

## SERIES: F2D3-1056 | DESCRIPTION: HIGH CURRENT POWER INDUCTORS

### FEATURES

- Composite core
- Moisture Sensitivity: Level (MSL) 1
- Magnetic shielded structure: excellent resistance to electro magnetic interference (EMI)
- Operating temperature -40°C to 125°C



| MODEL          | Inductance<br>(Lo) | Tolerance    | DC Resistance<br>(DCR) | Saturation Current<br>(Isat) | Temperature Rise Current<br>(Irms) |
|----------------|--------------------|--------------|------------------------|------------------------------|------------------------------------|
|                | typ<br>[μH]        | typ<br>[± %] | max<br>[mΩ]            | typ<br>[A]                   | typ<br>[A]                         |
| F2D3-1056-1R3M | 1.30               | 20           | 2.50                   | 19.0                         | 15.0                               |
| F2D3-1056-2R0M | 2.00               | 20           | 3.35                   | 15.0                         | 13.0                               |
| F2D3-1056-2R7M | 2.70               | 20           | 4.75                   | 13.0                         | 11.0                               |
| F2D3-1056-3R5M | 3.50               | 20           | 6.45                   | 11.0                         | 9.50                               |
| F2D3-1056-4R7M | 4.70               | 20           | 7.88                   | 9.50                         | 8.50                               |
| F2D3-1056-5R6M | 5.60               | 20           | 10.7                   | 9.00                         | 8.00                               |
| F2D3-1056-6R8M | 6.80               | 20           | 13.5                   | 8.00                         | 7.50                               |
| F2D3-1056-8R2M | 8.20               | 20           | 15.5                   | 6.80                         | 6.20                               |
| F2D3-1056-100M | 10.0               | 20           | 19.0                   | 6.00                         | 5.80                               |

#### 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 20%  
Temperature Rise Current - Irms: DC current (A) that will cause an approximate ΔT of 40°C
4. Operating temperature range includes self-temperature rise

### PART NUMBER KEY

**F2D3 - 1056 - XXX X**

Type / Product Series

F2D2-1056 = High Current Power 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                                              |
|-----------|--------------------------------------------------------|
| RoHS      | Compliance with ROHS, Reach compliant and Halogen Free |

ENVIROMENTAL

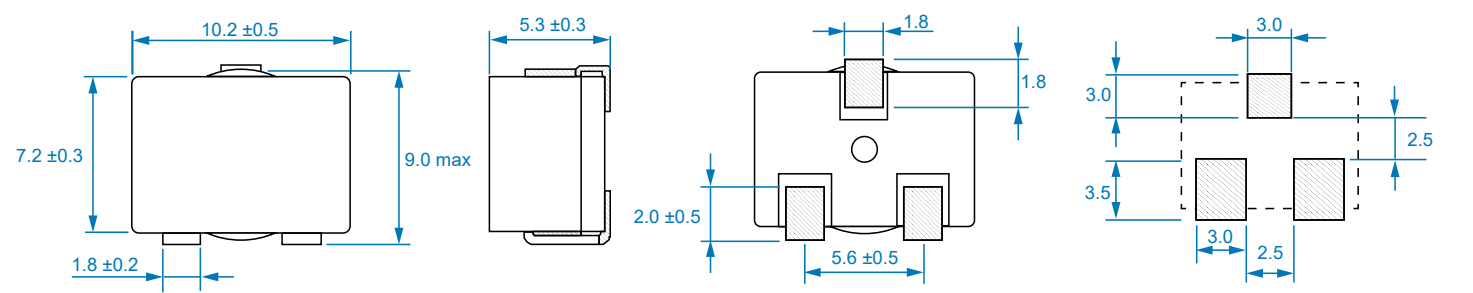
| Parameter             | Conditions                            | Min | Typ | Max | Units |
|-----------------------|---------------------------------------|-----|-----|-----|-------|
| Operating temperature | Including coils self-temeprature rise | -40 |     | 125 | °C    |
| Storage temperature   |                                       | -40 |     | 125 | °C    |

MECHANICAL

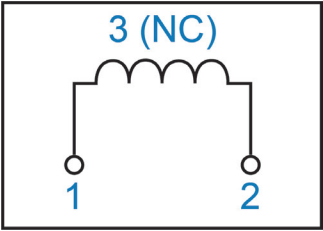
| Parameter     | Conditions       | Min | Typ | Max | Units |
|---------------|------------------|-----|-----|-----|-------|
| Core material | Composite        |     |     |     |       |
| Dimensions    | 10.2 x 9.0 x 5.3 |     |     |     | mm    |
| Weight        | 1.61             |     |     |     | g     |

MECHANICAL DRAWING

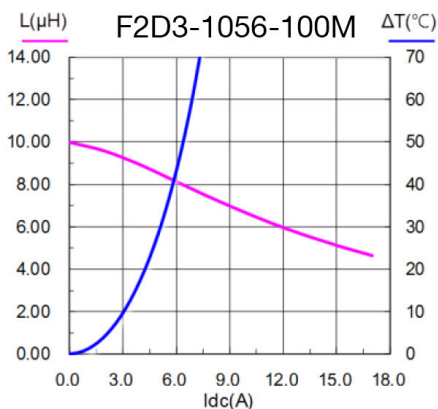
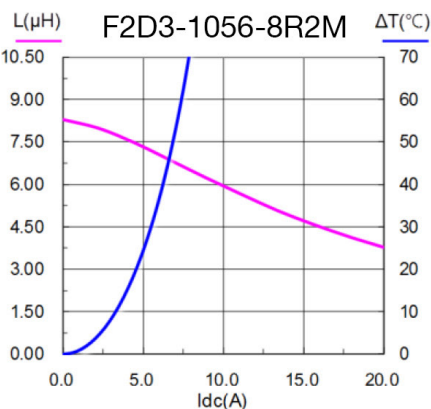
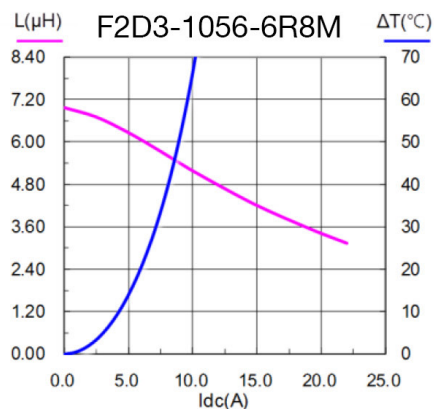
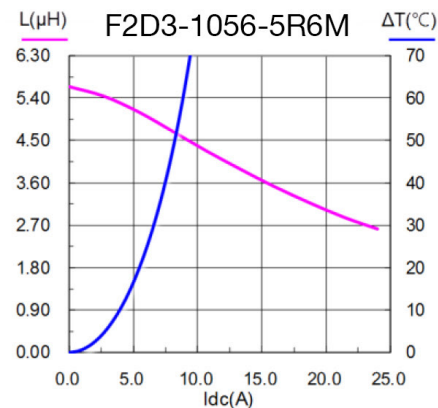
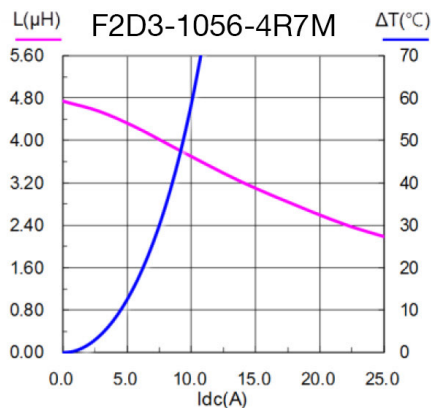
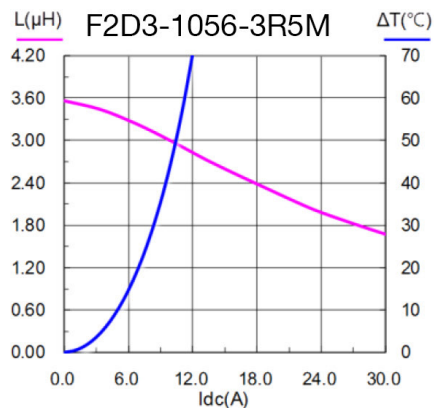
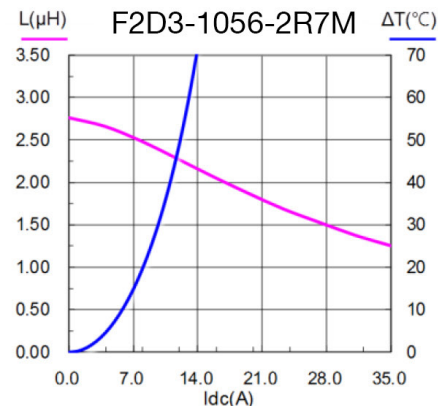
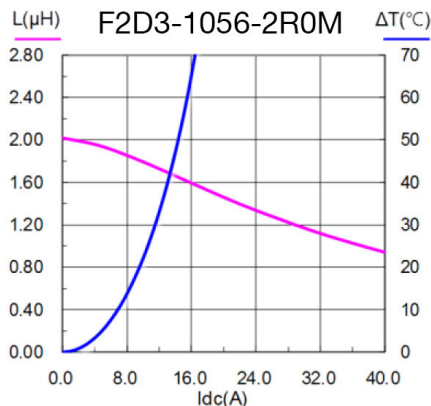
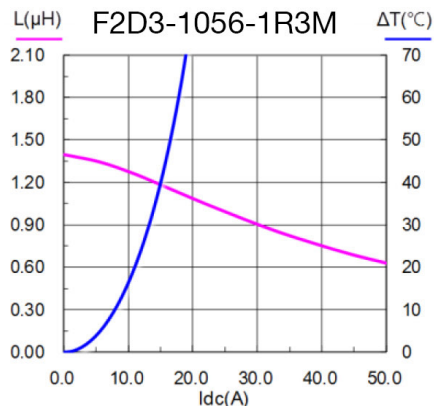
Units: mm



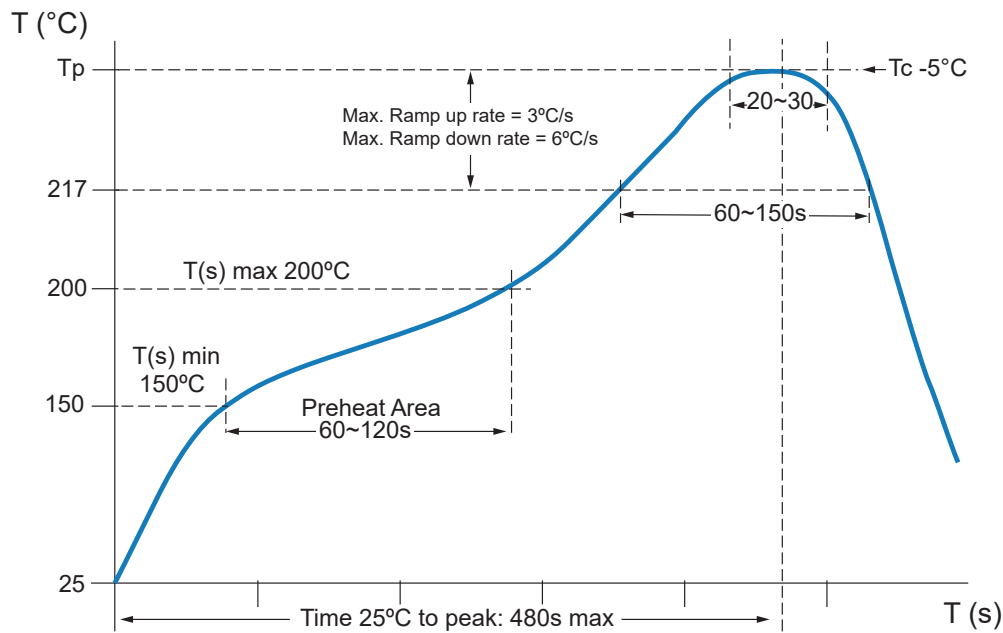
ELECTRICAL DIAGRAM



## PERFORMANCE CURVES



REFLOW SOLDERING TEMPERATURE CURVE

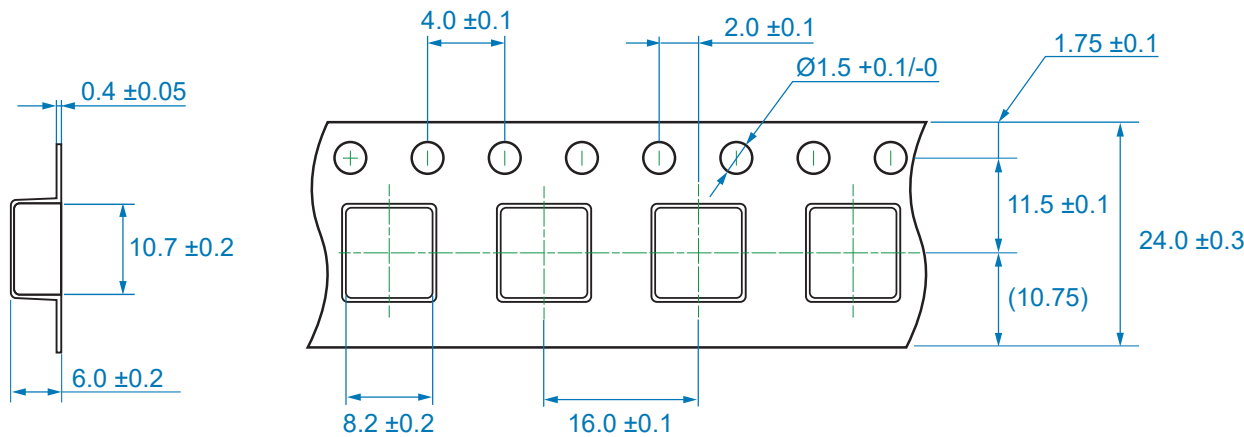


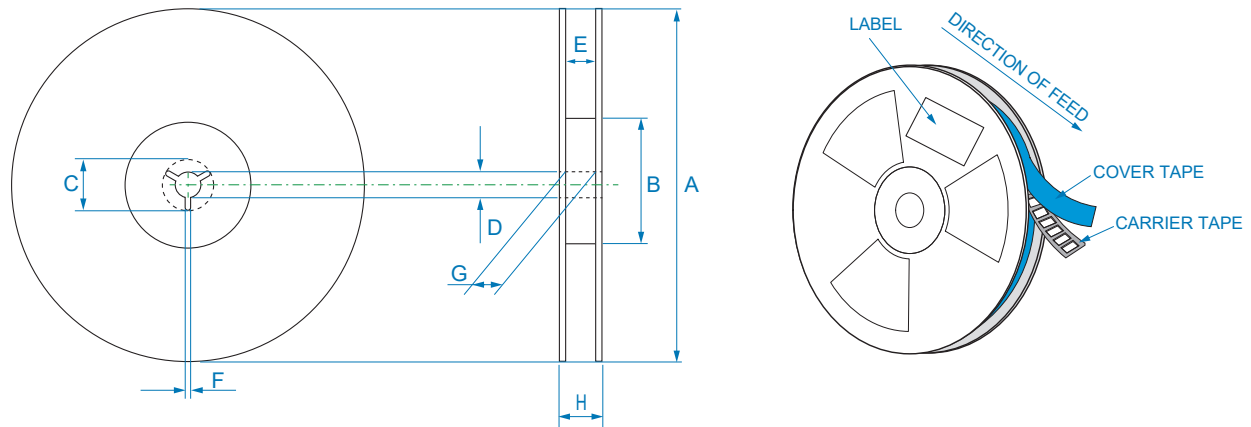
CLASSIFICATION OF PEAK PACKAGE BODY TEMPERATURE

|                  | Package Thickness         | Package Volume        |                              |                       |
|------------------|---------------------------|-----------------------|------------------------------|-----------------------|
|                  |                           | $< 350 \text{ mm}^3$  | $350 \sim 2000 \text{ mm}^3$ | $> 2000 \text{ mm}^3$ |
| PB-Free Assembly | $< 1.6 \text{ mm}$        | $260^{\circ}\text{C}$ | $260^{\circ}\text{C}$        | $260^{\circ}\text{C}$ |
|                  | $1.6 \sim 2.5 \text{ mm}$ | $260^{\circ}\text{C}$ | $250^{\circ}\text{C}$        | $245^{\circ}\text{C}$ |
|                  | $\geq 2.5 \text{ mm}$     | $250^{\circ}\text{C}$ | $245^{\circ}\text{C}$        | $245^{\circ}\text{C}$ |

QUANTITY PER REEL & PACKING INFORMATION

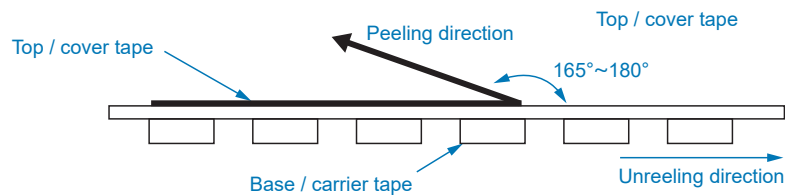
Units: mm





## REEL DIMENSIONS (mm)

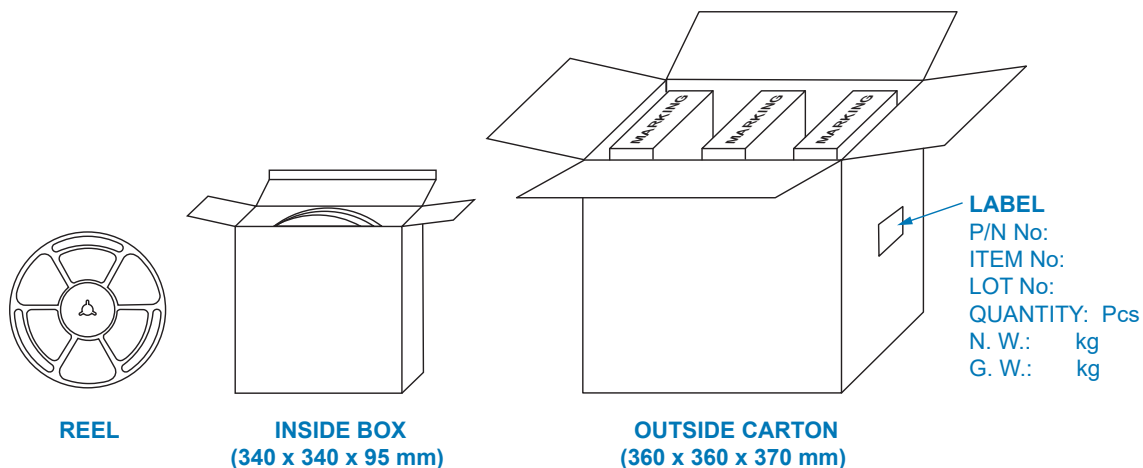
| Product Series | A         | B       | C          | D          | E         | F         | G            | H         |
|----------------|-----------|---------|------------|------------|-----------|-----------|--------------|-----------|
| F2D3-1056      | 330 ± 2.0 | 100 min | 21.0 ± 0.8 | 13.0 ± 0.5 | 23.90 min | 2.0 ± 0.5 | 24.4 +2.0/-0 | 30.40 max |



### Peel-off Force

The peel-off speed shall be about 300 ± 10 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 |
|----------------|--------------|--------------------|------------------------|
| F2D3-1056      | 500          | 1000               | 3000                   |

### Storage Conditions

- Product in packing storage condition: temperature 5 ~ 40 °C, RH ≤ 70 %.
- Avoid storing in environments prone to high temperatures, excessive humidity, dust, or corrosion.

REVISION HISTORY

| Rev. | Description     | Date             |
|------|-----------------|------------------|
| 1    | initial release | November/22/2024 |

**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.



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