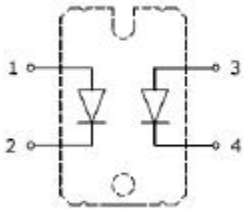
1200V 50A Soft Recovery Diode, Parallel configuration in Isolated SOT227 package



APPLICATIONS

- Switch mode power supplies
- Welding applications
- Motor drives

FEATURES

- 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}	1200	V
Continuous forward current T_C= 85°C	I_F	50	A
Surge non-repetitive forward current Limited by T_{jmax}	I_{FRM}	100	
Operating junction and storage temperature	T_j, T_{stg}	-40… +150	°C

Thermal and Isolation Characteristics

Parameter	Symbol	Max. Value	Units
Characteristics			
Thermal resistance, junction to case, per Diode	R_{thJC}	0.63	°C/W
Isolation voltage, RMS (measured between terminals and mounting base, 50-60 Hz, for 1-3 seconds)	V_{iso}	3000	V

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Electrical Characteristics (per Diode), at T_j = 25°C, unless otherwise specified

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Static Characteristics					
Reverse leakage current V_R = 1200 V, T_j=25°C V_R = 1200 V, T_j=150°C	I_R	- -	- -	100 1.5	µA mA
Forward voltage drop I_F = 50A, T_j=25 °C I_F = 50A, T_j=150 °C	V_F	- -	1.70 1.80	2.2 -	V

Electrical Characteristics (per Diode), at T_j = 25°C, unless otherwise specified

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Dynamic Characteristics					
Reverse recovery time V_R = 600V, I_F = 50A, di_F/dt = 200A/µs, T_j=25°C V_R = 600V, I_F = 50A, di_F/dt = 200A/µs, T_j = 150°C	t_{rr}	- -	636 978	- -	ns
Maximum reverse recovery current V_R = 600V, I_F = 50A, di_F/dt = 200A/µs, T_j=25°C V_R = 600V, I_F = 50A, di_F/dt = 200A/µs, T_j = 150°C	I_{rrm}	- -	13.0 26.5	- -	A
Reverse recovery charge V_R = 600V, I_F = 50A, di_F/dt = 200A/µs, T_j=25°C V_R = 600V, I_F = 50A, di_F/dt = 200A/µs, T_j = 150°C	Q_{rr}	- -	3.9 13.1	- -	µC

Figure 1 – Typical Diode Forward Characteristics

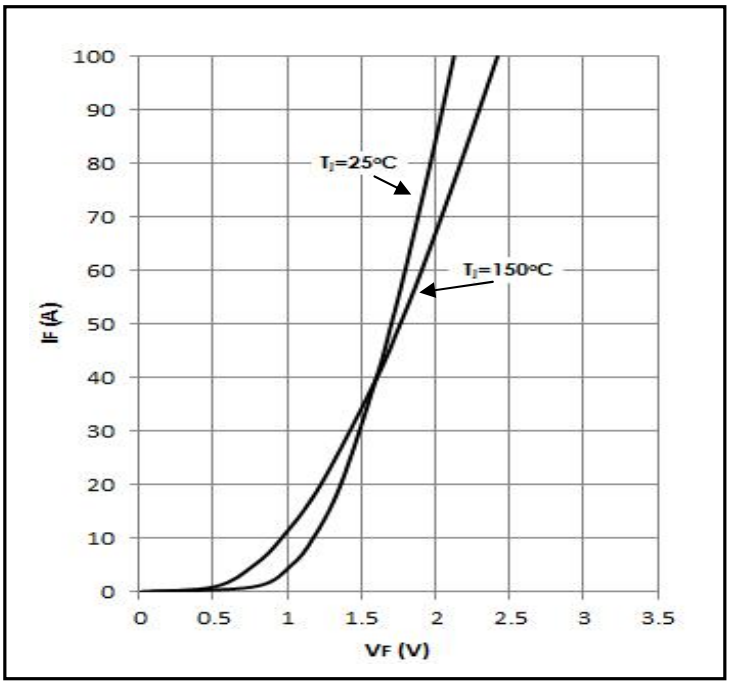

Figure 2 – Reverse recovery time vs. di_F/dt

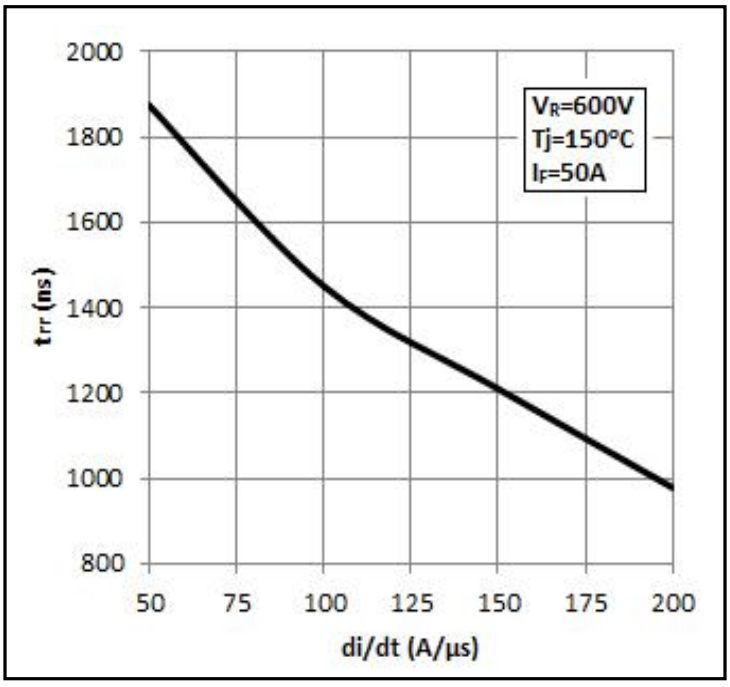

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Figure 3 – Reverse recovery charge vs. di_F/dt

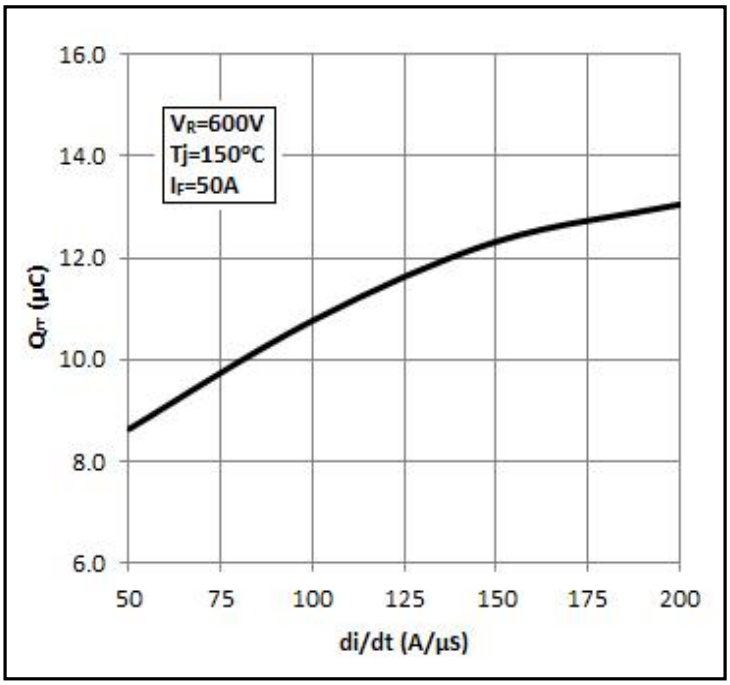


Figure 4 – Maximum reverse recovery current vs. di_F/dt

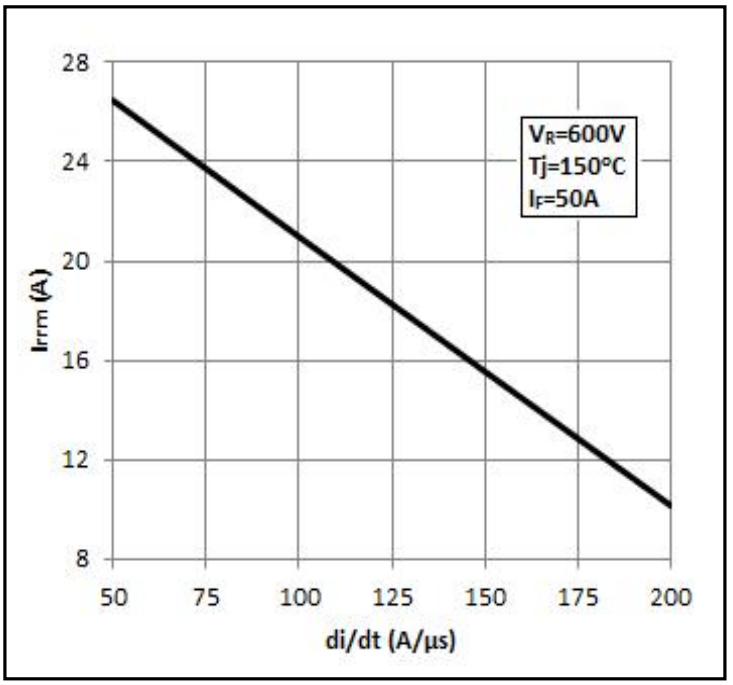
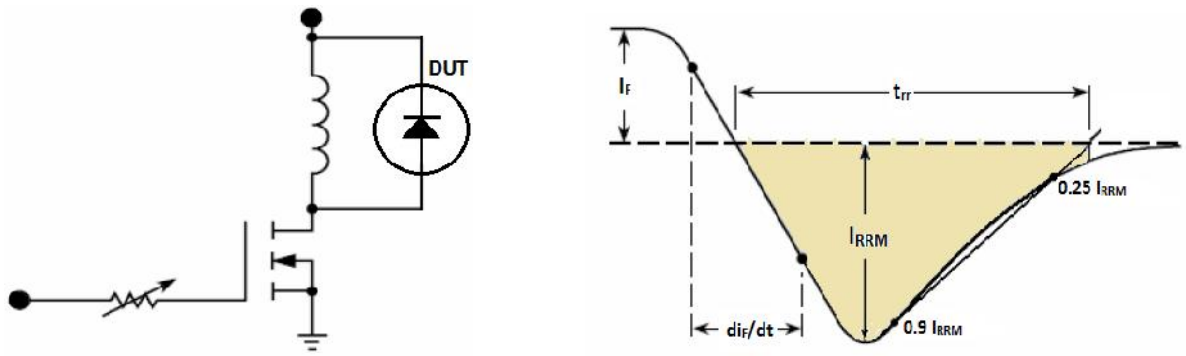


Figure 5 – Diode Reverse Recovery Test Circuit and Waveform



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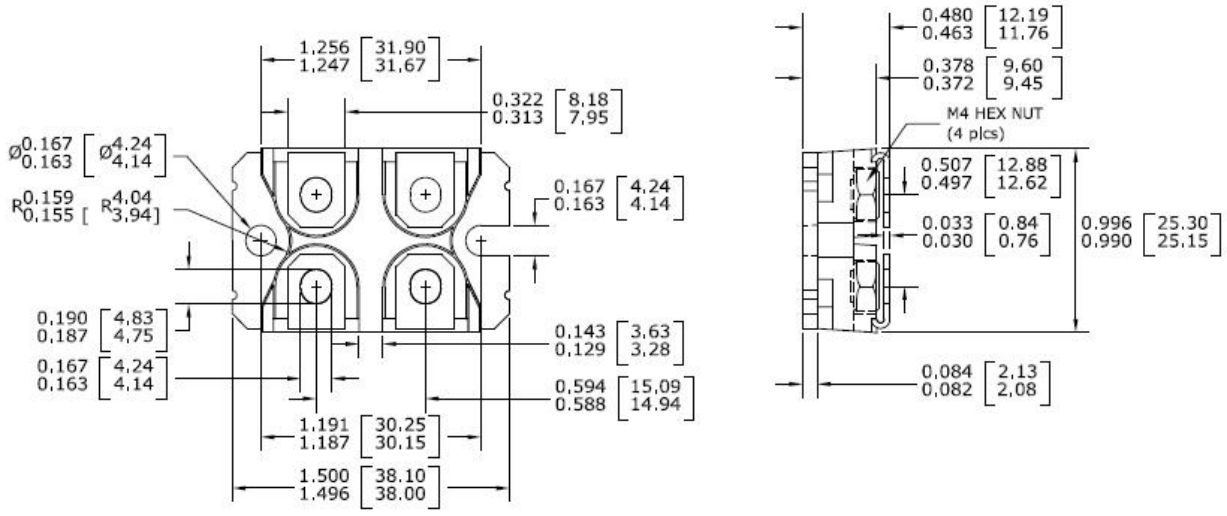
Package Outline Drawing



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.**

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