SANKEN ELECTRIC

FMXS-4202S

Fast Recovery Diode

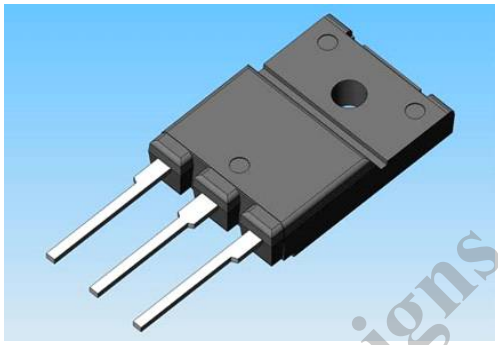
June, 2011

General Description

FRD that has excellent high speed performance is incorporated into the TO-3PF at high current package. It achieved a balance between high speed at high temperature operates and low-VF.

Package

(TO-3PF 3pin)



Applications

- A DC-DC converters.
- A high current secondary rectifier.
- A high frequencies rectifier circuit, etc.

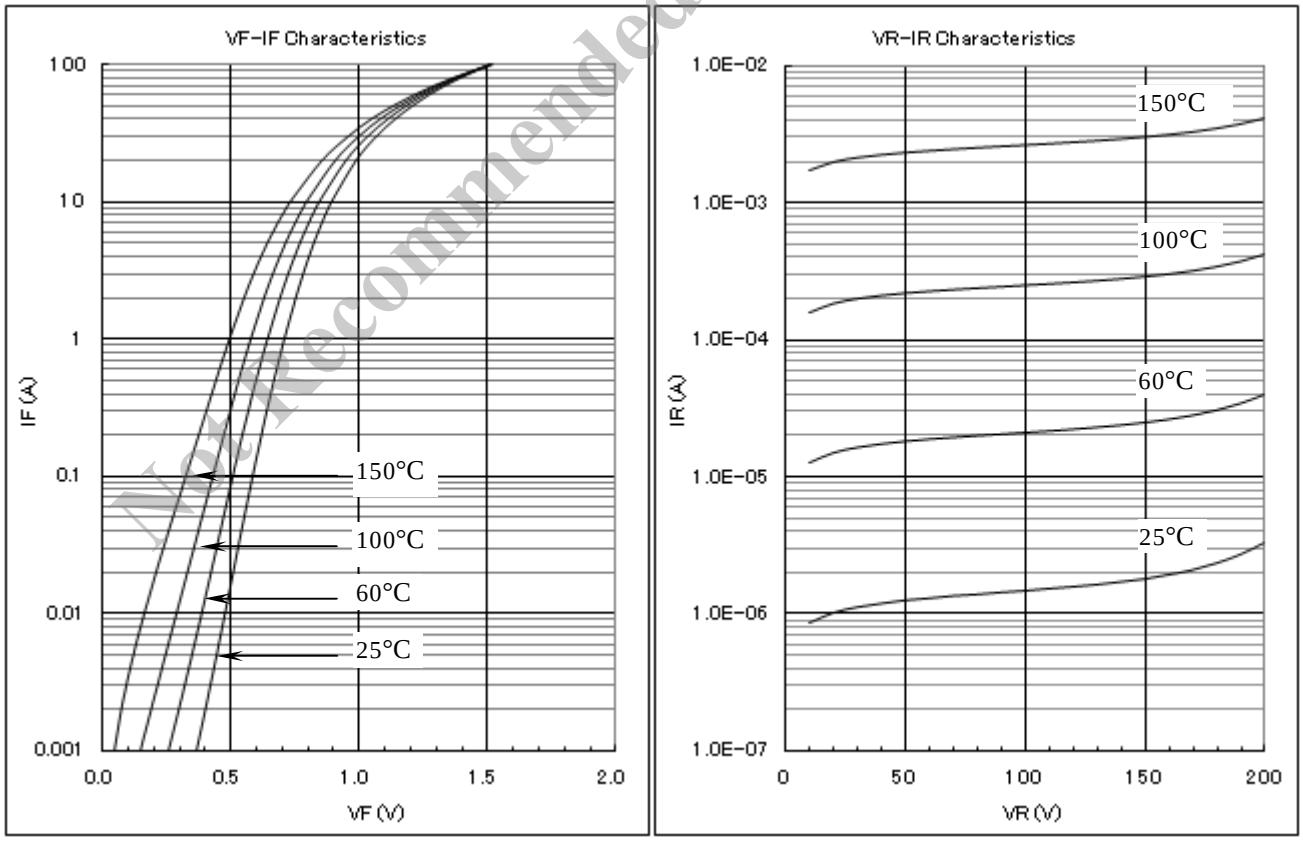
Features

- An ultrafast recovery diode.
- A balance low-VF and high speed performance at high temperature.
- A great radiation performance due to high-current package.
- A great isolation performance due to full mold package.

Key Specifications

Item	Unit	Rating	Conditions
V_{RM}	V	200	
V_F	V	1.05	I_F=10A
$I_{F(AV)}$	A	20	
t_{rr}	ns	30	

Typical Characteristics



VF-IF&VR-IR show ratings per one chip.

✶ **Absolute maximum ratings**

No.	Item	Symbol	Unit	Rating	Conditions
1	Transient Peak Reverse Voltage	V_{RSM}	V	200	
2	Peak Reverse Voltage	V_{RM}	V	200	
3	Average Forward Current	$I_{F(AV)}$	A	20	
4	Peak Surge Forward Current	I_{FSM}	A	150	10msec. Half sinewave, one shot
5	I^2t Limiting Value	I^2t	A^2s	112.5	1msec ≤ t ≤ 10msec
6	Junction Temperature	T_j	°C	-40～+150	
7	Storage Temperature	T_{stg}	°C	-40～+150	

No.1,2,4&5 show ratings per one chip.

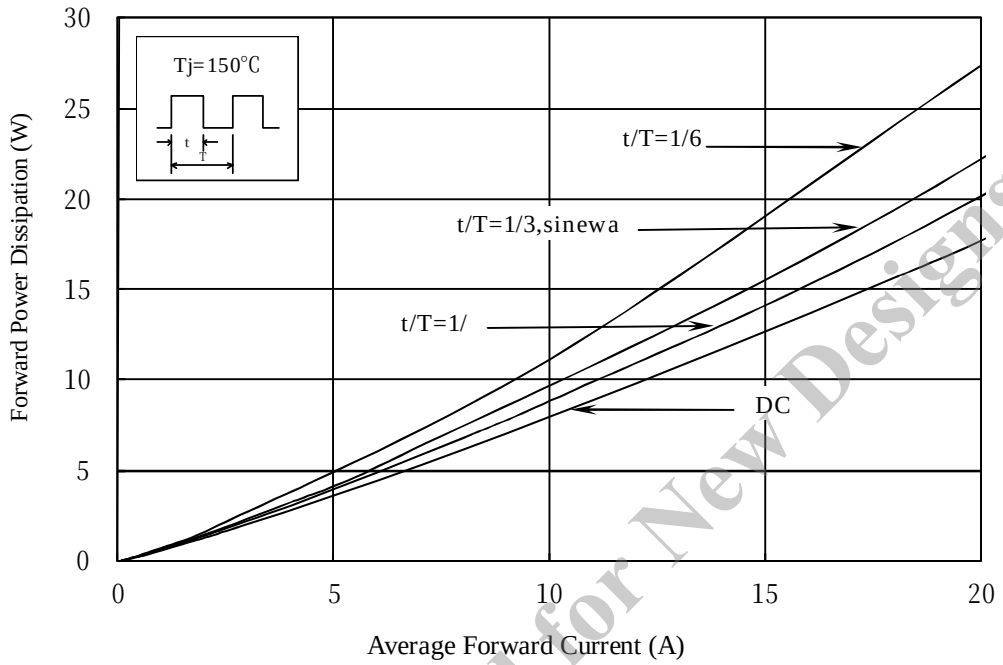
✶ **Electrical characteristics (Ta=25°C, unless otherwise specified)**

No.	Item	Symbol	Unit	Value	Conditions
1	Forward Voltage Drop	V_F	V	1.05 max.	I_F=10A
2	Reverse Leakage Current	I_R	uA	50 max.	$V_R=V_{RM}$
3	Reverse Leakage Current Under High Temperature	$H \cdot I_R$	mA	30 max.	$V_R=V_{RM}$, T_j=150°C
4	Reverse Recovery Time	trr1	ns	30 max.	I_F= I_{RP}=500mA, T_j=25°C, 90% Recovery point
		trr2	ns	25 max.	I_F=500mA,I_{RP}=1A, T_j=25°C, 75% Recovery point
5	Thermal Resistance	$R_{th(j-l)}$	°C /W	2.0 max.	Between Junction and case

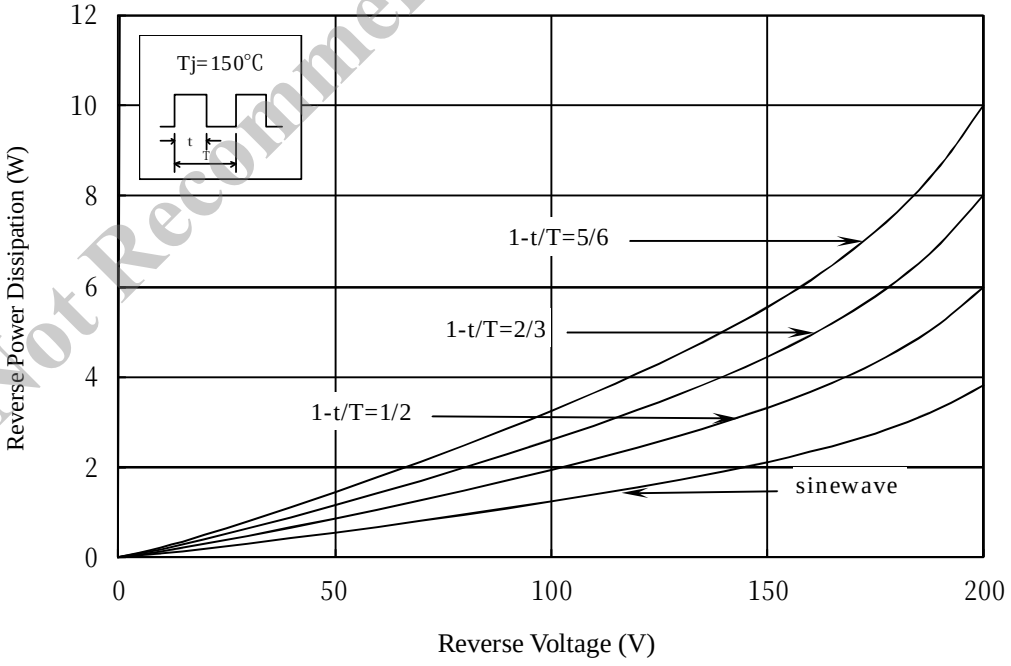
No.1,2,3&4 show characteristics per one chip.

✶ **Characteristics**

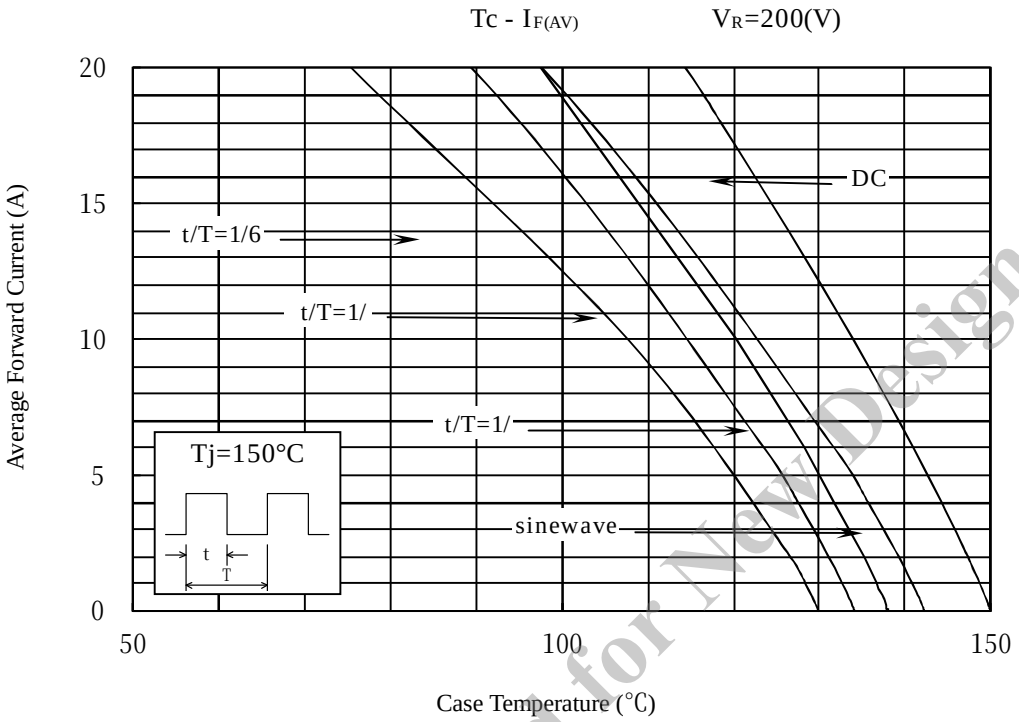
$I_{F(AV)}$ - P_F



V_R - P_R



✶ **Derating**



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✶ Package information **(mm)**