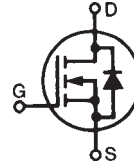


PolarHT™ HiPerFET Power MOSFET

N-Channel Enhancement Mode
Fast Intrinsic Diode
Avalanche Rated

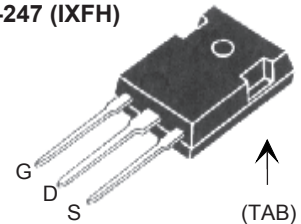
IXFH 110N10P
IXFV 110N10P
IXFV 110N10PS

$V_{DSS} = 100 \text{ V}$
 $I_{D25} = 110 \text{ A}$
 $R_{DS(on)} \leq 15 \text{ m}\Omega$
 $t_{rr} \leq 150 \text{ ns}$

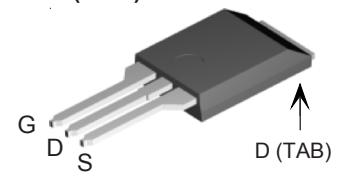


| Symbol | Test Conditions | Maximum Ratings | |
|--------------|---|------------------|------------------|
| | | | |
| V_{DSS} | $T_J = 25^\circ\text{C to } 175^\circ\text{C}$ | 100 | V |
| V_{DGR} | $T_J = 25^\circ\text{C to } 175^\circ\text{C}; R_{GS} = 1 \text{ M}\Omega$ | 100 | V |
| V_{GSS} | Continuous | ± 20 | V |
| V_{GSM} | Transient | ± 30 | 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 | $^\circ\text{C}$ |
| T_{SOLD} | Plastic body for 10 s | 260 | $^\circ\text{C}$ |
| M_d | Mounting torque (TO-247) | 1.13/10 | Nm/lb.in. |
| F_C | Mounting Force (PLUS220) | 11..65 / 2.5..15 | N/lb |
| Weight | TO-247 | 6 | g |
| | PLUS220 | 4 | g |

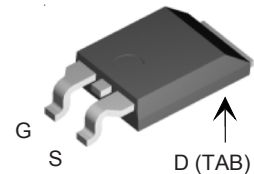
TO-247 (IXFH)



PLUS220 (IXFV)



PLUS220SMD (IXFV...S)



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

Features

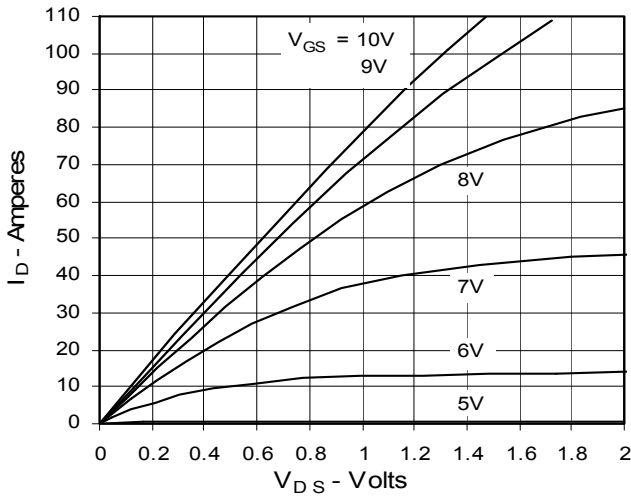
- † Fast intrinsic diode
- † International standard packages
- † Unclamped Inductive Switching (UIS) rated
- † Low package inductance
- easy to drive and to protect

Advantages

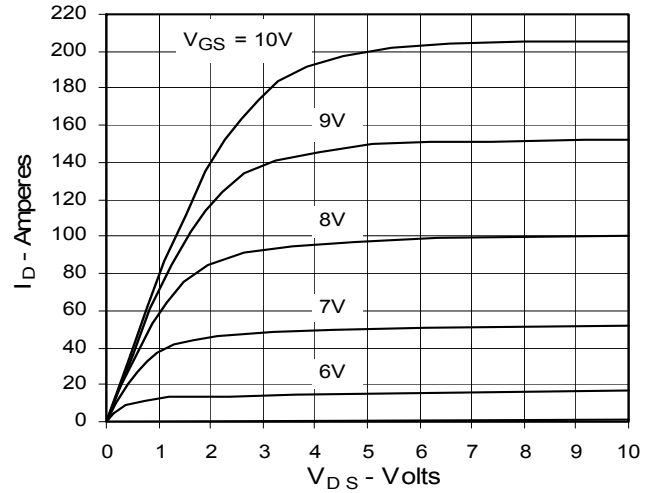
- † Easy to mount
- † Space savings
- † High power density

| Symbol | Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified) | Characteristic Values | | |
|--------------|--|-----------------------|------|----------------------|
| | | Min. | Typ. | Max. |
| BV_{DSS} | $V_{GS} = 0 \text{ V}$, $I_D = 250 \mu\text{A}$ | 100 | | V |
| $V_{GS(th)}$ | $V_{DS} = V_{GS}$, $I_D = 4 \text{ mA}$ | 2.5 | | 5.0 V |
| I_{GSS} | $V_{GS} = \pm 20 \text{ V}_{DC}$, $V_{DS} = 0$ | | | $\pm 100 \text{ nA}$ |
| I_{DSS} | $V_{DS} = V_{DSS}$ | | | 25 μA |
| | $V_{GS} = 0 \text{ V}$ $T_J = 150^\circ\text{C}$ | | | 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 $\text{m}\Omega$ |

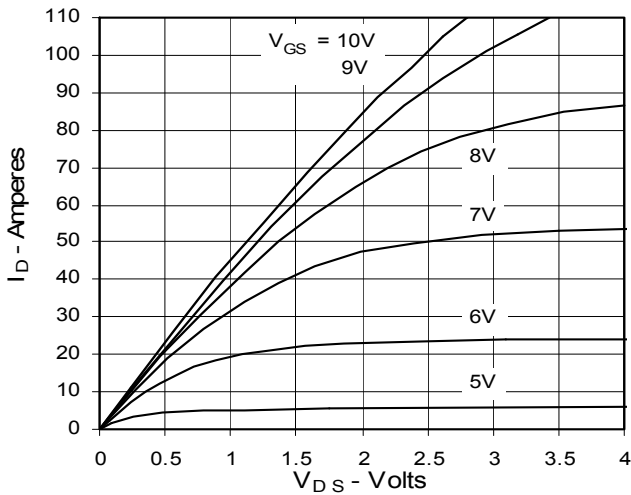
**Fig. 1. Output Characteristics
@ 25°C**



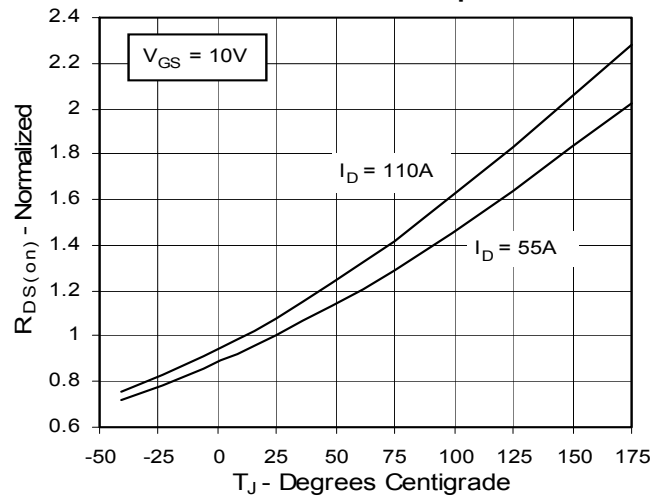
**Fig. 2. Extended Output Characteristics
@ 25°C**



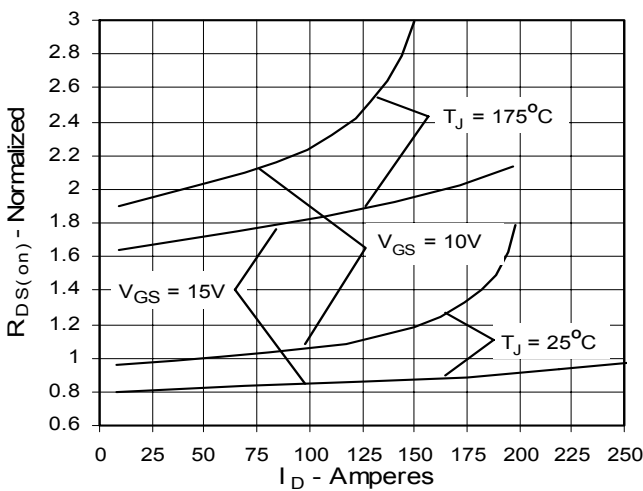
**Fig. 3. Output Characteristics
@ 150°C**



**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**

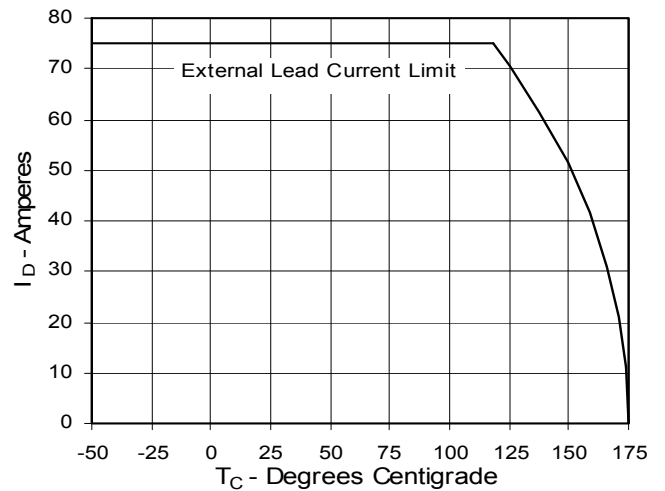


Fig. 7. Input Admittance

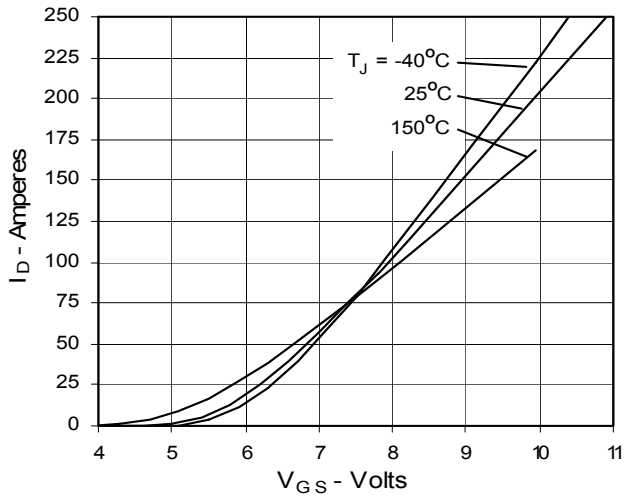


Fig. 8. Transconductance

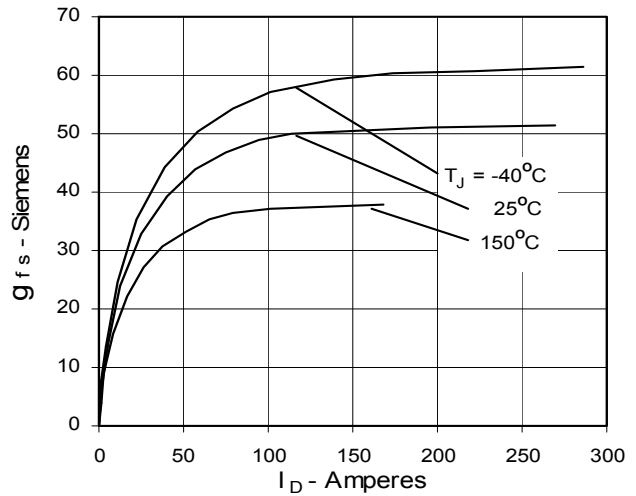


Fig. 9. Source Current vs. Source-To-Drain Voltage

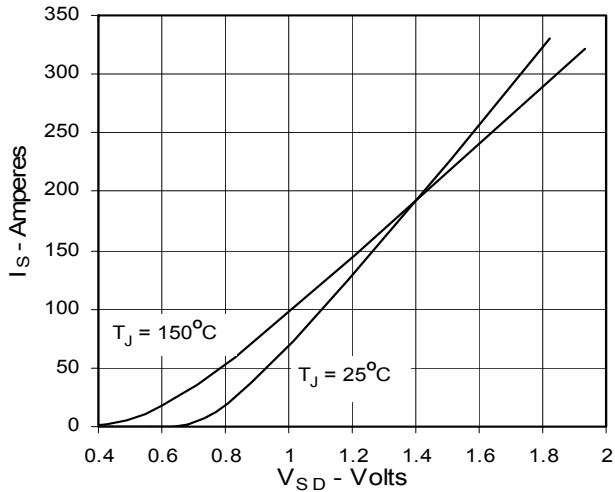


Fig. 10. Gate Charge

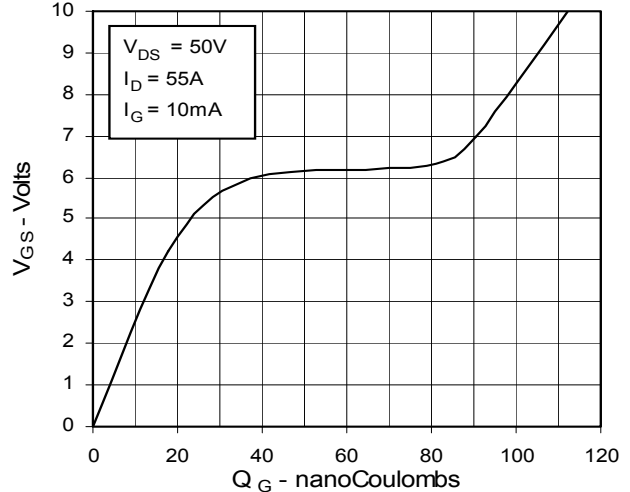


Fig. 11. Capacitance

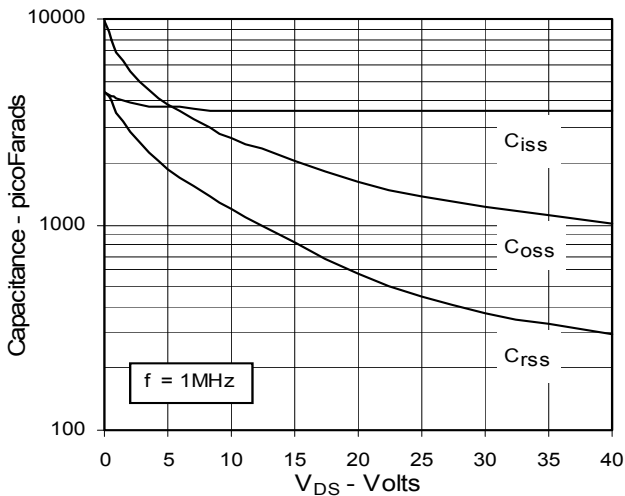


Fig. 12. Forward-Bias Safe Operating Area

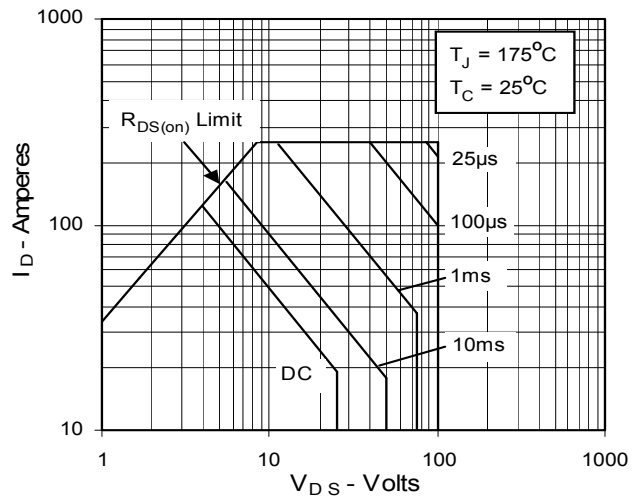
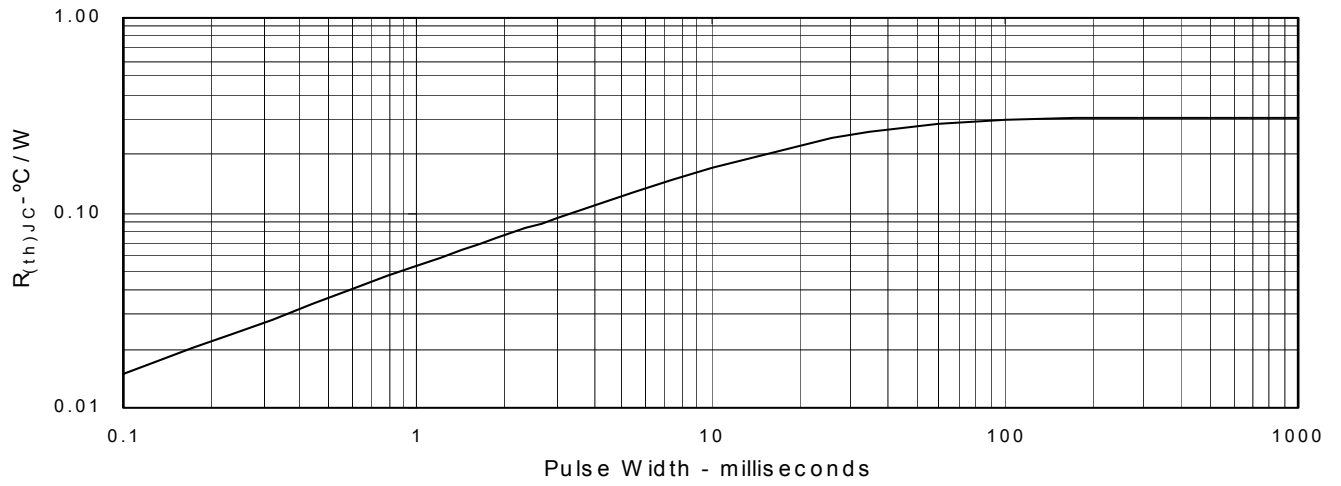


Fig. 13. Maximum Transient Thermal Resistance





Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.