

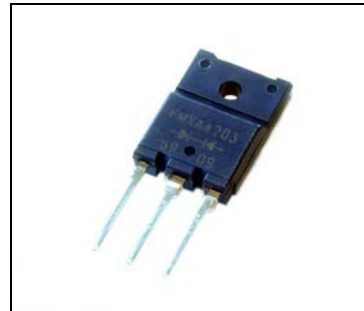
FMXA-4203S

November, 2005

■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 high frequency rectifier FRD for FCC power supply, etc.

■Package---TO3PF



■Applications

- A high frequency rectifier for FCC power supply unit, etc.
- An output rectifier for SMPS, UPS, DC-DC converter.
- A Flywheel diode for the inverter and chopper, etc.

■Key Specifications

●Absolute maximum ratings

Parameter	Symbol	Unit	Rating
Transient Peak Reverse Voltage	VRSM	V	300
Peak Reverse Voltage	VRM	V	300
Average Forward Current	IF(AV)	A	20
Peak Surge Forward Current	IFSM	A	100

■Features

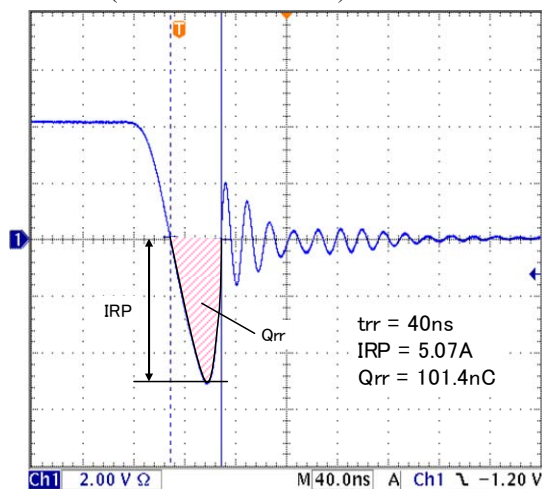
- The shortest trr characteristic in the world at high temperature (100°C).
Realized to shorten the trr at 100°C by 30% compared to the conventional device.
(51ns => 36ns (typ.), IF=IRP=500/500mA. Compared to the SK's conventional device FMX-33S)

●Electrical characteristics

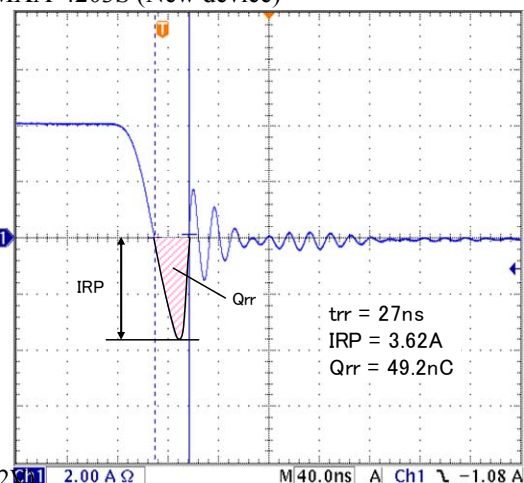
Parameter	Symbol	Unit	Rating	Conditions
Forward Voltage Drop	VF	V	1.3 max.	IF=10A
Reverse Leakage Current	IR	μA	100 max.	VR=VRM
Reverse Leakage Current Under High Temperature	H•IR	mA	30 max.	VR=VRM, Tj=150°C
Reverse Recovery Time	trr	ns	25 max.	IF=IRP=500mA 90% Recovery point

Typical Current Waveform, mounted on the power supply

FMX-33S (Conventional device)



FMXA-4203S (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	300	
2	Peak Reverse Voltage	VRM	V	300	
3	Average Forward Current	IF(AV)	A	20	
4	Peak Surge Forward Current	IFSM	A	100	10msec. Half sine-wave, one shot
5	I ² t Limiting Value	I ² t	A ² S	50	1msec ≤ t ≤ 10msec
6	Junction Temperature	T _j	°C	-40 to +150	
7	Storage Temperature	T _{stg}	°C	-40 to +150	

• Electrical Characteristics

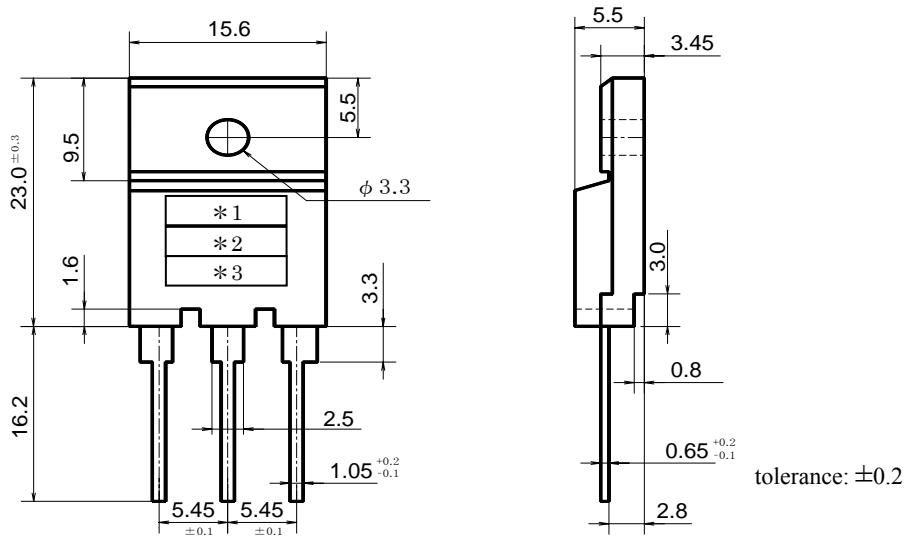
No.	Item	Symbol	Unit	Rating	Conditions
1	Forward Voltage Drop	V _F	V	1.30 max.	IF=10A
2	Reverse Leakage Current	I _R	μA	100 max.	VR=VRM
3	Reverse Leakage Current Under High Temperature	H•I _R	mA	30 max.	VR=VRM, T _j =150°C
4	Reverse Recovery Time	trr	ns	25 max	IF=IRP=500mA 90% Recovery point
5	Thermal Resistance	R _{th(j-c)}	°C/W	2.0 max.	Between Junction and case

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§2. Package information

2-1 Package type, physical dimensions and material



Unit: mm

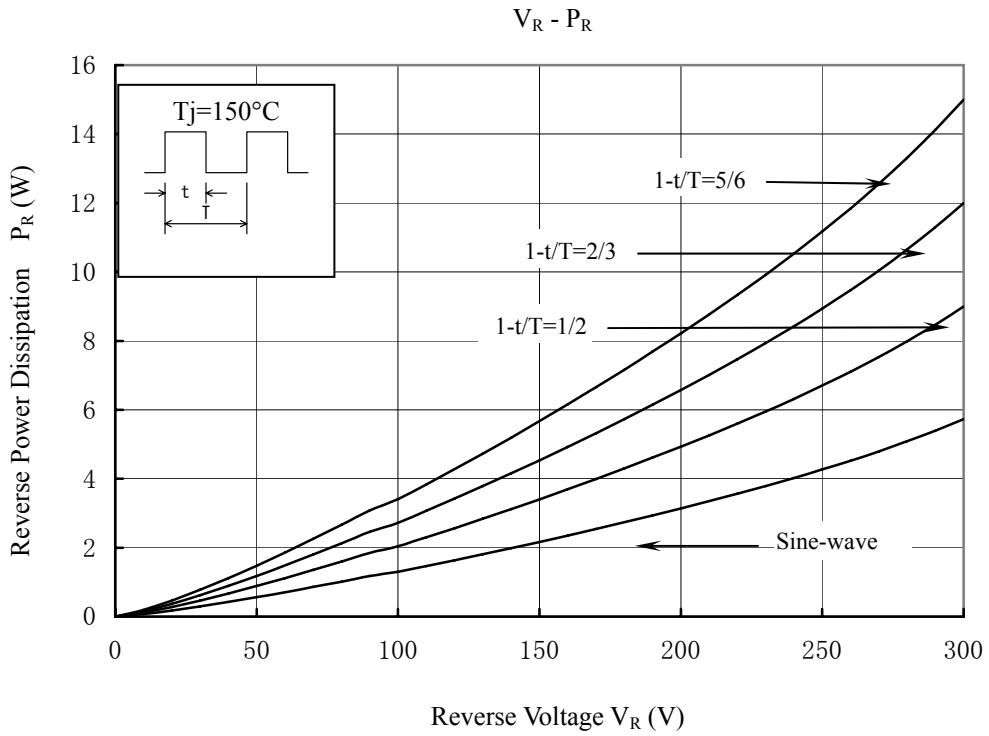
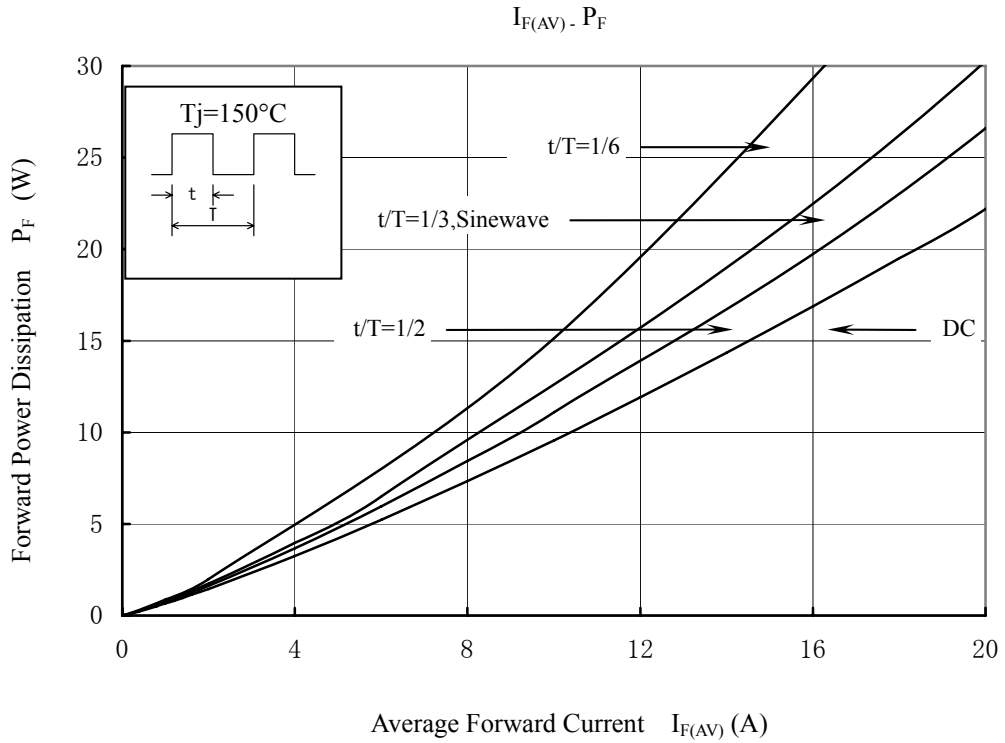
2-2 Marking

Part Number	Marking		
	Type Name	Polarity	Lot number
FMXA-4203S	FMXA4203		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.: 5O06 (October 6, 2005)

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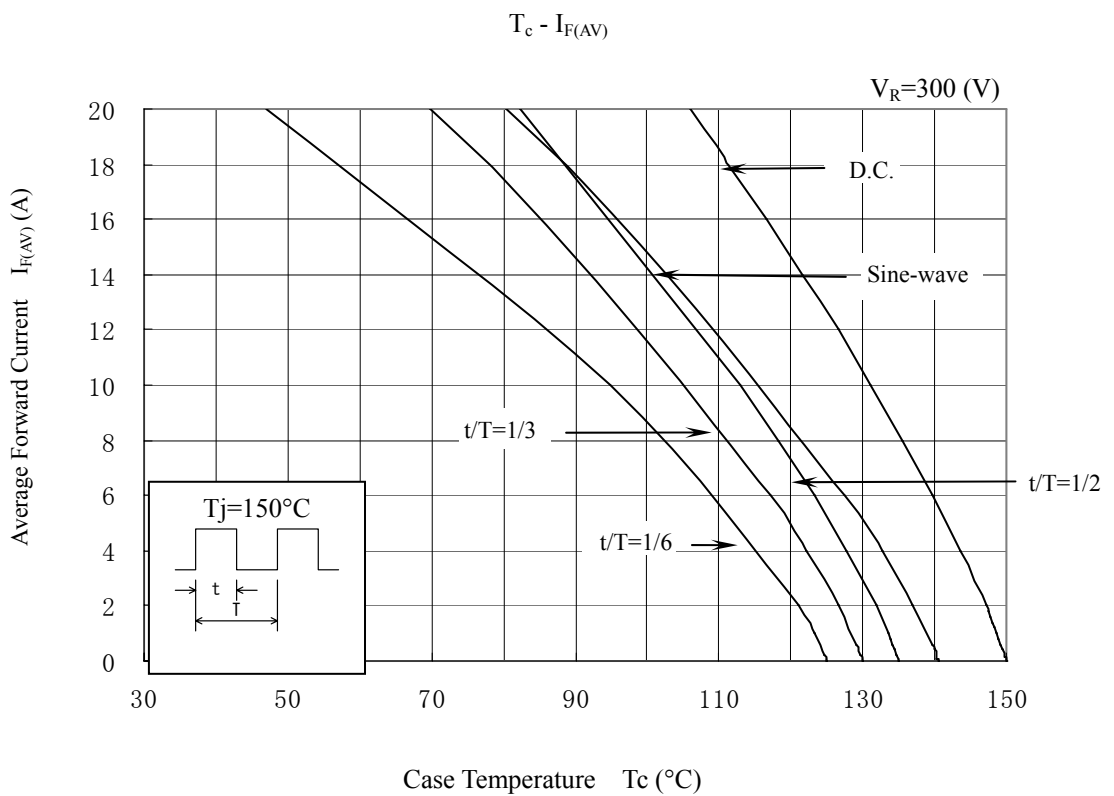
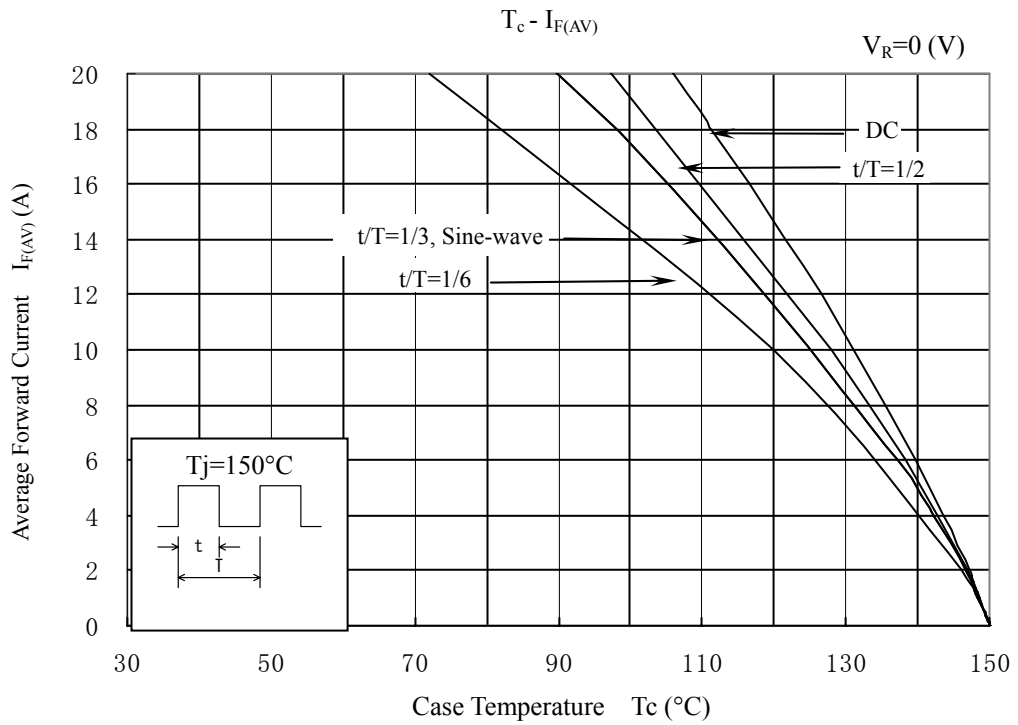
§3. Characteristics



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§4. Derating



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