

Description

The FMC-28U is a high voltage fast recovery diode of 800 V / 6.0 A. The maximum t_{rr} of 70 ns is realized by optimizing a life-time control.

Features

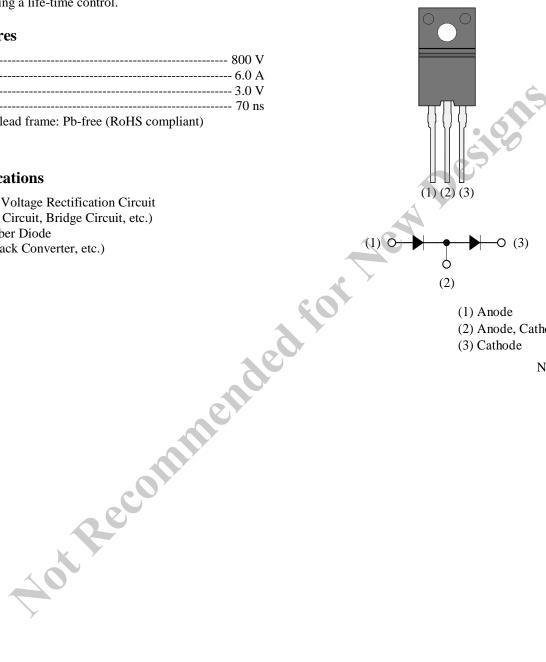
• V _{RM}	800 V
• I _{F(AV)}	
• V _F	
• t _{rr1}	
***	/O IIS
• Bare lead frame: Pb-free (RoHS compliant)	

Applications

- High Voltage Rectification Circuit (PFC Circuit, Bridge Circuit, etc.)
- Snubber Diode (Flyback Converter, etc.)

Package

TO220F-3L



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

Not to scale

FMC-28U

Absolute Maximum Ratings

Unless otherwise specified, $T_A = 25$ °C

Parameter	Symbol	Rating	Unit	Conditions
Peak Repetitive Reverse Voltage ⁽¹⁾	V _{RSM}	800	V	
Repetitive Reverse Voltage ⁽¹⁾	V_{RM}	800	V	
Average Forward Current	I _{F(AV)}	6.0	A	See Figure 1 and Figure 2
Surge Forward Current ⁽¹⁾	I_{FSM}	50	A	Half cycle sine wave, positive side, 10 ms, 1 shot
I ² t Limiting Value ⁽¹⁾	I ² t	12.5	A^2s	$1 \text{ ms} \le t \le 10 \text{ ms}$
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.	Тур.	Max.	Unit
Forward Voltage Drop ⁽¹⁾	V	$T_J = 25 ^{\circ}\text{C}, I_F = 3.0 \text{A}$	_		3.0	V
	V_{F}	$T_J = 100 ^{\circ}\text{C}, I_F = 3.0 \text{A}$	_	1.8	_	V
Reverse Leakage Current ⁽¹⁾	I_R	$V_R = V_{RM}$	_		100	μΑ
Reverse Leakage Current Under High Temperature ⁽¹⁾	$H \cdot I_R$	$V_R = V_{RM}, T_J = 150 ^{\circ}C$	_	_	500	μΑ
Reverse Recovery Time ⁽¹⁾	t _{rr1}	$I_F = I_{RP} = 500 \text{ mA}$ 90% recovery point, $T_J = 25 ^{\circ}\text{C}$			70	ns
	t _{rr2}	$I_F = 500 \text{ mA},$ $I_{RP} = 1000 \text{ mA},$ 75% recovery point, $T_J = 25 \text{ °C}$	_	_	35	ns
Thermal Resistance ⁽²⁾	$R_{th(J-C)}$				4.0	°C/W
Aot Reco						

Specifies a value per chip; the FMC-28U consists of two chips. $^{(2)}R_{th\,(J\text{-}C)}$ 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

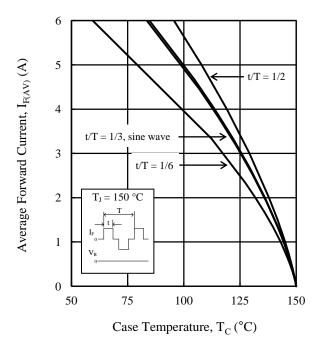


Figure 1. $I_{F(AV)}$ vs. T_C Typical Characteristics $(V_R = 0 \ V)$

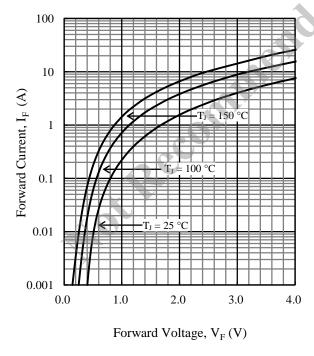


Figure 3. V_F vs. I_F Typical Characteristics

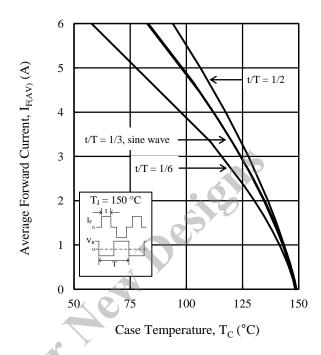


Figure 2. $I_{F(AV)}$ vs. T_C Typical Characteristics $(V_R = 800 \text{ V})$

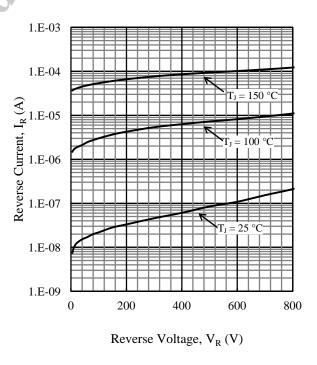
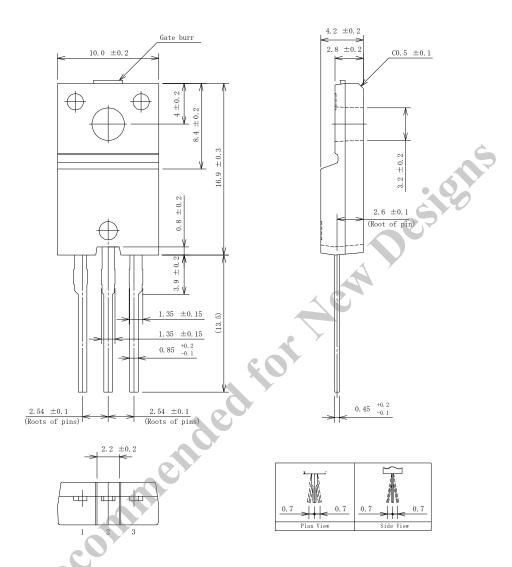


Figure 4. V_R vs. I_R Typical Characteristics

Physical Dimensions

• TO220F-3L



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

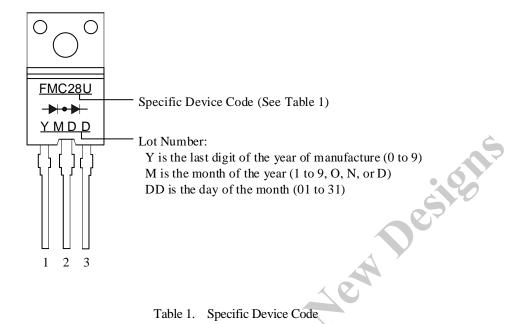


Table 1. Specific Device Code

	Specific Device Code	Part Number
	FMC28U	FMC-28U
AOL RE	Commende	
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