

1200V 50A Soft Recovery Diode in TO247 package

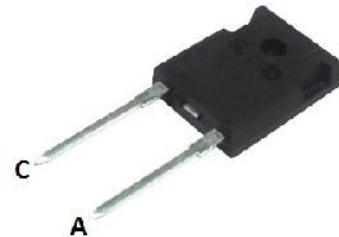
APPLICATIONS

- 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

| Parameter | Symbol | Value | Units |
|---|----------------|-------------|------------------|
| Repetitive peak reverse voltage | V_{RRM} | 1200 | V |
| Continuous forward current $T_C = 100^\circ\text{C}$ | 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 | $^\circ\text{C}$ |

Thermal Characteristics

| Parameter | Symbol | Max. Value | Units |
|--------------------------------------|------------|------------|---------------------------|
| Characteristics | | | |
| Thermal resistance, junction to case | R_{thJC} | 0.48 | $^\circ\text{C}/\text{W}$ |

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

| Parameter | Symbol | Value | | | Unit |
|--|--------|-------|------|------|---------------|
| | | Min. | Typ. | Max. | |
| Static Characteristics | | | | | |
| Reverse leakage current $V_R = 1200\text{ V}, T_j = 25^\circ\text{C}$ $V_R = 1200\text{ V}, T_j = 150^\circ\text{C}$ | I_R | - | - | 100 | μA |
| Forward voltage drop $I_F = 50\text{ A}, T_j = 25^\circ\text{C}$ $I_F = 50\text{ A}, T_j = 150^\circ\text{C}$ | V_F | - | 1.70 | 2.2 | V |
| | | - | 1.80 | - | |

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

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

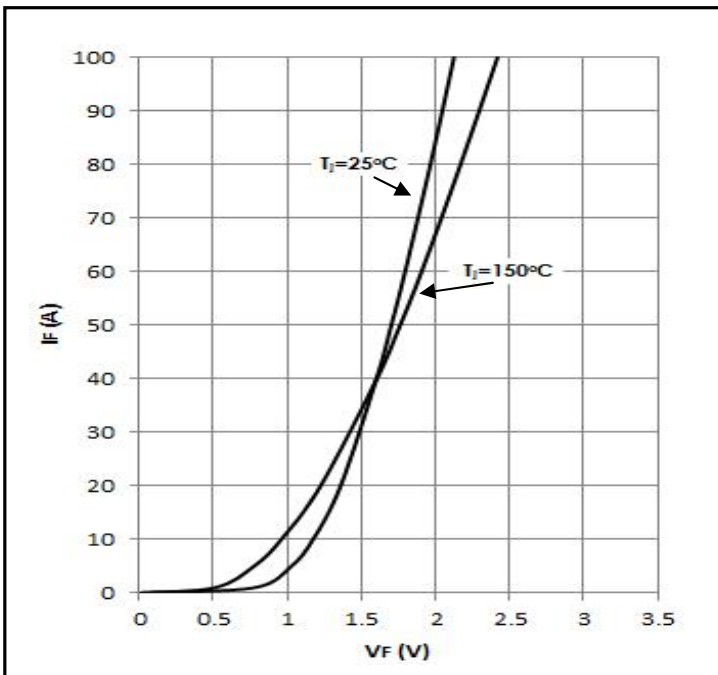
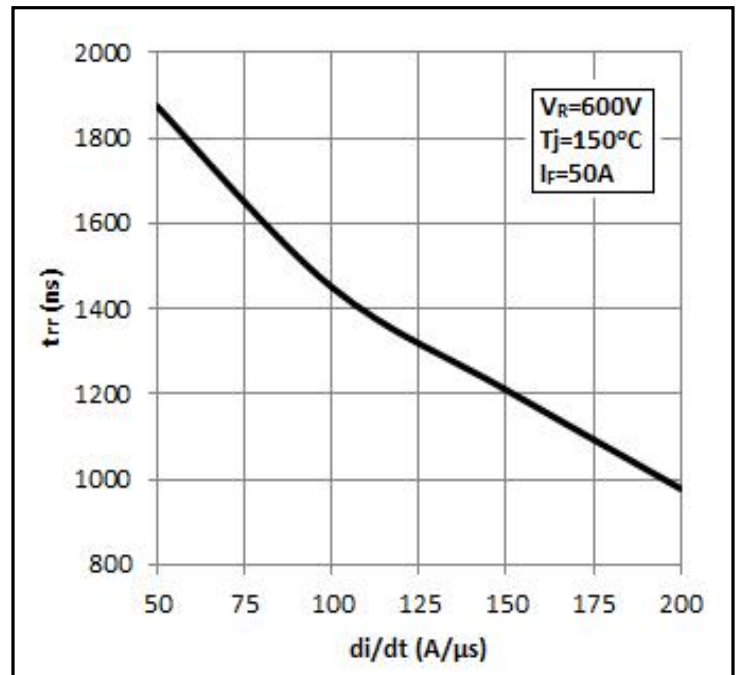
Figure 1 – Typical Diode Forward Characteristics

Figure 2 – Reverse recovery time vs. di_F/dt


Figure 3 – Reverse recovery charge vs. di_F/dt

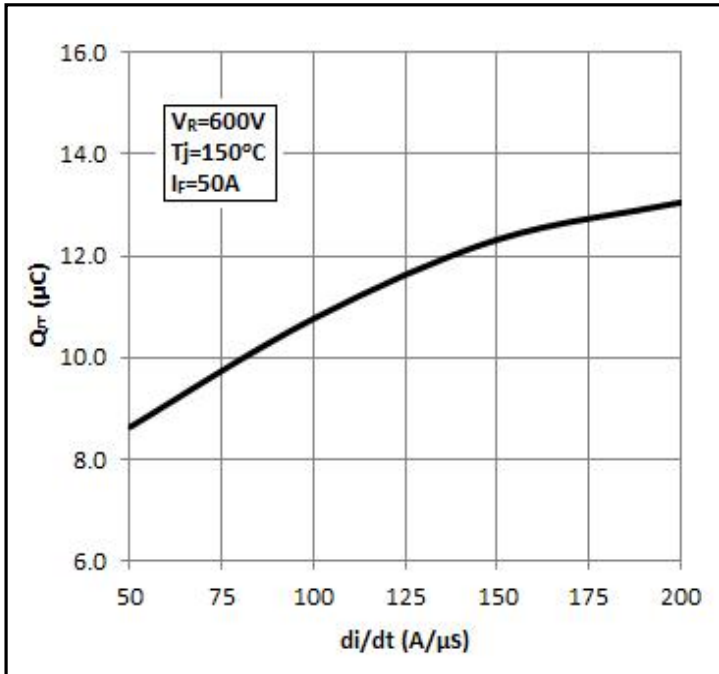


Figure 4 – Maximum reverse recovery current vs. di_F/dt

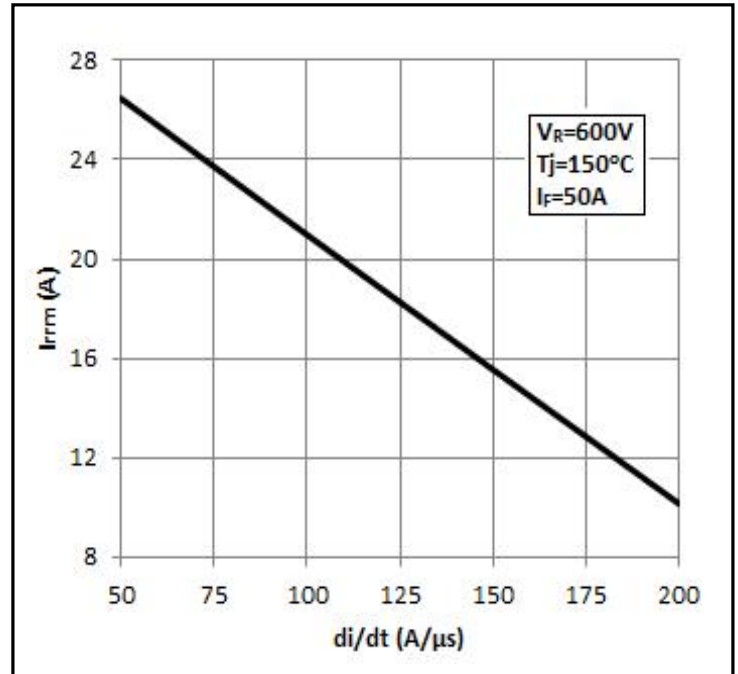
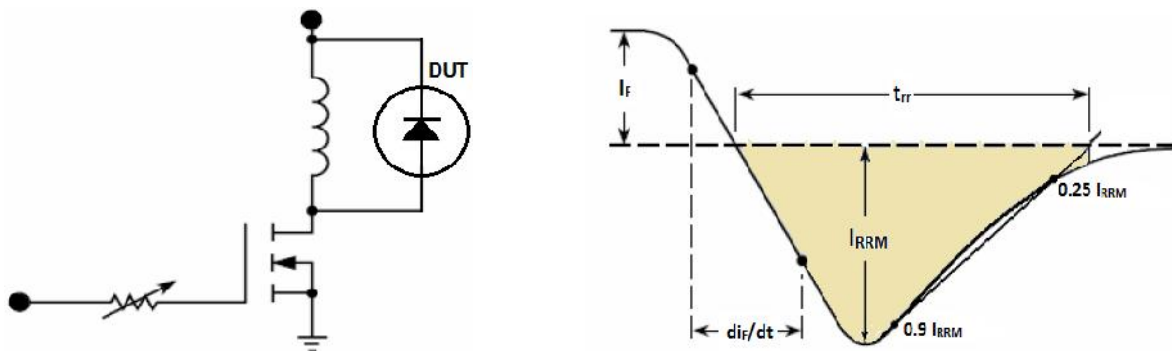
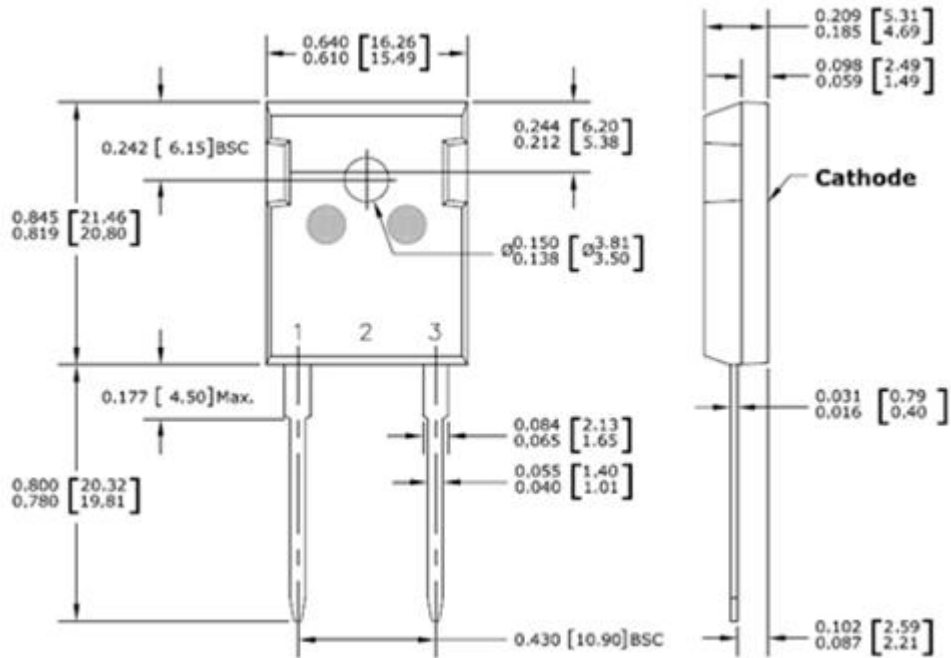


Figure 5 – Diode Reverse Recovery Test Circuit and Waveform



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.**