

**$V_{RSM} = 100\text{ V}$ ,  $I_{F(AV)} = 30\text{ A}$**   
**Schottky Diode**  
**FMET-23010**

**Description**

The FMET-23010 is a 100 V, 30 A Schottky diode with a trench structure, allowing improvements in  $V_F$  and  $I_R$  characteristics. These characteristic features contribute to improving power supply efficiency and to enabling high-frequency systems.

**Features**

- $V_{RSM}$  ----- 100 V
- $I_{F(AV)}$  ----- 30 A
- $V_F$  ( $I_F = 15\text{ A}$ ) ----- 0.81 V typ.
- Bare lead frame: Pb-free (RoHS compliant)

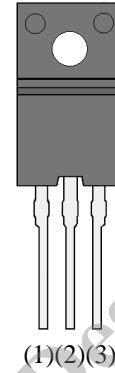
**Applications**

The high speed switching applications as follows:

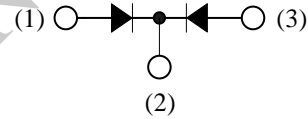
- DC-DC Converter
- Adapter

**Package**

TO220F-3L



Not to scale



- (1) Anode
- (2) Cathode
- (3) Anode

Not Recommended for New Designs

**Absolute Maximum Ratings**

 Unless otherwise specified,  $T_A = 25\text{ }^\circ\text{C}$ .

| Parameter                                      | Symbol      | Rating     | Unit             | Conditions   |
|--|-------------|------------|------------------|--|
| Peak Repetitive Reverse Voltage <sup>(1)</sup> | $V_{RSM}$   | 100        | V                |  |
| Repetitive Reverse Voltage <sup>(1)</sup>      | $V_{RM}$    | 100        | V                |  |
| Average Forward Current <sup>(2)</sup>         | $I_{F(AV)}$ | 30         | A                | See Figure 1 and Figure 2                          |
| Surge Forward Current <sup>(1)</sup>           | $I_{FSM}$   | 120        | A                | Half cycle sine wave, positive side, 10 ms, 1 shot |
| $I^2t$ Limiting Value <sup>(1)</sup>           | $I^2t$      | 72         | $A^2s$           | $1\text{ ms} \leq t \leq 10\text{ ms}$             |
| Junction Temperature                           | $T_J$       | -40 to 150 | $^\circ\text{C}$ |  |
| Storage Temperature                            | $T_{STG}$   | -40 to 150 | $^\circ\text{C}$ |  |

**Electrical Characteristics**

 Unless otherwise specified,  $T_A = 25\text{ }^\circ\text{C}$ .

| Parameter   | Symbol        | Conditions                                      | Min. | Typ. | Max. | Unit               |
|---|---------------|---|------|------|------|--------------------|
| Forward Voltage Drop <sup>(1)</sup>                           | $V_F$         | $I_F = 15\text{ A}$                             | —    | 0.81 | 0.85 | V                  |
| Reverse Leakage Current <sup>(1)</sup>                        | $I_R$         | $V_R = V_{RM}$                                  | —    | —    | 100  | $\mu\text{A}$      |
| Reverse Leakage Current under High Temperature <sup>(1)</sup> | $H \cdot I_R$ | $V_R = V_{RM}, T_J = 150\text{ }^\circ\text{C}$ | —    | —    | 50   | mA                 |
| Thermal Resistance <sup>(3)</sup>                             | $R_{th(J-C)}$ |   | —    | —    | 4.0  | $^\circ\text{C/W}$ |

<sup>(1)</sup> Specifies a value per chip; the FMET-23010 consists of two chips.

<sup>(2)</sup> Specifies a value of the two chips configuring the product; a value per chip is 15 A.

<sup>(3)</sup>  $R_{th(J-C)}$  is thermal resistance between junction and the case. The case temperature is measured at the back side near the screw hole.

Rating and Characteristic Curves

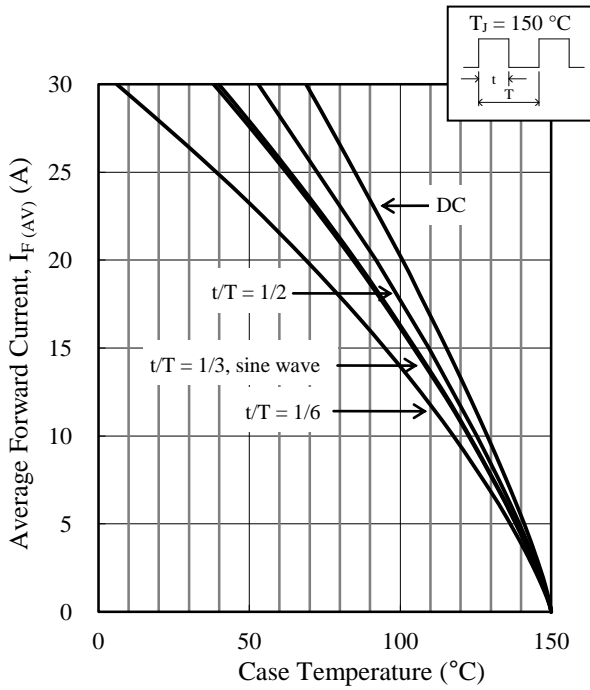


Figure 1.  $T_C$  vs.  $I_{F(AV)}$  Typical Characteristics ( $V_R = 0\text{ V}$ )

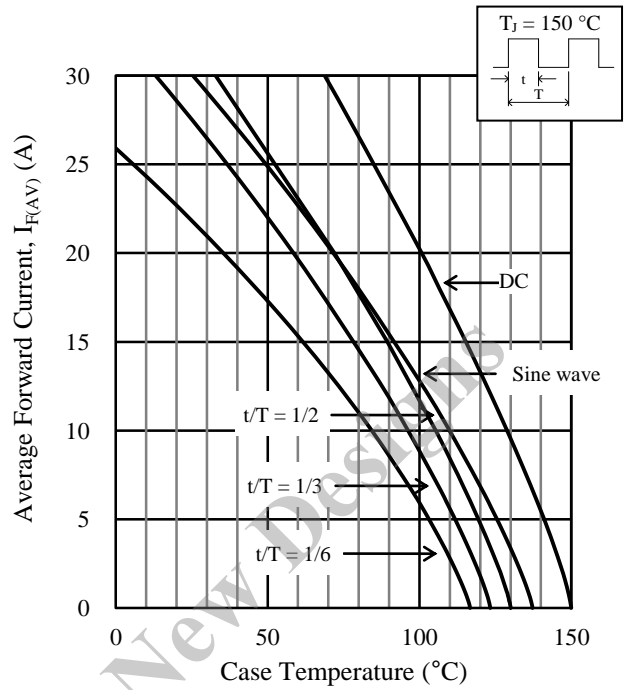


Figure 2.  $T_C$  vs.  $I_{F(AV)}$  Typical Characteristics ( $V_R = 100\text{ V}$ )

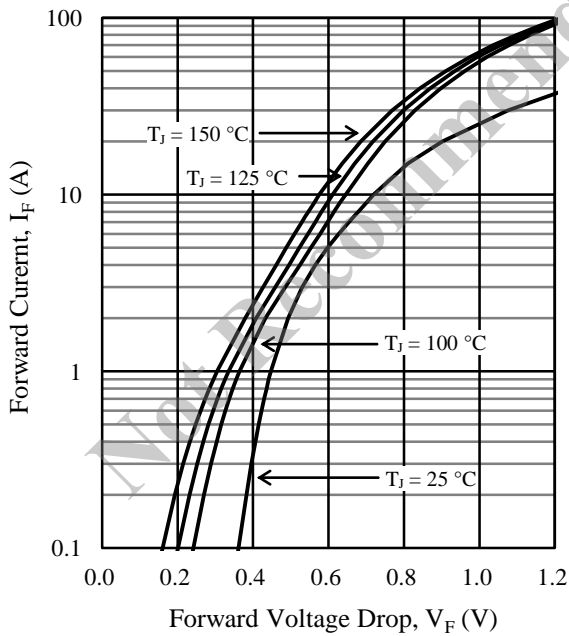


Figure 3.  $V_F$  vs.  $I_F$  Typical Characteristics

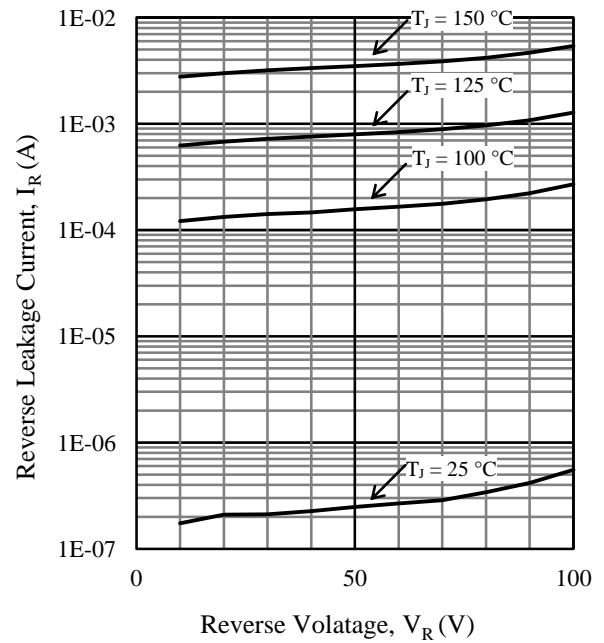
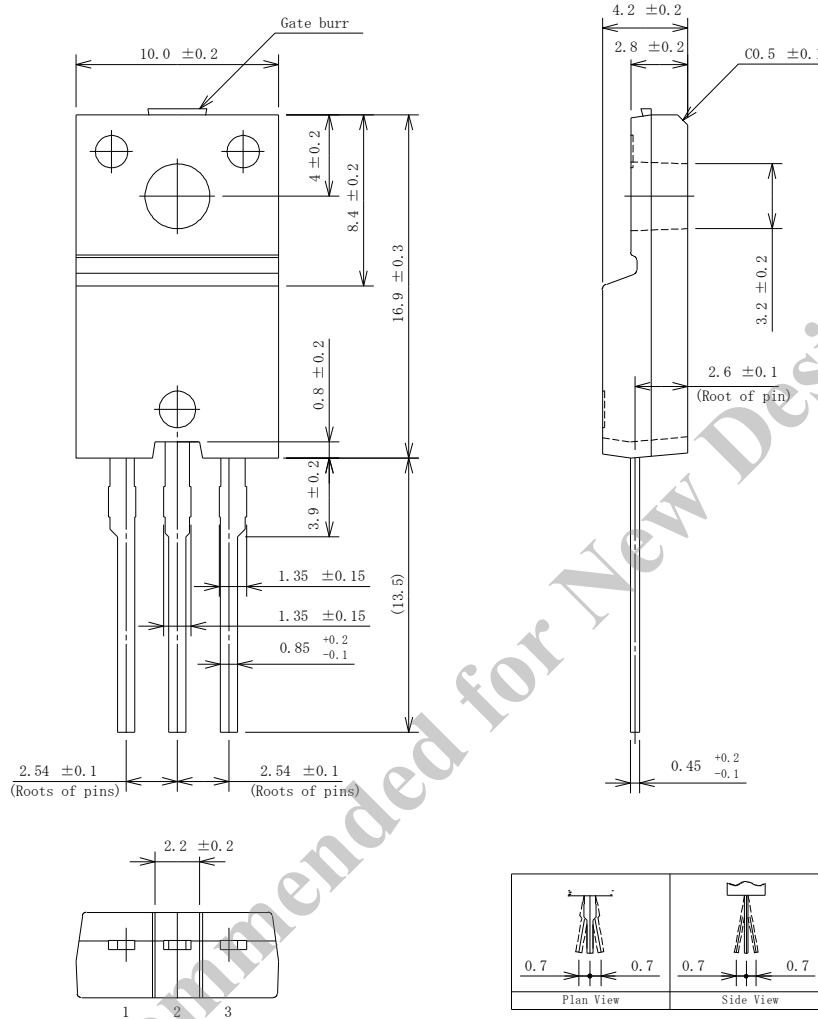


Figure 4.  $V_R$  vs.  $I_R$  Typical Characteristics

Physical Dimensions

• TO220F



NOTES:

- Dimensions in millimeters
- Maximum gate burr height is 0.3 mm.
- Bare lead frame: Pb-free (RoHS compliant)
- When soldering the products, it is required to minimize the working time, within the following limits:
  - Flow:  $260 \pm 5$  °C /  $10 \pm 1$  s, 2 times
  - Soldering Iron:  $380 \pm 10$  °C /  $3.5 \pm 0.5$  s, 1 time (Soldering should be at a distance of at least 1.5 mm from the body of the product.)
  - Recommended screw torque for TO220F: 0.490 N·m to 0.686 N·m (5 kgf·cm to 7 kgf·cm)

**Marking Diagram**

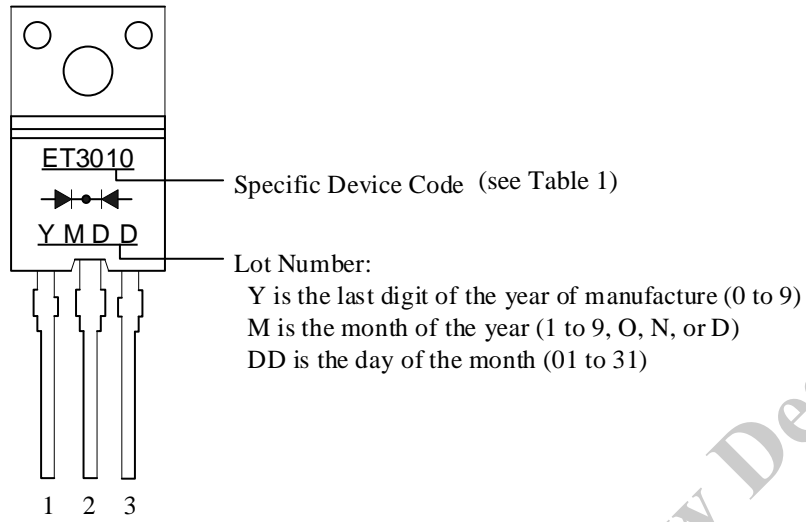


Table 1. Specific Device Code

| Specific Device Code | Part Number |
|----------------------|-------------|
| ET3010               | FMET-23010  |

Not Recommended for New Designs

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