

**$V_{RSM} = 100\text{ V}$ ,  $I_{F(AV)} = 15\text{ A}$**   
**Schottky Diode**  
**FMET-21510**

**Description**

The FMET-21510 is a 100 V, 15 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
- $I_{F(AV)}$  ----- 15 A
- $V_F$  ( $I_F = 7.5\text{ A}$ ) ----- 0.81 V typ.
- Bare lead frame: Pb-free (RoHS compliant)

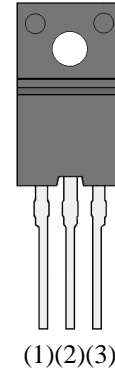
**Applications**

The high speed switching applications as follows:

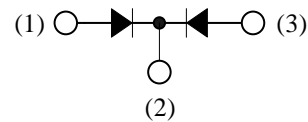
- DC-DC Converter
- Adapter

**Package**

TO220F-3L



Not to scale



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

## FMET-21510

### 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>	$I_{F(AV)}$	15	A	See Figure 1 and Figure 2
Surge Forward Current <sup>(1)</sup>	$I_{FSM}$	100	A	Half cycle sine wave, positive side, 10 ms, 1 shot
$I^2t$ Limiting Value <sup>(1)</sup>	$I^2t$	50	$A^2s$	$1\text{ ms} \leq t \leq 10\text{ ms}$
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>	$V_F$	$I_F = 7.5\text{ A}$	—	0.81	0.85	V
Reverse Leakage Current <sup>(1)</sup>	$I_R$	$V_R = V_{RM}$	—	—	50	$\mu\text{A}$
Reverse Leakage Current under High Temperature <sup>(1)</sup>	$H \cdot I_R$	$V_R = V_{RM}, T_J = 150\text{ }^\circ\text{C}$	—	—	25	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-21510 consists of two chips.

<sup>(2)</sup> Specifies a value of the two chips configuring the product; a value per chip is 7.5 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

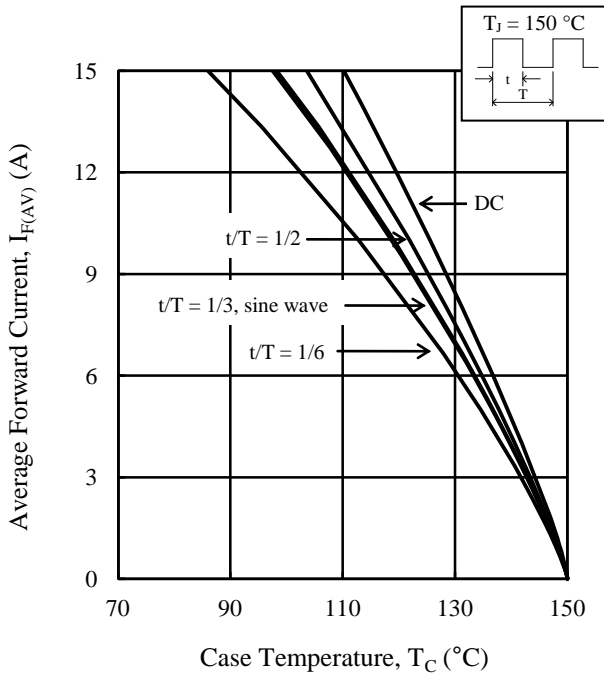


Figure 1.  $T_C$  vs.  $I_{F(AV)}$  Typical Characteristics ( $V_R = 0$  V)

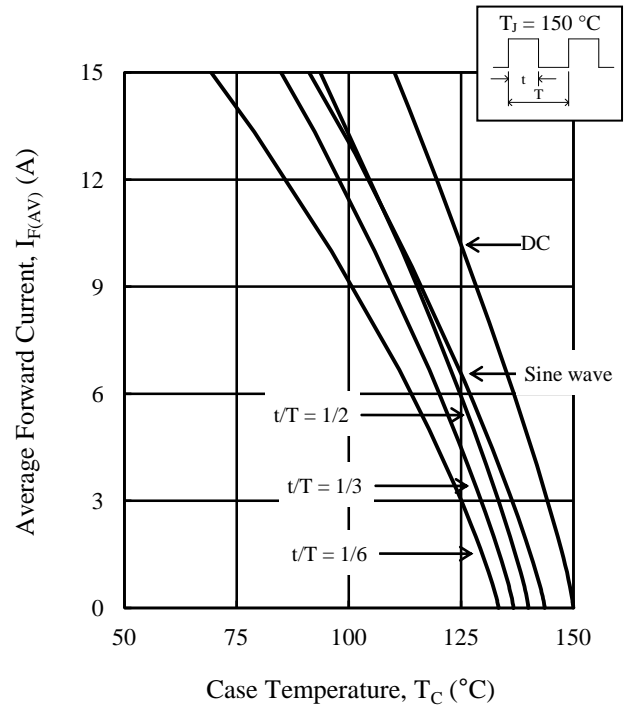


Figure 2.  $T_C$  vs.  $I_{F(AV)}$  Typical Characteristics ( $V_R = 100$  V)

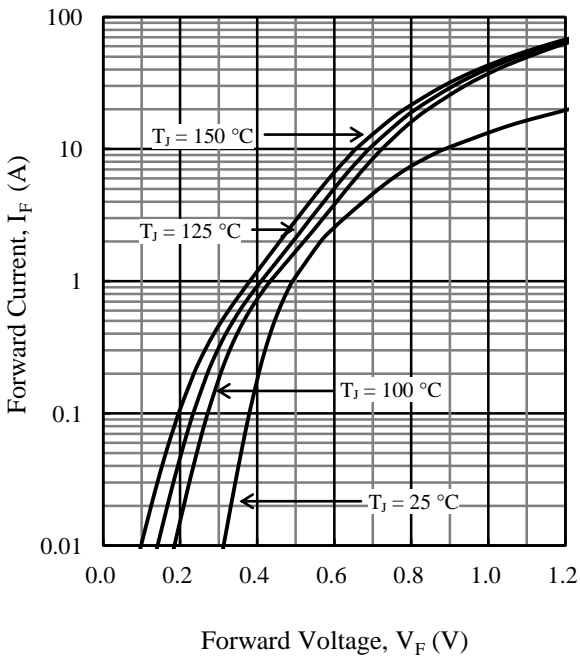


Figure 3.  $V_F$  vs.  $I_F$  Typical Characteristics

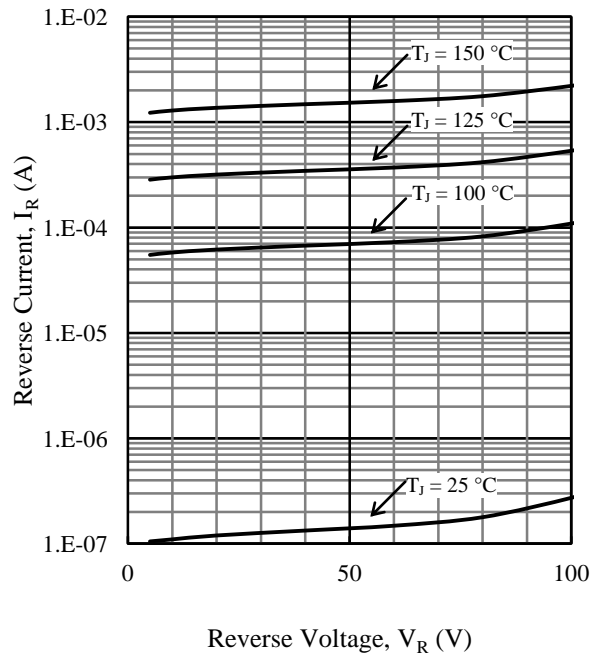
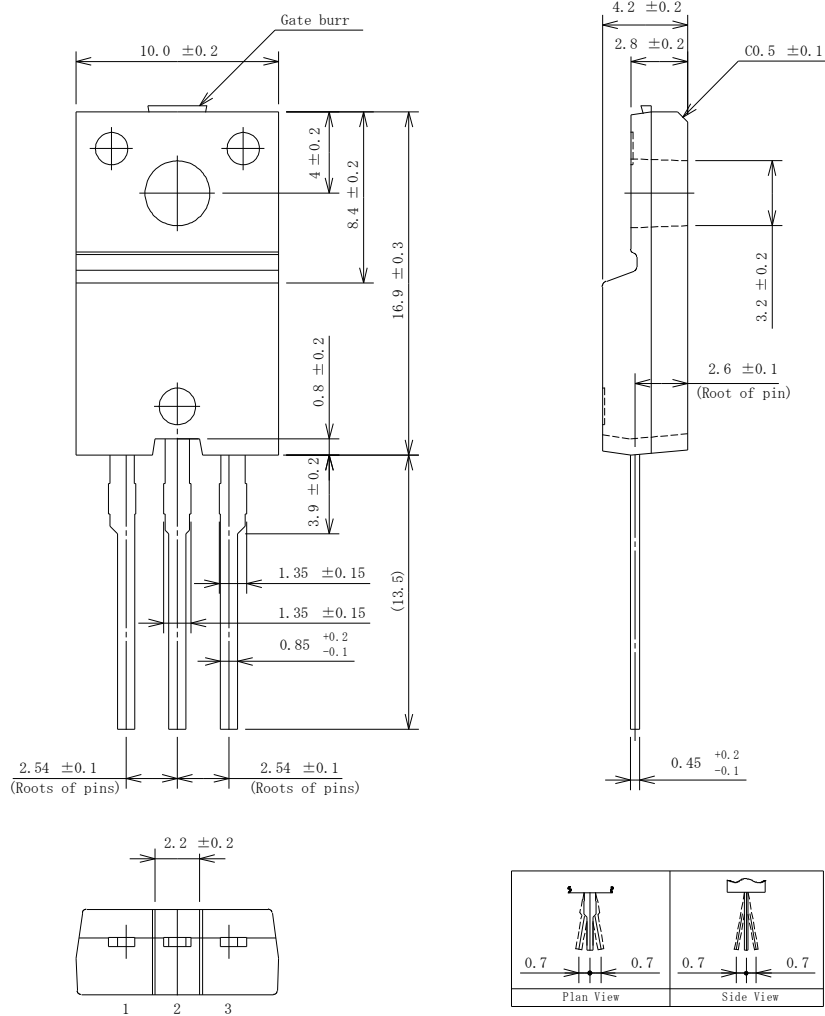


Figure 4.  $V_R$  vs.  $I_R$  Typical Characteristics

# FMET-21510

## 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**

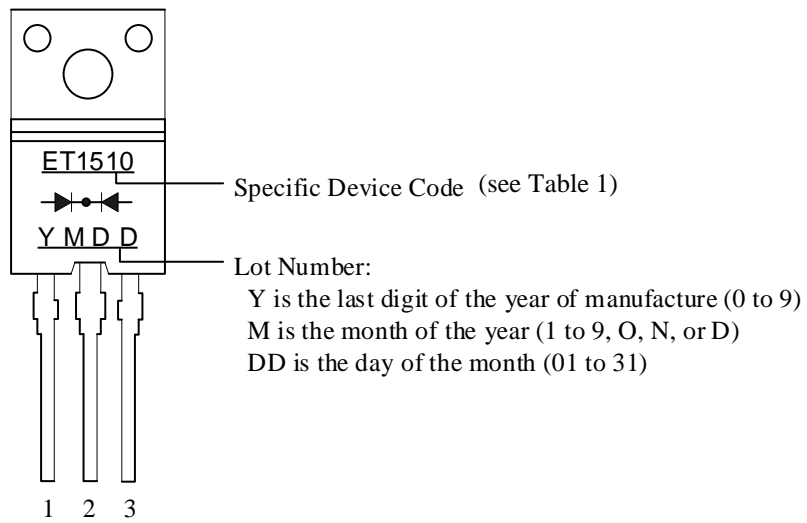


Table 1. Specific Device Code

Specific Device Code	Part Number
ET1510	FMET-21510

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