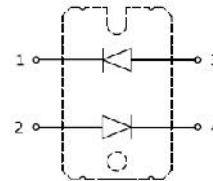


Anti-Parallel Fast Recovery 600V 60A Epitaxial Diodes, in Isolated SOT227 package

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
- Low leakage current
- Pb-free finished; **RoHS compliant**



MAXIMUM RATINGS (per Diode)

Parameter	Symbol	Value	Units
Repetitive peak reverse voltage	V_{RRM}	600	V
Average forward current $T_C = 85^\circ\text{C}$	$I_{F(AV)}$	60	A
Surge non-repetitive forward current $T_J = 45^\circ\text{C}$, $t_p = 10$ ms, 50Hz, Sine	I_{FSM}	600	
Power dissipation	P_D	250	W
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 Diode	R_{thJC}	0.65	$^\circ\text{C}/\text{W}$
Isolation voltage, RMS (measured between terminals and mounting base, 50-60 Hz, for 1-3 seconds)	V_{iso}	3000	V

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

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Static Characteristics					
Reverse leakage current $V_R = 600\text{V}$, $T_J = 25^\circ\text{C}$ $V_R = 600\text{V}$, $T_J = 150^\circ\text{C}$	I_R	-	-	250 1000	μA
Forward voltage drop $I_F = 60\text{A}$, $T_J = 25^\circ\text{C}$ $I_F = 60\text{A}$, $T_J = 150^\circ\text{C}$	V_F	-	1.3 1.1	1.8 -	V

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

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Dynamic Characteristics					
Reverse recovery time $V_R = 30\text{V}$, $I_F = 1\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$ $V_R = 300\text{V}$, $I_F = 60\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_j = 25^\circ\text{C}$ $V_R = 300\text{V}$, $I_F = 60\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_j = 150^\circ\text{C}$	t_{rr}	-	38 54 208	-	ns
Reverse recovery charge $V_R = 300\text{V}$, $I_F = 60\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_j = 25^\circ\text{C}$ $V_R = 300\text{V}$, $I_F = 60\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_j = 150^\circ\text{C}$	Q_{rr}	-	148 2.20	-	nC μC
Maximum reverse recovery current $V_R = 300\text{V}$, $I_F = 60\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_j = 25^\circ\text{C}$ $V_R = 300\text{V}$, $I_F = 60\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$, $T_j = 150^\circ\text{C}$	I_{rrm}	-	6 17	-	A

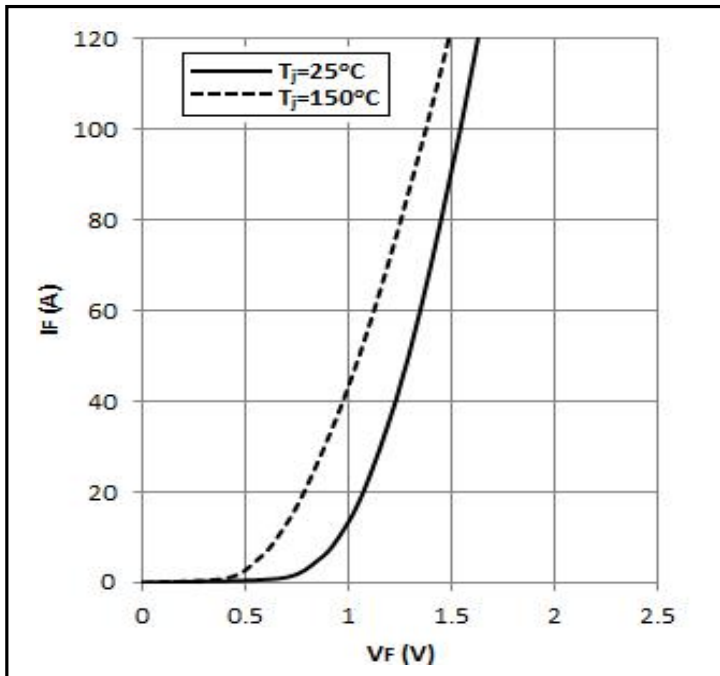
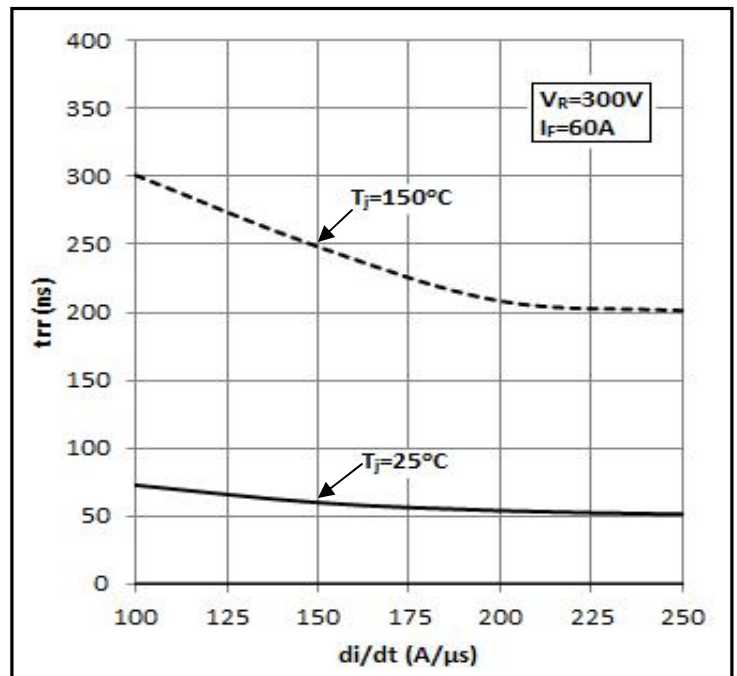
Figure 1 – Typical Forward voltage drop vs forward current

Figure 2 – Reverse recovery time vs di_F/dt


Figure 3 – Reverse recovery charge vs di_F/dt

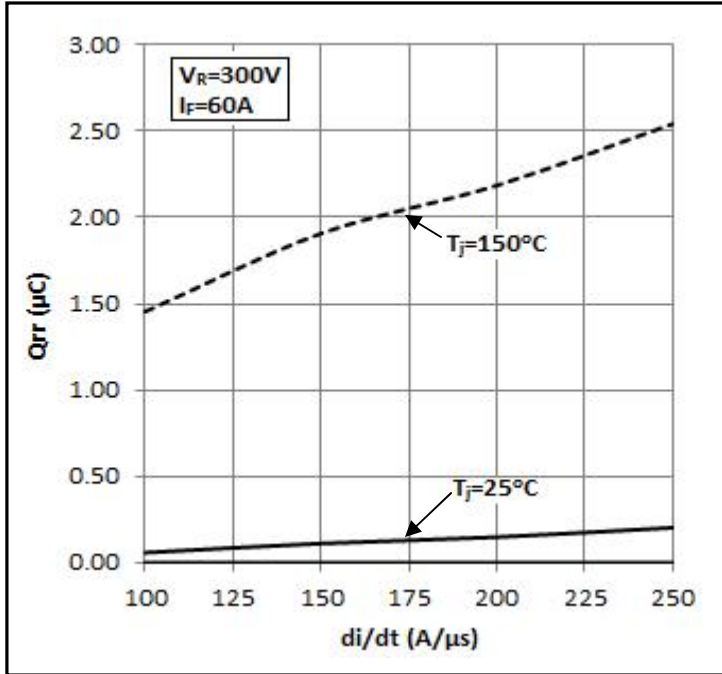


Figure 4 – Reverse recovery current vs di_F/dt

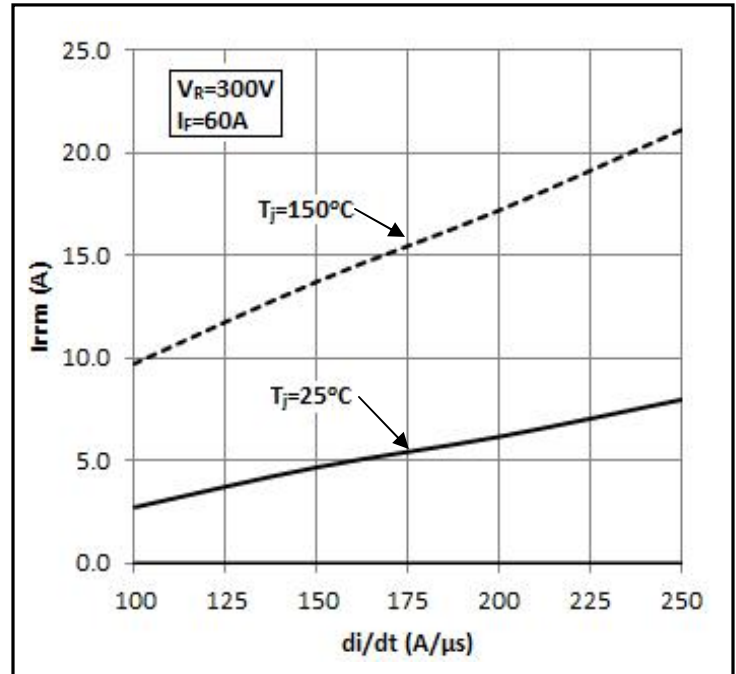
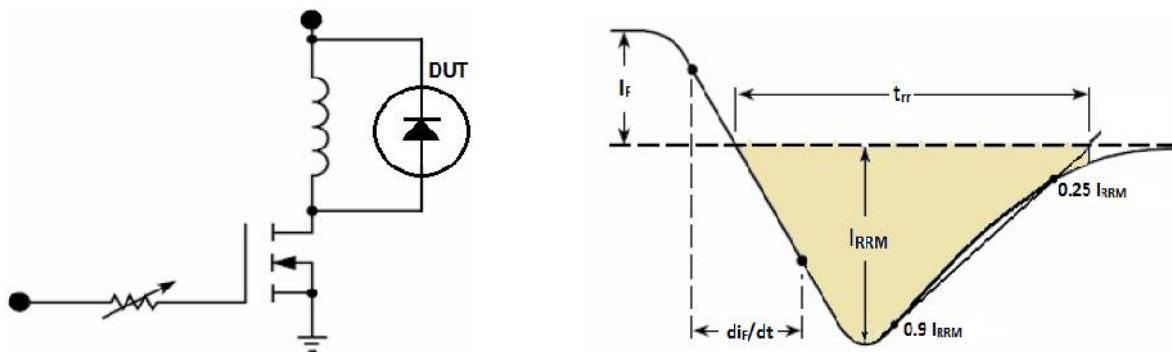
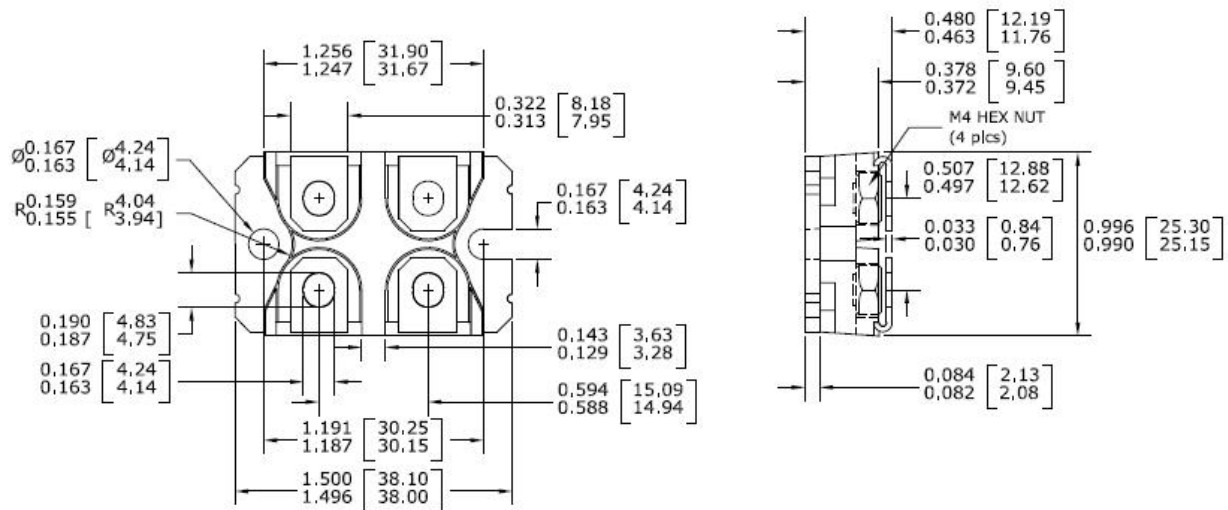


Figure 5 – Diode Reverse Recovery Test Circuit and Waveform



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.**