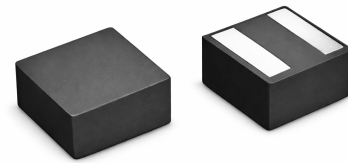


## ➤ Applications

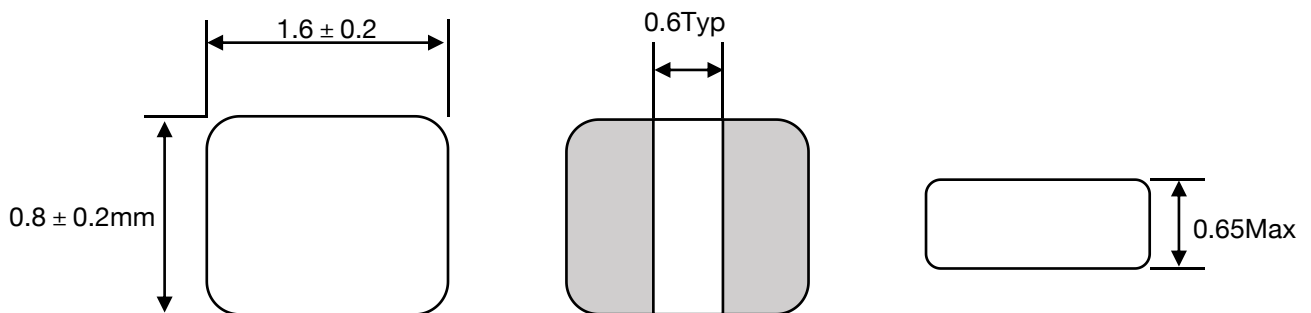
- POL / DC-DC
- Buck / Boost / Buck-Boost
- PMIC output filtering
- Consumer & portable electronics



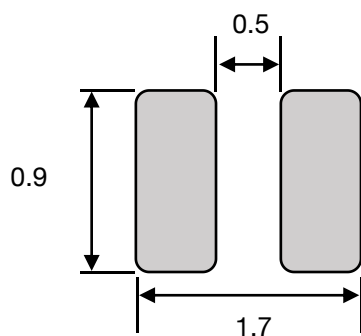
## ➤ Product Features

- Composite molded construction with ultra-low acoustic noise
- Compact and lightweight design, ideal for high-density SMT applications
- Magnetically shielded structure delivering excellent EMI suppression
- Low core loss and high efficiency over a wide operating frequency range
- Molded with low-loss alloy powder, providing low DCR and reduced parasitic capacitance
- Wide operating temperature range:  $-55\text{ }^{\circ}\text{C}$  to  $+125\text{ }^{\circ}\text{C}$  (including self-heating)

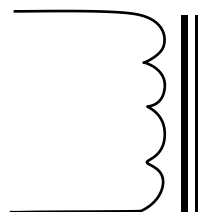
## ➤ Dimensions (mm)



**Reference Land Pattern**





**Schematic**



**How to order**

AWIM1608065D - R47MTF

Model  |   
 Value Code (see table)

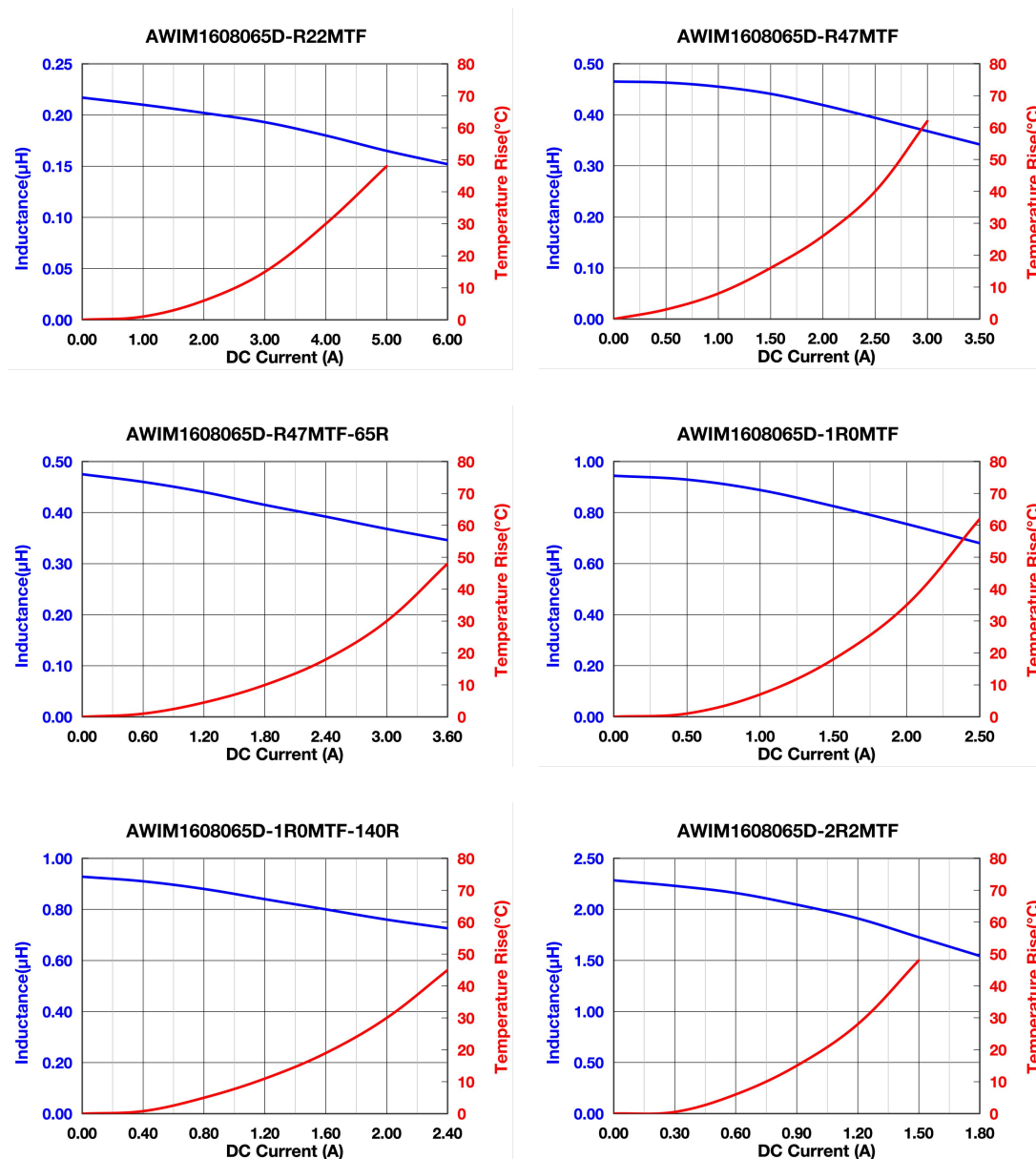
 **Electrical Characteristics**

| Part No                  | Inductance( $\mu$ H) | DCR ( $m\Omega$ ) |     | I <sub>rms</sub> (A) |     | I <sub>sat</sub> (A) |     |
|--------------------------|----------------------|-------------------|-----|----------------------|-----|----------------------|-----|
|                          |                      | Typ               | Max | Typ                  | Max | Typ                  | Max |
| AWIM1608065D-R22MTF      | 0.22                 | 35                | 43  | 4.0                  | 3.5 | 5.0                  | 4.5 |
| AWIM1608065D-R47MTF      | 0.47                 | 66                | 82  | 2.3                  | 2.0 | 3.3                  | 3.0 |
| AWIM1608065D-R47MTF-65R  | 0.47                 | 65                | 78  | 3.0                  | 2.5 | 3.5                  | 3.2 |
| AWIM1608065D-1R0MTF      | 1.0                  | 180               | 200 | 1.8                  | 1.5 | 2.4                  | 2.0 |
| AWIM1608065D-1R0MTF-140R | 1.0                  | 140               | 160 | 2.2                  | 1.8 | 2.2                  | 2.0 |
| AWIM1608065D-2R2MTF      | 2.2                  | 390               | 430 | 1.3                  | 1.1 | 1.6                  | 1.3 |

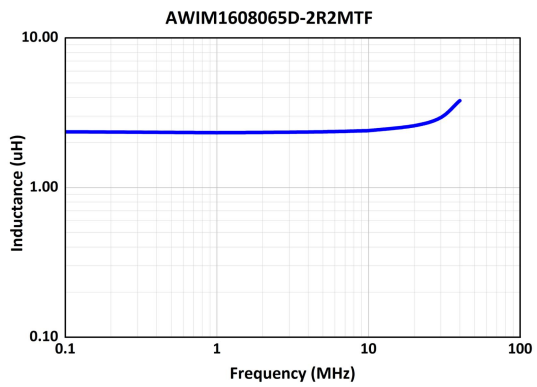
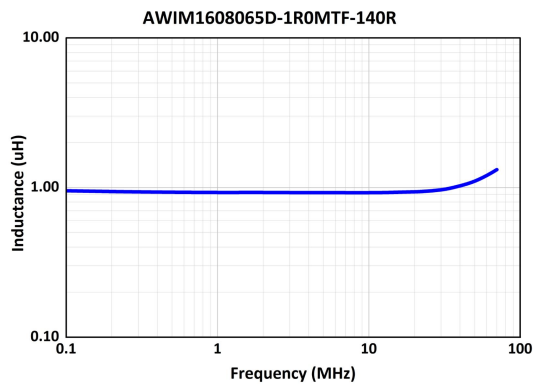
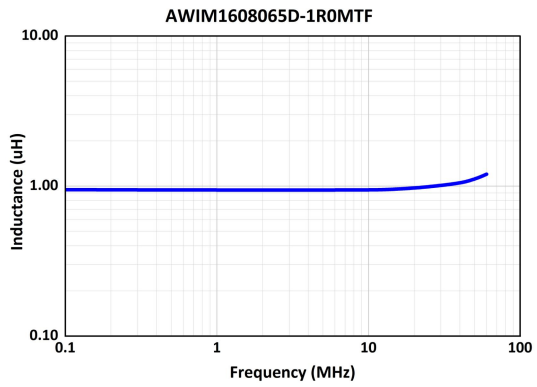
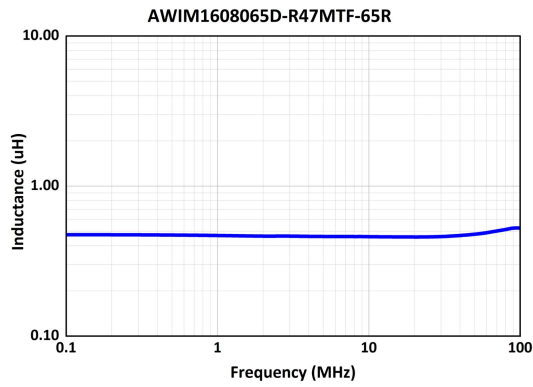
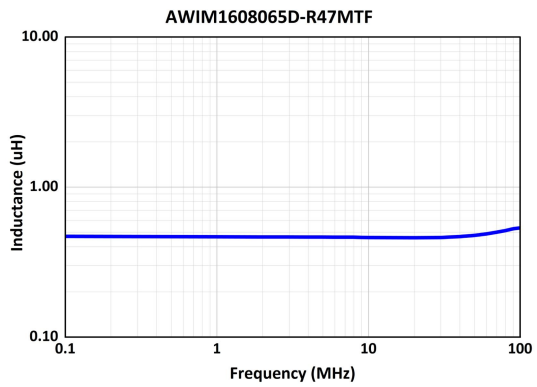
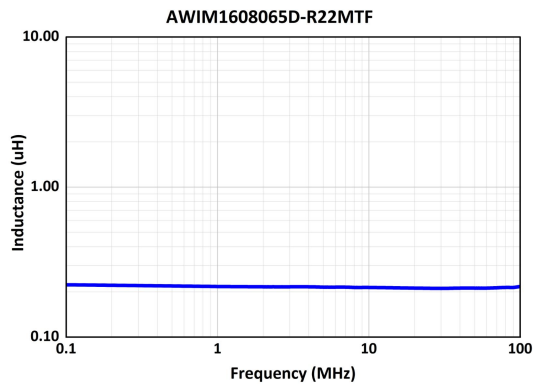
**Notes:**

- 1.All test data are referenced at 25 °C ambient.
- 2.Test Condition: 1 MHz, 1.0 V<sub>rms</sub>.
- 3.I<sub>rms</sub>: DC current (A) that will cause an approximate temperature rise ( $\Delta T$ ) of 40 °C.
- 4.I<sub>sat</sub>: DC current (A) that causes the initial inductance L<sub>0</sub> to drop approximately 30%.
- 5.Operating temperature range: -55 °C to +125 °C.
- 6.The part temperature (ambient + temperature rise) should not exceed 125 °C under worst case operating conditions. Circuit design, components, PCB trace size and thickness, airflow and other cooling process all affect the part temperature. The part temperature should be verified in the actual application.

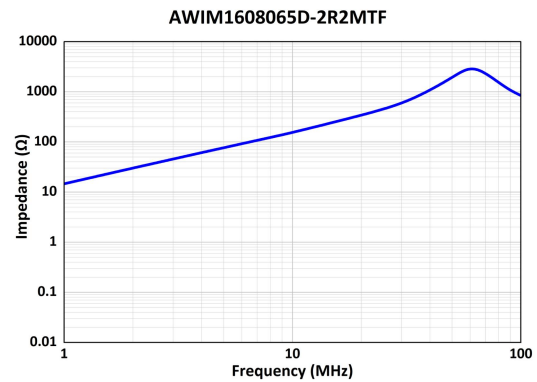
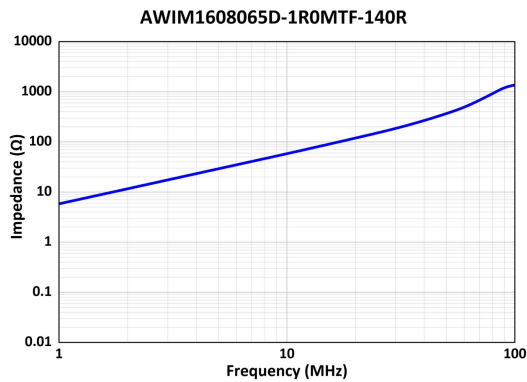
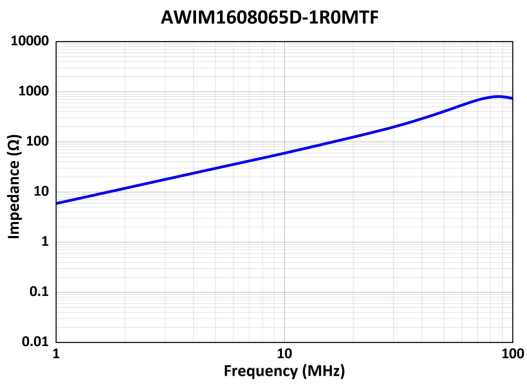
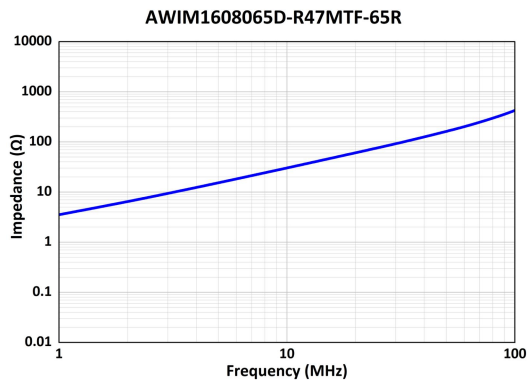
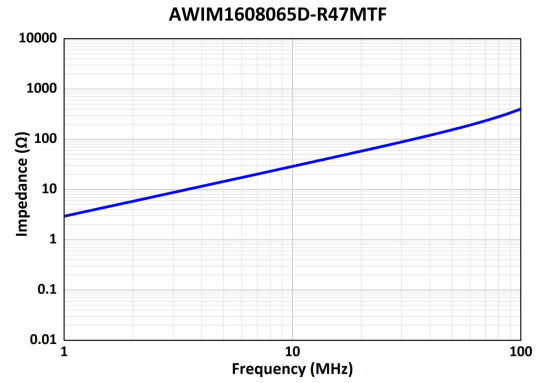
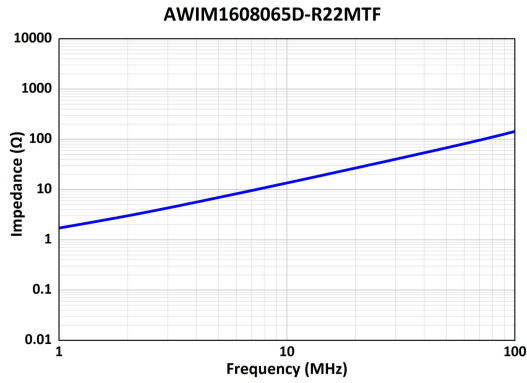
▷ **Saturation Current vs Temperature Rise Current Curve**



 **L vs Frequency**

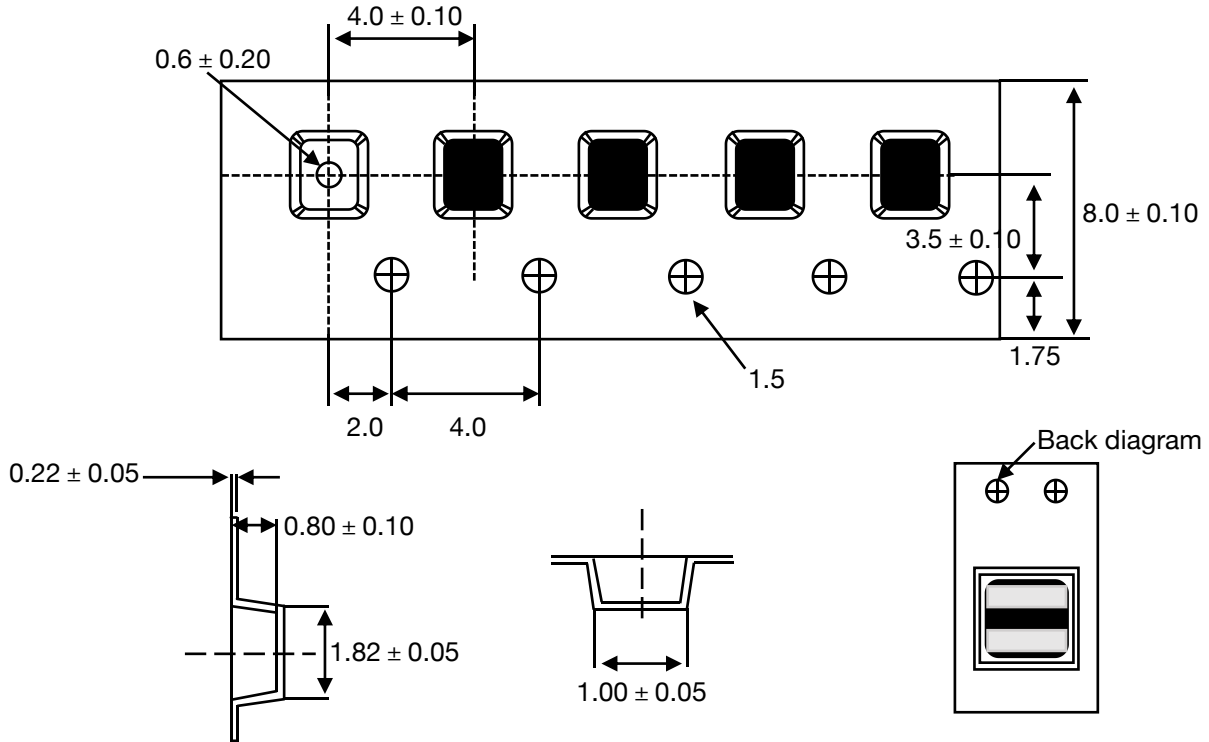


 **Impedance vs Frequency**

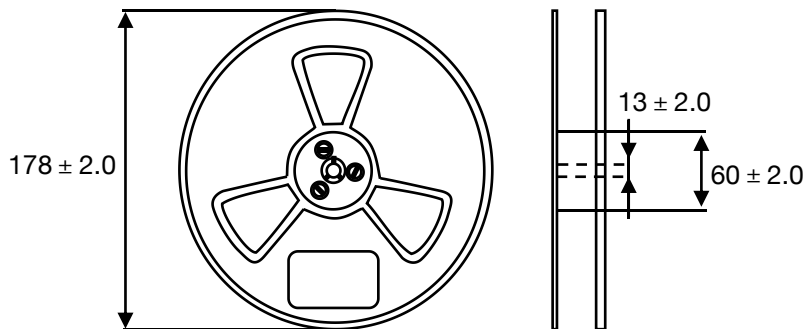


**▷ Packing Specification**

**Carrier Tape Dimensions (mm)**



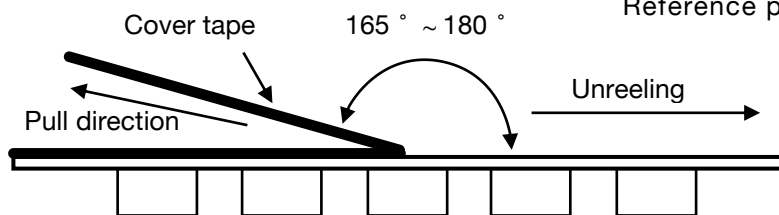
**Reel Dimensions (mm)**



**Cover Tape Peel Off Condition**

Cover tape peel force shall be 0.2 to 1.0N.

Reference peel speed 300mm/min.



**Packing Quantity**

| Product Series | Quantity / Reel | Inner Carton Quantity | Outer Carton Quantity   |
|----------------|-----------------|-----------------------|-------------------------|
| AWIM1608065    | 3,000pcs        | (3,000x10)= 30,000pcs | (30,000x8) = 240,000pcs |

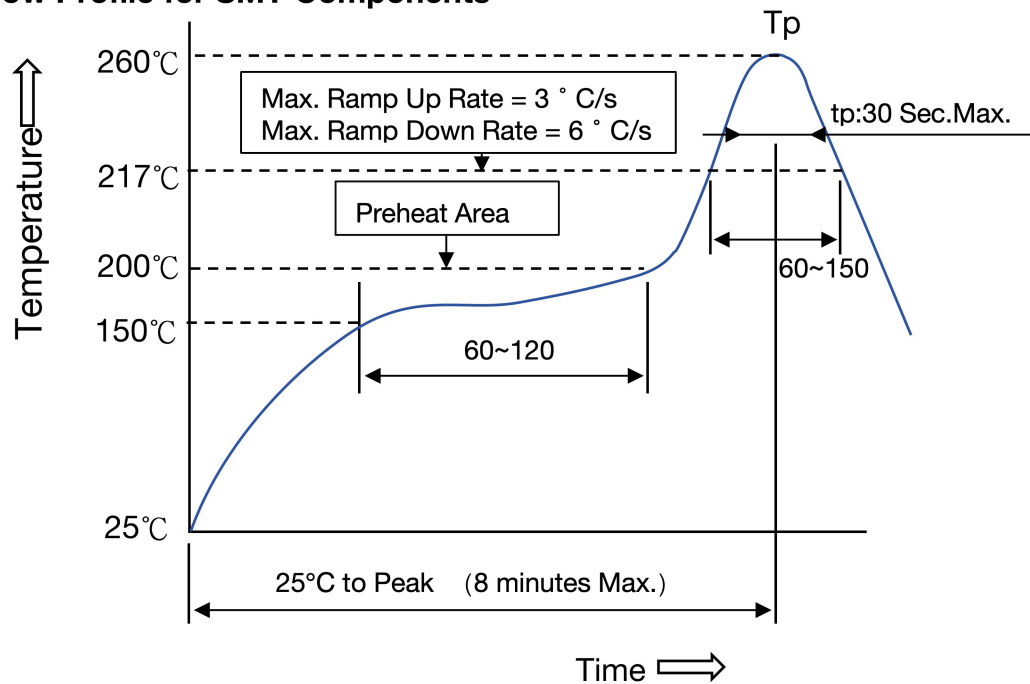
**Label Marking (REF Only)**

| Advanced Wire Coil Technology LLC (AW COIL) |       |  |
|---|-------|--|
| Customer:                                   |       |  |
| AW COIL P/N:                                |       |  |
| Quantity:                                   |       |  |
| Description:                                |       |  |
| Date:                                       | Notes |  |

The following items will be marked on the reel of product label and shipping label.

**▷ Soldering Specification**

**Reflow Profile for SMT Components**



# Mini Power-Molded Inductor AWIM-D series

## AWIM1608065D Series



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### REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request and confirm the delivery specifications.

### SAFETY & USAGE PRECAUTIONS

Please pay sufficient attention to the following precautions for safe design and use of these products.

#### **⚠ REMINDERS**

- The recommended storage period is within 12 months.  
Please store under specified conditions (temperature: 5 to 40 °C, humidity: 10 to 75 % RH).
- If the recommended storage period is exceeded, solderability of the terminal electrodes may deteriorate.
- Do not store products in locations where corrosive gases such as salt, acid, or alkali are present.
- Operating temperature after mounting: -55 °C to +125 °C (including self-heating, unless otherwise specified).
- Soldering conditions after mounting must be within the ranges specified in this datasheet.  
Excessive heating may cause performance degradation or reduced product lifetime.
- Do not use products that have been subjected to excessive mechanical shock, such as being dropped.
- When mounting on a printed circuit board, residual stress may be applied due to board warpage, distortion, or screw tightening.  
Ensure that excessive mechanical stress is not applied to the component.
- Self-heating may occur when power is applied.  
Adequate thermal margin must be considered in the design.
- Product performance may deteriorate if coating, potting, or molding materials are applied.  
Please evaluate the impact in advance.
- Do not use these products outside the conditions specified in the delivery specifications.
- 

#### **Intended Applications and Usage Restrictions**

- These products are designed for general electronic equipment, including but not limited to:
- Industrial control and power conversion equipment
- Consumer and portable electronic devices
- Telecommunications and networking equipment
- Automotive electronic modules not related to safety-critical systems
- Unless otherwise specified, these products are not designed or guaranteed for use in applications requiring extremely high levels of safety or reliability, where product failure could result in serious harm to life, health, or property.
- Such applications include but are not limited to: aerospace or aviation equipment, medical equipment, nuclear power control equipment, military equipment, and other safety-critical systems.
- If use in such applications is intended, please consult Advanced Wire Coil Technology LLC (AW COIL) in advance.

#### **Automotive Capability**

##### **Manufactured in facilities certified to IATF 16949.**

These products are not AEC-Q200 qualified but are suitable for automotive electronic applications not related to safety-critical systems.

AEC-Q200 qualification can be supported upon request.

#### **Design Responsibility Notice**

When designing equipment, customers are strongly advised to implement appropriate protective circuits, fail-safe mechanisms, or backup systems to prevent damage or injury in the event of product failure.

**Revision: Rev. A | Release Date: 2026-01**