TrenchT4™
IXTN660N04T4
Power MOSFET

N-Channel Enhancement Mode
Avalanche Rated
Fast Intrinsic Diode

Symbol Test Conditions Maximum Ratings

\( V_{DSS} \) \( T_J = 25°C \) to \( 175°C \) 40 V
\( V_{DGR} \) \( T_J = 25°C \) to \( 175°C \), \( R_{GS} = 1\Omega \) 40 V
\( V_{GSM} \) Transient ±15 V
\( I_{DSS} \) \( T_C = 25°C \) (Chip Capability) 660 A
\( I_{L(RMS)} \) External Lead Current Limit 200 A
\( I_{DM} \) \( T_C = 25°C \), Pulse Width Limited by \( T_{JM} \) 1800 A
\( I_A \) \( T_C = 25°C \) 330 A
\( E_{AS} \) \( T_C = 25°C \) 5 J
\( P_{D} \) \( T_C = 25°C \) 1040 W
\( T_J \) -55 ... +175 °C
\( T_{JM} \) 175 °C
\( T_{aG} \) -55 ... +175 °C
\( V_{ISOL} \) 50/60 Hz, RMS \( t = 1 \) minute 2500 V~
\( I_{BOL} \leq 1mA \) \( t = 1 \) second 3000 V~
\( M_d \) Mounting Torque 1.5/13 Nm/lb.in
Terminal Connection Torque 1.3/11.5 Nm/lb.in
Weight 30 g

Features
- International Standard Package
- miniBLOC, with Aluminium Nitride Isolation
- 175°C Operating Temperature
- Isolation Voltage 2500 V~
- High Current Handling Capability
- Fast Intrinsic Diode
- Avalanche Rated
- Low \( R_{DS(on)} \)

Advantages
- Easy to Mount
- Space Savings
- High Power Density

Applications
- DC-DC Converters and Offi-Line UPS
- Primary-Side Switch
- High Speed Power Switching Applications
### SOT-227B (IXTN) Outline

(M4 screws (4x) supplied)

### Symbol Test Conditions (T_J = 25°C, Unless Otherwise Specified) | Characteristic Values
---|---

#### Source-Drain Diode

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Test Conditions</th>
<th>Characteristic Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>gfs</strong></td>
<td>V_DS = 10V, I_D = 60A, Note 1</td>
<td>110</td>
</tr>
<tr>
<td><strong>Ciss</strong></td>
<td>V_DS = 10V, V_DS = 0.5•V_DSS, I_D = 0.5•I_DSS</td>
<td>6.5</td>
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<tr>
<td><strong>Coss</strong></td>
<td>V_DS = 10V, V_DS = 25V, f = 1MHz</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>R_G</strong></td>
<td></td>
<td>2.5</td>
</tr>
<tr>
<td><strong>t_{(on)}</strong></td>
<td>V_DS = 10V, I_D = 0.5•I_DSS</td>
<td>40</td>
</tr>
<tr>
<td><strong>t_r</strong></td>
<td>V_DS = 10V, I_D = 0.5•I_DSS</td>
<td>430</td>
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<tr>
<td><strong>t_{(off)}</strong></td>
<td>R_G = 1Ω (External)</td>
<td>386</td>
</tr>
<tr>
<td><strong>Q_{g(on)}</strong></td>
<td>V_DS = 10V, I_D = 0.5•I_DSS</td>
<td>860</td>
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<tr>
<td><strong>Q_{gs]</strong></td>
<td>V_DS = 10V, I_D = 0.5•I_DSS</td>
<td>240</td>
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<tr>
<td><strong>Q_{gd]</strong></td>
<td>V_DS = 10V, I_D = 0.5•I_DSS</td>
<td>290</td>
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<tr>
<td><strong>R_{thJC</strong>}</td>
<td></td>
<td>0.144 °C/W</td>
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<tr>
<td><strong>R_{thCS</strong>}</td>
<td></td>
<td>0.05 °C/W</td>
</tr>
</tbody>
</table>

### Note
1. Pulse test, t ≤ 300μs, duty cycle, d ≤ 2%.

### ADVANCE TECHNICAL INFORMATION

The product presented herein is under development. The Technical Specifications offered are derived from a subjective evaluation of the design, based upon prior knowledge and experience, and constitute a "considered reflection" of the anticipated result. IXYS reserves the right to change limits, test conditions, and dimensions without notice.

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Fig. 7. Input Admittance

Fig. 8. Transconductance

Fig. 9. Forward Voltage Drop of Intrinsic Diode

Fig. 10. Gate Charge

Fig. 11. Capacitance

Fig. 12. Forward-Bias Safe Operating Area

IXYS Reserves the Right to Change Limits, Test Conditions, and Dimensions.
Fig. 19. Maximum Transient Thermal Impedance

Pulse Width - Seconds

Z_{thJC} - K / W
Mouser Electronics

Authorized Distributor

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