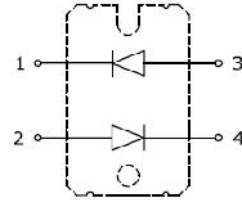


PRELIMINARY DATASHEET

Anti-parallel Fast Recovery 2X150A, 400V Epitaxial Diodes, in Isolated SOT227 Package

APPLICATIONS

- Switch mode power supplies (SMPS) rectifiers
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders
- Inductive heating and melting
- Ultrasonic cleaners and welders
- Power factor correction (PFC) circuits
- Inversion welder
- Converter and chopper



FEATURES

- Ultrafast recovery time
- Low forward voltage
- High surge current capability
- Low leakage current
- Pb-free finished; **RoHS compliant**



MAXIMUM RATINGS (per Diode)

Parameter	Symbol	Value	Units
Repetitive peak reverse voltage	V_{RRM}	400	V
Average forward current, per Diode $T_c = 90^\circ\text{C}$	$I_{F(AV)}$	150	A
Average forward current, per Device $T_c = 90^\circ\text{C}$		300	
Maximum repetitive forward current, square wave, 20kHz		I_{FRM}	
Surge non-repetitive forward current $T_c = 25^\circ\text{C}$, $t_p = 10\text{ ms}$, 50Hz, Sine	I_{FSM}	1200	
Operating junction and storage temperature	T_j, T_{stg}	-55... +175	

Thermal and Isolation Characteristics

Parameter	Symbol	Max. Value	Units
Characteristics			
Thermal resistance, junction to case, per Diode	R_{thJC}	0.45	$^\circ\text{C}/\text{W}$
Isolation voltage, RMS (measured between terminals and mounting base, 50-60 Hz, for 3 seconds)	V_{iso}	3000	V

Electrical Characteristics, at $T_j = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Static Characteristics					
Breakdown voltage $I_R = 200 \mu\text{A}$, $T_j = 25^\circ\text{C}$	V_{Br}	400	-	-	V
Reverse leakage current $V_R = 400\text{V}$, $T_j = 25^\circ\text{C}$	I_R	-	-	100	μA
Reverse leakage current $V_R = 400\text{V}$, $T_j = 150^\circ\text{C}$		-	-	4	mA
Forward voltage drop $I_F = 150\text{A}$, $T_j = 25^\circ\text{C}$ $I_F = 150\text{A}$, $T_j = 150^\circ\text{C}$	V_F	-	1.18 1.15	1.42 1.38	V

Electrical Characteristics, at $T_j = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Dynamic Characteristics					
Reverse recovery time $V_R = 30\text{V}$, $I_F = 1\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_j = 25^\circ\text{C}$	t_{rr}	-	50	-	ns
Reverse recovery time $V_R = 200\text{V}$, $I_F = 150\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_j = 25^\circ\text{C}$ $V_R = 200\text{V}$, $I_F = 150\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_j = 125^\circ\text{C}$		-	125 285	-	
Reverse recovery charge $V_R = 200\text{V}$, $I_F = 150\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_j = 25^\circ\text{C}$ $V_R = 200\text{V}$, $I_F = 150\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_j = 125^\circ\text{C}$	Q_{rr}	-	514 3840	-	nC
Maximum reverse recovery current $V_R = 200\text{V}$, $I_F = 150\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_j = 25^\circ\text{C}$ $V_R = 200\text{V}$, $I_F = 150\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_j = 125^\circ\text{C}$	I_{rrm}	-	8 25	-	A

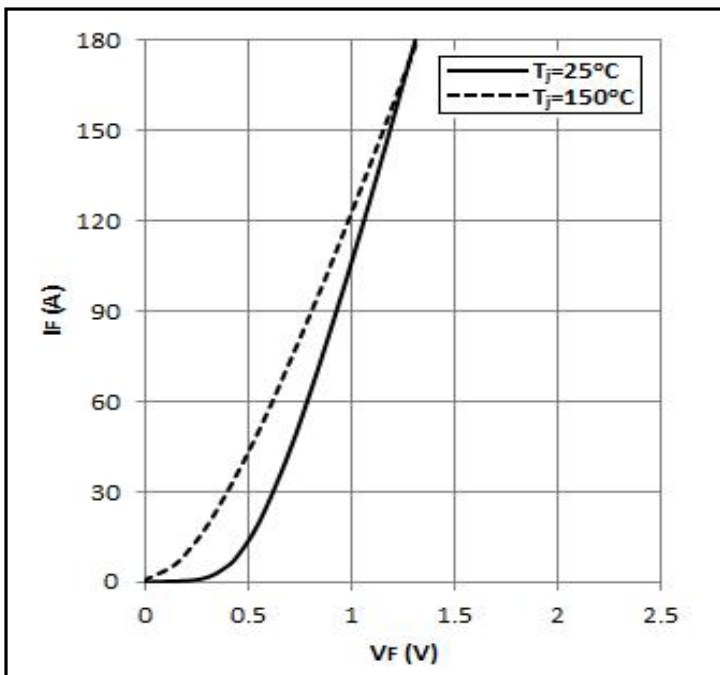
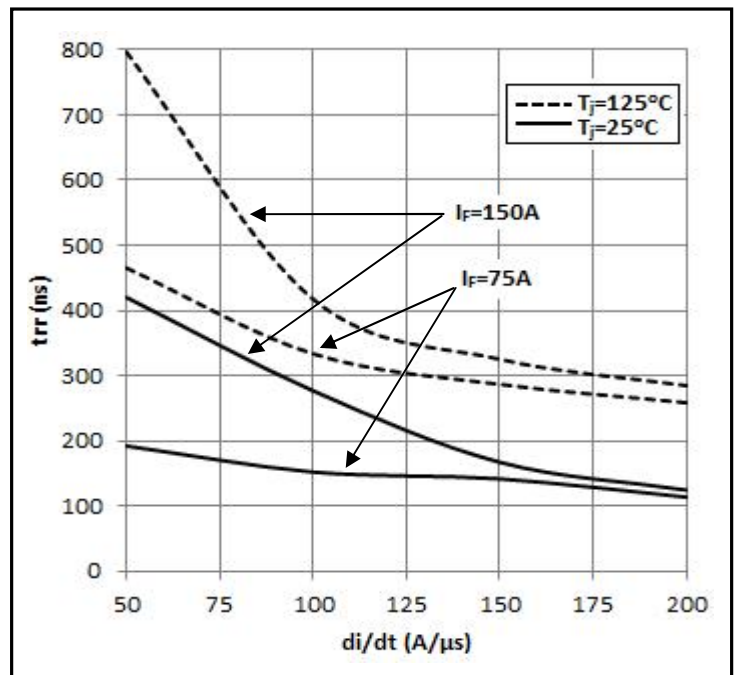
Figure 1 – Typical Forward Voltage Drop vs Forward Current

Figure 2 – Reverse recovery time vs. di_F/dt


Figure 3 – Reverse recovery charge vs. di_F/dt

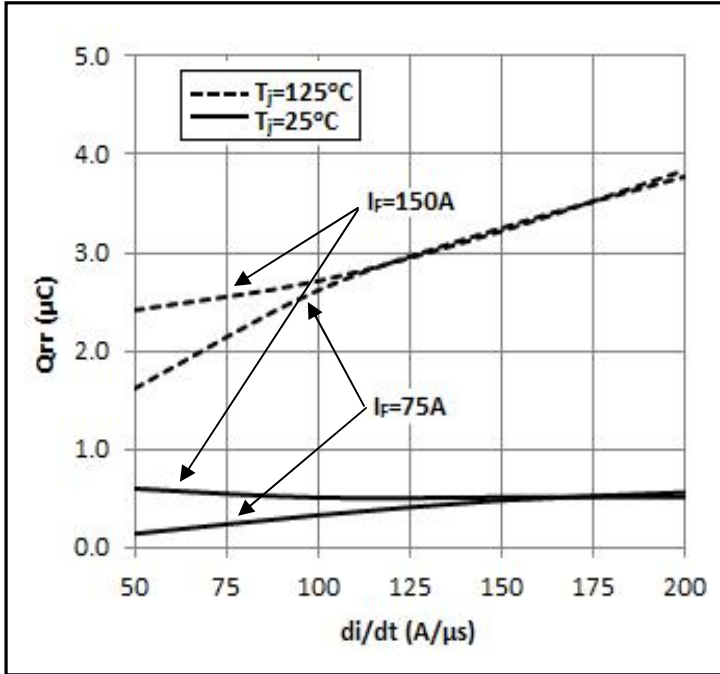


Figure 4 – Maximum reverse recovery current vs. di_F/dt

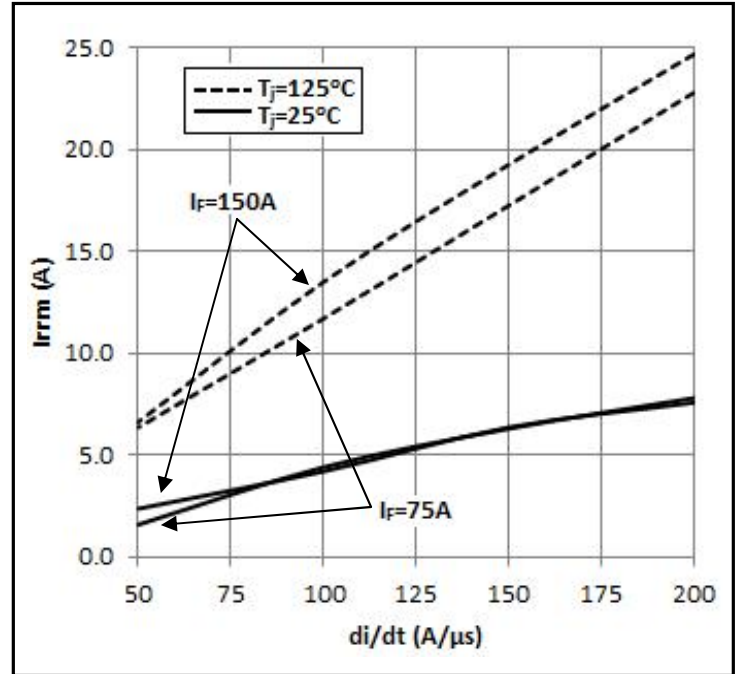
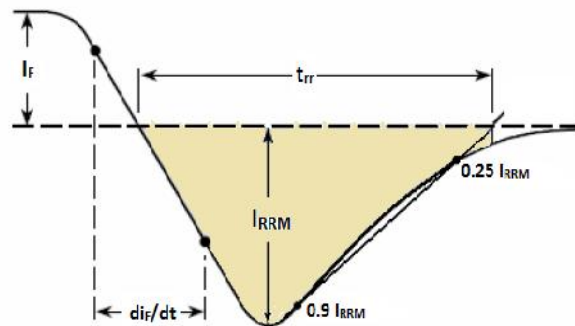
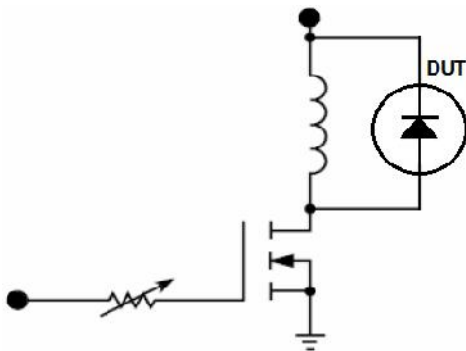
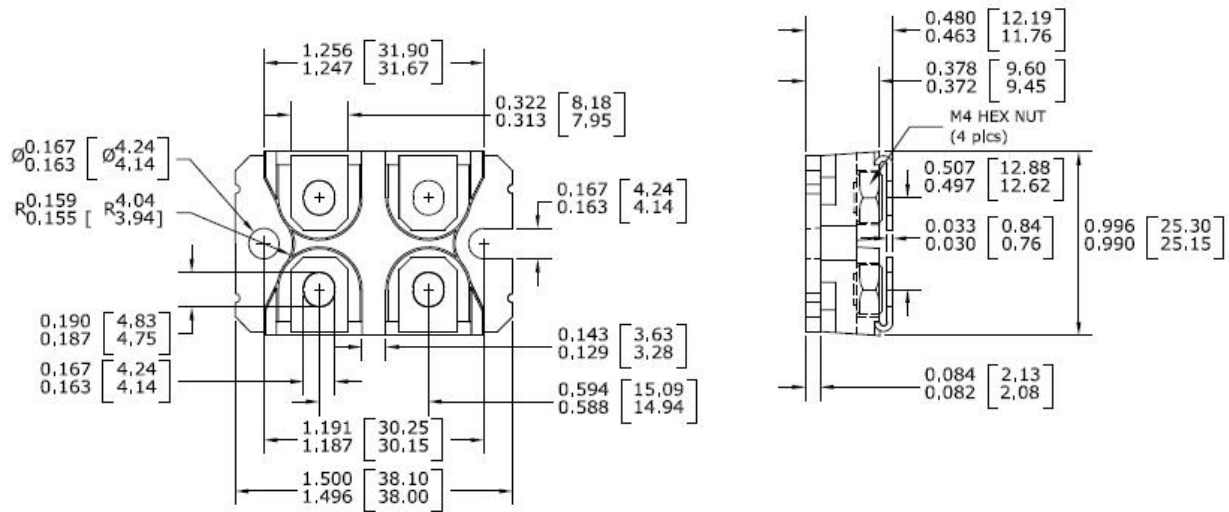


Figure 5 – Diode Reverse Recovery Test Circuit and Waveform



Package Outline Drawing



Disclaimer

These specifications may not be considered as a guarantee of components characteristics. Components have to be tested depending on intended application as adjustments may be necessary. The use of **iQXPRZ Power Inc.** components in life support appliances and systems are subject to written approval of **iQXPRZ Power Inc.**