

**$V_{RSM} = 100\text{ V}$ ,  $I_{F(AV)} = 40\text{ A}$**   
**Trench Schottky Diode**  
**FMET-24010**

**Description**

The FMET-24010 is a 100 V, 40 A, Schottky diode of the trench structure and has the improved characteristics of  $V_F$  and  $I_R$ . These characteristics realize the improving of power supply efficiency, and the high frequency system.

**Features**

- $V_{RM}$ ----- 100 V
- $I_{F(AV)}$ ----- 40 A
- $V_F$  (125 °C,  $I_F = 10\text{ A}$ ) ----- 0.57 V typ
- RoHS Compliant

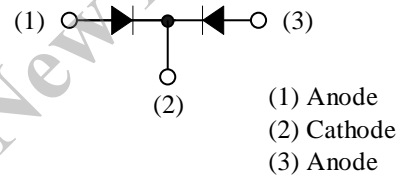
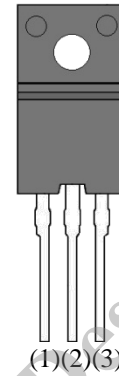
**Application**

The high speed switching applications as follows:

- DC-DC Converter
- Adapter

**Package**

TO220F-3L



Not to scale

Not Recommended for New Designs

**Absolute Maximum Ratings**

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

Parameter	Symbol	Rating	Unit	Remarks
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>	$I_{F(AV)}$	40	A	
Surge Forward Current <sup>(1)</sup>	$I_{FSM}$	150	A	Half cycle sine wave, positive side, 10 ms, one shot
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	Remarks
Forward Voltage Drop <sup>(1)</sup>	$V_F$	$I_F = 10\text{ A}$	—	0.67	—	V	
		$I_F = 20\text{ A}$	—	0.81	0.85	V	
Forward Voltage Drop Under High Temperature <sup>(1)</sup>	$H \cdot V_F$	$T_J = 125\text{ }^\circ\text{C}, I_F = 10\text{ A}$	—	0.57	—	V	
		$T_J = 125\text{ }^\circ\text{C}, I_F = 20\text{ A}$	—	0.67	—	V	
Reverse Leakage Current <sup>(1)</sup>	$I_R$	$V_R = V_{RM}$	—	0.9	150	$\mu\text{A}$	
Reverse Leakage Current Under High Temperature <sup>(1)</sup>	$H \cdot I_R$	$V_R = V_{RM}, T_J = 150\text{ }^\circ\text{C}$	—	9.0	75	mA	
Thermal Resistance <sup>(3)</sup>	$R_{th(J-C)}$		—	—	4.0	$^\circ\text{C/W}$	

<sup>(1)</sup> The rating of one chip.

<sup>(2)</sup> The rating of two chips. The rating of one chip is 20A.

<sup>(3)</sup>  $R_{th(J-C)}$  is thermal resistance between junction and case. Case temperature ( $T_C$ ) is measured at the under of the screw hole of case.

Rating and Characteristics Curves

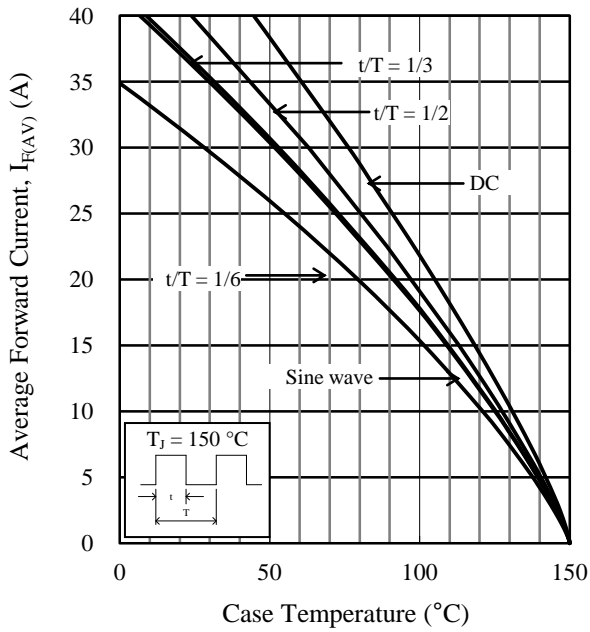


Figure 1.  $I_{F(AV)}$  vs. Case Temperature Curves  
 $V_R = 0\text{ V}$

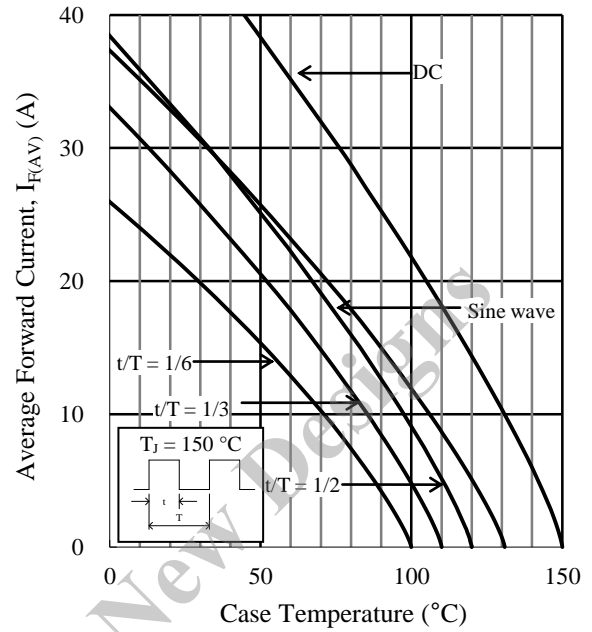


Figure 2.  $I_{F(AV)}$  vs. Case Temperature Curves  
 $V_R = 100\text{ V}$

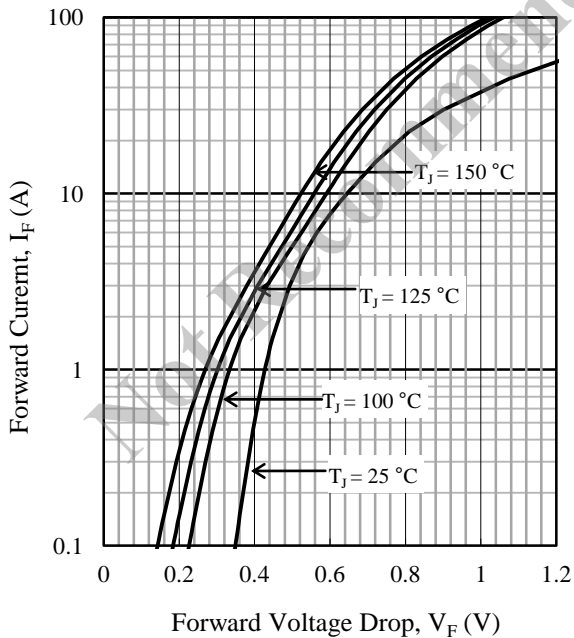


Figure 3.  $I_F - V_F$  Typical Characteristics

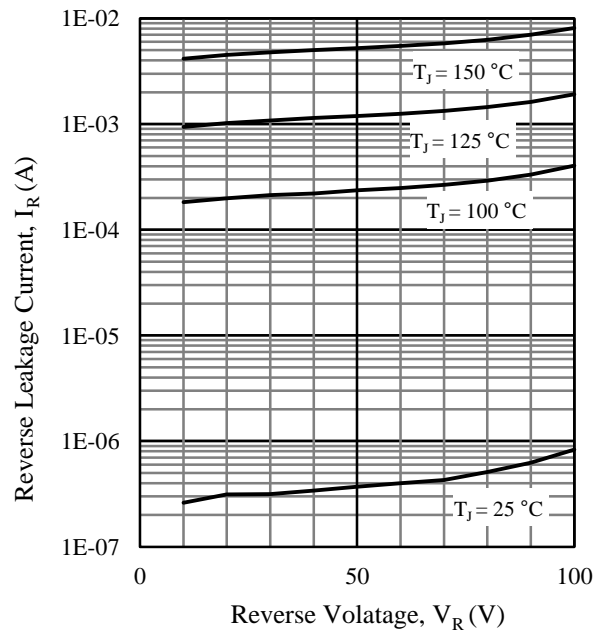
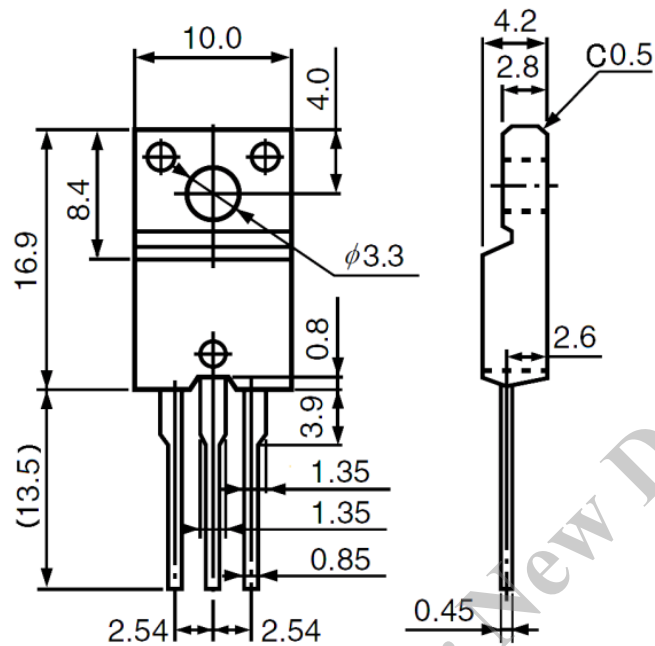


Figure 4.  $I_R - V_R$  Typical Characteristics

## FMET-24010

### Physical Dimensions

- TO220F-3L



#### NOTES:

- Dimensions in millimeters
- Bare lead frame: Pb-free (RoHS compliant)
- When soldering the products, be sure 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 products.)
- The recommended screw torque for TO220F-3L: 0.490 to 0.686 N·m (5 to 7 kgf·cm)

**Marking Diagram**

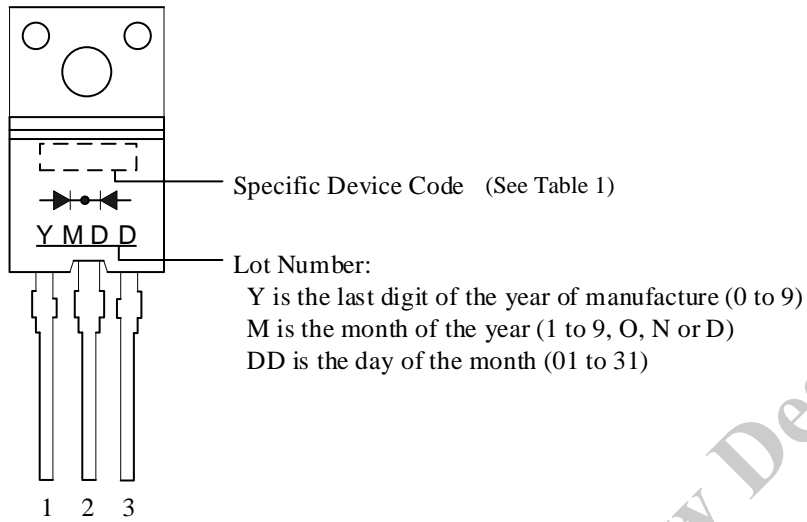


Table 1. Specific Device Code

Specific Device Code	Part Number
ET4010	FMET-24010

Not Recommended for New Designs

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