

# FMXA-1106S

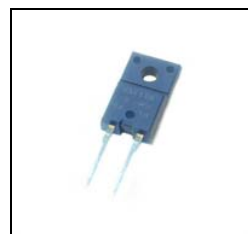
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## ■General Description

Shorter trr at high temperature has been realized by employing the new life time control technology.

This is the optimum characteristic as a fast recovery diode (FRD) for a continuous-current-mode PFC circuit.

## ■Package---TO220F-2Pin



## ■Applications

- PDP panel driver circuit.
- Continuous-current-mode PFC circuit.
- An output rectifier for SMPS, UPS, DC-DC converter.
- A Flywheel diode for the inverter and chopper.

## ■Key Specifications

### ●Absolute maximum ratings

Parameter	Symbol	Unit	Rating
Transient Peak Reverse Voltage	VRSM	V	600
Peak Reverse Voltage	VRM	V	600
Average Forward Current	IF(AV)	A	10
Peak Surge Forward Current	IFSM	A	100

## ■Features

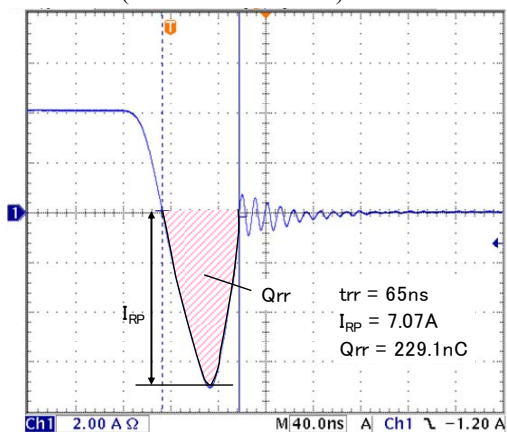
- The shortest trr characteristic in the world at high temperature (100°C).  
Realized to shorten the trr at 100°C by 26% compared to the conventional device.  
(73ns => 54ns (typ), IF=IRP=500/500mA. Compared to the SK's conventional device FMX-G26S)

### ●Electrical characteristics

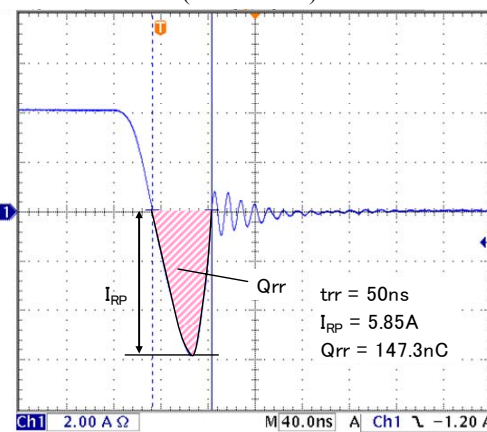
Parameter	Symbol	Unit	Rating	Conditions
Forward Voltage Drop	VF	V	1.98 max.	IF=10A
Reverse Leakage Current	IR	μA	100 max.	VR=VRM
Reverse Leakage Current Under High Temperature	H•IR	mA	30 max.	VR=VRM, Tj=150°C
Reverse Recovery Time	trr	ns	28 max.	IF=IRP=500mA 90%Recovery point

## Typical Current Waveform, mounted on the power supply

FMX-G26S (Conventional device)



FMXA-1106S (New device)



Measurement condition: FCC power supply, f=160kHz, Load 5A (DC12V)

Horiz:40ns/div, Vert:2A/div

Die Structure: Silicon Planer Diode (FRD)

### §1. Absolute Maximum Ratings and Electrical Characteristics

#### •Absolute Maximum Ratings

No.	Item	Symbol	Unit	Rating	Conditions
1	Transient Peak Reverse Voltage	VRSM	V	600	
2	Peak Reverse Voltage	VRM	V	600	
3	Average Forward Current	IF(AV)	A	10	
4	Peak Surge Forward Current	IFSM	A	100	10msec. Half sine-wave, one shot
5	I <sup>2</sup> t Limiting Value	I <sup>2</sup> t	A <sup>2</sup> S	50	1msec ≤ t ≤ 10msec
6	Junction Temperature	T <sub>j</sub>	°C	-40 to +150	
7	Storage Temperature	T <sub>stg</sub>	°C	-40 to +150	

#### •Electrical Characteristics

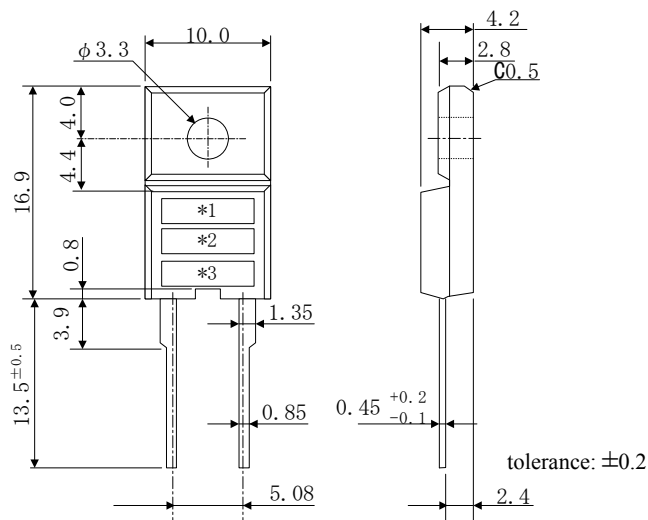
No.	Item	Symbol	Unit	Rating	Conditions
1	Forward Voltage Drop	V <sub>F</sub>	V	1.98 max.	IF=10A
2	Reverse Leakage Current	I <sub>R</sub>	μA	100 max.	VR=VRM
3	Reverse Leakage Current Under High Temperature	H•I <sub>R</sub>	mA	30 max.	VR=VRM, T <sub>j</sub> =150°C
4	Reverse Recovery Time	t <sub>rr</sub>	ns	28 max	IF=IRP=500mA 90% Recovery point
5	Thermal Resistance	R <sub>th(j-c)</sub>	°C/W	4.0 max.	Between Junction and case

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## §2. Package information

### 2-1 Package type, physical dimensions and material



Unit: mm

### 2-2 Marking

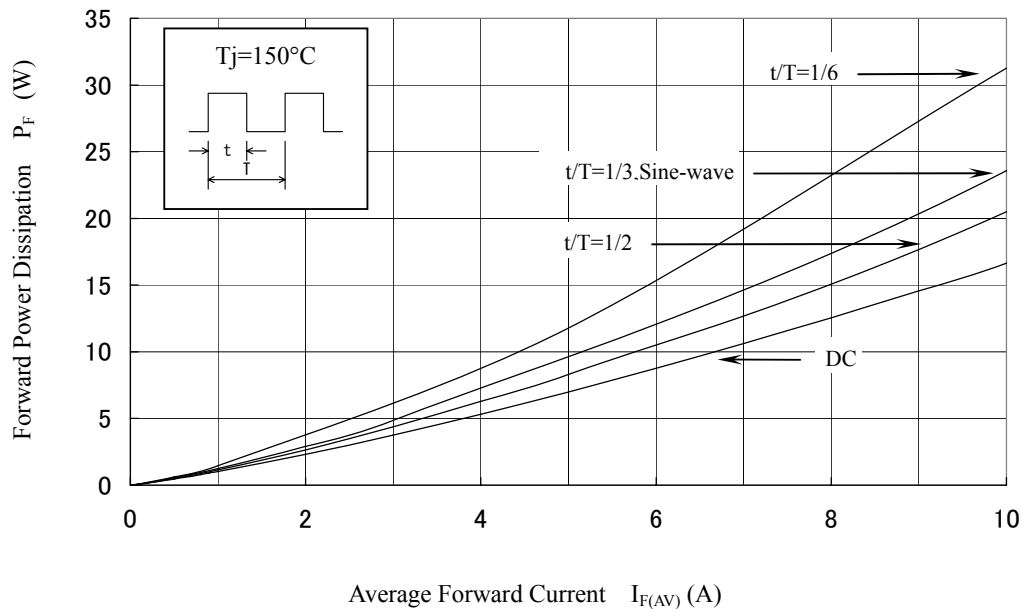
Part Number	Marking		
	Type Name	Polarity	Lot number
FMXA-1106S	XA1106	S	1st letter: Last digit of year 2nd letter: Month From 1 to 9 for Jan. to Sep., O for Oct., N for Nov., D for Dec. 3rd & 4th letter: Day e.g.: 5006 (October 6, 2005)

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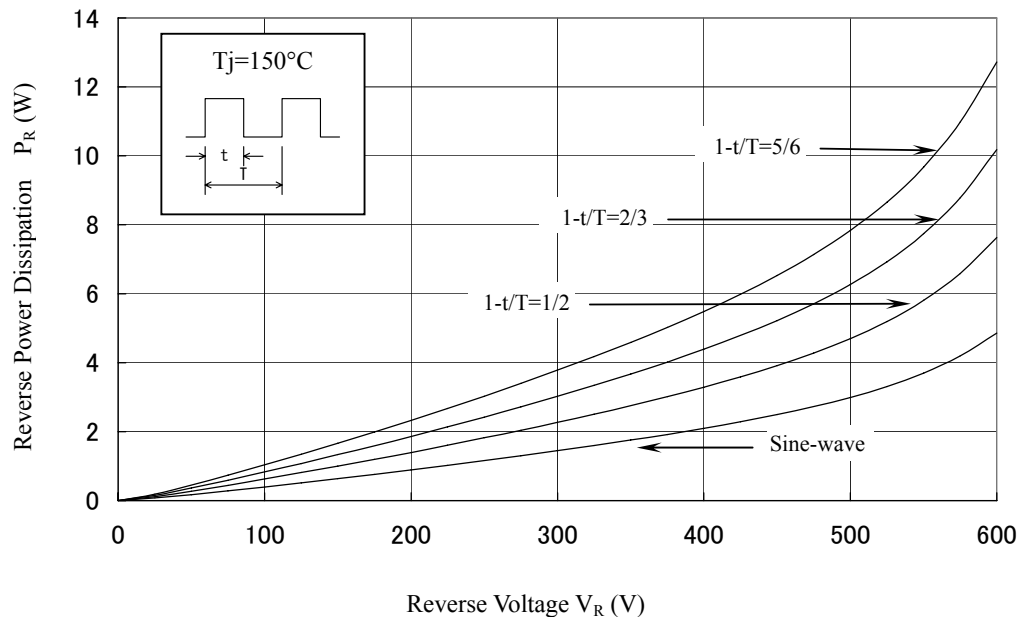
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### §3. Characteristics

$I_{F(AV)} - P_F$



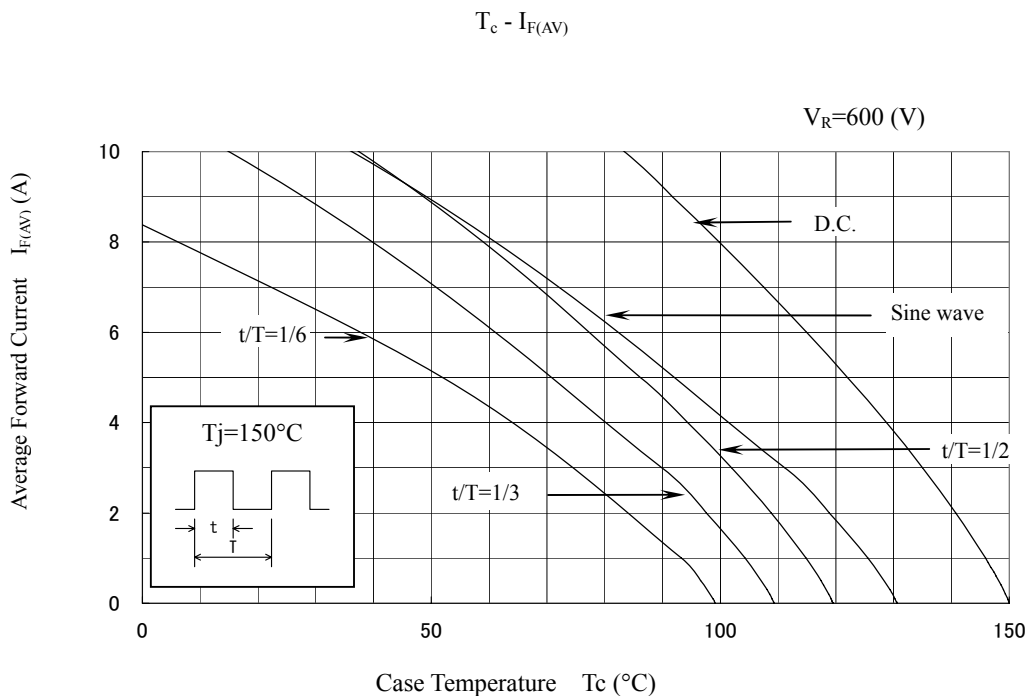
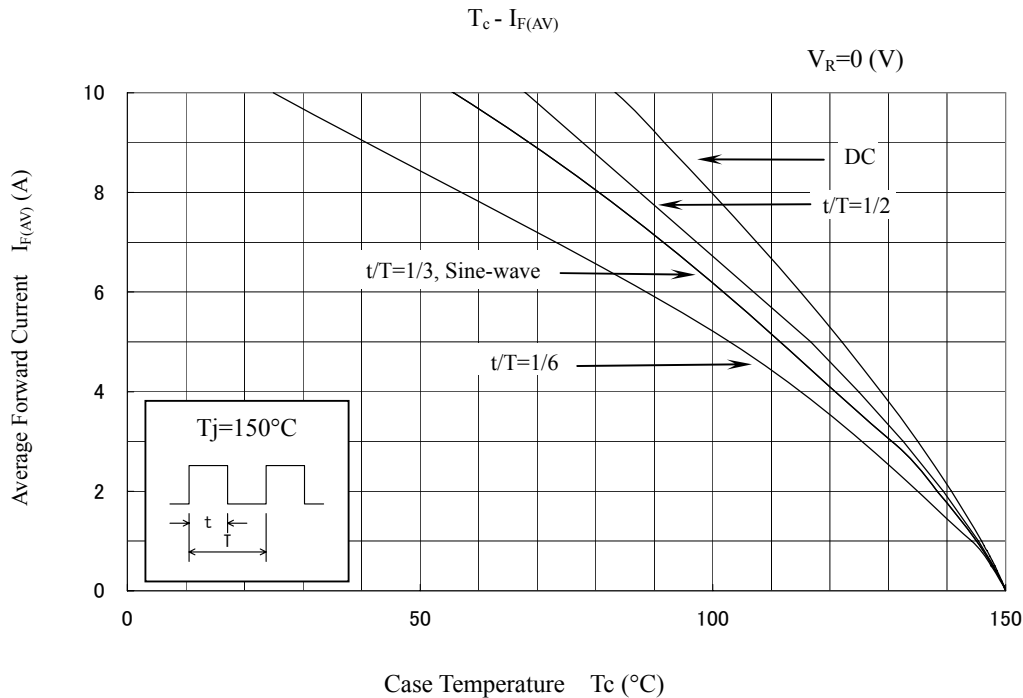
$V_R - P_R$



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## §4. Derating



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