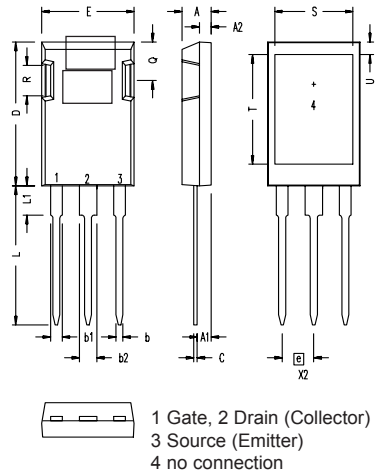


| Symbol       | Test Conditions                                                                                         | Characteristic Values<br>( $T_J = 25^\circ\text{C}$ , unless otherwise specified) |                        |      |
|--------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|------|
|              |                                                                                                         | Min.                                                                              | Typ.                   | Max. |
| $g_{fs}$     | $V_{DS} = 10\text{ V}$ ; $I_D = 0.5 I_{D25}$ , pulse test                                               | 50                                                                                | 84                     | S    |
| $C_{iss}$    | $V_{GS} = 0\text{ V}$ , $V_{DS} = 25\text{ V}$ , $f = 1\text{ MHz}$                                     |                                                                                   | 7500                   | pF   |
| $C_{oss}$    |                                                                                                         |                                                                                   | 1800                   | pF   |
| $C_{rss}$    |                                                                                                         |                                                                                   | 280                    | pF   |
| $t_{d(on)}$  | $V_{GS} = 10\text{ V}$ , $V_{DS} = 0.5 V_{DSS}$ , $I_D = 60\text{ A}$<br>$R_G = 3.3\ \Omega$ (External) |                                                                                   | 30                     | ns   |
| $t_r$        |                                                                                                         |                                                                                   | 35                     | ns   |
| $t_{d(off)}$ |                                                                                                         |                                                                                   | 150                    | ns   |
| $t_f$        |                                                                                                         |                                                                                   | 90                     | ns   |
| $Q_{g(on)}$  | $V_{GS} = 10\text{ V}$ , $V_{DS} = 0.5 V_{DSS}$ , $I_D = 0.5 I_{D25}$                                   |                                                                                   | 240                    | nC   |
| $Q_{gs}$     |                                                                                                         |                                                                                   | 50                     | nC   |
| $Q_{gd}$     |                                                                                                         |                                                                                   | 100                    | nC   |
| $R_{thJC}$   | ISOPLUS247                                                                                              | 0.15                                                                              | 0.5 $^\circ\text{C/W}$ |      |
| $R_{thCS}$   |                                                                                                         |                                                                                   | $^\circ\text{C/W}$     |      |

| Symbol   | Test Conditions                                                                                           | Characteristic Values<br>( $T_J = 25^\circ\text{C}$ , unless otherwise specified) |      |               |
|----------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|---------------|
|          |                                                                                                           | Min.                                                                              | typ. | Max.          |
| $I_S$    | $V_{GS} = 0\text{ V}$                                                                                     |                                                                                   |      | 90 A          |
| $I_{SM}$ | Repetitive                                                                                                |                                                                                   |      | 280 A         |
| $V_{SD}$ | $I_F = I_S$ , $V_{GS} = 0\text{ V}$ ,<br>Pulse test, $t \leq 300\ \mu\text{s}$ , duty cycle $d \leq 2\%$  |                                                                                   |      | 1.5 V         |
| $t_{rr}$ | $I_F = 25\text{ A}$ , $-di/dt = 100\text{ A}/\mu\text{s}$<br>$V_R = 100\text{ V}$ , $V_{GS} = 0\text{ V}$ | 0.6                                                                               | 6    | 200 ns        |
| $Q_{RM}$ |                                                                                                           |                                                                                   |      | $\mu\text{C}$ |
| $I_{RM}$ |                                                                                                           |                                                                                   |      | A             |

## ISOPLUS 247 OUTLINE

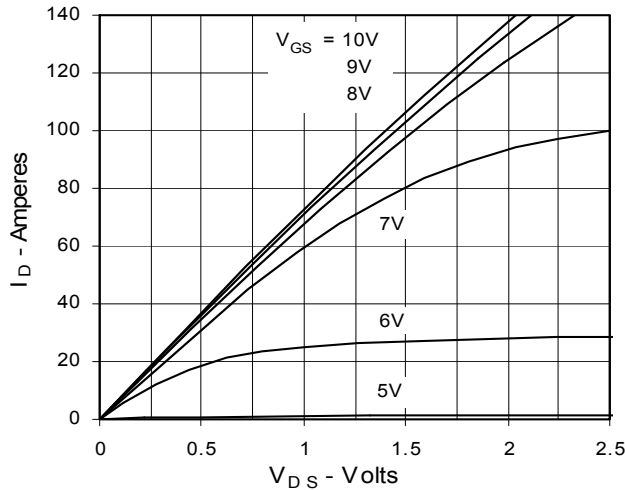


| Dim.           | Millimeter |       | Inches   |      |
|----------------|------------|-------|----------|------|
|                | Min.       | Max.  | Min.     | Max. |
| A              | 4.83       | 5.21  | .190     | .205 |
| A <sub>1</sub> | 2.29       | 2.54  | .090     | .100 |
| A <sub>2</sub> | 1.91       | 2.16  | .075     | .085 |
| b              | 1.14       | 1.40  | .045     | .055 |
| b <sub>1</sub> | 1.91       | 2.13  | .075     | .084 |
| b <sub>2</sub> | 2.92       | 3.12  | .115     | .123 |
| C              | 0.61       | 0.80  | .024     | .031 |
| D              | 20.80      | 21.34 | .819     | .840 |
| E              | 15.75      | 16.13 | .620     | .635 |
| e              | 5.45 BSC   |       | .215 BSC |      |
| L              | 19.81      | 20.32 | .780     | .800 |
| L1             | 3.81       | 4.32  | .150     | .170 |
| Q              | 5.59       | 6.20  | .220     | .244 |
| R              | 4.32       | 4.83  | .170     | .190 |

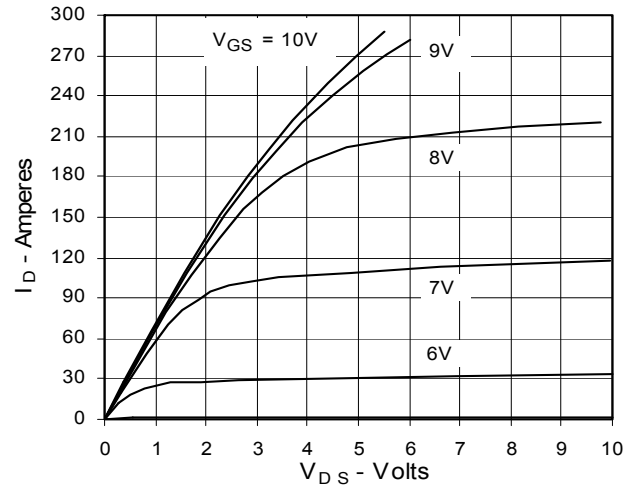
IXYS reserves the right to change limits, test conditions, and dimensions.

IXYS MOSFETs and IGBTs are covered by 4,835,592 4,931,844 5,049,961 5,237,481 6,162,665 6,404,065 B1 6,683,344 6,727,585  
one or more of the following U.S. patents: 4,850,072 5,017,508 5,063,307 5,381,025 6,259,123 B1 6,534,343 6,710,405 B2 6,759,692  
4,881,106 5,034,796 5,187,117 5,486,715 6,306,728 B1 6,583,505 6,710,463 6,771,478 B2

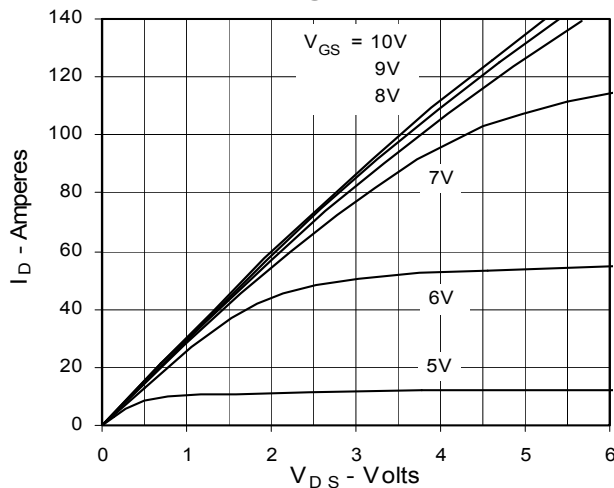
**Fig. 1. Output Characteristics  
@ 25°C**



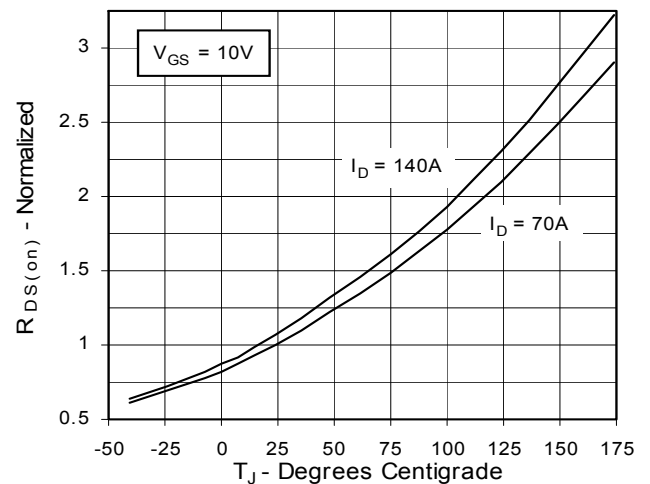
**Fig. 2. Extended Output Characteristics  
@ 25°C**



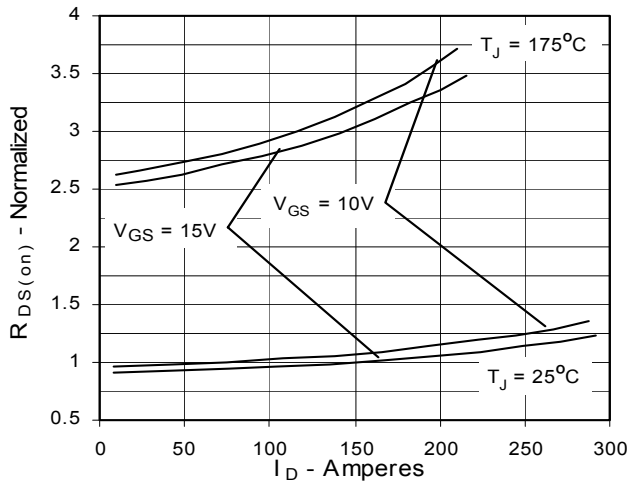
**Fig. 3. Output Characteristics  
@ 150°C**



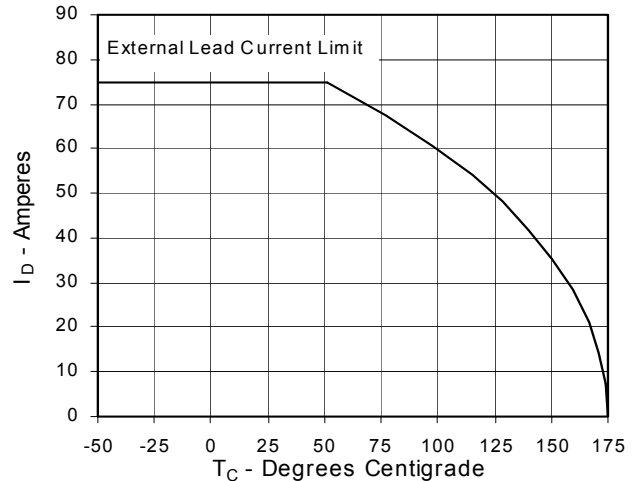
**Fig. 4.  $R_{DS(on)}$  Normalized to  $I_D = 70\text{A}$   
Value vs. Junction Temperature**



**Fig. 5.  $R_{DS(on)}$  Normalized to  
 $I_D = 70\text{A}$  Value vs. Drain Current**



**Fig. 6. Drain Current vs. Case  
Temperature**



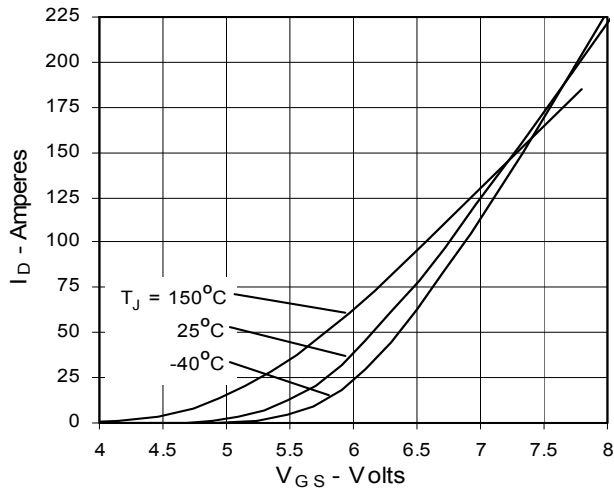
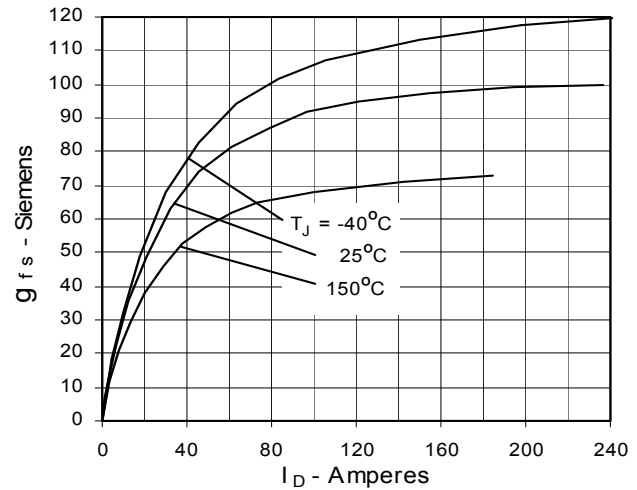
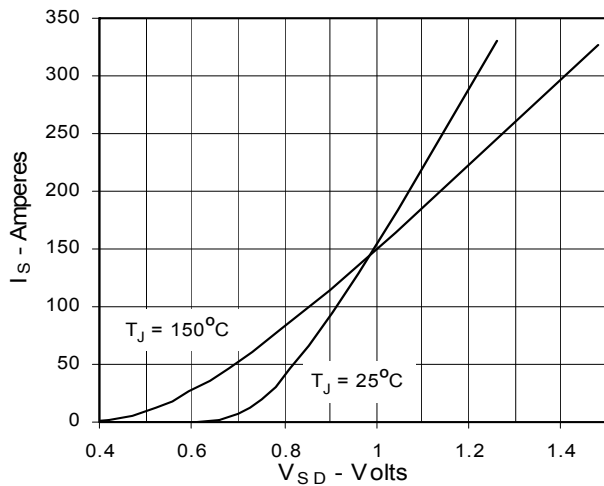
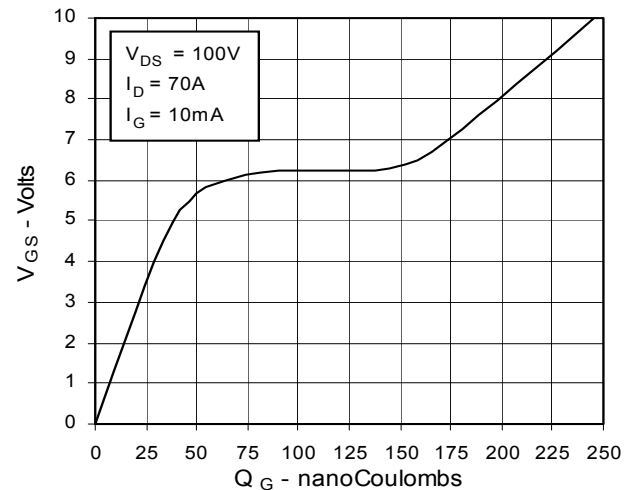
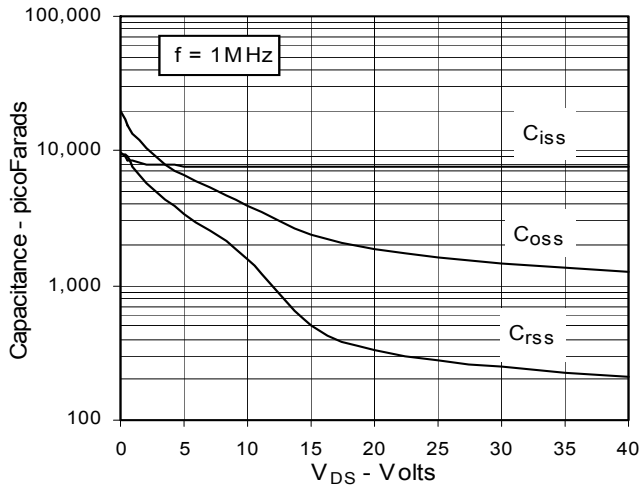
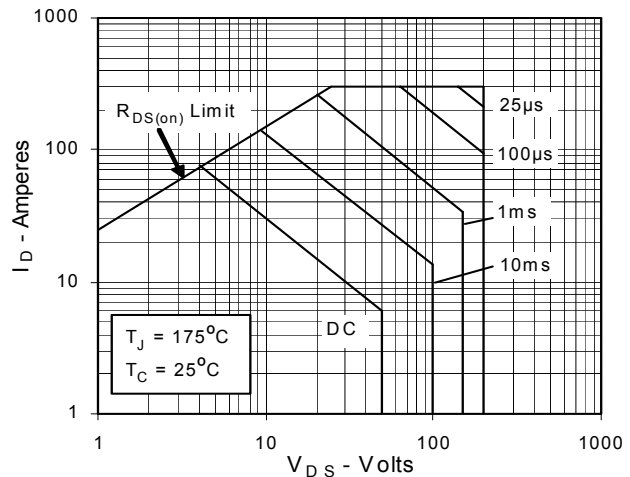
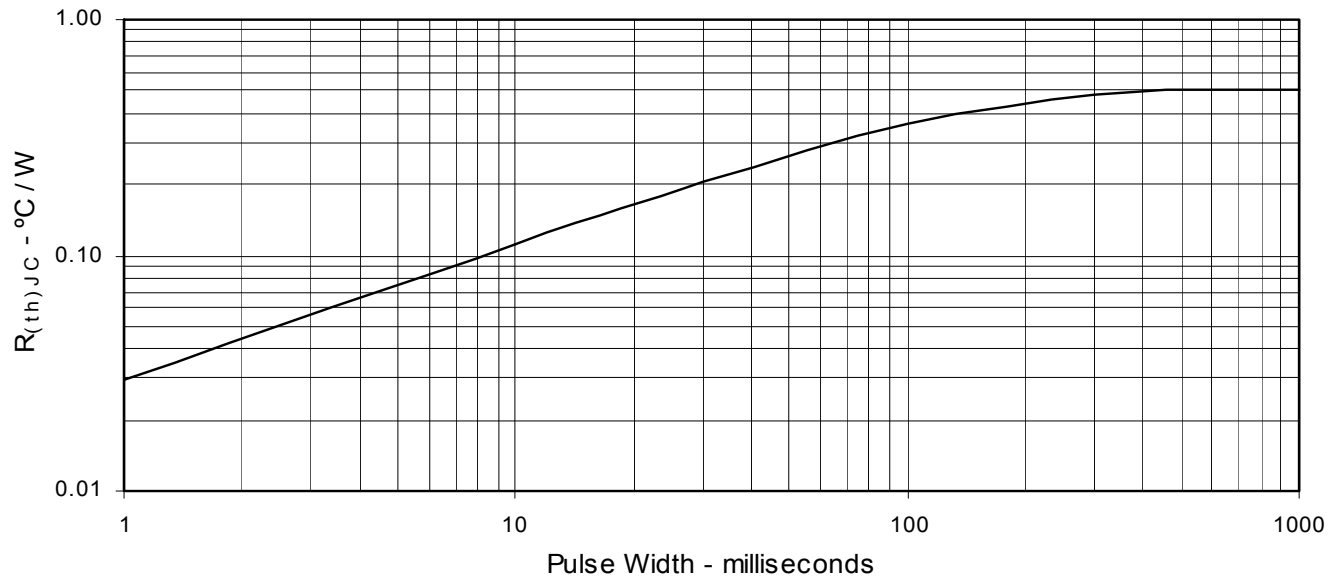
**Fig. 7. Input Admittance**

**Fig. 8. Transconductance**

**Fig. 9. Source Current vs. Source-To-Drain Voltage**

**Fig. 10. Gate Charge**

**Fig. 11. Capacitance**

**Fig. 12. Forward-Bias Safe Operating Area**


Fig. 13. Maximum Transient Thermal Resistance





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