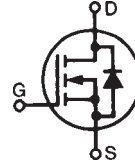


PolarHT™ Power MOSFET

IXTQ 110N10P IXTT 110N10P

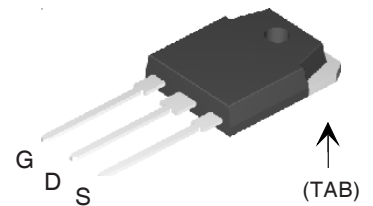
$$\begin{aligned} V_{DSS} &= 100 \text{ V} \\ I_{D25} &= 110 \text{ A} \\ R_{DS(on)} &= 15 \text{ m}\Omega \end{aligned}$$

N-Channel Enhancement Mode

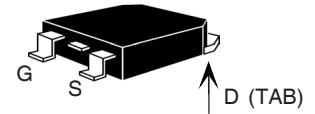


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 175°C	100	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 175°C ; $R_{GS} = 1 \text{ M}\Omega$	100	V
V_{GSM}		± 20	V
I_{D25}	$T_C = 25^\circ\text{C}$	110	A
$I_{D(RMS)}$	External lead current limit	75	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_{JM}	250	A
I_{AR}	$T_C = 25^\circ\text{C}$	60	A
E_{AR}	$T_C = 25^\circ\text{C}$	40	mJ
E_{AS}	$T_C = 25^\circ\text{C}$	1.0	J
dv/dt	$I_S \leq I_{DM}$, $di/dt \leq 100 \text{ A}/\mu\text{s}$, $V_{DD} \leq V_{DSS}$, $T_J \leq 150^\circ\text{C}$, $R_G = 4 \Omega$	10	V/ns
P_D	$T_C = 25^\circ\text{C}$	480	W
T_J		-55 ... +175	$^\circ\text{C}$
T_{JM}		175	$^\circ\text{C}$
T_{stg}		-55 ... +150	$^\circ\text{C}$
T_L	1.6 mm (0.062 in.) from case for 10 s	300	$^\circ\text{C}$
M_d	Mounting torque (TO-3P)	1.13/10	Nm/lb.in.
Weight	TO-3P	5.5	g
	TO-268	5.0	g

TO-3P (IXTQ)



TO-268 (IXTT)



G = Gate D = Drain
S = Source TAB = Drain

Features

- International standard packages
- Unclamped Inductive Switching (UIS) rated
- Low package inductance
 - easy to drive and to protect

Advantages

- Easy to mount
- Space savings
- High power density

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
V_{DSS}	$V_{GS} = 0 \text{ V}$, $I_D = 250 \mu\text{A}$	100		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250 \mu\text{A}$	2.5		5.0 V
I_{GSS}	$V_{GS} = \pm 20 \text{ V}_{DC}$, $V_{DS} = 0$			$\pm 100 \text{ nA}$
I_{DSS}	$V_{DS} = V_{DSS}$ $V_{GS} = 0 \text{ V}$ $T_J = 150^\circ\text{C}$			25 μA
				250 μA
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$, $I_D = 0.5 I_{D25}$ Pulse test, $t \leq 300 \mu\text{s}$, duty cycle $d \leq 2\%$			15 $\text{m}\Omega$

PolarHT™ DMOS transistors utilize proprietary designs and process. US patent is pending.

Fig. 1. Output Characteristics @ 25°C

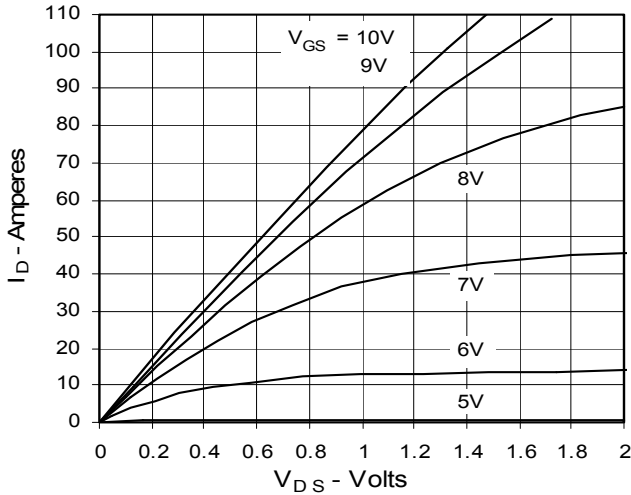


Fig. 2. Extended Output Characteristics @ 25°C

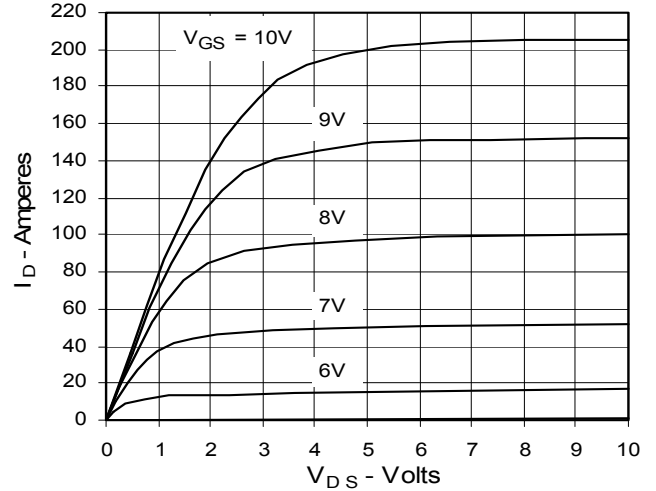


Fig. 3. Output Characteristics @ 150°C

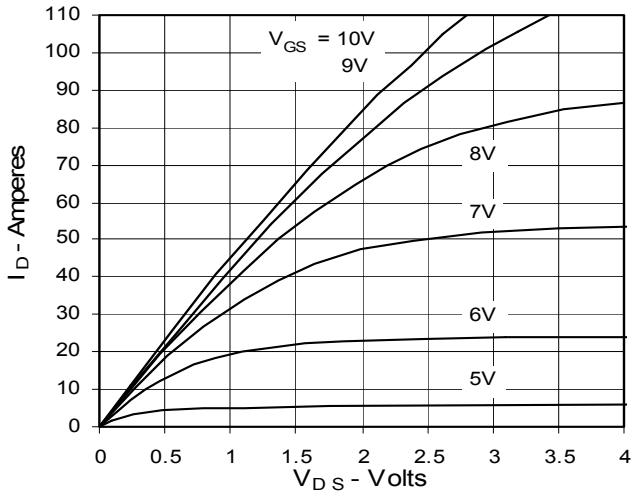


Fig. 4. $R_{DS(on)}$ Normalized to 0.5 I_{D25} Value vs. Junction Temperature

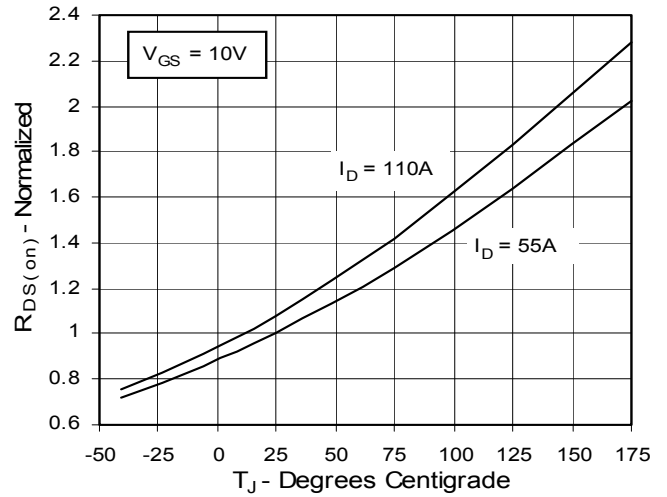


Fig. 5. $R_{DS(on)}$ Normalized to 0.5 I_{D25} Value vs. Drain Current

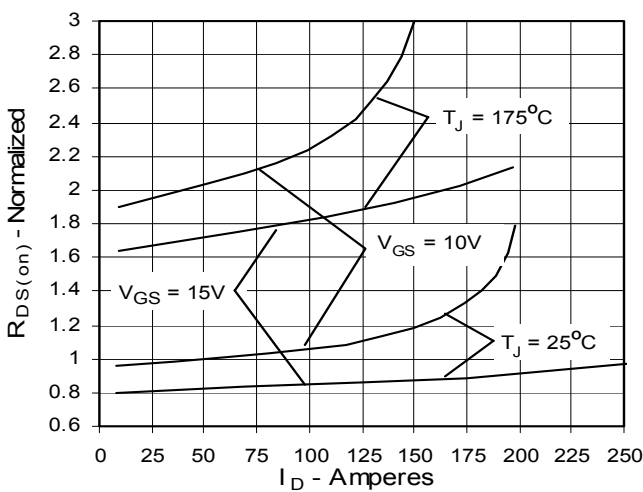


Fig. 6. Drain Current vs. Case Temperature

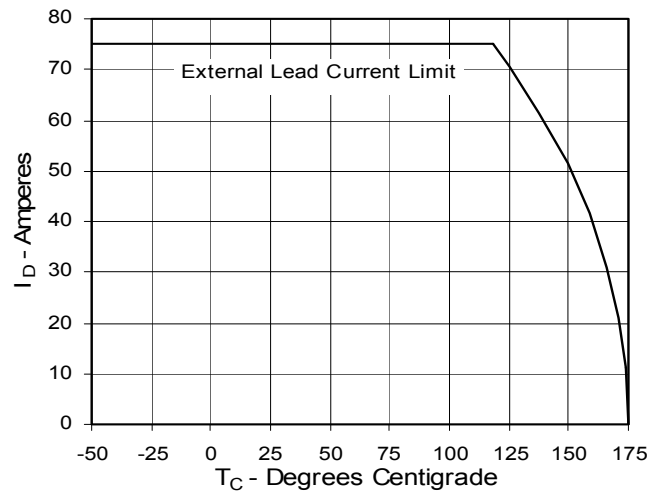


Fig. 7. Input Admittance

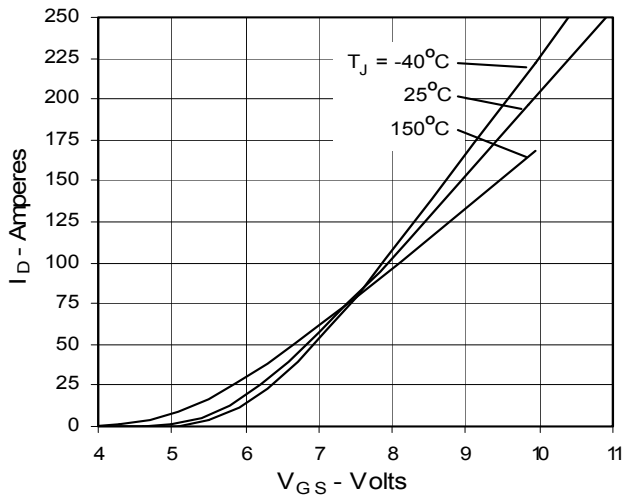


Fig. 8. Transconductance

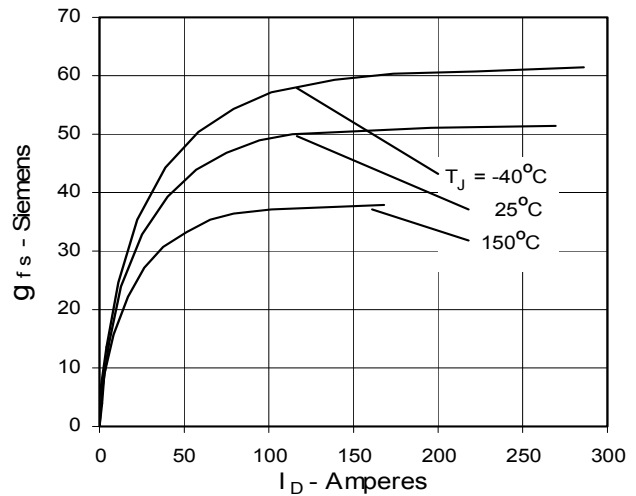


Fig. 9. Source Current vs. Source-To-Drain Voltage

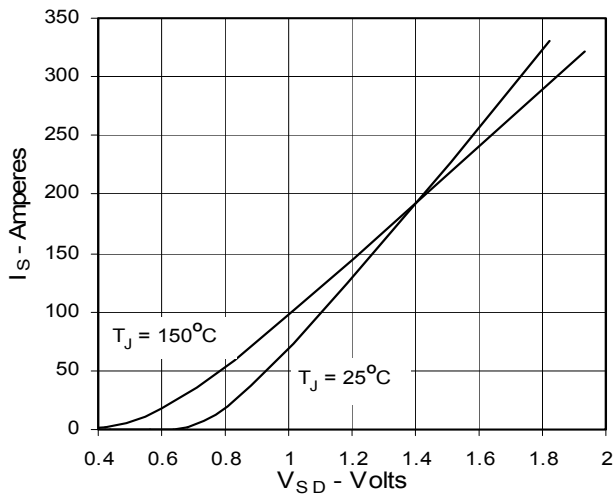


Fig. 10. Gate Charge

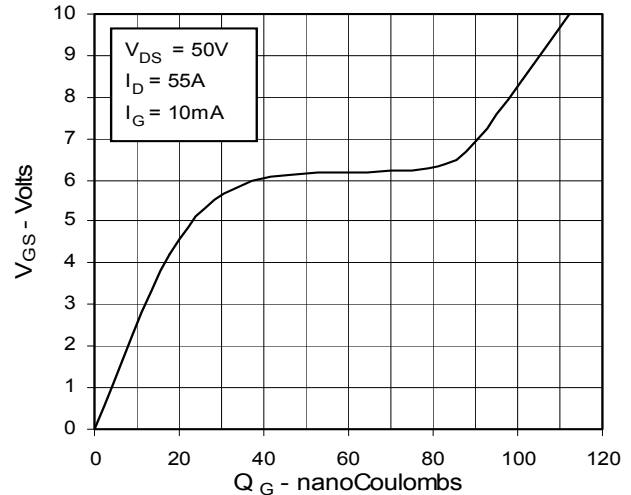


Fig. 11. Capacitance

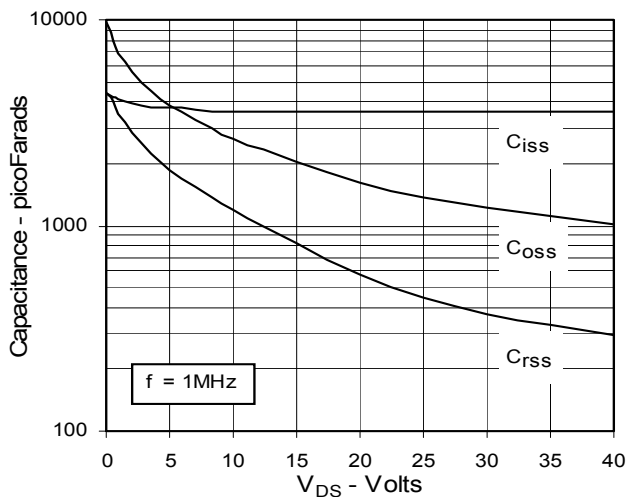
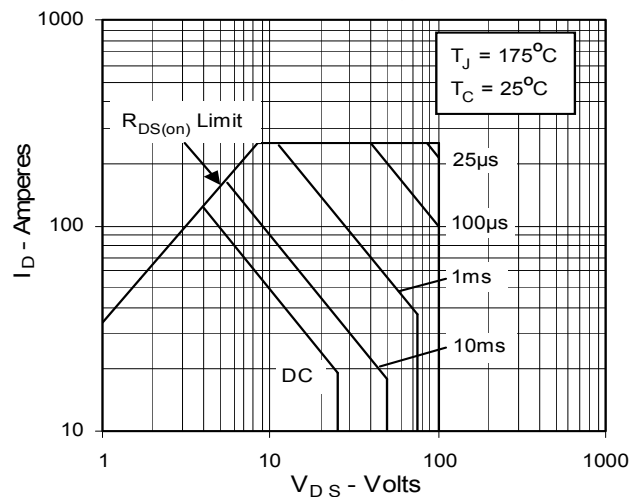


Fig. 12. Forward-Bias Safe Operating Area

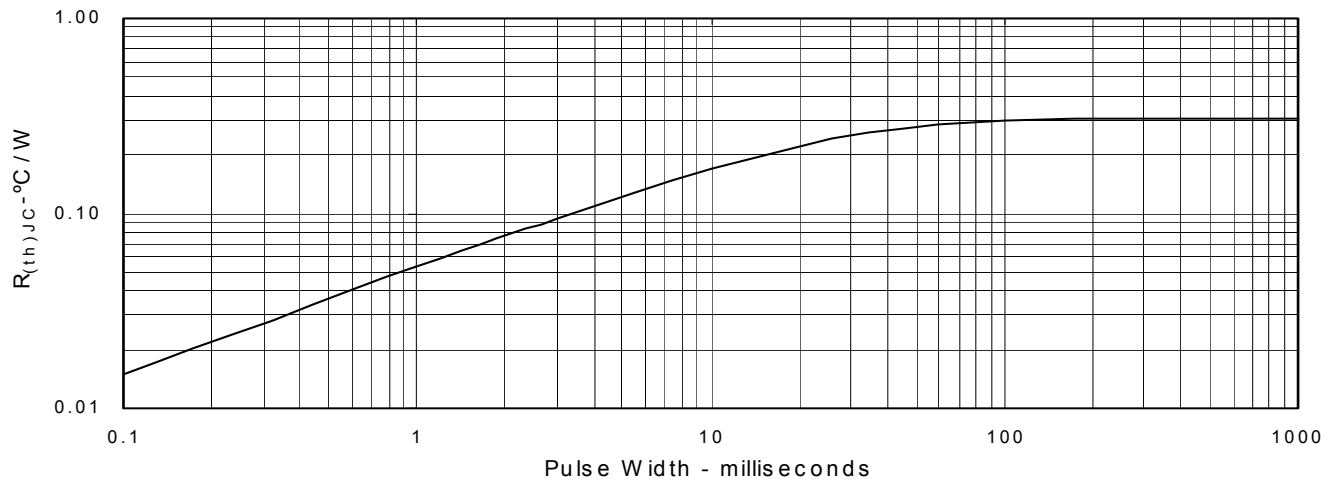


IXYS reserves the right to change limits, test conditions, and dimensions.

IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents:

4,835,592	4,881,106	5,017,508	5,049,961	5,187,117	5,381,025	6,162,665	6,306,728 B1	6,534,343	6,683,344
4,850,072	4,931,844	5,034,796	5,063,307	5,237,481	5,486,715	6,259,123 B1	6,404,065 B1	6,583,505	6,710,405 B2

Fig. 13. Maximum Transient Thermal Resistance





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