANCE CURVES



## PERFORMANCE CURVES



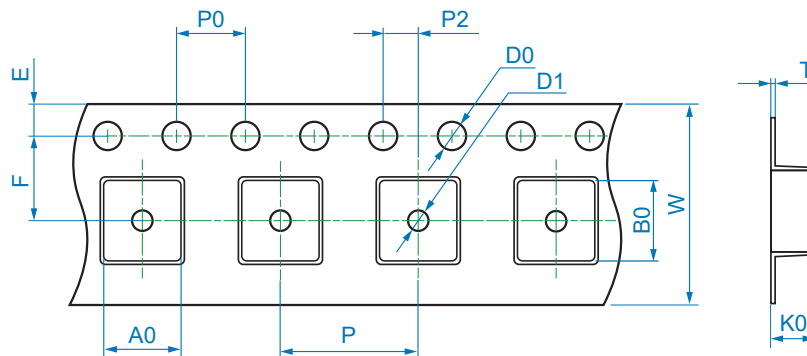
## REFLOW SOLDERING TEMPERATURE CURVE



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 contions, please adjust and confirm according to users' environment/equipment.

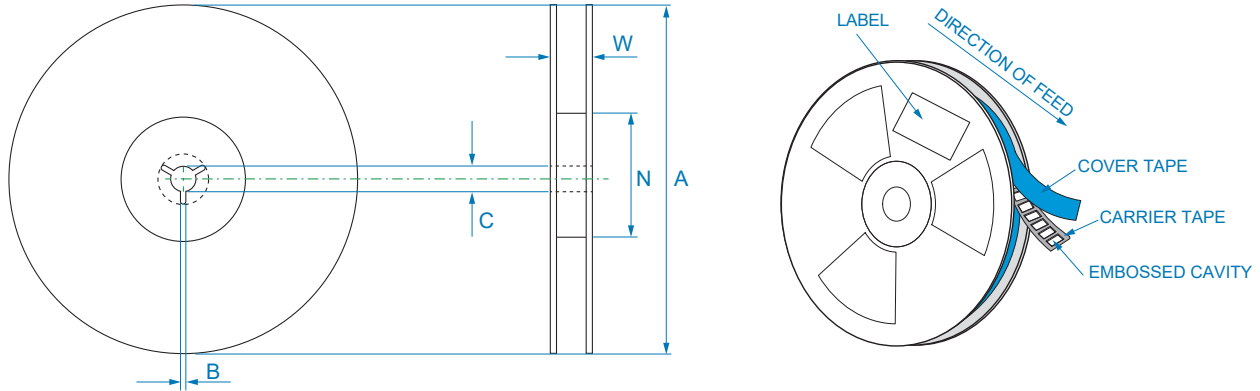
## QUANTITY PER REEL & PACKING INFORMATION

Units: mm



### TAPE DIMENSIONS (mm)

| Product Series | W            | P            | P0          | P2          | D0            | D1            | T               | A0            | B0            | K0            | E              | F             |
|----------------|--------------|--------------|-------------|-------------|---------------|---------------|-----------------|---------------|---------------|---------------|----------------|---------------|
| F1C2-060603W   | $16 \pm 0.3$ | $12 \pm 0.1$ | $4 \pm 0.1$ | $2 \pm 0.1$ | $1.5 \pm 0.1$ | $1.5 \pm 0.1$ | $0.35 \pm 0.05$ | $7.0 \pm 0.1$ | $6.8 \pm 0.1$ | $3.3 \pm 0.1$ | $1.75 \pm 0.1$ | $7.5 \pm 0.1$ |
| F1C2-060605W   | $16 \pm 0.3$ | $12 \pm 0.1$ | $4 \pm 0.1$ | $2 \pm 0.1$ | $1.5 \pm 0.1$ | $1.5 \pm 0.1$ | $0.35 \pm 0.05$ | $7.0 \pm 0.1$ | $6.8 \pm 0.1$ | $5.3 \pm 0.1$ | $1.75 \pm 0.1$ | $7.5 \pm 0.1$ |
| F1C2-060606W   | $16 \pm 0.3$ | $12 \pm 0.1$ | $4 \pm 0.1$ | $2 \pm 0.1$ | $1.5 \pm 0.1$ | $1.5 \pm 0.1$ | $0.35 \pm 0.05$ | $7.0 \pm 0.1$ | $6.8 \pm 0.1$ | $6.3 \pm 0.1$ | $1.75 \pm 0.1$ | $7.5 \pm 0.1$ |

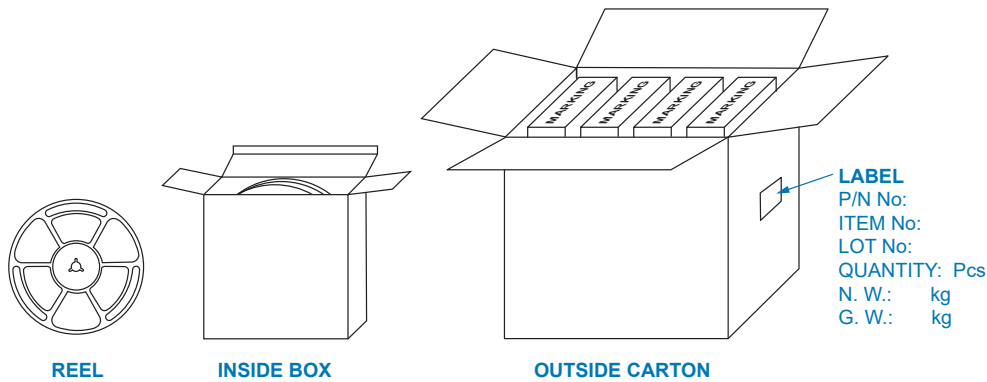
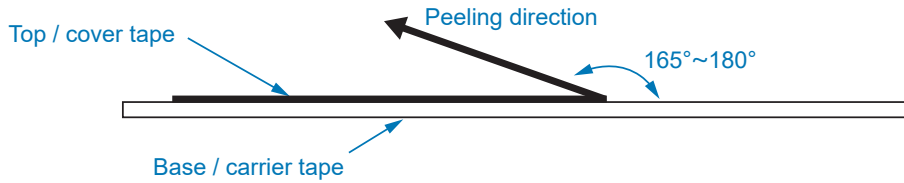


**REEL DIMENSIONS (mm)**

| Product Series | A         | W          | N        | B         | C          |
|----------------|-----------|------------|----------|-----------|------------|
| F1C2-060603W   | 330 ± 2.0 | 16.8 ± 0.2 | 97 ± 0.5 | 2.2 ± 0.5 | 13.2 ± 0.2 |
| F1C2-060605W   | 330 ± 2.0 | 16.8 ± 0.2 | 97 ± 0.5 | 2.2 ± 0.5 | 13.2 ± 0.2 |
| F1C2-060606W   | 330 ± 2.0 | 16.8 ± 0.2 | 97 ± 0.5 | 2.2 ± 0.5 | 13.2 ± 0.2 |

**Peel-off Force**

The peel-off speed shall be about 300 mm/min.  
 The peel-off force of top cover tape shall be between 0.1 to 1.3 N



**QUANTITY PER PACKAGE**

| Product Series | Pcs per Reel | Pcs per Inside Box | Pcs per Outside Carton |
|----------------|--------------|--------------------|------------------------|
| F1C2-060603W   | 1000         | 3000               | 12000                  |
| F1C2-060605W   | 800          | 2400               | 9600                   |
| F1C2-060606W   | 750          | 2250               | 9000                   |

**Storage Conditions**

- a) Temperature conditions: <35°C.
- b) Humidity conditions between 35% - 65%.
- c) Moisture Sensitivity Level (MSL): Level 1.
- d) Storage of material to be in a sulfur and chlorine free environment.

## REVISION HISTORY

---

| Rev. | Description     | Date        |
|------|-----------------|-------------|
| 1    | initial release | May/24/2024 |
| A    |                 |             |

---

**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)