Ultrafast Recovery Diode

FMXA-2102ST

March, 2006

General Description

A combination of a new lifetime control technology and a thinner die realizes low power dissipation.

As a FRD for SW power supply secondary side rectification, this device has optimal characteristics for a high frequency rectification use.

Applications

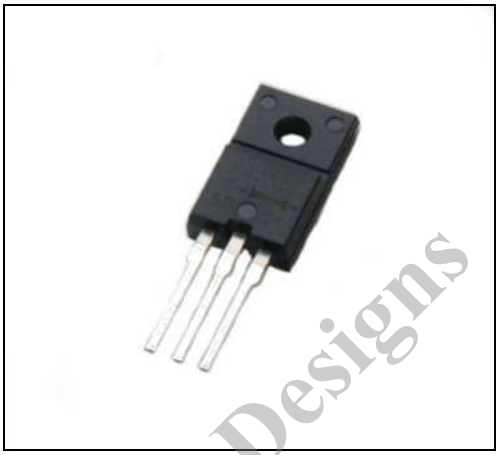
- PDP driver circuit.
- An output rectifier for SMPS, UPS, DC-DC converter.
- A Flywheel diode for the inverter and chopper.

Features

- An excellent reverse recovery characteristic under high temperature
- An improved heat dissipation at a junction part thanks to a thinner die

Die Structure: Silicon Planer Diode (FRD)

Package—TO220F



Not Recommended for New Designs

Key Specifications

Absolute maximum ratings

Parameter	Symbol	Unit	Rating
Transient Peak Reverse Voltage	VRSM	V	200
Peak Reverse Voltage	VRM	V	200
Average Forward Current	IF(AV)	A	10
Peak Surge Forward Current	IFSM	A	100

Electrical characteristics

Parameter	Symbol	Unit	Rating	Conditions
Forward Voltage Drop	VF	V	1.2 max.	IF=5A
Reverse Leakage Current	IR	μA	100 max.	VR=VRM
Reverse Leakage Current Under High Temperature	H•IR	mA	20 max.	VR=VRM, Tj=150°C
Reverse Recovery Time	trr	ns	25 max.	IF=IRP=500mA 90%Recovery point

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§1. Absolute Maximum Ratings and Electrical Characteristics

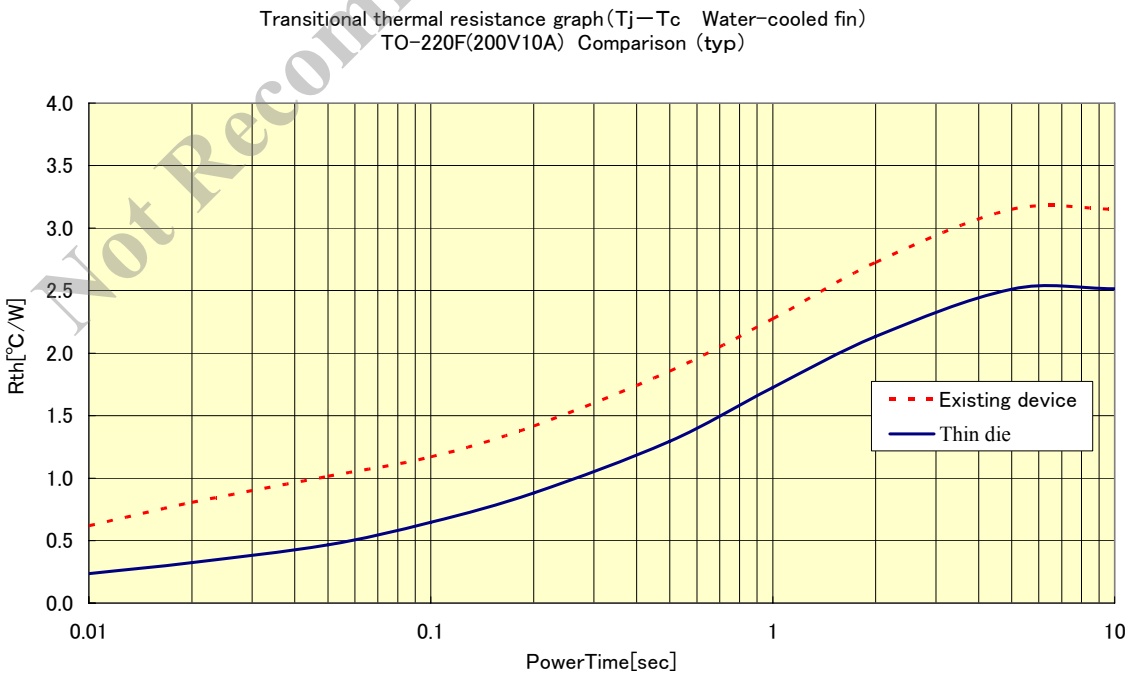
•Absolute Maximum Ratings

No.	Item	Symbol	Unit	Rating	Conditions
1	Transient Peak Reverse Voltage	VRSM	V	200	
2	Peak Reverse Voltage	VRM	V	200	
3	Average Forward Current	IF(AV)	A	10	Refer to "§4 Derating".
4	Peak Surge Forward Current	IFSM	A	100	10msec. Half sine-wave, one shot
5	I^2t Limiting Value	I^2t	A^2S	50	1msec ≤ t ≤ 10msec
6	Junction Temperature	Tj	°C	-40 to +150	
7	Storage Temperature	Tstg	°C	-40 to+150	

• Electrical Characteristics

No.	Item	Symbol	Unit	Rating	Conditions
1	Forward Voltage Drop	V_F	V	1.2 max.	IF=5A
2	Reverse Leakage Current	I_R	μA	100 max.	VR=VRM
3	Reverse Leakage Current Under High Temperature	H•I_R	mA	20 max.	VR=VRM, Tj=150°C
4	Reverse Recovery Time	trr	ns	25 max	IF=IRP=100mA 90% Recovery point
5	Thermal Resistance	$R_{th(j-c)}$	°C/W	4.0 max.	Between Junction and case

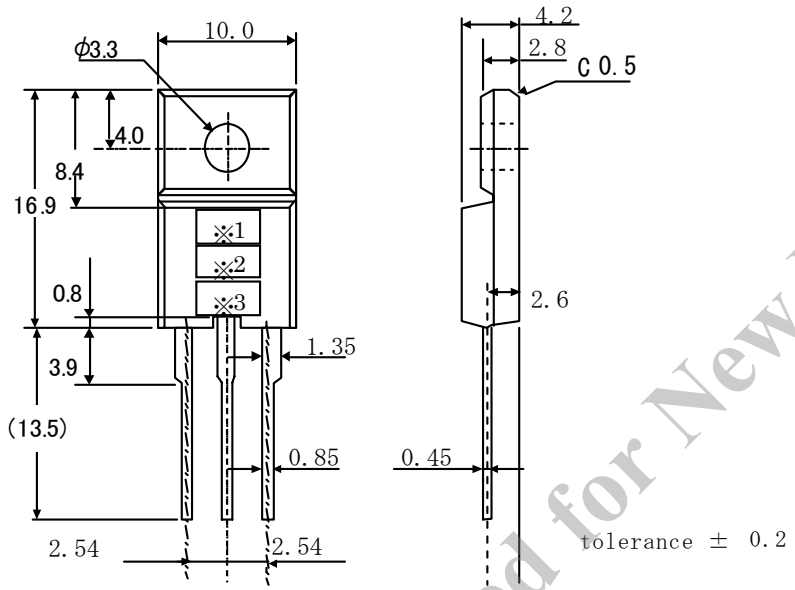
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§2. Package information

2-1 Package type, physical dimensions and material



Unit: mm

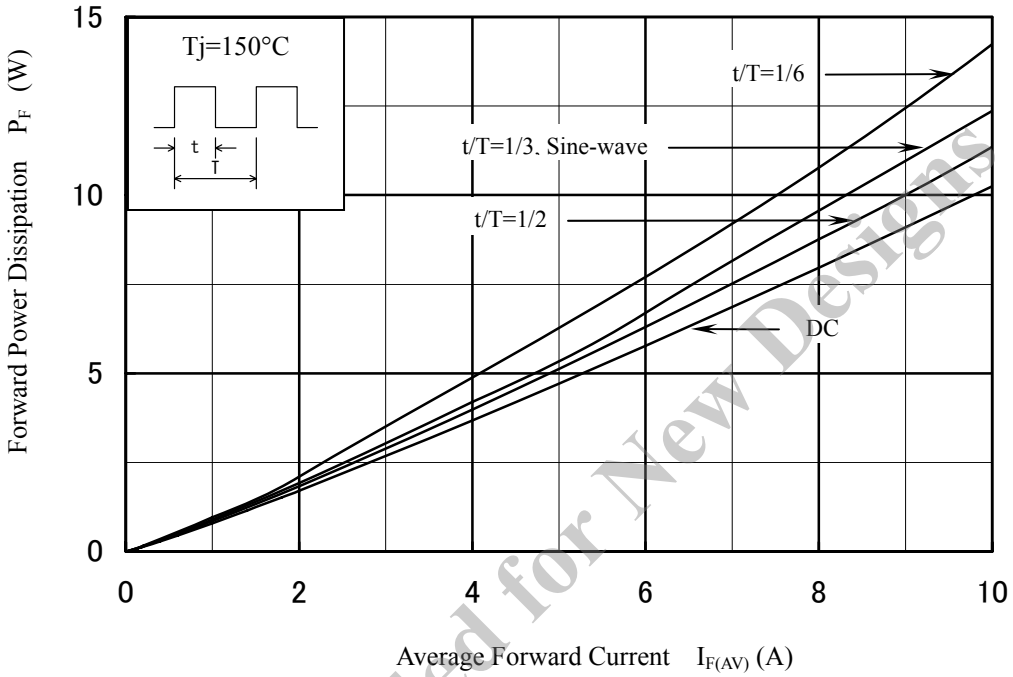
2-2 Marking

Part Number	Marking		
	Type Name	Polarity	Lot number
FMXA-2102ST	XA2102	T 	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 ex. 6227 (Feb.,27, 2006)

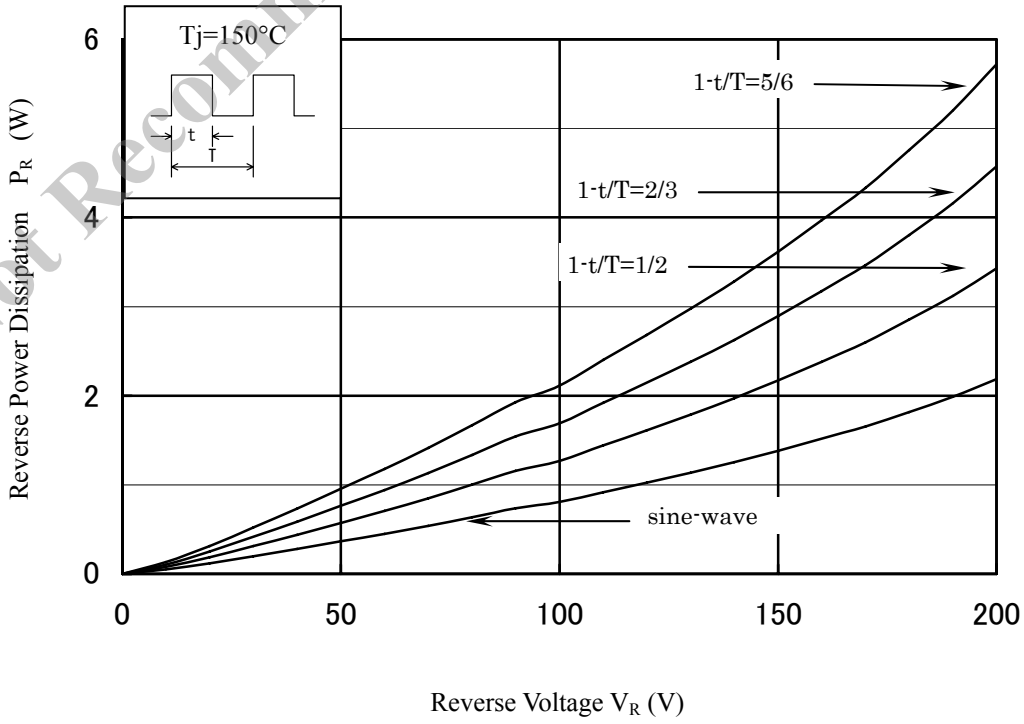
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§3. Characteristics

$I_{F(AV)}$ - P_F



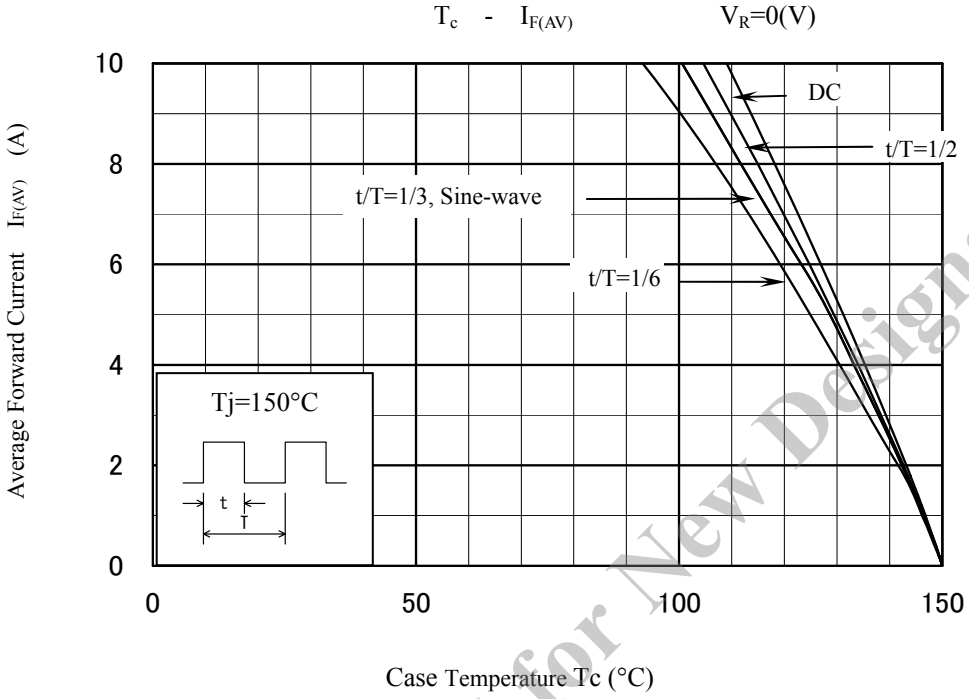
V_R - P_R

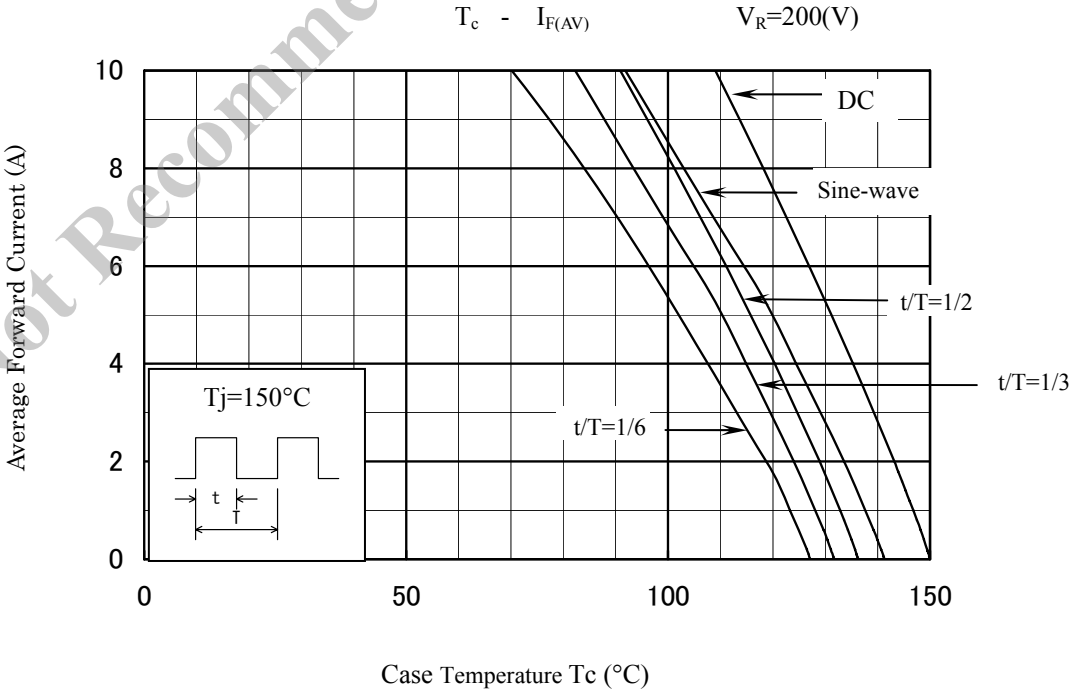


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§4. Derating





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<Worldwide Contacts>

Asia Pacific

China

Sanken Electric Hong Kong Co., Ltd.
Suite 1026 Ocean Centre, Canton Road, Tsimshatsui, Kowloon, Hong Kong
Tel: 852-2735-5262
Fax: 852-2735-5494

Sanken Electric (Shanghai) Co., Ltd.
Room3202, Maxdo Centre, Xingyi Road 8, Changning district, Shanghai, China
Tel: 86-21-5208-1177
Fax: 86-21-5208-1757

Taiwan Sanken Electric Co., Ltd.
Room 1801, 18th Floor, 88 Jung Shiau East Road, Sec. 2, Taipei 100, Taiwan R.O.C.
Tel: 886-2-2356-8161
Fax: 886-2-2356-8261

India

Saket Devices Pvt. Ltd.
Office No.13, First Floor, Bandal - Dhankude Plaza, Near PMT Depot, Paud Road, Kothrud, Pune - 411 038, India
Tel: 91-20-5621-2340
91-20-2528-5449
Fax: 91-20-2528-5459

Japan

Sanken Electric Co., Ltd. Overseas Sales Headquaters
Metropolitan Plaza Bldg. 1-11-1 Nishi-Ikebukuro, Toshima-ku, Tokyo 171-0021, Japan
Tel: 81-3-3986-6164
Fax: 81-3-3986-8637

Korea

Sanken Electric Korea Co., Ltd.
Mirae Asset Life Bldg. 6F, 168 Kongduk-dong, Mapo-ku, Seoul, 121-705, Korea
Tel: 82-2-714-3700
Fax: 82-2-3272-2145

Singapore

Sanken Electric Singapore Pte. Ltd.
150 Beach Road, #14-03 The Gateway West, Singapore 189720
Tel: 65-6291-4755
Fax: 65-6297-1744

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Europe

United Kingdom

Sanken Power Systems (UK) Limited
Pencoed Technology Park, Pencoed, Bridgend CF35 5HY. UK
Tel: 44-1656-869-100
Fax: 44-1656-869-162

North America

United States

Allegro MicroSystems, Inc.
115 Northeast Cutoff, Worcester, Massachusetts 01606, U.S.A.
Tel: 1-508-853-5000
Fax: 1-508-853-3353

Allegro MicroSystems, Inc. (Southern California)
14 Hughes Street, Suite B105, Irvine, CA 92618
Tel: 1-949-460-2003
Fax: 1-949-460-7837

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