V_{RSM} = 100 V, $I_{F(AV)}$ = 40 A
Trench Schottky Diode

FMET-24010

Data Sheet

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 A) ---------- 0.57 V typ
- RoHS Compliant

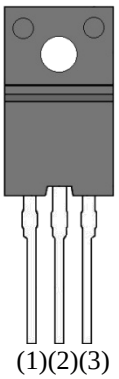
Application

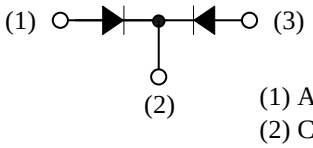
The high speed switching applications as follows:

- DC-DC Converter
- Adapter

Package

TO220F-3L





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

Not to scale

Absolute Maximum Ratings

Unless otherwise specified, T_A = 25 °C

Parameter	Symbol	Rating	Unit	Remarks
Peak Repetitive Reverse Voltage[1]	V_{RSM}	100	V	
Repetitive Reverse Voltage[1]	V_{RM}	100	V	
Average Forward Current[2]	$I_{F(AV)}$	40	A	
Surge Forward Current[1]	I_{FSM}	150	A	Half cycle sine wave, positive side, 10 ms, one shot
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	Remarks
Forward Voltage Drop[1]	V_F	I_F = 10 A	—	0.67	—	V	
		I_F = 20 A	—	0.81	0.85	V	
Forward Voltage Drop Under High Temperature[1]	H·V_F	T_J = 125 °C, I_F = 10 A	—	0.57	—	V	
		T_J = 125 °C, I_F = 20 A	—	0.67	—	V	
Reverse Leakage Current[1]	I_R	$V_R = V_{RM}$	—	0.9	150	μA	
Reverse Leakage Current Under High Temperature[1]	H·I_R	$V_R = V_{RM}$, T_J = 150 °C	—	9.0	75	mA	
Thermal Resistance[3]	$R_{th(J-C)}$		—	—	4.0	°C/W	

[1] The rating of one chip.
[2] The rating of two chips. The rating of one chip is 20A.
[3] $R_{th(J-C)}$ 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

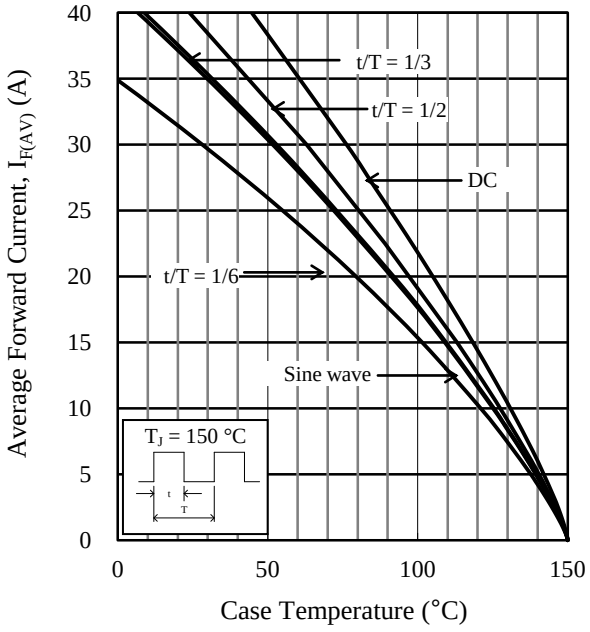


Figure 1. $I_{F(AV)}$ vs. Case Temperature Curves
V_R = 0 V

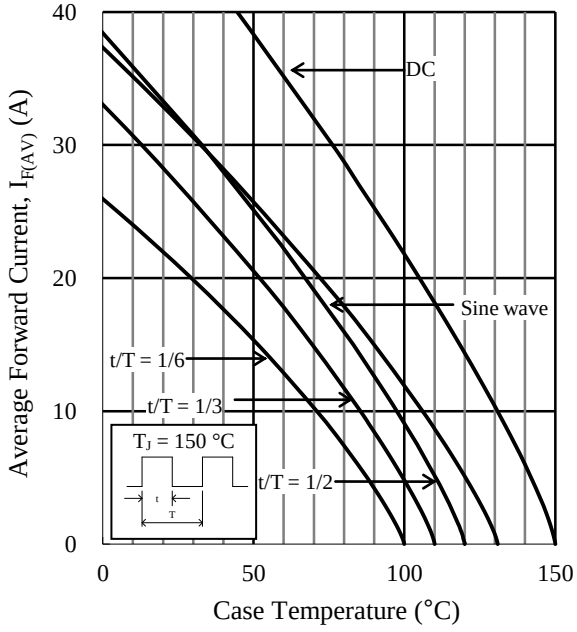


Figure 2. $I_{F(AV)}$ vs. Case Temperature Curves
V_R = 100 V

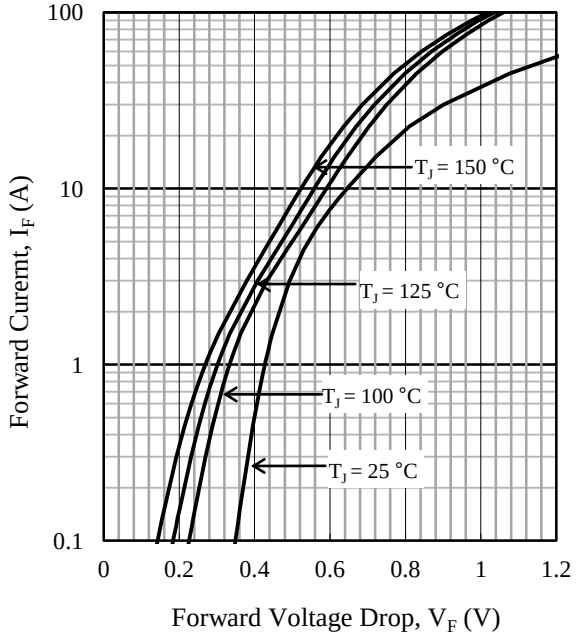


Figure 3. I_F — V_F Typical Characteristics

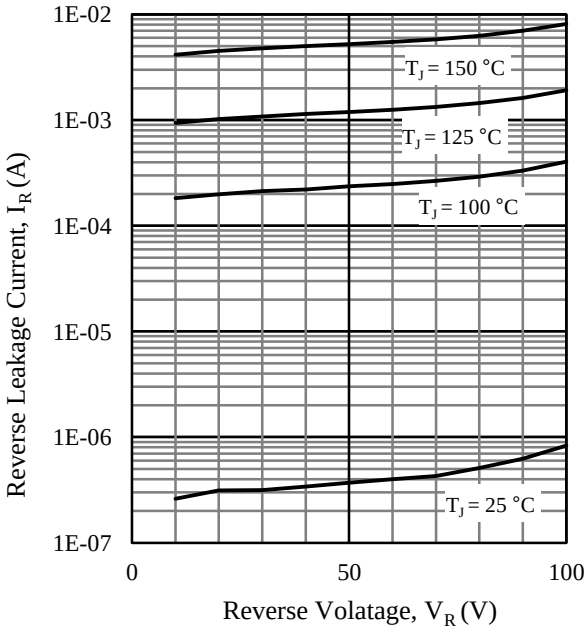
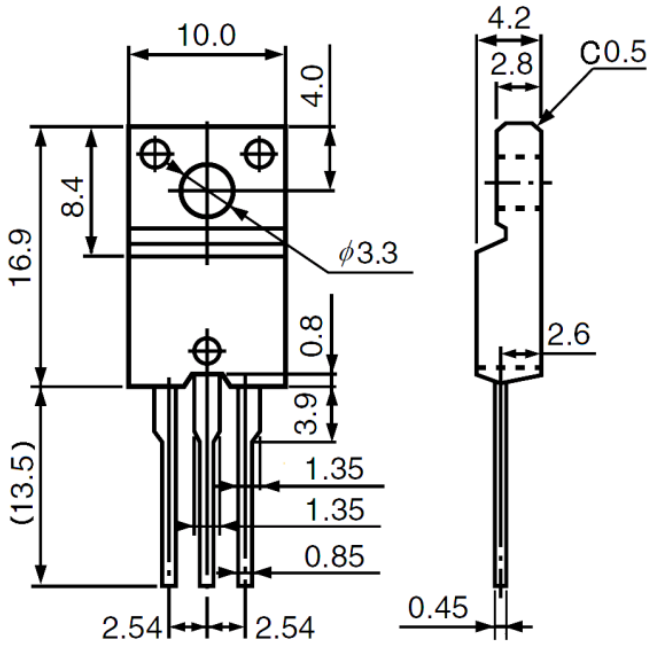


Figure 4. I_R — V_R Typical Characteristics

Physical Dimensions

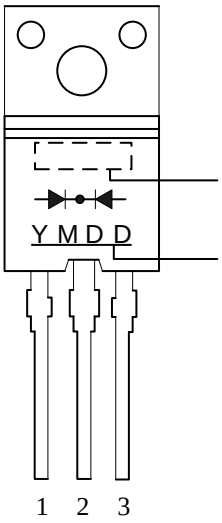
● TO220F-3L



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 ± 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 products.)
- The recommended screw torque for TO220F-3L: 0.490 to 0.686 N·m (5 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
ET4010	FMET-24010

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