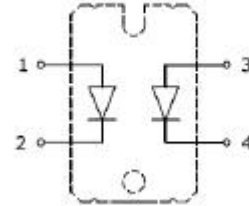


PRELIMINARY DATASHEET

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 | $^\circ\text{C}$ |

Thermal and Isolation Characteristics

| Parameter | Symbol | Max. Value | Units |
|--|------------|------------|--------------------|
| Characteristics | | | |
| Thermal resistance, junction to case, per Diode | R_{thJC} | 0.45 | $^\circ\text{C/W}$ |
| 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_{rm} | - | 8 25 | - | A |

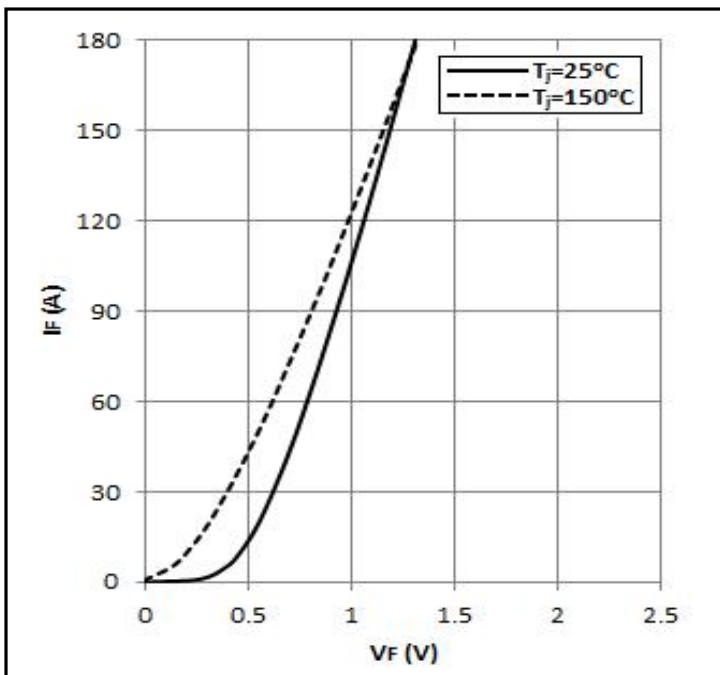
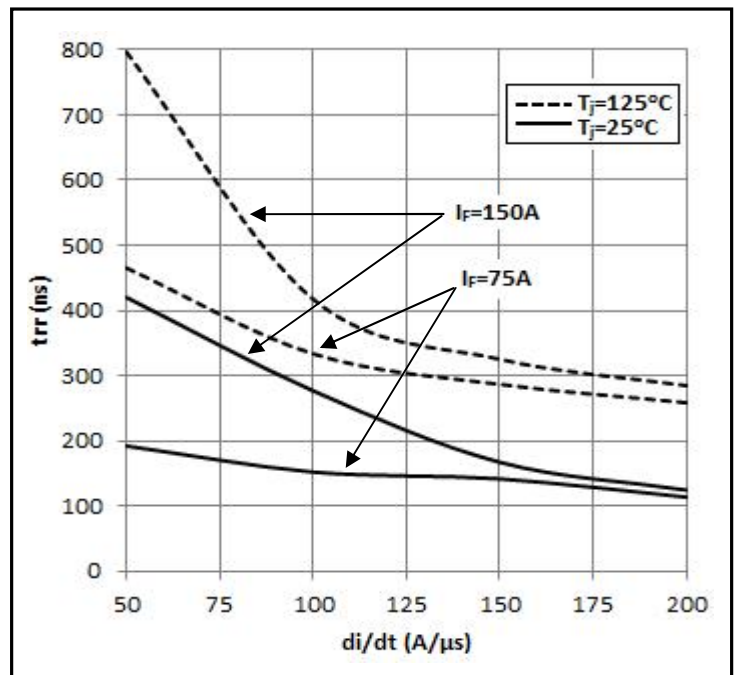
Figure 1 – Typical Forward Voltage Drop vs Forward Current

Figure 2 – Reverse recovery time vs. di_F/dt


Figure 3 – Reverse recovery charge vs. di_F/dt

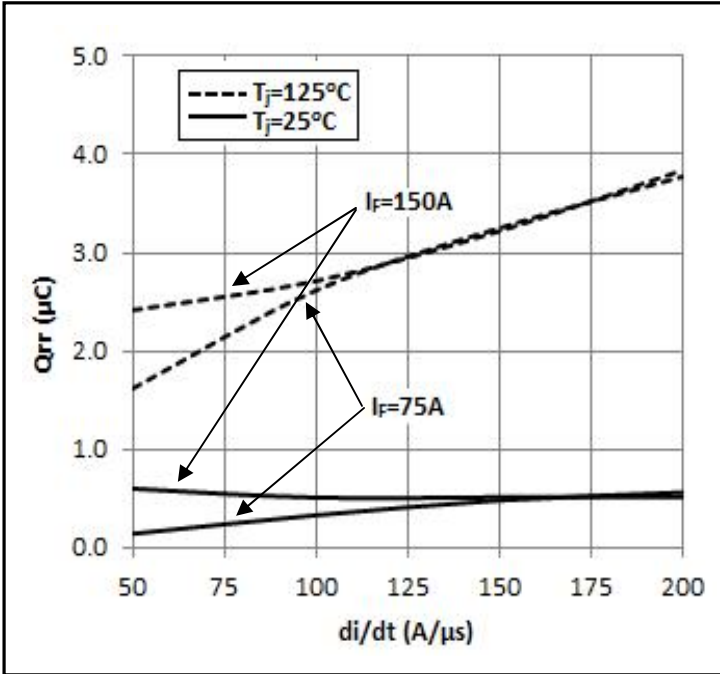


Figure 4 – Maximum reverse recovery current vs. di_F/dt

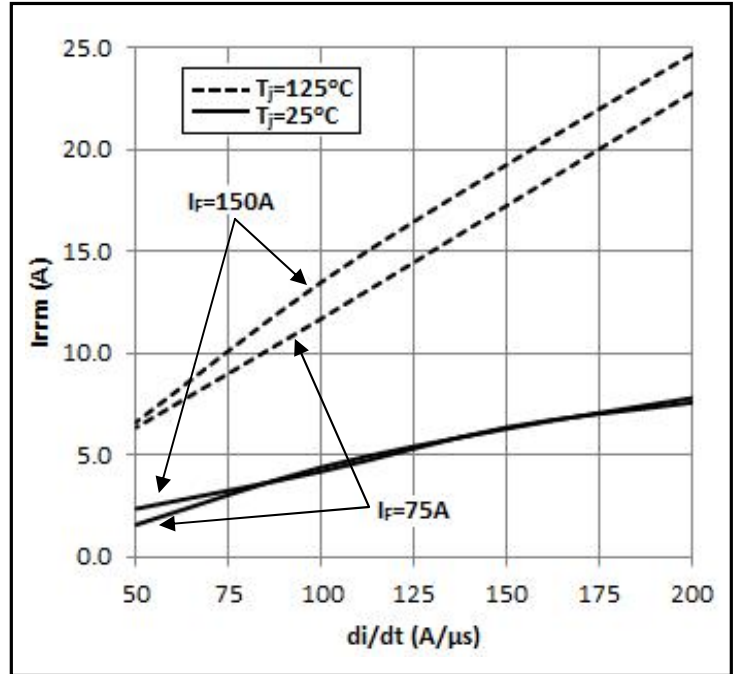
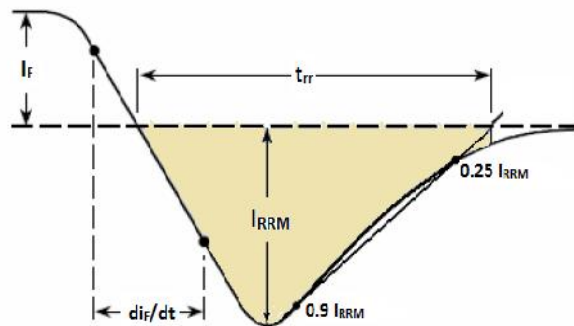
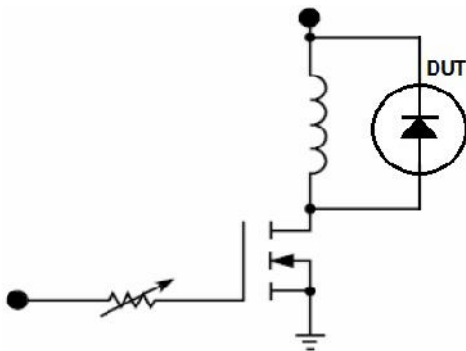
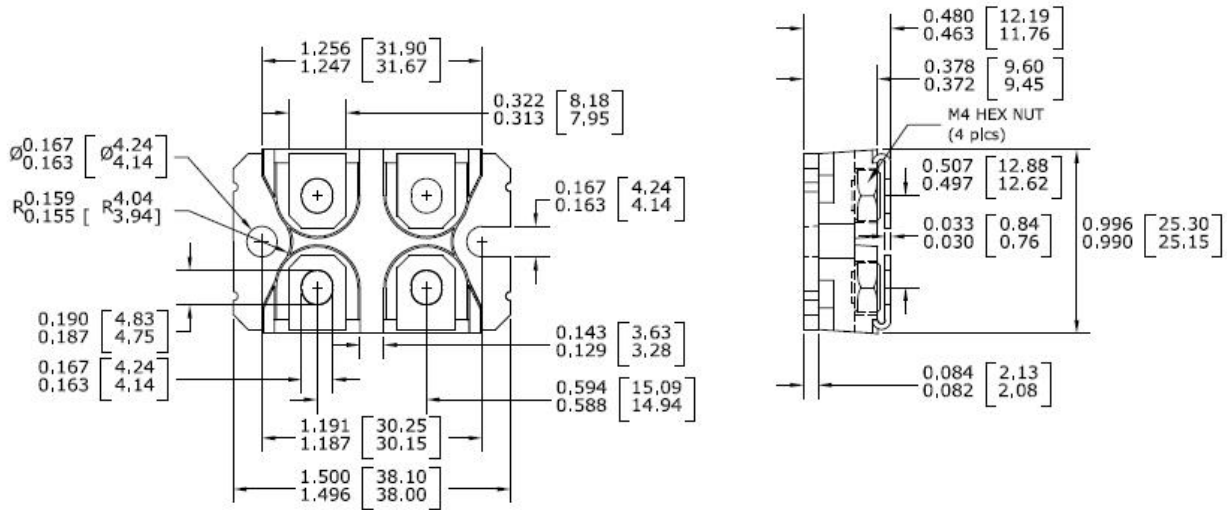


Figure 5 – Diode Reverse Recovery Test Circuit and Waveform



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.**