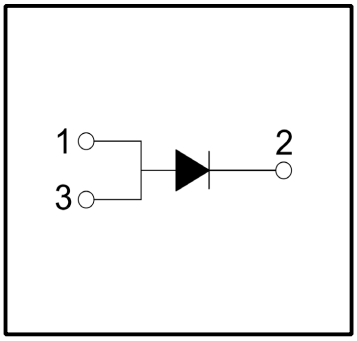
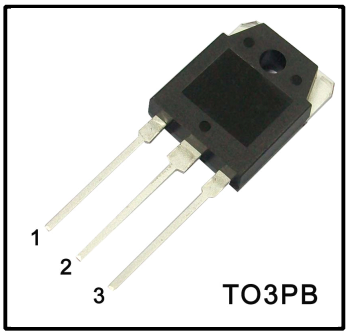
Features

- Ultrafast recovery time
- Soft Reverse Recovery characteristics
- Low Recovery Loss
- Low forward voltage
- High Surge Current Capability
- Low leakage current



General Description

FRD from Winsemi utilizes advanced processing techniques to achieve ultrafast recovery times and higher forward current Its soft recovery characteristics and high reliability suit for wide industrial applications.



Applications

- Freewheeling, Snubber, Clamp
- Inversion Welder
- PFC
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- UPS

Absolute Maximum Ratings

Symbol	Parameter	Test Conditions	Value	Units
V_R	Maximum D.C.Reverse Voltage		300	V
V_{RRM}	MaximumRepetitive Revers Voltage		300	V
$I_{F(AV)}$	Average Forward Current	Tc=110℃,Per Diode	80	A
$I_{F(RMS)}$	RMS Forward Current	Tc=110℃,Per Diode	110	A
I_{FSM}	No-Repetitive Peak Surge current	T_J=45℃,t=10ms,50Hz,Sine	640	A
P_D	Power Dissipation		250	W
T_J	Junction Temperature		150	℃
T_{STG}	Storage Temperature Range		-55~150	℃
Torque	Module-to-Sink	Recommended	1.1	N.m
$R_{\theta JC}$	Thermal Resistance	Junction-to-Case	0.5	℃/W
Weight			6.0	g

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Electrical Characteristics T_C=25℃

Symbol	Parameter	Test Conditions	Value			Units
			Min	Typ	Max	
I_{RM}	Reverse Leakage Current	V_R=300V	-	-	10	μA
		V_R=300V,T_J=125℃	-	-	10	mA
V_F	Forward Voltage Drop	I_F=80A	-	1.35	1.5	V
		I_F=80A,TJ=125℃	-	1.25	-	V
T_{rr}	Reverse Recovery Time	I_F=1A,V_R=30,diF/dt=-200A/μs	-	30	-	ns
T_{rr}	Reverse Recovery Time	I_F=80A,V_R=150V di_F/dt= -200A/ μs	-	50	-	ns
I_{RRM}	Max.Reverse Recovery Current		-	5	-	A
T_{rr}	Reverse Recovery Time	I_F=80A,V_R=150V di_F/dt= -200A/μs,T_J=125℃	-	95	-	ns
I_{RRM}	Max.Reverse Recovery Current		-	9	-	A
S			-	0.6	-	-

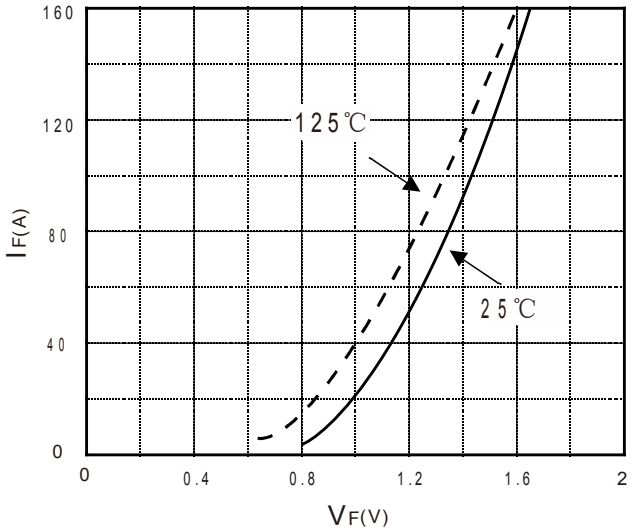


Fig.1 Forward Voltage Drop vs Forward Current

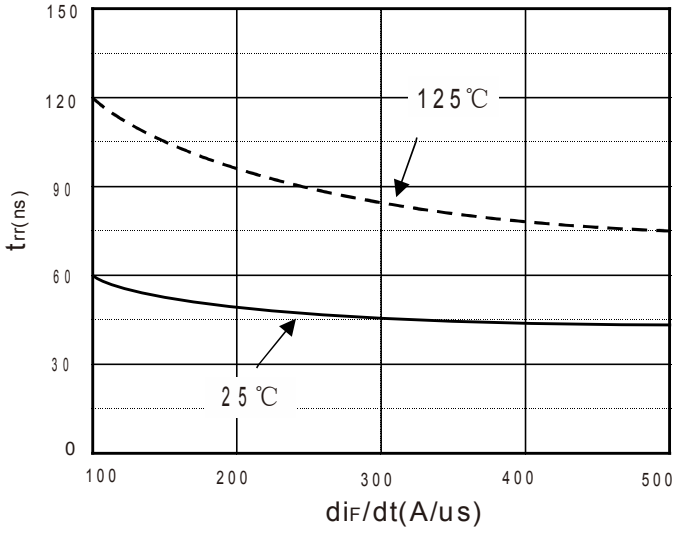


Fig.2 Reverse Recovery Time vs di_F/dt

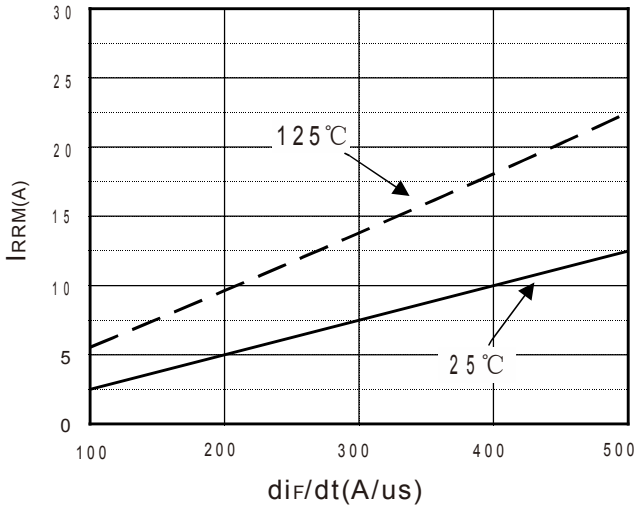


Fig.3 Reverse Recovery Current vs di_F/dt

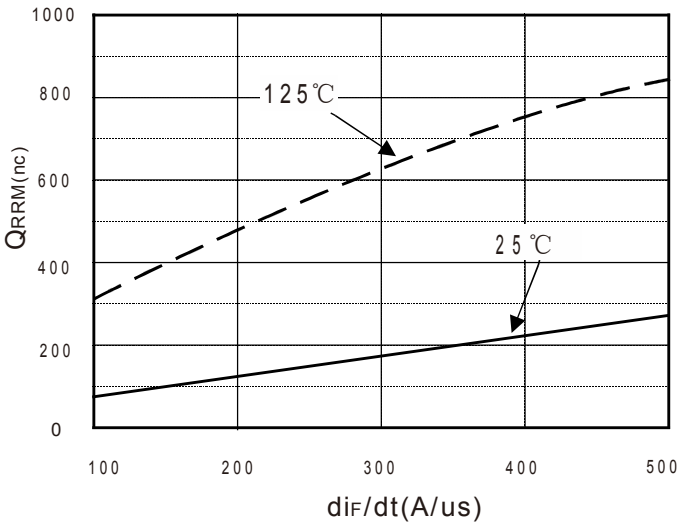


Fig.4 Reverse Recovery Charge vs di_F/dt

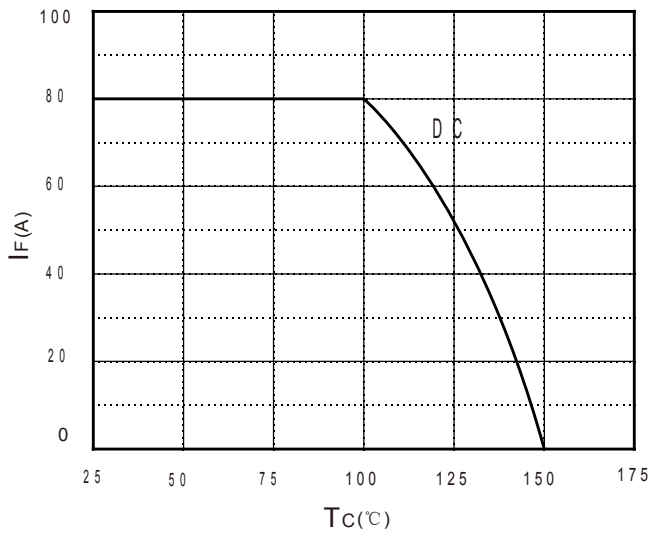


Fig.5 Forward current vs.Case temperature

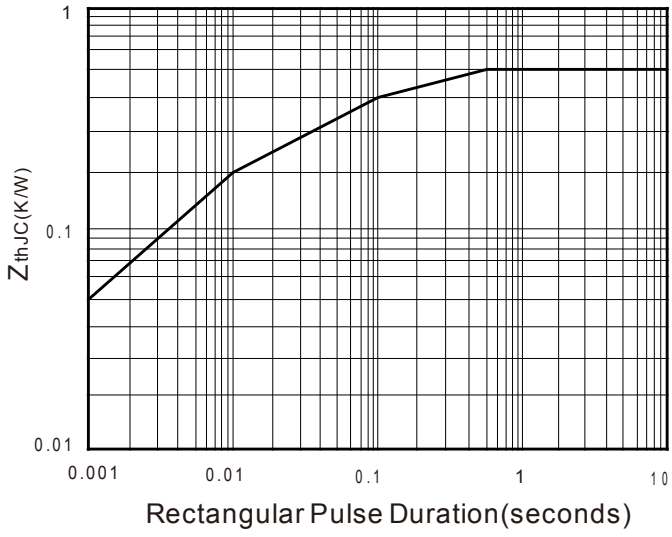


Fig.6 Transient Thermal Impedance

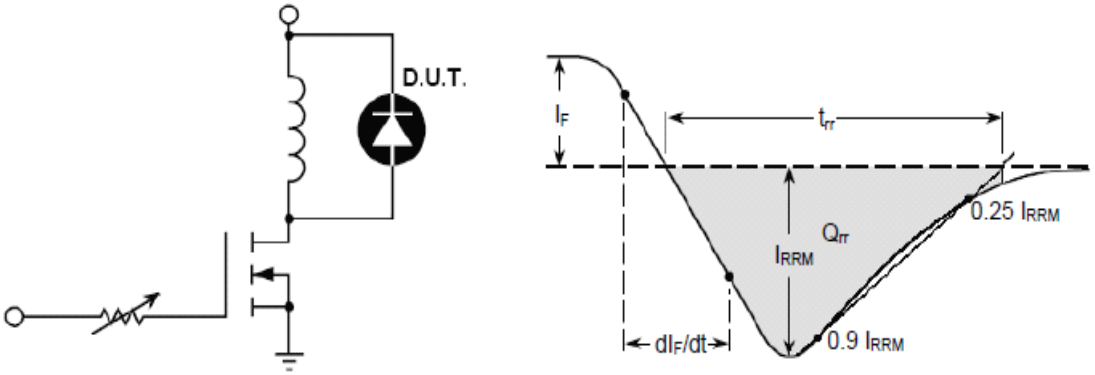
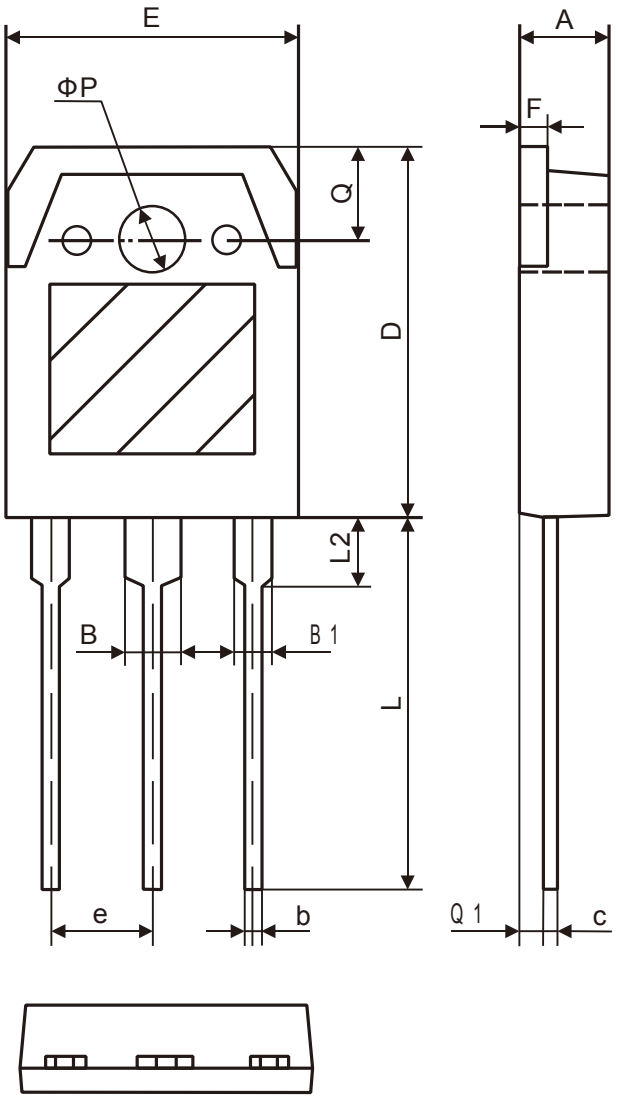


Fig.7 Diode Reverse Recovery Test Circuit and Waveform

TO-3PB Package Dimension

Unit:mm



符号 symbol	Min	Max
A	4.60	5.00
B	2.90	3.20
B1	1.90	2.20
b	0.90	1.10
c	0.50	0.70
D	19.40	20.40
E	15.40	15.80
e	5.45（TYP）	
F	1.40	1.60
L	19.50	20.50
L2	3.30	3.70
Q	4.90	5.10
Q1	1.30	1.50
P	3.10	3.50

NOTE:

1.We strongly recommend customers check carefully on the trademark when buying our product, if there is any question, please don't be hesitate to contact us.

2.Please do not exceed the absolute maximum ratings of the device when circuit designing.

3.Winsemi Microelectronics Co., Ltd reserved the right to make changes in this specification sheet and is subject to change without prior notice.

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