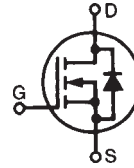


PolarHT™ Power MOSFET

IXTK 170N10P
IXTQ 170N10P
IXTT 170N10P

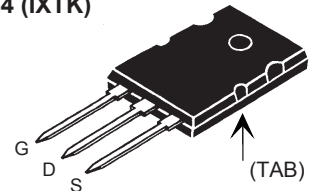
V_{DSS} = 100 V
I_{D25} = 170 A
R_{DS(on)} ≤ 9.0 mΩ

N-Channel Enhancement Mode
Avalanche Rated

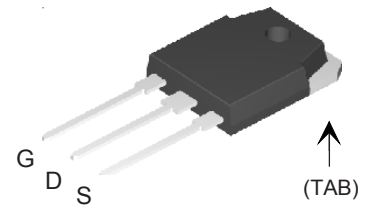


Symbol	Test Conditions	Maximum Ratings	
V _{DSS}	T _J = 25° C to 175° C	100	V
V _{DGR}	T _J = 25° C to 175° C; R _{GS} = 1 MΩ	100	V
V _{GS}	Continuous	±20	V
V _{GSM}	Transient	±30	V
I _{D25}	T _C = 25° C	170	A
I _{D(RMS)}	External lead current limit	75	A
I _{DM}	T _C = 25° C, pulse width limited by T _{JM}	350	A
I _{AR}	T _C = 25° C	60	A
E _{AR}	T _C = 25° C	80	mJ
E _{AS}	T _C = 25° C	2.0	J
dv/dt	I _S ≤ I _{DM} , di/dt ≤ 100 A/μs, V _{DD} ≤ V _{DSS} , T _J ≤ 150° C, R _G = 4 Ω	10	V/ns
P _D	T _C = 25° C	714	W
T _J		-55 ... +175	°C
T _{JM}		175	°C
T _{stg}		-55 ... +150	°C
T _L	1.6 mm (0.062 in.) from case for 10 s	300	°C
T _{SOLD}	Plastic body for 10 s	260	°C
M _d	Mounting torque (TO-3P)	1.13/10	Nm/lb.in.
Weight	TO-3P	5.5	g
	TO-264	10	g
	TO-268	5.0	g

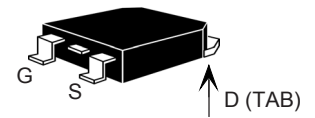
TO-264 (IXTK)



TO-3P (IXTQ)



TO-268 (IXTT)



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

Symbol	Test Conditions (T _J = 25° C, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV _{DSS}	V _{GS} = 0 V, I _D = 250 μA	100		V
V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	2.5		5.0 V
I _{GSS}	V _{GS} = ±20 V _{DC} , V _{DS} = 0			±100 nA
I _{DSS}	V _{DS} = V _{DSS} V _{GS} = 0 V T _J = 125° C			25 μA 250 μA
R _{DS(on)}	V _{GS} = 10 V, I _D = 0.5 I _{D25} V _{GS} = 15 V, I _D = 350 A Pulse test, t ≤ 300 μs, duty cycle d ≤ 2 %	7.0		9.0 mΩ mΩ

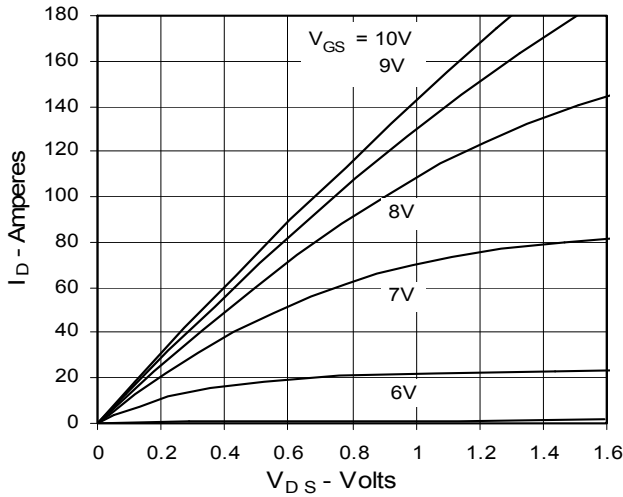
Features

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

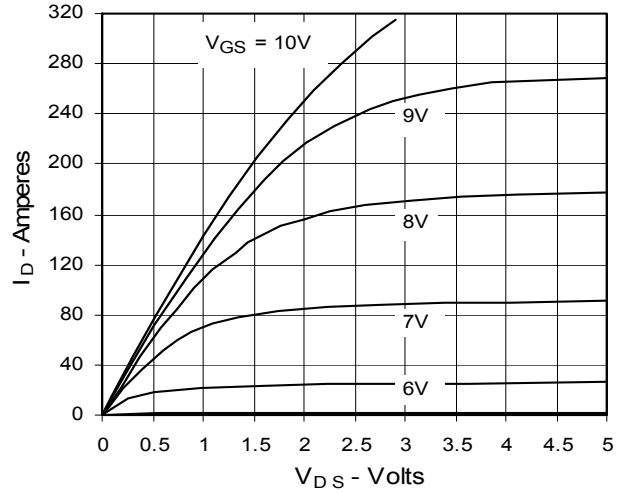
Advantages

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

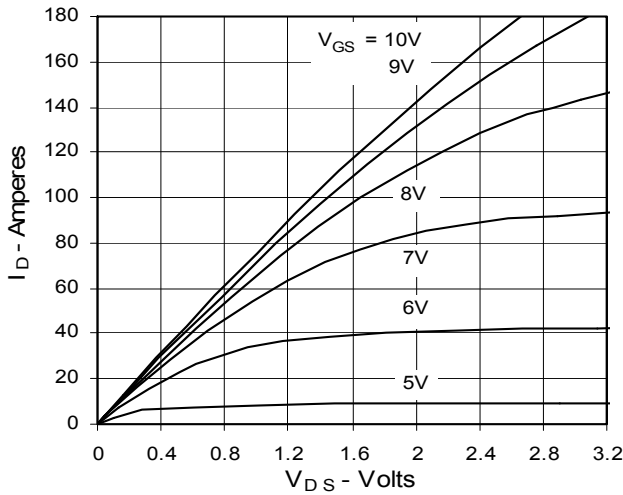
**Fig. 1. Output Characteristics
@ 25°C**



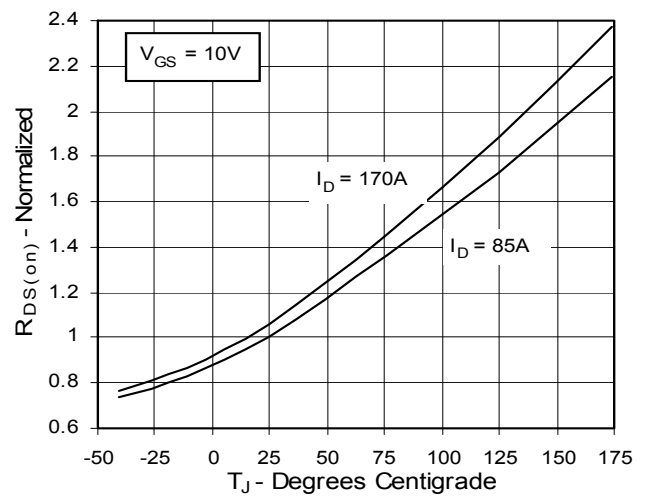
**Fig. 2. Extended Output Characteristics
@ 25°C**



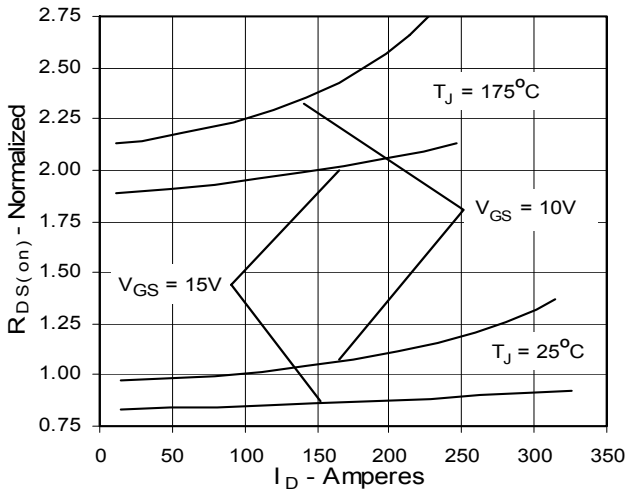
**Fig. 3. Output Characteristics
@ 150°C**



**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**

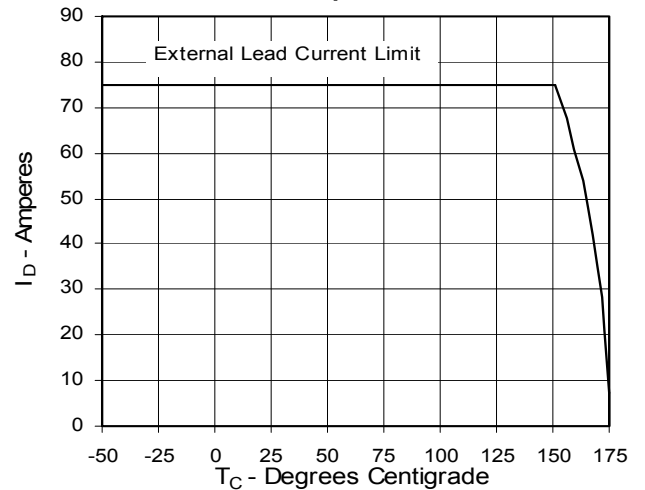


Fig. 7. Input Admittance

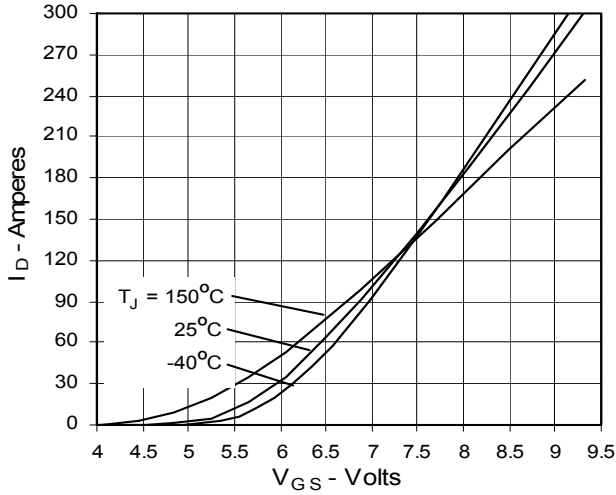


Fig. 8. Transconductance

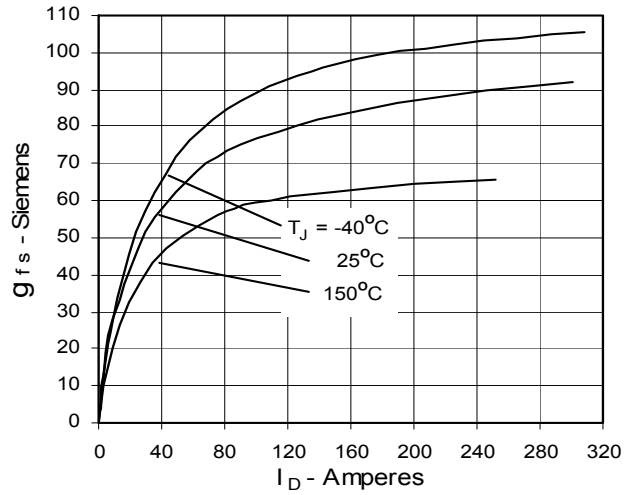


Fig. 9. Source Current vs. Source-To-Drain Voltage

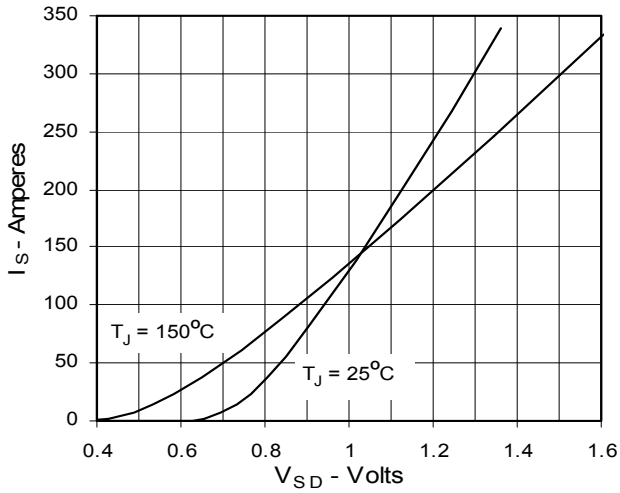


Fig. 10. Gate Charge

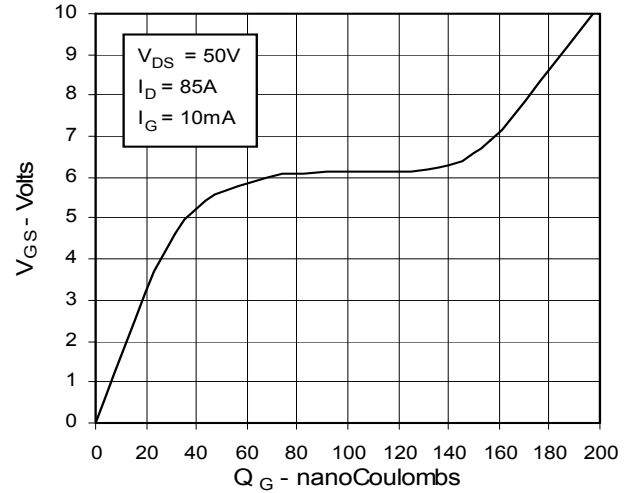


Fig. 11. Capacitance

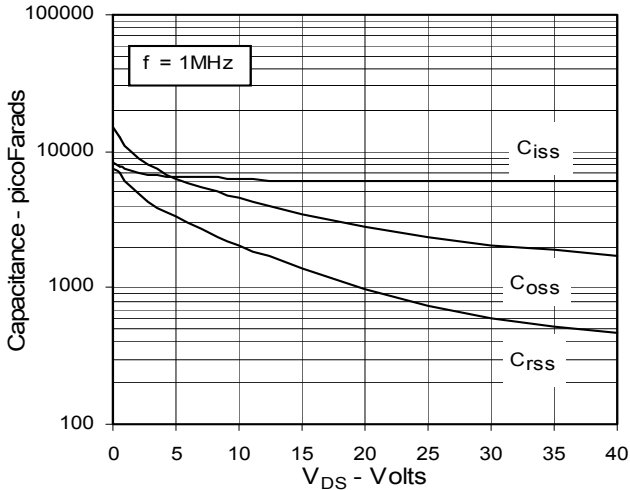


Fig. 12. Forward-Bias Safe Operating Area

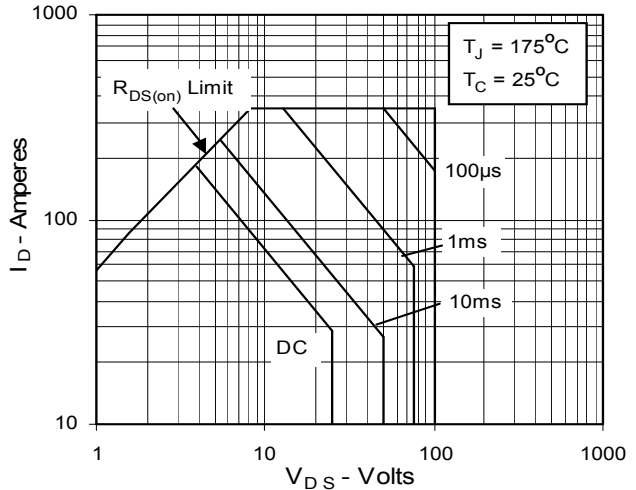


Fig. 13. Maximum Transient Thermal Resistance

