V_{RSM} = 100 V, $I_{F(AV)}$ = 20 A
Schottky Diode

FMET-22010

Data Sheet

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 A) ---------- 0.81 V typ.
- Bare lead frame: Pb-free (RoHS compliant)

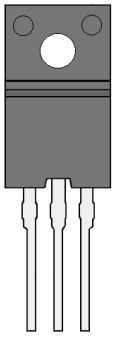
Applications

The high speed switching applications as follows:

- DC-DC Converter
- Adapter

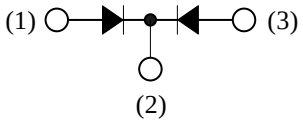
Package

TO220F-3L



(1)(2)(3)

Not to scale



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

Absolute Maximum Ratings

Unless otherwise specified, T_A = 25 °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 ms ≤ t ≤ 10 ms
Junction Temperature	T_J	−40 to 150	°C	
Storage Temperature	T_{STG}	−40 to 150	°C	

Electrical Characteristics

Unless otherwise specified, T_A = 25 °C.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage Drop[1]	V_F	I_F = 10 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 °C	—	—	35	mA
Thermal Resistance[3]	$R_{th(J-C)}$		—	—	4.0	°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

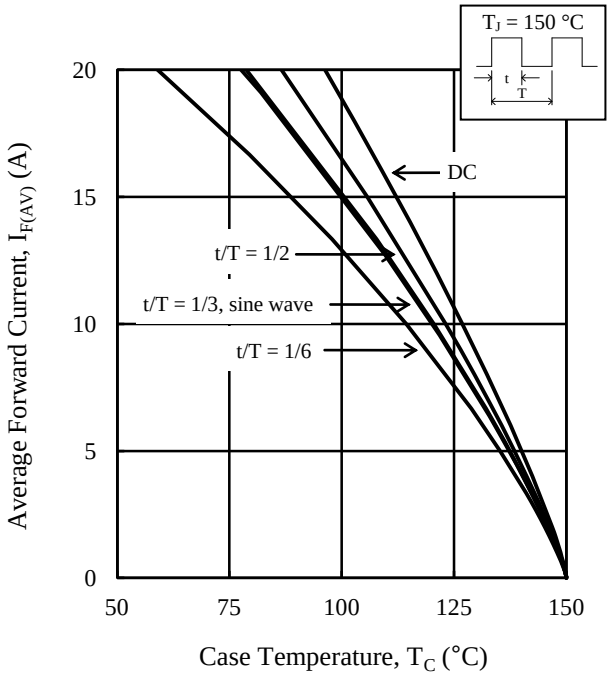


Figure 1. T_C vs. $I_{F(AV)}$ Typical Characteristics (V_R = 0 V)

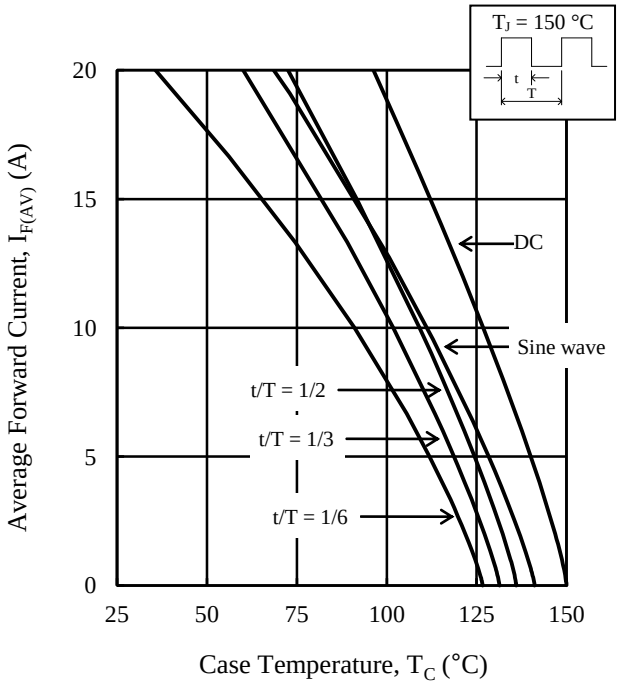


Figure 2. T_C vs. $I_{F(AV)}$ Typical Characteristics (V_R = 100 V)

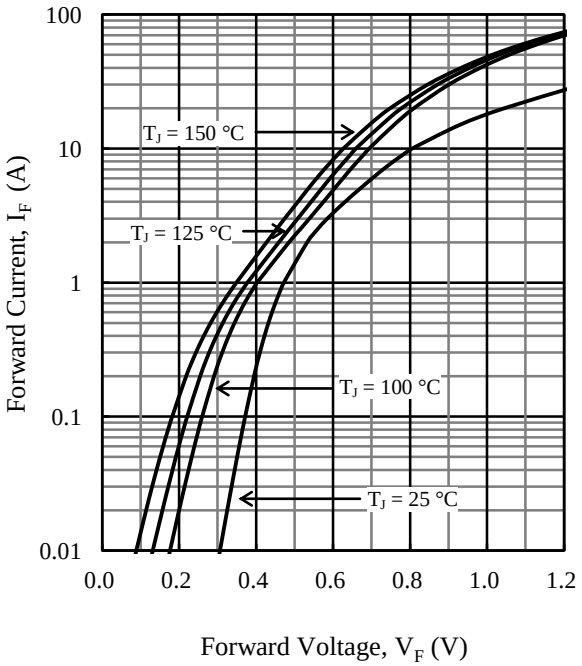


Figure 3. V_F vs. I_F Typical Characteristics

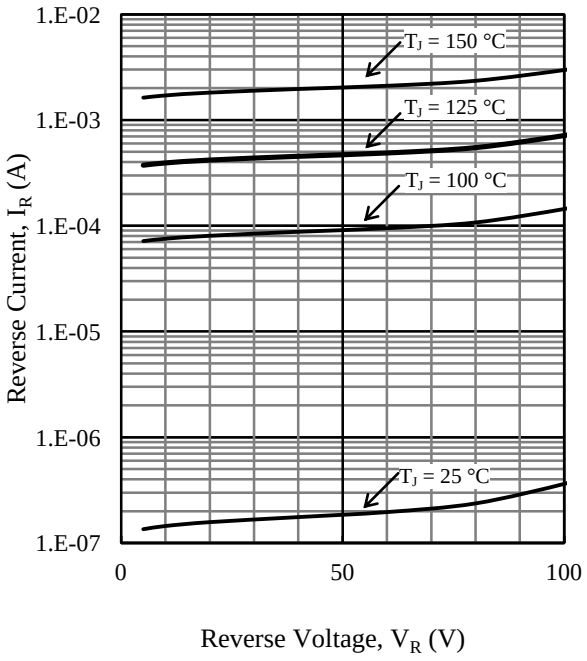
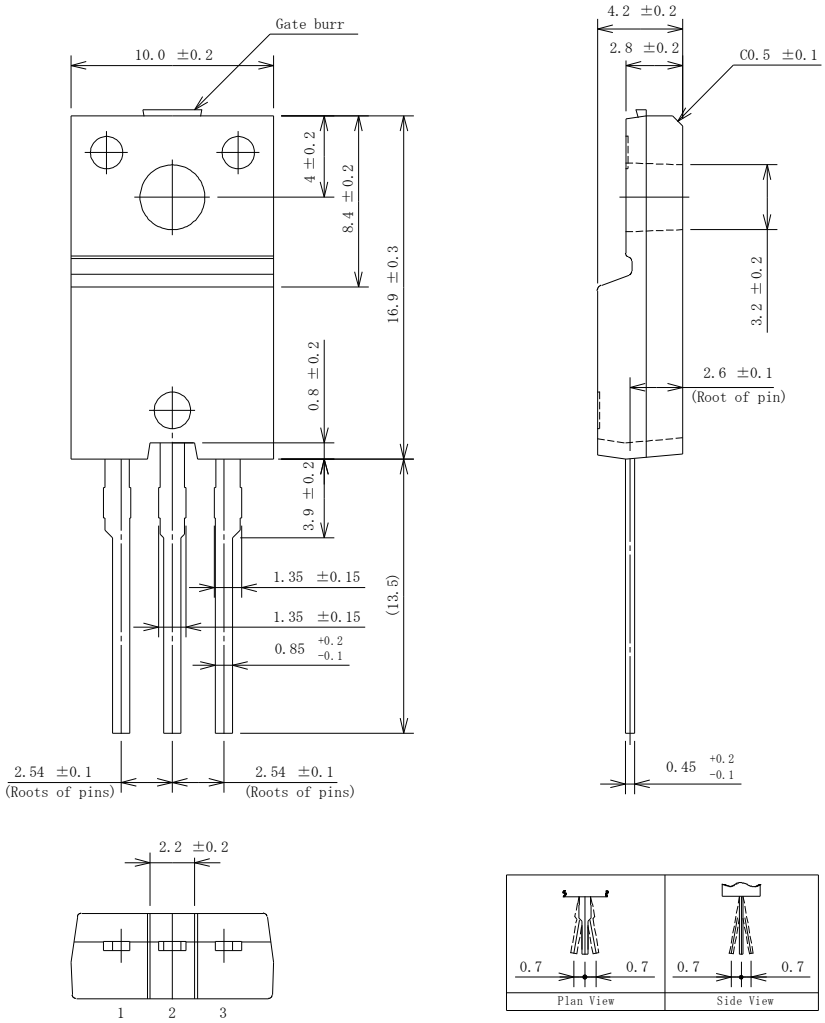


Figure 4. V_R vs. I_R Typical Characteristics

Physical Dimensions

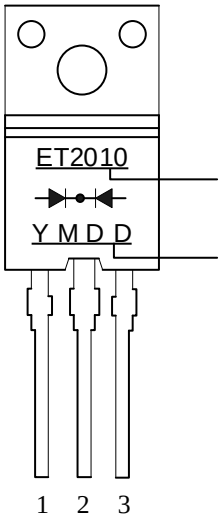
● **TO220F**



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



Specific Device Code (see Table 1)

Lot Number:
Y is the last digit of the year of manufacture (0 to 9)
M is the month of the year (1 to 9, O, N, or D)
DD is the day of the month (01 to 31)

Table 1. Specific Device Code

Specific Device Code	Part Number
ET2010	FMET-22010

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