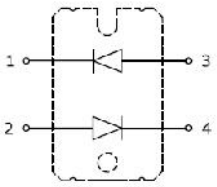
Anti-Parallel Fast Recovery 2X30A, 600V Epitaxial Diodes, in Isolated SOT227 Package

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
- 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°C	$I_{F(AV)}$	30	A
Surge non-repetitive forward current T_J= 45°C, t_p = 10 ms, 50Hz, Sine	I_{FSM}	300	
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}	1.04	°C/W
Isolation voltage, RMS (measured between terminals and mounting base, 50-60 Hz, for 3 seconds)	V_{iso}	3000	V

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 = 600V V_R = 600V, T_j = 125°C	I_R	- -	- -	15 250	µA
Forward voltage drop I_F = 30A, T_j = 25 °C I_F = 30A, T_j = 150 °C	V_F	- -	1.4 1.1	2.0 -	V

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

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Dynamic Characteristics					
Reverse recovery time V_R = 30V, I_F = 1A, di_F/dt = -200A/µs V_R = 300V, I_F = 30A, di_F/dt = -200A/µs, Tj = 25 °C V_R = 300V, I_F = 30A, di_F/dt = -200A/µs, T_j = 125°C	t_{rr}	- - -	25 102 166	- - -	ns
Reverse recovery charge V_R = 300V, I_F = 30A, di_F/dt = -200A/µs, T_j = 25 °C V_R = 300V, I_F = 30A, di_F/dt = -200A/µs, Tj = 125°C	Q_{rr}	- -	206 1434	- -	nC
Maximum reverse recovery current V_R = 300V, I_F = 30A, di_F/dt = -200A/µs, T_j = 25°C V_R = 300V, I_F = 30A, di_F/dt = -200A/µs, T_j = 125°C	I_{rrm}	- -	5.9 13.5	- -	A

Figure 1 – Typical Forward voltage drop vs forward current

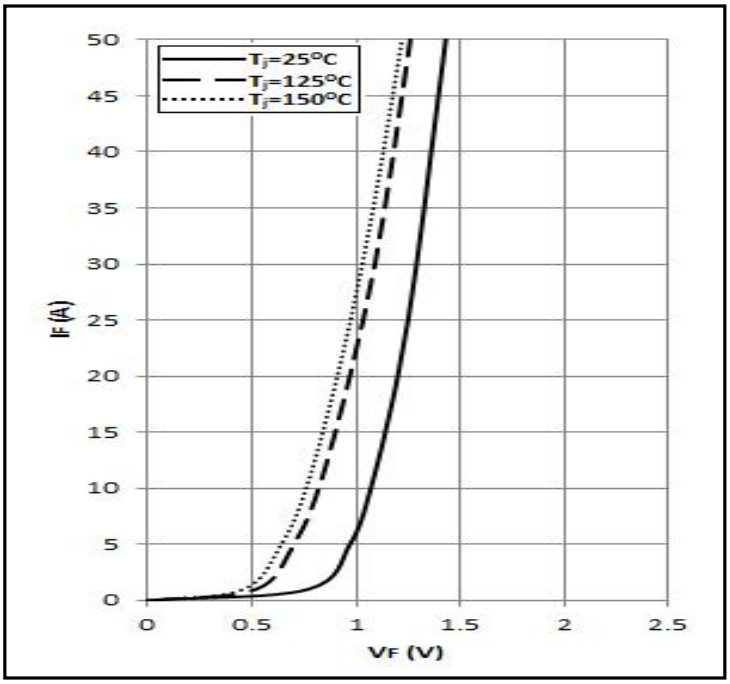

Figure 2 – Reverse recovery time vs di_F/dt

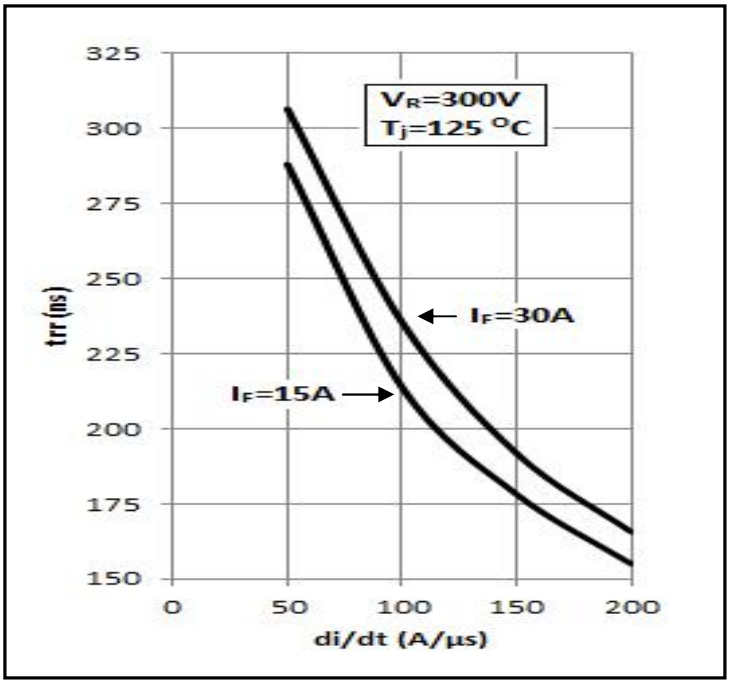

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Figure 3 – Reverse recovery charge vs di_F/dt

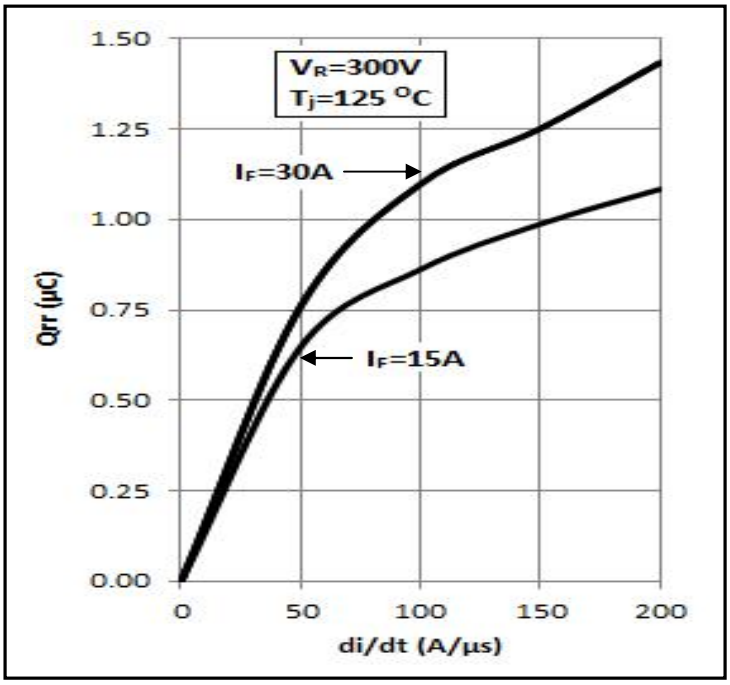


Figure 4 – Reverse recovery current vs di_F/dt

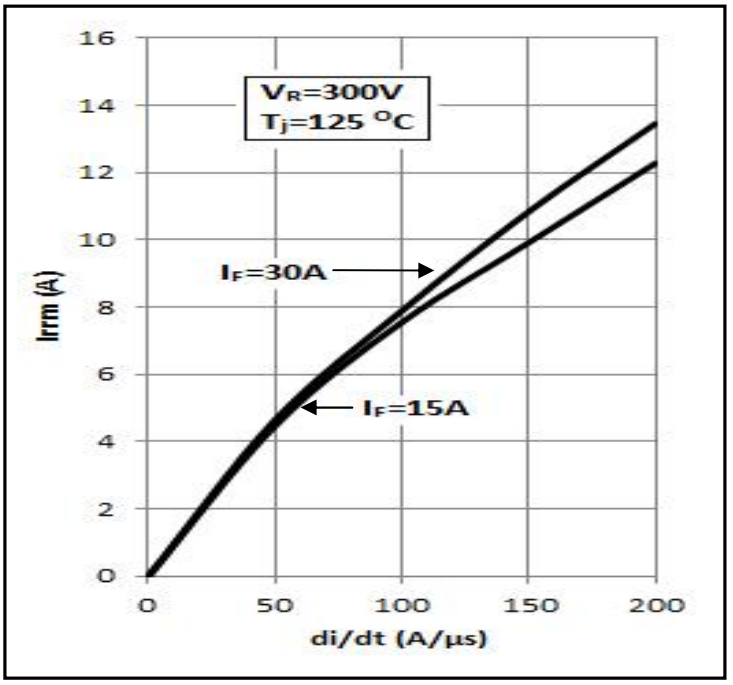
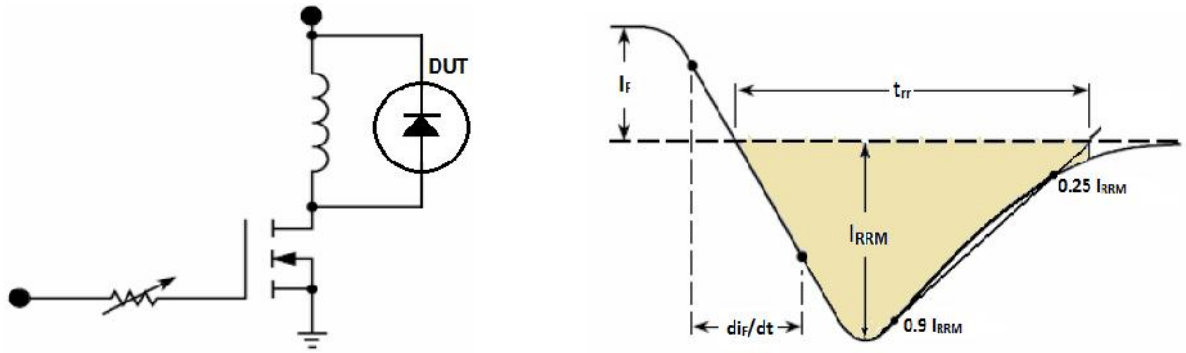


Figure 5 – Diode Reverse Recovery Test Circuit and Waveform



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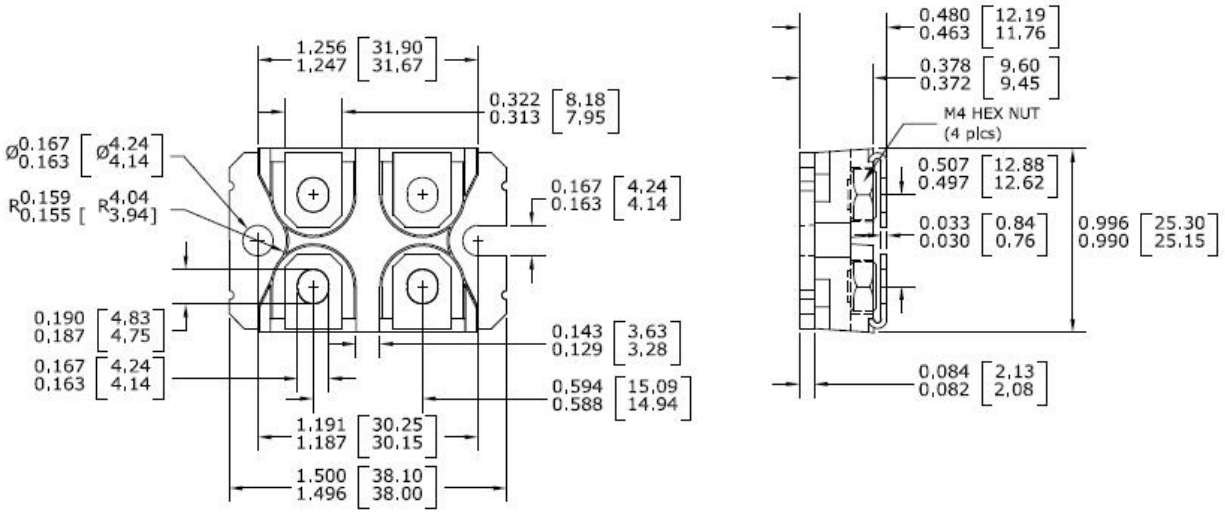
Package Outline Drawing



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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