SANKEN ELECTRIC

FMX-4206S

Fast Recovery Diode

Jan. 2010

General Description

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

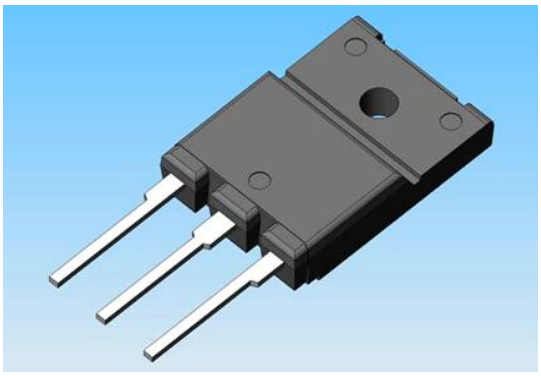
Applications

- DCM or CCM type PFC circuit
  (Power factor improvement circuit)
- DC-DC converters.
  (Forward type/ flyback type/ current resonance type)

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.

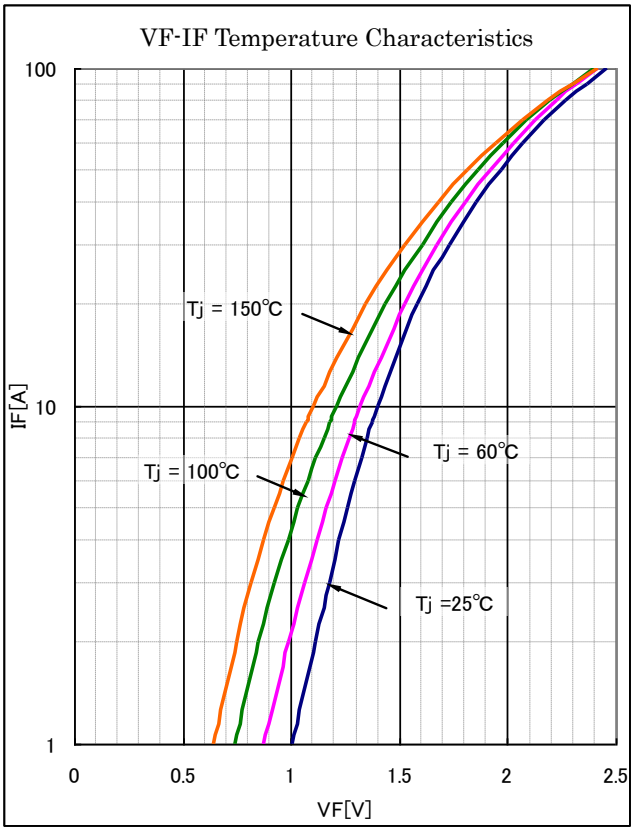
Package (TO-3PF 3pin)

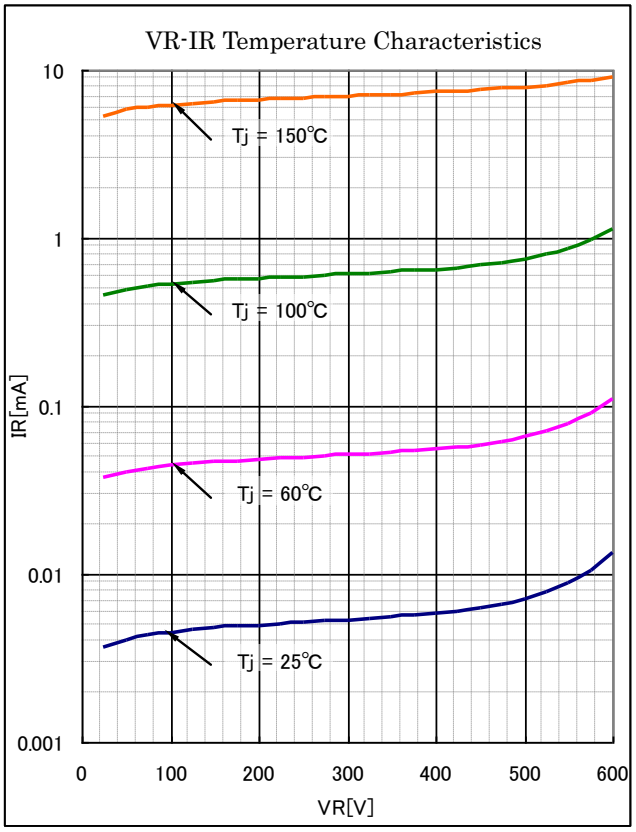


Key Specifications

Item	Unit	Rating	Conditions
V_{RM}	V	600	
V_F	V	1.5	I_F=10A
$I_{F(AV)}$	A	20	
$t_{rr}1$	ns	30	
$t_{rr}2$	ns	—	

Typical Characteristics





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

✶ **Absolute maximum ratings**

No.	Item	Symbol	Unit	Rating	Conditions
1	Transient Peak Reverse Voltage	V_{RSM}	V	600	
2	Peak Reverse Voltage	V_{RM}	V	600	
3	Average Forward Current	$I_{F(AV)}$	A	20	Refer to Derating (Page4)
4	Peak Surge Forward Current	I_{FSM}	A	100	10msec. Half sinewave, one shot
5	I^2t Limiting Value	I^2t	A^2s	50	1msec≦t≦10msec
6	Junction Temperature	T_j	℃	-40～+150	
7	Storage Temperature	T_{stg}	℃	-40～+150	

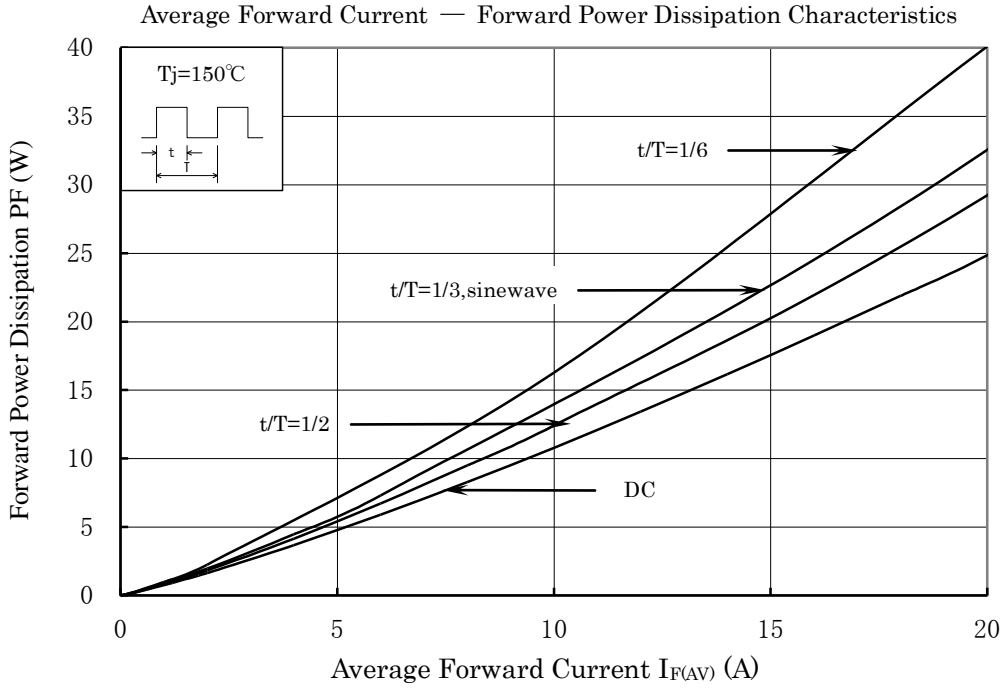
No.1,2,4&5 show characteristics per one chip.

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

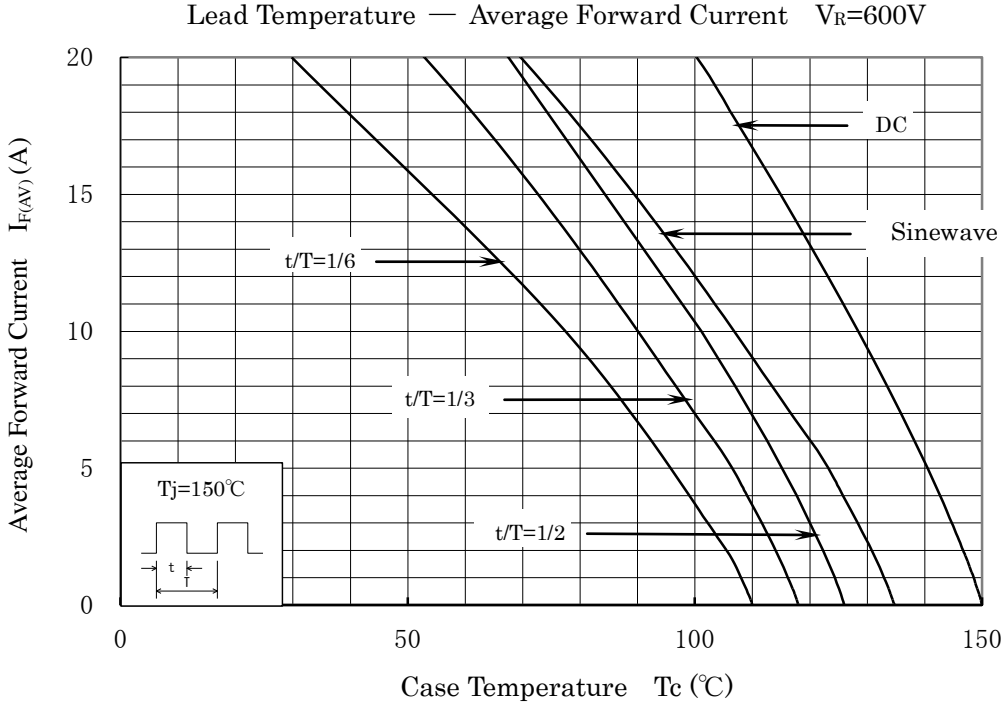
No.	Item	Symbol	Unit	Value	Conditions
1	Forward Voltage Drop	V_F	V	1.5 max.	I_F=10A
2	Reverse Leakage Current	I_R	uA	100 max.	$V_R=V_{RM}$
3	Reverse Leakage Current Under High Temperature	$H\cdot I_R$	mA	20 max.	$V_R=V_{RM}$, T_j=150℃
4	Reverse Recovery Time	t_{rr}	ns	30 max.	$I_F=I_{RP}$=500mA 90% Recovery point, T_j=25℃
		$H\cdot t_{rr}$	ns	102 typ .	$I_F=I_{RP}$=500mA 90% Recovery point, T_j=150℃
5	Forward Voltage Drop	$R_{th(j-c)}$	℃/W	2.0 max.	Between Junction and case

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

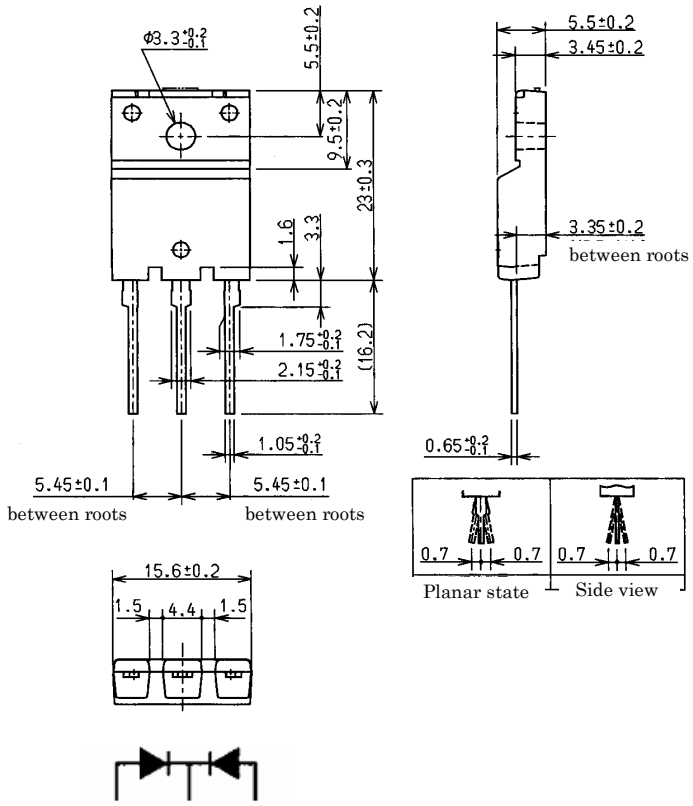
★ **Characteristics**



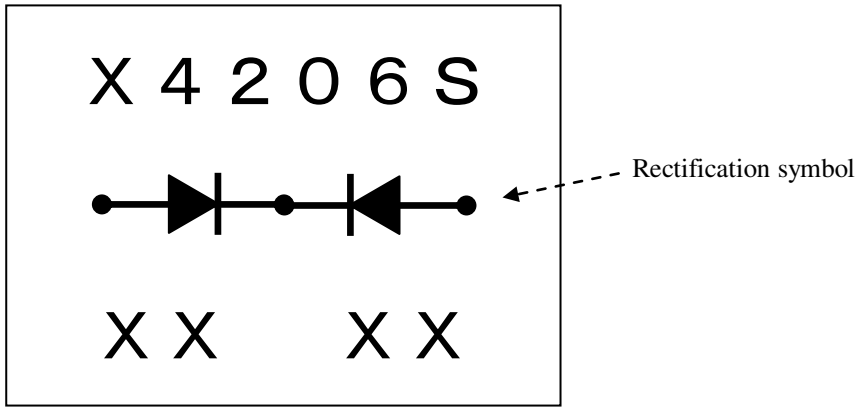
★ **Derating**



✶ **Package information (mm)**



✶ **Marking**



X4206S: Part number FMX-4206S is described “X4206S”.
XXXX: Lot number (manufacture year, month, day) is described 4-digit numbers.