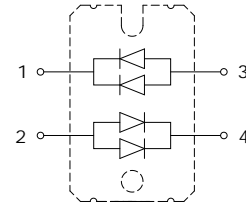


PRELIMINARY DATASHEET

Anti-parallel Fast Recovery, 4x60A, 600V 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
- Soft recovery characteristics
- Low recovery loss
- Low forward voltage
- High surge current capability
- Pb-free finished; **RoHS compliant**



MAXIMUM RATINGS (per Leg)

Parameter	Symbol	Value	Units
Repetitive peak reverse voltage	V_{RRM}	600	V
Average forward current $T_C = 85^\circ\text{C}$	$I_{F(AV)}$	120	A
Maximum repetitive forward current $T_C=25^\circ\text{C}$, t_p limited by T_{jmax} , $D=0.5$	I_{FSM}	1200	
Operating junction and storage temperature	T_j, T_{stg}	-40... +150	$^\circ\text{C}$

Thermal and Isolation Characteristics

Parameter	Symbol	Max. Value	Units
Characteristics			
Thermal resistance, junction to case, per Leg	R_{thJC}	0.325	$^\circ\text{C}/\text{W}$
Isolation voltage, RMS (measured between terminals and mounting base, 50-60 Hz, for 1-3 seconds)	V_{iso}	3000	V

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

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Static Characteristics					
Reverse leakage current $V_R = 600\text{V}, T_j = 25^\circ\text{C}$	I_R	-	-	500	μA
Forward voltage drop $I_F = 120\text{A}, T_j = 25^\circ\text{C}$	V_F	-	1.3	1.8	V

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

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Dynamic Characteristics					
Reverse recovery time $V_R = 30\text{V}, I_F = 1\text{A}, di_F/dt = -200\text{A}/\mu\text{s}, T_j = 25^\circ\text{C}$ $V_R = 300\text{V}, I_F = 120\text{A}, di_F/dt = -200\text{A}/\mu\text{s}, T_j = 25^\circ\text{C}$ $V_R = 300\text{V}, I_F = 120\text{A}, di_F/dt = -200\text{A}/\mu\text{s}, T_j = 125^\circ\text{C}$	t_{rr}	-	48 103 218	-	ns
Reverse recovery charge $V_R = 300\text{V}, I_F = 120\text{A}, di_F/dt = -200\text{A}/\mu\text{s}, T_j = 25^\circ\text{C}$ $V_R = 300\text{V}, I_F = 120\text{A}, di_F/dt = -200\text{A}/\mu\text{s}, T_j = 125^\circ\text{C}$	Q_{rr}	-	467 3184	-	nC
Maximum reverse recovery current $V_R = 300\text{V}, I_F = 120\text{A}, di_F/dt = -200\text{A}/\mu\text{s}, T_j = 25^\circ\text{C}$ $V_R = 300\text{V}, I_F = 120\text{A}, di_F/dt = -200\text{A}/\mu\text{s}, T_j = 125^\circ\text{C}$	I_{rrm}	-	8.0 24.4	-	A

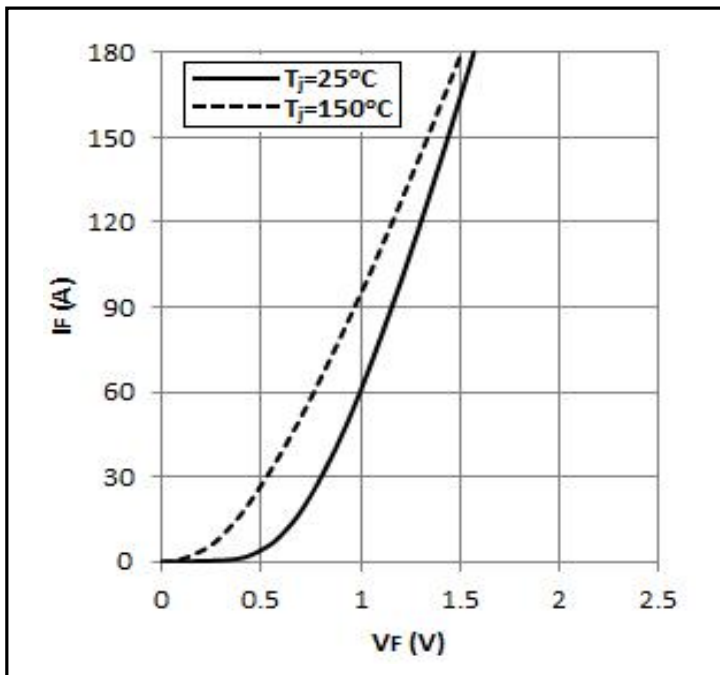
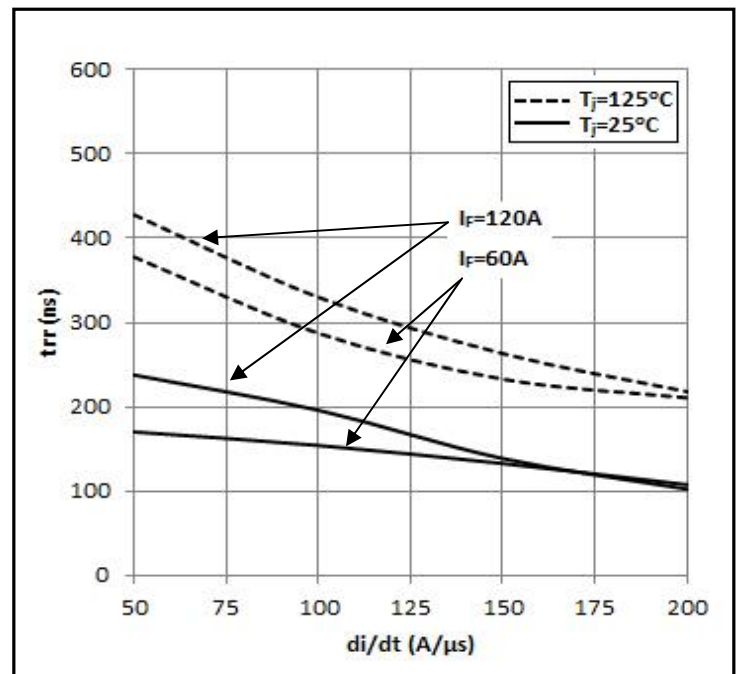
Figure 1 – Typical Forward Voltage Drop vs Forward Current

Figure 2 – Reverse recovery time vs. di_F/dt


Figure 2 – Reverse recovery charge vs. di_F/dt

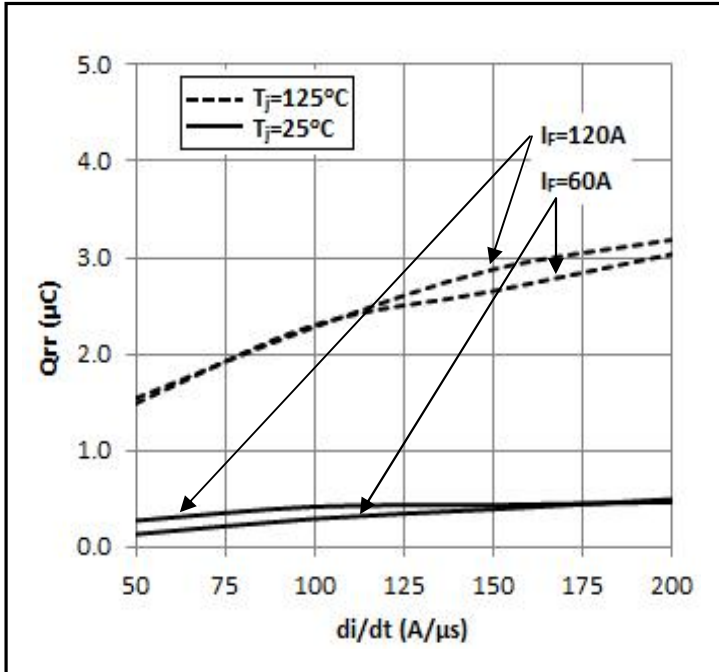


Figure 3 – Maximum reverse recovery current vs. di_F/dt

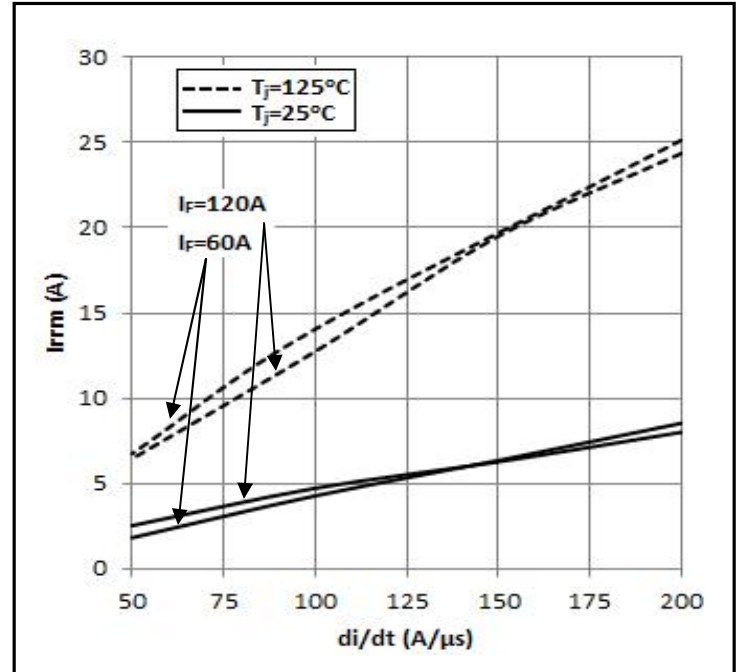
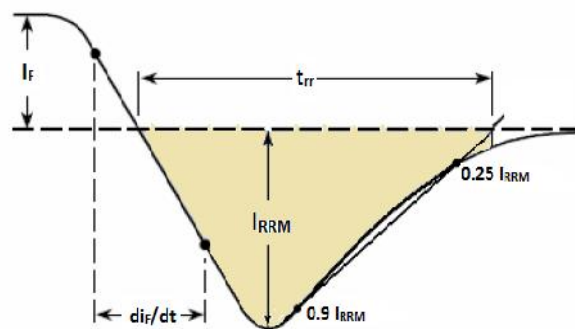
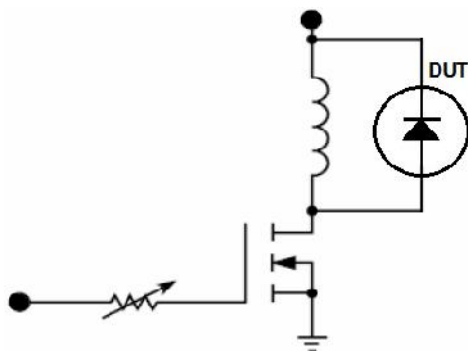
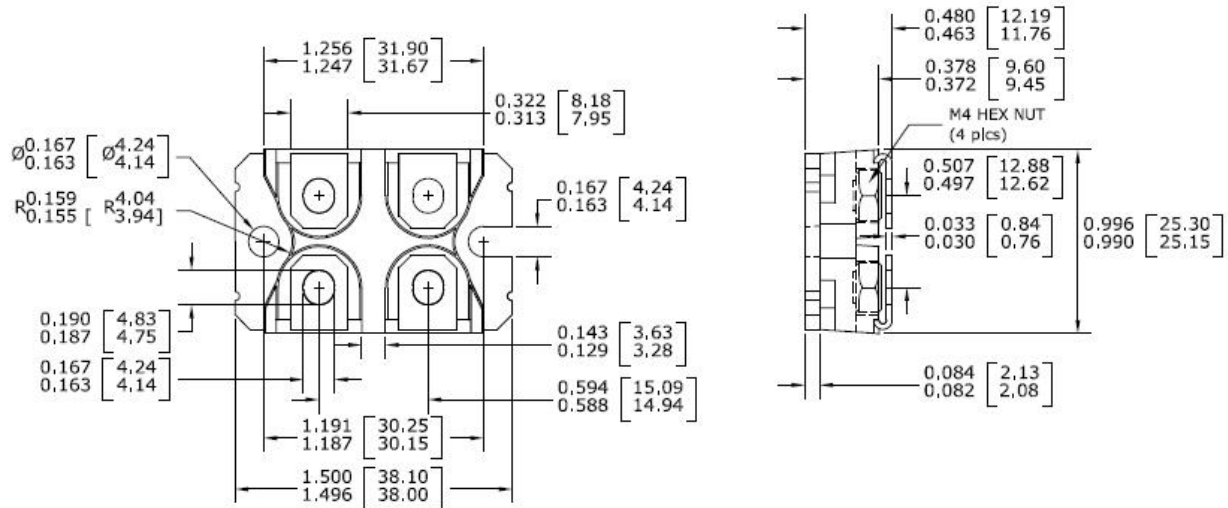


Figure 4 – Diode Reverse Recovery Test Circuit and Waveform



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.**