TrenchP™
Power MOSFETs

IXTA28P065T
IXTP28P065T

P-Channel Enhancement Mode
Avalanche Rated

Symbol | Test Conditions | Maximum Ratings | Characteristic Values
---|---|---|---

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Test Conditions</th>
<th>Characteristic Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>V_{DSS}</td>
<td>T_J = 25°C to 150°C</td>
<td>- 65 V</td>
</tr>
<tr>
<td>V_{DGR}</td>
<td>T_J = 25°C to 150°C, R_{GS} = 1MΩ</td>
<td>- 65 V</td>
</tr>
<tr>
<td>V_{GSS}</td>
<td>Continuous</td>
<td>±15 V</td>
</tr>
<tr>
<td>V_{GSM}</td>
<td>Transient</td>
<td>±25 V</td>
</tr>
<tr>
<td>I_{DS}</td>
<td>T_C = 25°C</td>
<td>- 28 A</td>
</tr>
<tr>
<td>I_{DM}</td>
<td>T_C = 25°C, Pulse Width Limited by T_{JM}</td>
<td>- 90 A</td>
</tr>
<tr>
<td>I_A</td>
<td>T_C = 25°C</td>
<td>- 28 A</td>
</tr>
<tr>
<td>E_S</td>
<td>T_C = 25°C</td>
<td>200 mJ</td>
</tr>
<tr>
<td>P_D</td>
<td>T_C = 25°C</td>
<td>83 W</td>
</tr>
<tr>
<td>T_J</td>
<td>-55 ... +150 °C</td>
<td></td>
</tr>
<tr>
<td>T_{JM}</td>
<td>150 °C</td>
<td></td>
</tr>
<tr>
<td>T_{stg}</td>
<td>-55 ... +150 °C</td>
<td></td>
</tr>
<tr>
<td>T_L</td>
<td>1.6mm (0.062 in.) from Case for 10s</td>
<td>300 °C</td>
</tr>
<tr>
<td>T_{SOLD}</td>
<td>Plastic Body for 10s</td>
<td>260 °C</td>
</tr>
<tr>
<td>M_d</td>
<td>Mounting Torque (TO-220)</td>
<td>1.13 / 10 Nm/lb.in.</td>
</tr>
<tr>
<td>Weight</td>
<td>TO-220</td>
<td>3.0 g</td>
</tr>
<tr>
<td></td>
<td>TO-263</td>
<td>2.5 g</td>
</tr>
</tbody>
</table>

Features
- International Standard Packages
- Avalanche Rated
- Extended FBSSOA
- Fast Intrinsic Diode
- Low R_{DS(on)} and Q_G

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

Applications
- High-Side Switching
- Push Pull Amplifiers
- DC Choppers
- Automatic Test Equipment
- Current Regulators
- Battery Charger Applications

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IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents:
- 4,835,592
- 5,049,561
- 5,237,481
- 6,162,665
- 6,404,065
- 6,683,344
- 6,727,585
- 7,005,734
- 7,157,338

IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents:
- 4,931,844
- 5,017,508
- 5,063,307
- 5,381,025
- 6,259,123
- 6,534,343
- 6,710,405
- 6,710,463
- 6,759,692
- 7,063,975

Note 1. Pulse test, t ≤ 300μs, duty cycle, d ≤ 2%.
Fig. 1. Output Characteristics @ $T_J = 25^\circ$C

Fig. 2. Extended Output Characteristics @ $T_J = 25^\circ$C

Fig. 3. Output Characteristics @ $T_J = 125^\circ$C

Fig. 4. $R_{DS(on)}$ Normalized to $I_D = -14$A Value vs. Junction Temperature

Fig. 5. $R_{DS(on)}$ Normalized to $I_D = -14$A Value vs. Drain Current

Fig. 6. Maximum Drain Current vs. Case Temperature
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

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Fig. 13. Resistive Turn-on Rise Time vs. Junction Temperature

![Graph showing resistive turn-on rise time vs. junction temperature.](image1)

- $R_G = 10\Omega$, $V_{GS} = -10V$  
- $V_{DS} = -33V$

Fig. 14. Resistive Turn-on Rise Time vs. Drain Current

![Graph showing resistive turn-on rise time vs. drain current.](image2)

- $R_G = 10\Omega$, $V_{GS} = -10V$  
- $V_{DS} = -33V$

Fig. 15. Resistive Turn-on Switching Times vs. Gate Resistance

![Graph showing resistive turn-on switching times vs. gate resistance.](image3)

- $V_J = 125\degree C$, $V_{GS} = -10V$  
- $V_{DS} = -33V$

Fig. 16. Resistive Turn-off Switching Times vs. Junction Temperature

![Graph showing resistive turn-off switching times vs. junction temperature.](image4)

- $R_G = 10\Omega$, $V_{GS} = -10V$  
- $V_{DS} = -33V$

Fig. 17. Resistive Turn-off Switching Times vs. Drain Current

![Graph showing resistive turn-off switching times vs. drain current.](image5)

- $V_J = 125\degree C$, $V_{GS} = -10V$  
- $V_{DS} = -33V$

Fig. 18. Resistive Turn-off Switching Times vs. Gate Resistance

![Graph showing resistive turn-off switching times vs. gate resistance.](image6)

- $V_J = 125\degree C$, $V_{GS} = -10V$  
- $V_{DS} = -33V$
Fig. 19. Maximum Transient Thermal Impedance

$Z_{thJC} - ^\circ C/W$

Pulse Width - Seconds

$0.0001 \quad 0.001 \quad 0.01 \quad 0.1 \quad 1 \quad 10$

$0.01 \quad 0.1 \quad 1 \quad 10$

$0.0001 \quad 0.001 \quad 0.01 \quad 0.1 \quad 1 \quad 10$

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