

$V_{RSM} = 650\text{ V}$, $I_{F(AV)} = 10\text{ A}$
SiC Schottky Diode
FMCA-11065

Description

The FMCA-11065 is a 650 V, 10 A, SiC Schottky diode that lowers reverse leakage current at high temperatures and reduces switching loss with its high-speed switching characteristics.

These characteristic features contribute to improving power supply efficiency and to enabling high-frequency systems.

Features

- RoHS Compliant
- V_{RSM} ----- 650 V
- $I_{F(AV)}$ ----- 10 A
- V_F at 25 °C ----- 1.5 V typ.

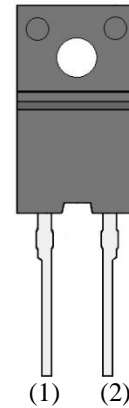
Applications

The high speed switching applications as follows:

- PFC Circuit
- Motor Drive Circuit
- Inverter Circuit

Package

TO220F-2L



(1) Cathode
(2) Anode

Not to scale

Absolute Maximum Ratings

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

Parameter	Symbol	Rating	Unit	Conditions
Peak Repetitive Reverse Voltage	V_{RSM}	650	V	
Repetitive Reverse Voltage	V_{RM}	600	V	
Average Forward Current	$I_{F(AV)}$	10	A	
Surge Forward Current	I_{FSM}	40	A	Half cycle sine wave, positive side, 10 ms, 1 shot
Junction Temperature	T_J	-40 to 175	$^\circ\text{C}$	
Storage Temperature	T_{STG}	-40 to 175	$^\circ\text{C}$	

Electrical Characteristics

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage Drop	V_F	$T_A = 25\text{ }^\circ\text{C}$, $I_F = 10\text{ A}$	—	1.5	1.75	V
		$T_A = 100\text{ }^\circ\text{C}$, $I_F = 10\text{ A}$	—	1.6	—	V
Reverse Leakage Current	I_R	$V_R = V_{RM}$	—	15	200	μA
Reverse Leakage Current Under High Temperature	$H \cdot I_R$	$V_R = V_{RM}$, $T_J = 150\text{ }^\circ\text{C}$	—	70	500	μA
Thermal Resistance ⁽¹⁾	$R_{th(J-L)}$		—	—	2.5	$^\circ\text{C/W}$

⁽¹⁾ $R_{th(J-L)}$ is thermal resistance between junction and lead.

Rating and Characteristic Curves

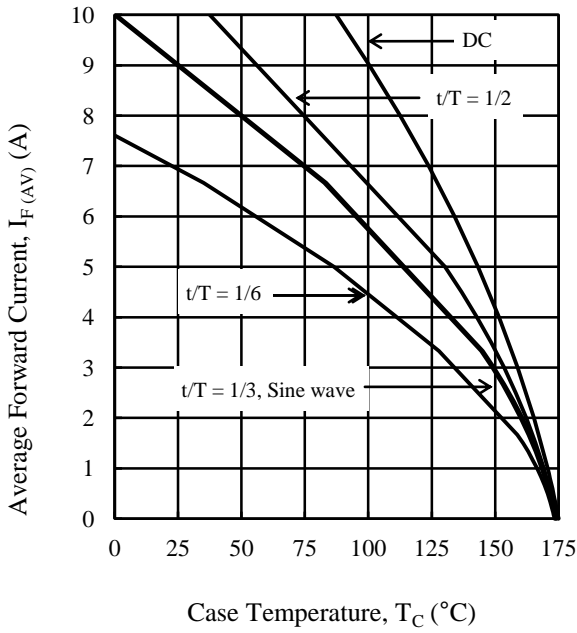


Figure 1. T_C vs. $I_{F(AV)}$ Typical Characteristics

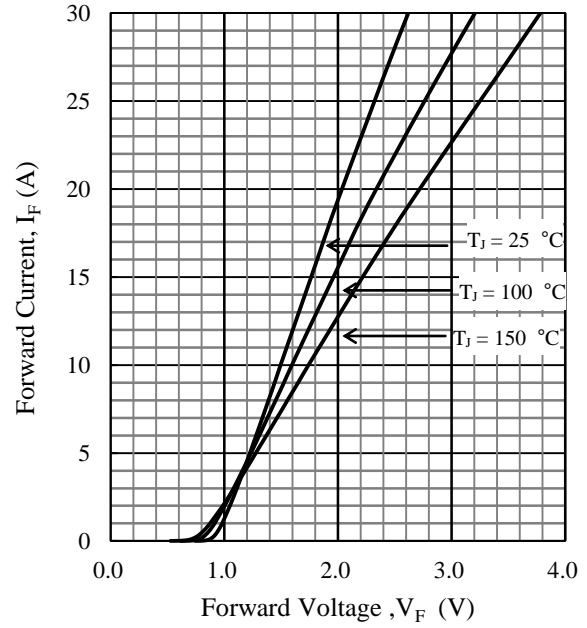


Figure 2. V_F vs. I_F Typical Characteristics

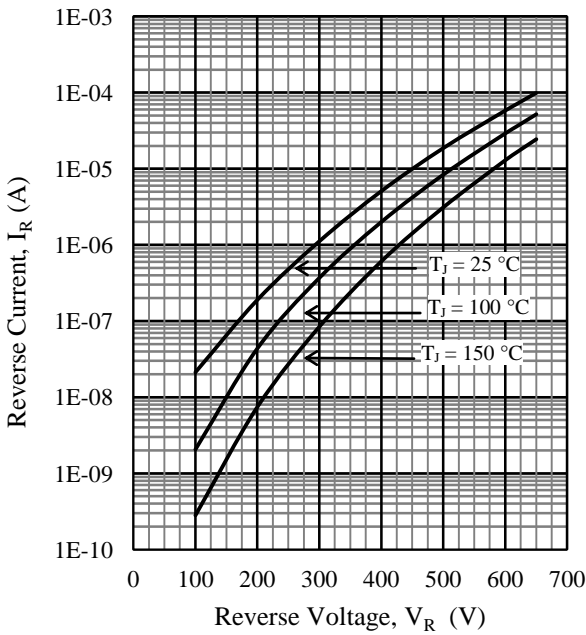
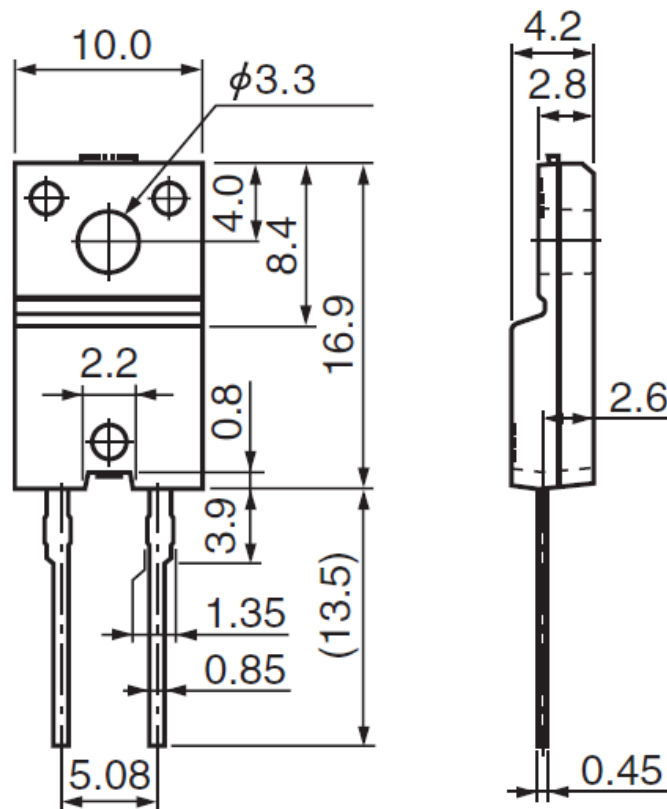


Figure 3. V_R vs. I_R Typical Characteristics

Physical Dimensions

- TO220F-2L



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: $260 \pm 5 \text{ }^\circ\text{C} / 10 \pm 1 \text{ s}$, 2 times
 Soldering Iron: $380 \pm 10 \text{ }^\circ\text{C} / 3.5 \pm 0.5 \text{ s}$, 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 TO220: 0.490 N·m to 0.686 N·m (5 kgf·cm to 7 kgf·cm)

Marking Diagram

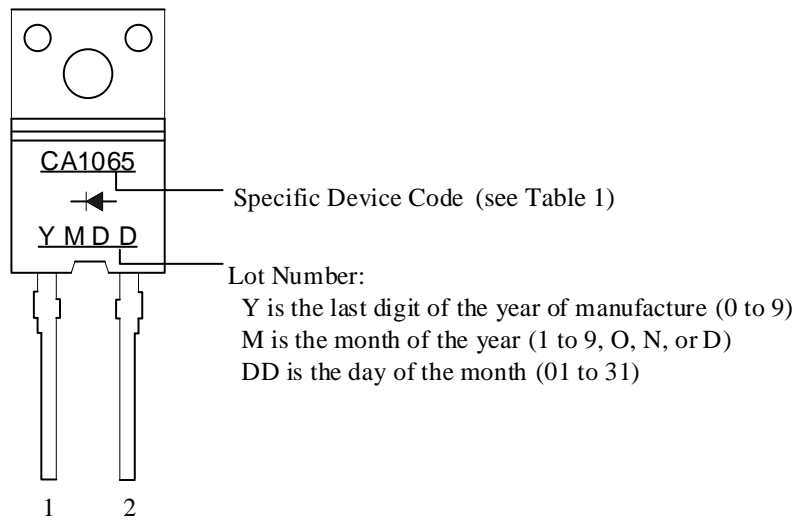


Table 1. Specific Device Code

Specific Device Code	Part Number
CA1065	FMCA-11065

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