

$V_{RSM} = 100\text{ V}$, $I_{F(AV)} = 40\text{ A}$
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

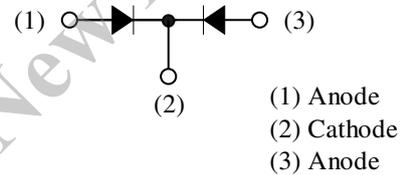
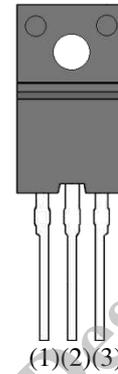
Application

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 ⁽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	$^\circ\text{C}$	
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 ⁽¹⁾	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 ⁽¹⁾	$H \cdot V_F$	$T_J = 125\text{ }^\circ\text{C}, I_F = 10\text{ A}$	—	0.57	—	V	
		$T_J = 125\text{ }^\circ\text{C}, I_F = 20\text{ A}$	—	0.67	—	V	
Reverse Leakage Current ⁽¹⁾	I_R	$V_R = V_{RM}$	—	0.9	150	μA	
Reverse Leakage Current Under High Temperature ⁽¹⁾	$H \cdot I_R$	$V_R = V_{RM}, T_J = 150\text{ }^\circ\text{C}$	—	9.0	75	mA	
Thermal Resistance ⁽³⁾	$R_{th(J-C)}$		—	—	4.0	$^\circ\text{C/W}$	

⁽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

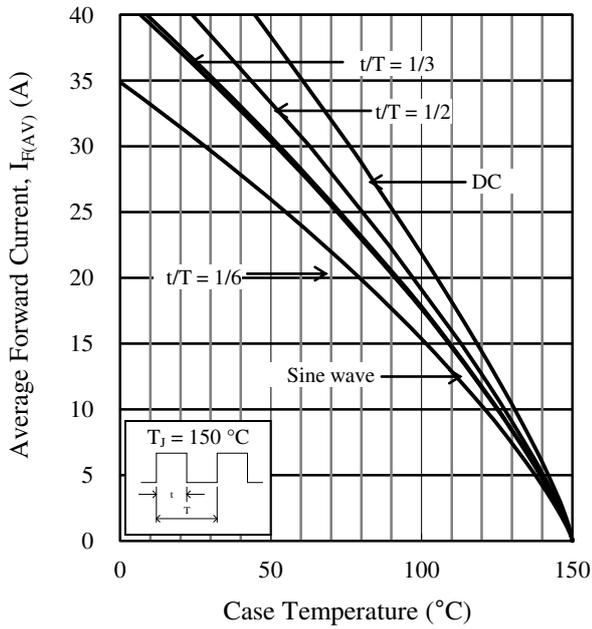


Figure 1. $I_{F(AV)}$ vs. Case Temperature Curves
 $V_R = 0 V$

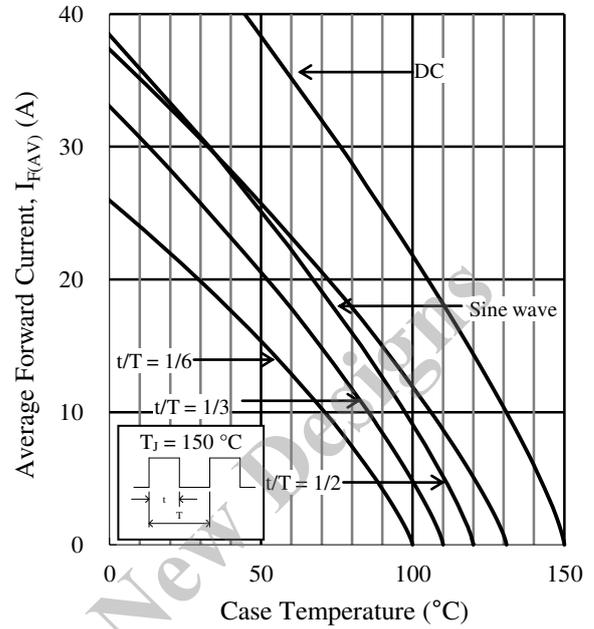


Figure 2. $I_{F(AV)}$ vs. Case Temperature Curves
 $V_R = 100 V$

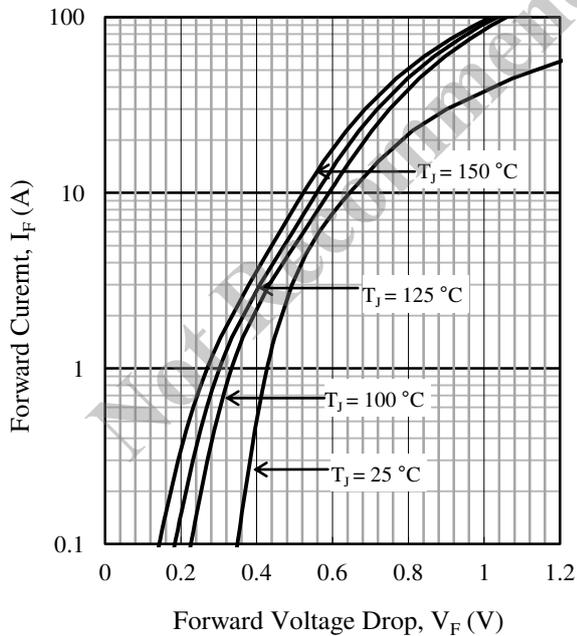


Figure 3. $I_F - V_F$ Typical Characteristics

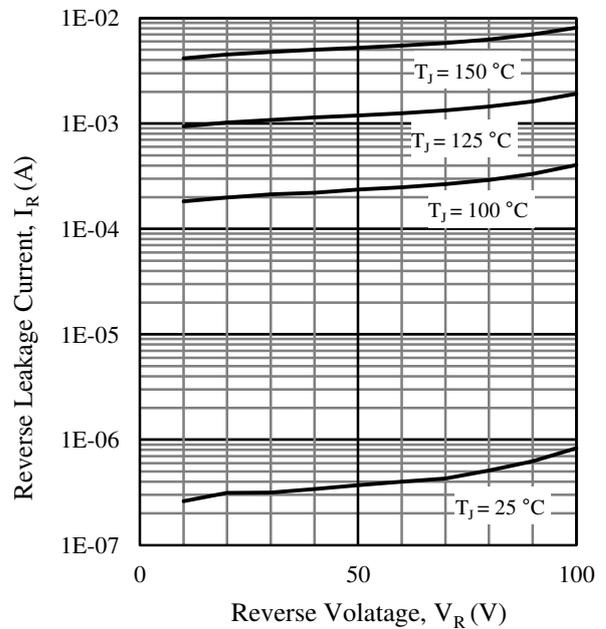
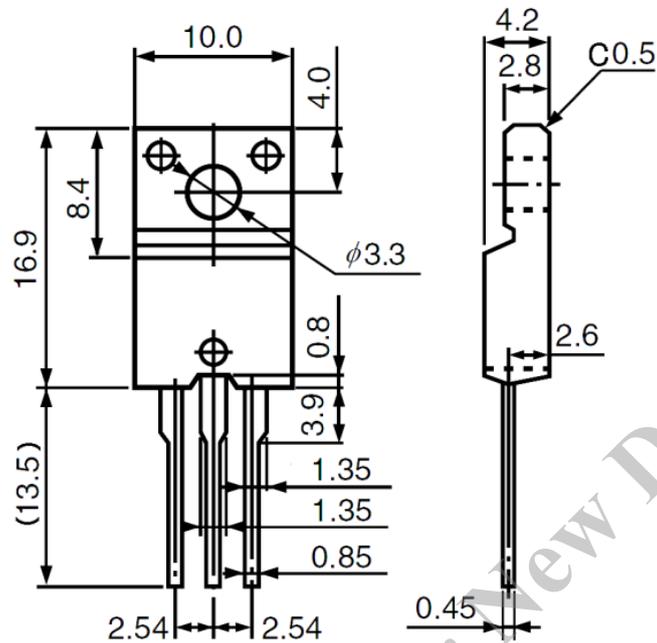


Figure 4. $I_R - V_R$ Typical Characteristics

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 ± 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

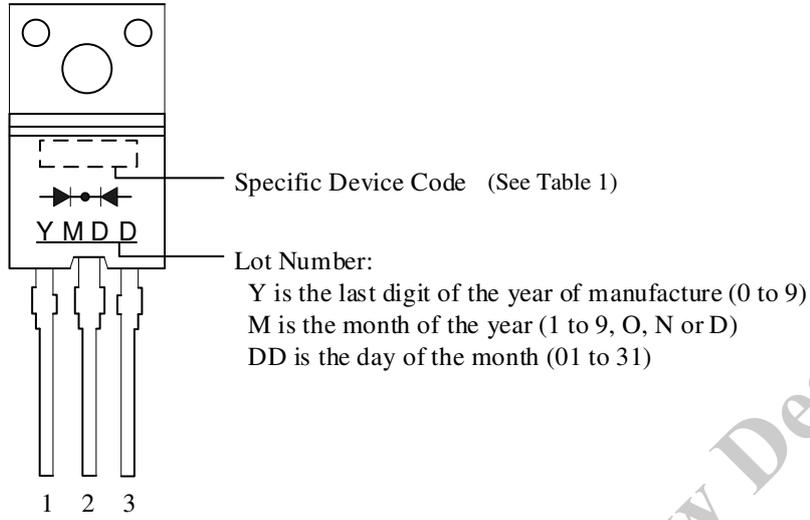


Table 1. Specific Device Code

Specific Device Code	Part Number
ET4010	FMET-24010

Not Recommended for New Designs

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