

$V_{RSM} = 100\text{ V}$, $I_{F(AV)} = 20\text{ A}$
Schottky Diode
FMET-22010

Description

The FMET-22010 is a 100 V, 20 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
- $I_{F(AV)}$ ----- 20 A
- $V_F (I_F = 10\text{ A})$ ----- 0.81 V typ.
- Bare lead frame: Pb-free (RoHS compliant)

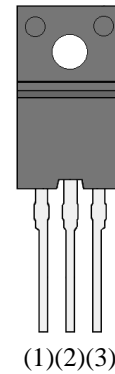
Applications

The high speed switching applications as follows:

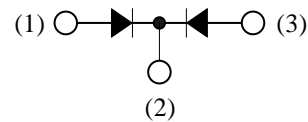
- DC-DC Converter
- Adapter

Package

TO220F-3L



Not to scale



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

FMET-22010

Absolute Maximum Ratings

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

Parameter	Symbol	Rating	Unit	Conditions
Peak Repetitive Reverse Voltage ⁽¹⁾	V_{RSM}	100	V	
Repetitive Reverse Voltage ⁽¹⁾	V_{RM}	100	V	
Average Forward Current ⁽²⁾	$I_{F(AV)}$	20	A	See Figure 1 and Figure 2
Surge Forward Current ⁽¹⁾	I_{FSM}	110	A	Half cycle sine wave, positive side, 10 ms, 1 shot
I^2t Limiting Value ⁽¹⁾	I^2t	60.5	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 ⁽¹⁾	V_F	$I_F = 10\text{ A}$	—	0.81	0.85	V
Reverse Leakage Current ⁽¹⁾	I_R	$V_R = V_{RM}$	—	—	70	μA
Reverse Leakage Current under High Temperature ⁽¹⁾	$H \cdot I_R$	$V_R = V_{RM}, T_J = 150\text{ }^\circ\text{C}$	—	—	35	mA
Thermal Resistance ⁽³⁾	$R_{th(J-C)}$		—	—	4.0	$^\circ\text{C/W}$

⁽¹⁾ Specifies a value per chip; the FMET-22010 consists of two chips.

⁽²⁾ Specifies a value of the two chips configuring the product; a value per chip is 10 A.

⁽³⁾ $R_{th(J-C)}$ 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

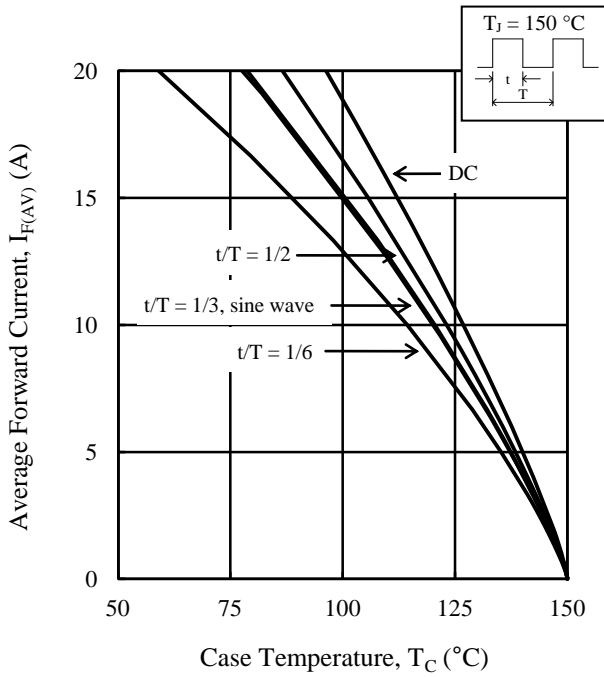


Figure 1. T_C vs. $I_{F(AV)}$ Typical Characteristics ($V_R = 0$ V)

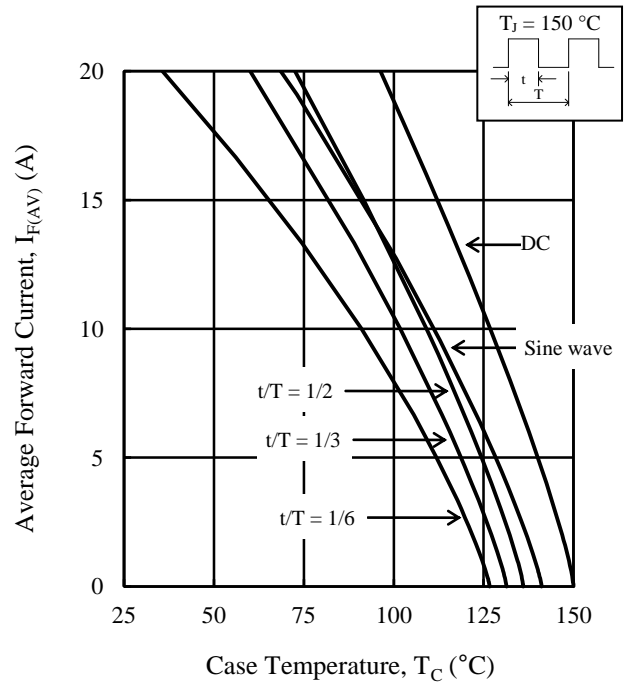


Figure 2. T_C vs. $I_{F(AV)}$ Typical Characteristics ($V_R = 100$ V)

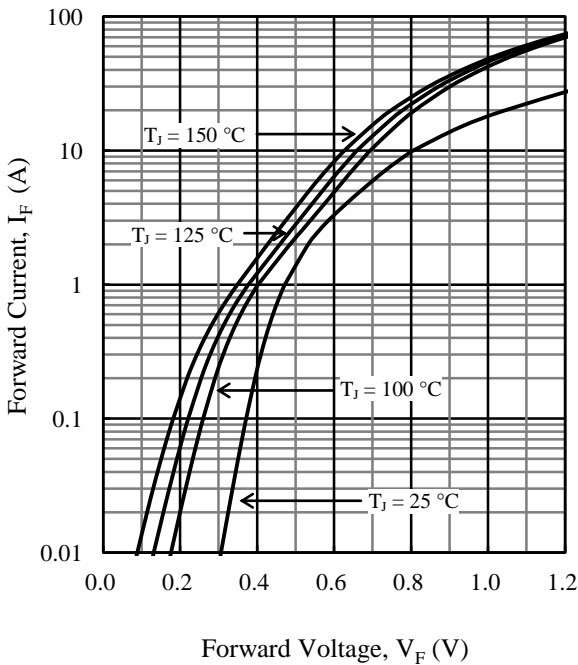


Figure 3. V_F vs. I_F Typical Characteristics

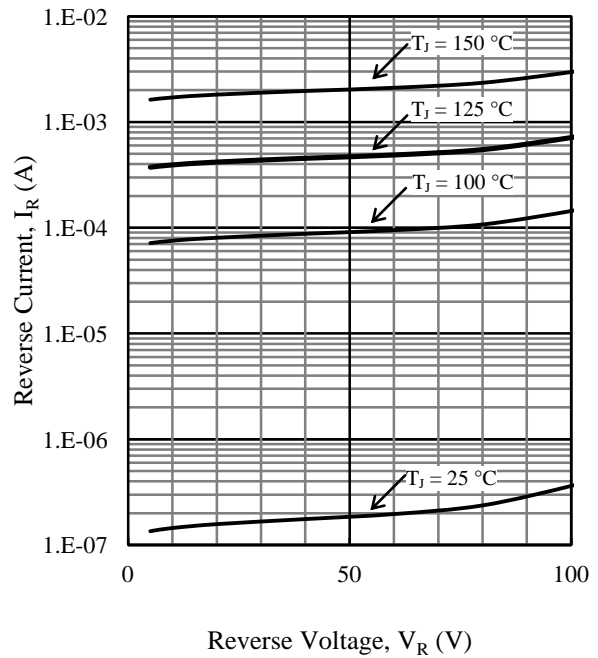
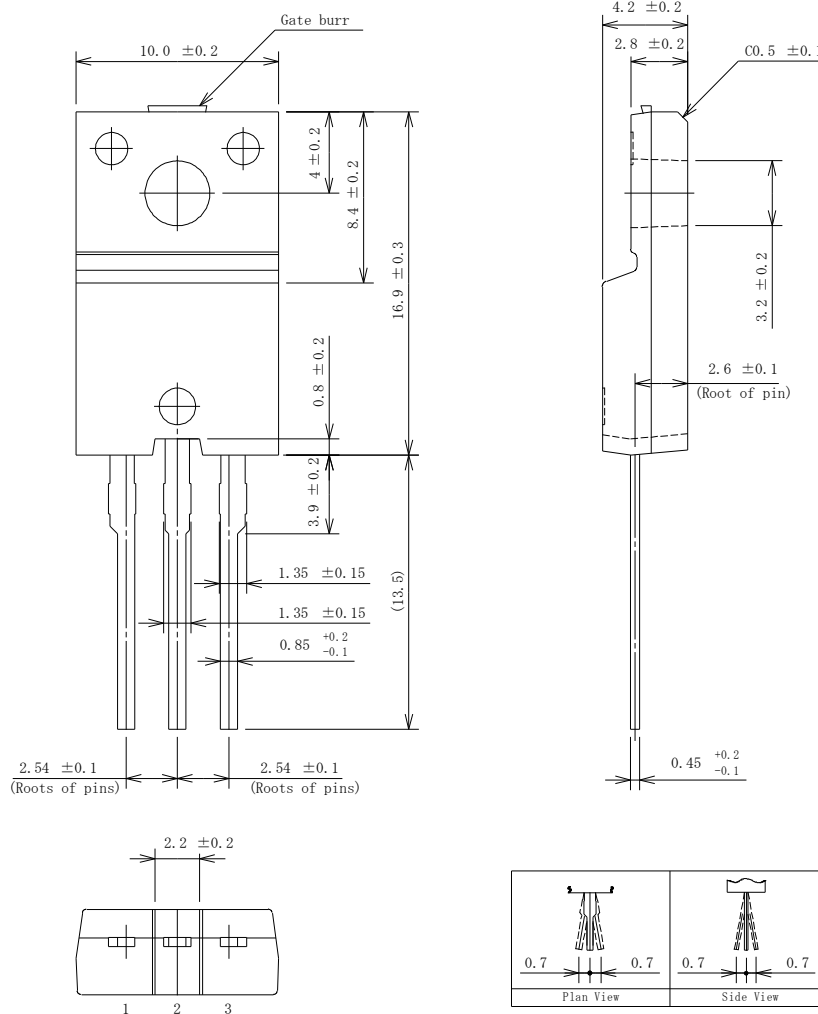


Figure 4. V_R vs. I_R Typical Characteristics

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 ± 5 °C / 10 ± 1 s, 2 times
 - Soldering Iron: 380 ± 10 °C / 3.5 ± 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

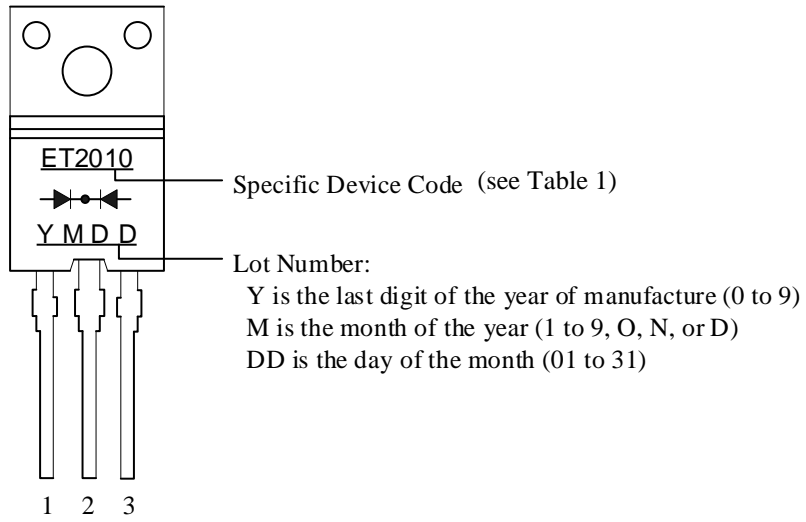


Table 1. Specific Device Code

Specific Device Code	Part Number
ET2010	FMET-22010

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