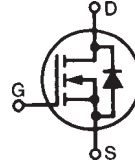


PolarHT™ Power MOSFET

IXTA50N20P
IXTP50N20P
IXTQ50N20P

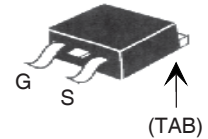
V_{DSS} = 200V
I_{D25} = 50A
R_{DS(on)} ≤ 60mΩ

N-Channel Enhancement Mode
Avalanche Rated

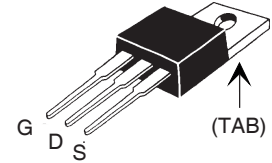


Symbol	Test Conditions	Maximum Ratings	
V _{DSS}	T _J = 25°C to 175°C	200	V
V _{DGR}	T _J = 25°C to 175°C, R _{GS} = 1MΩ	200	V
V _{GSS}	Continuous	±20	V
V _{GSM}	Transient	±30	V
I _{D25}	T _C = 25°C	50	A
I _{DM}	T _C = 25°C, pulse width limited by T _{JM}	120	A
I _A	T _C = 25°C	50	A
E _{AS}	T _C = 25°C	1	J
dV/dt	I _S ≤ I _{DM} , V _{DD} ≤ V _{DSS} , T _J ≤ 175°C	10	V/ns
P _D	T _C = 25°C	360	W
T _J		- 55 ... +175	°C
T _{JM}		175	°C
T _{stg}		- 55 ... +175	°C
T _L	1.6mm (0.062 in.) from case for 10s	300	°C
T _{SOLD}	Plastic body for 10s	260	°C
M _d	Mounting torque (TO-3P, TO-220)	1.13/10	Nm/lb.in.
Weight	TO-263	2.5	g
	TO-220	3.0	g
	TO-3P	5.5	g

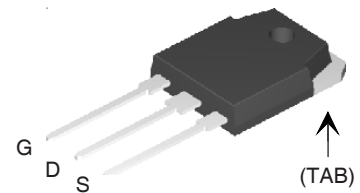
TO-263 (IXTA)



TO-220 (IXTP)



TO-3P (IXTQ)



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} = 0V, I _D = 250μA	200		V
V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2.5		5.0 V
I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100 nA
I _{DSS}	V _{DS} = V _{DSS}			25 μA
	V _{GS} = 0V			250 μA
R _{DS(on)}	V _{GS} = 10V, I _D = 0.5 • I _{D25} , Note 1			60 mΩ

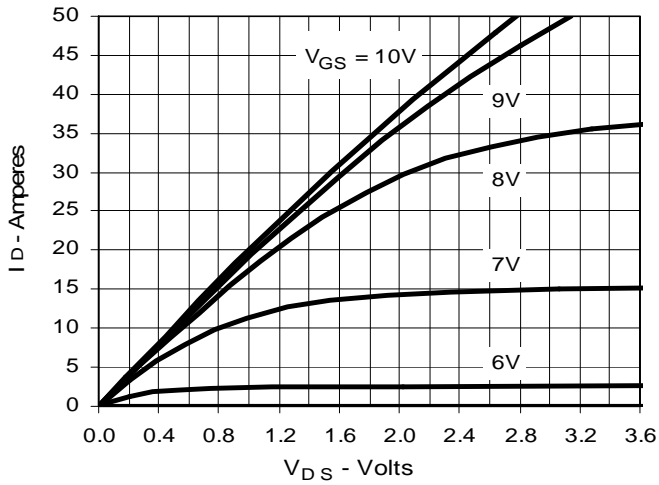
Features

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

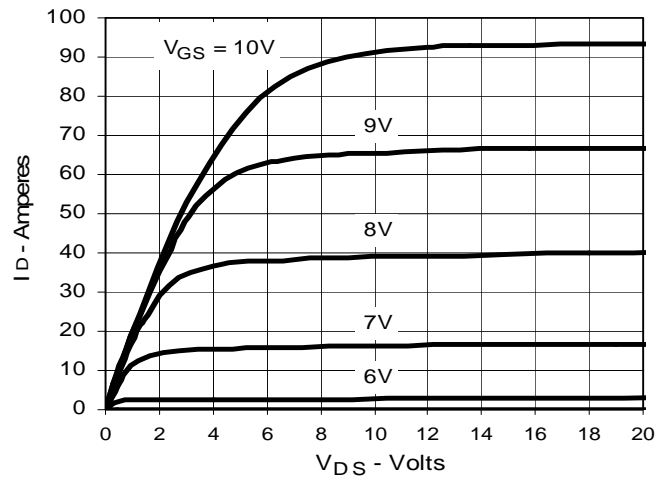
Advantages

- Easy to mount
- Space savings
- High power density

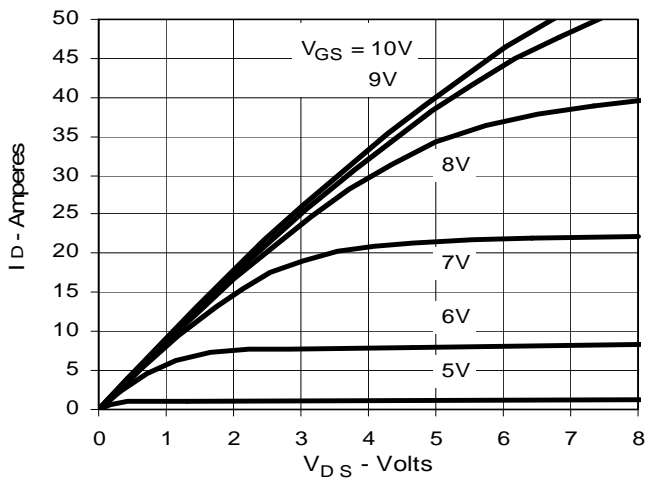
**Fig. 1. Output Characteristics
@ 25°C**



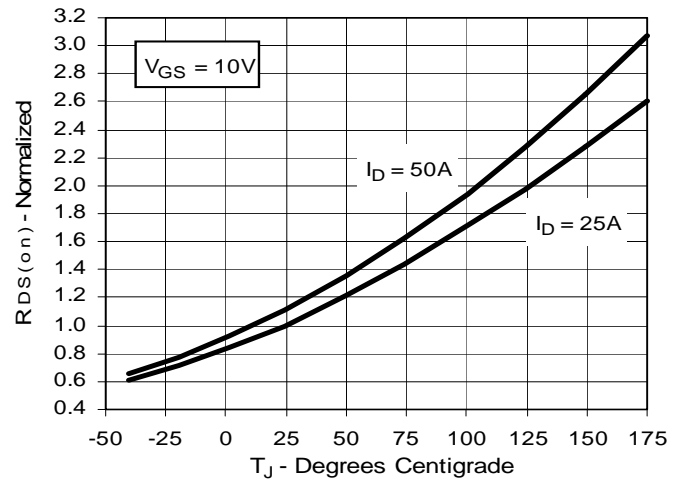
**Fig. 2. Extended Output Characteristics
@ 25°C**



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



**Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 25A$ Value
vs. Junction Temperature**



**Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 25A$ Value
vs. Drain Current**

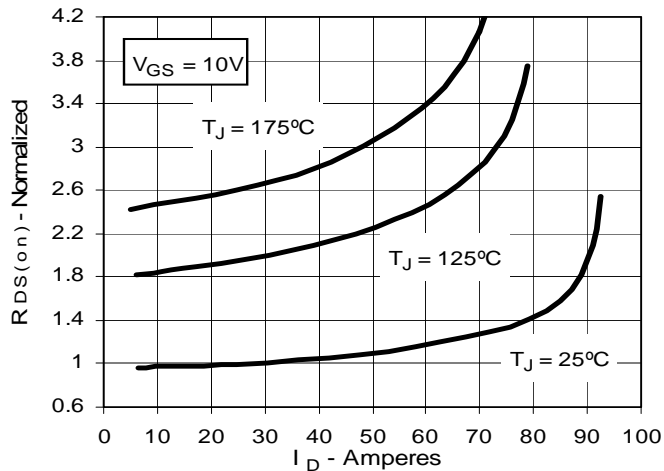


Fig. 6. Drain Current vs. Case Temperature

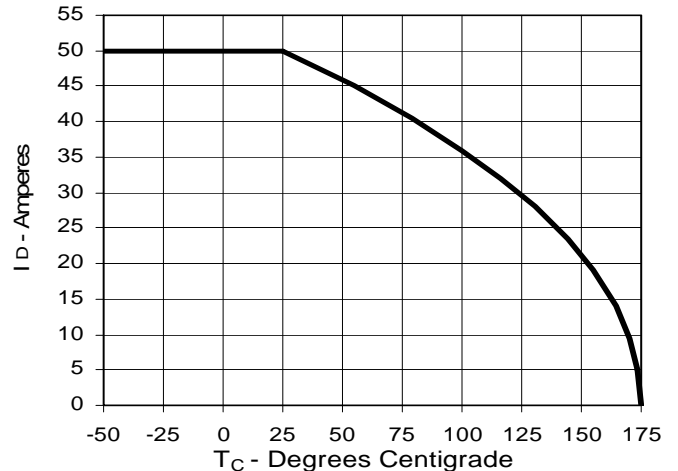


Fig. 7. Input Admittance

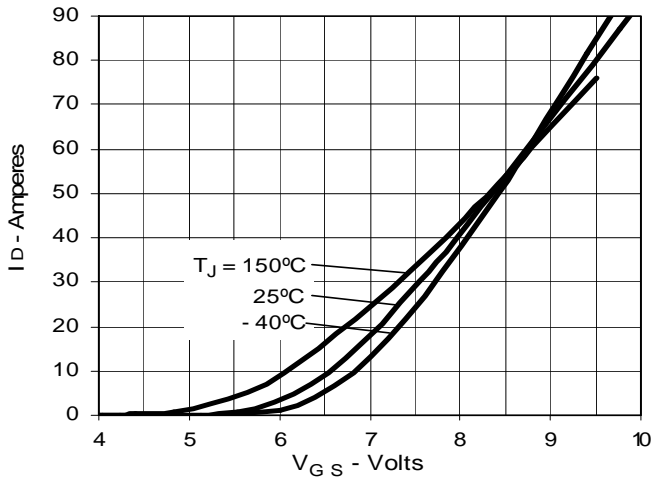


Fig. 8. Transconductance

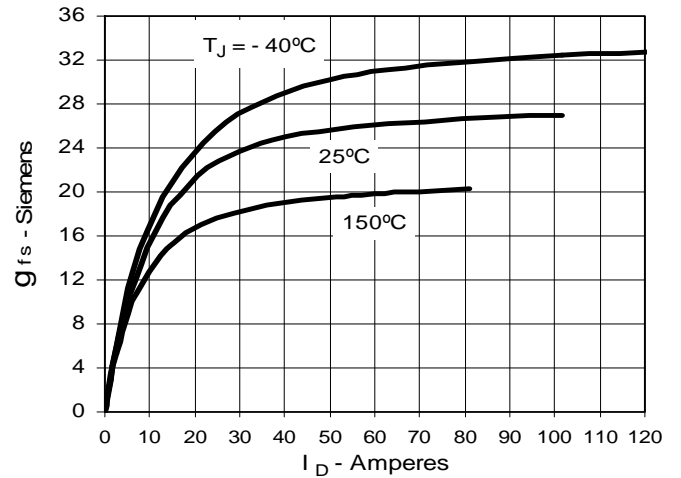


Fig. 9. Source Current vs. Source-To-Drain Voltage

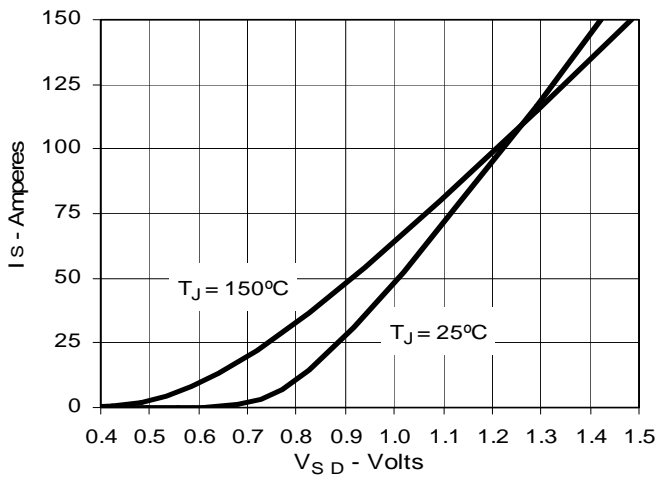


Fig. 10. Gate Charge

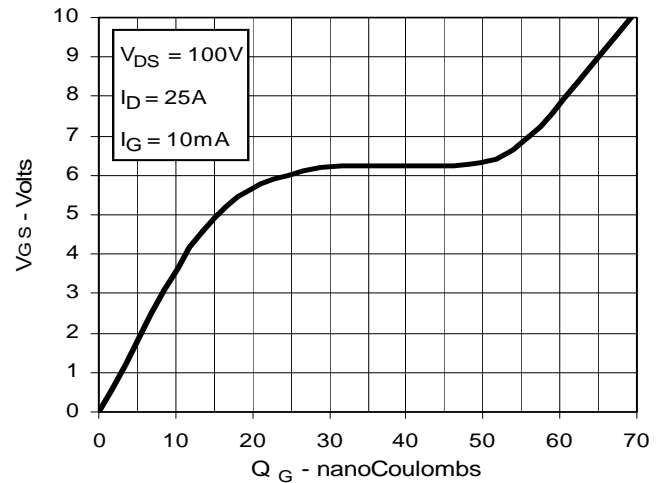


Fig. 11. Capacitance

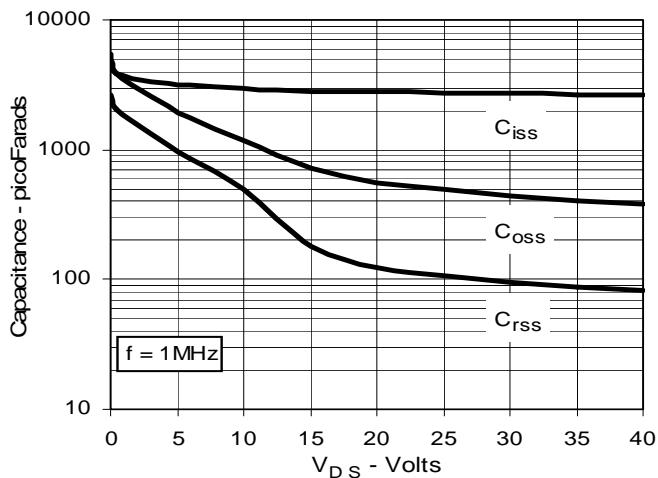


Fig. 12. Forward-Bias Safe Operating Area

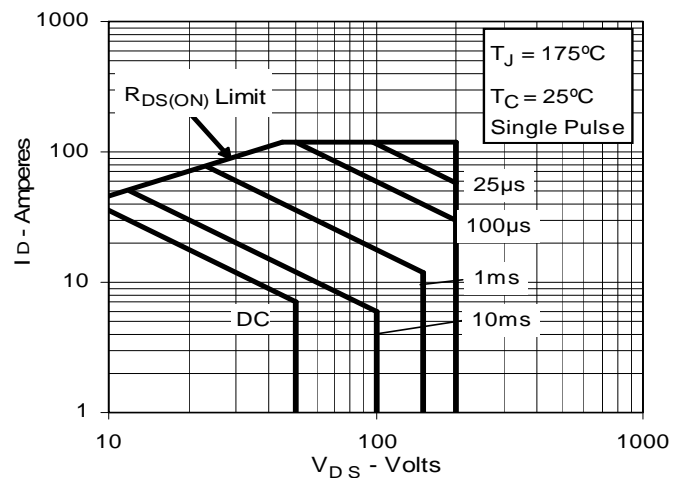
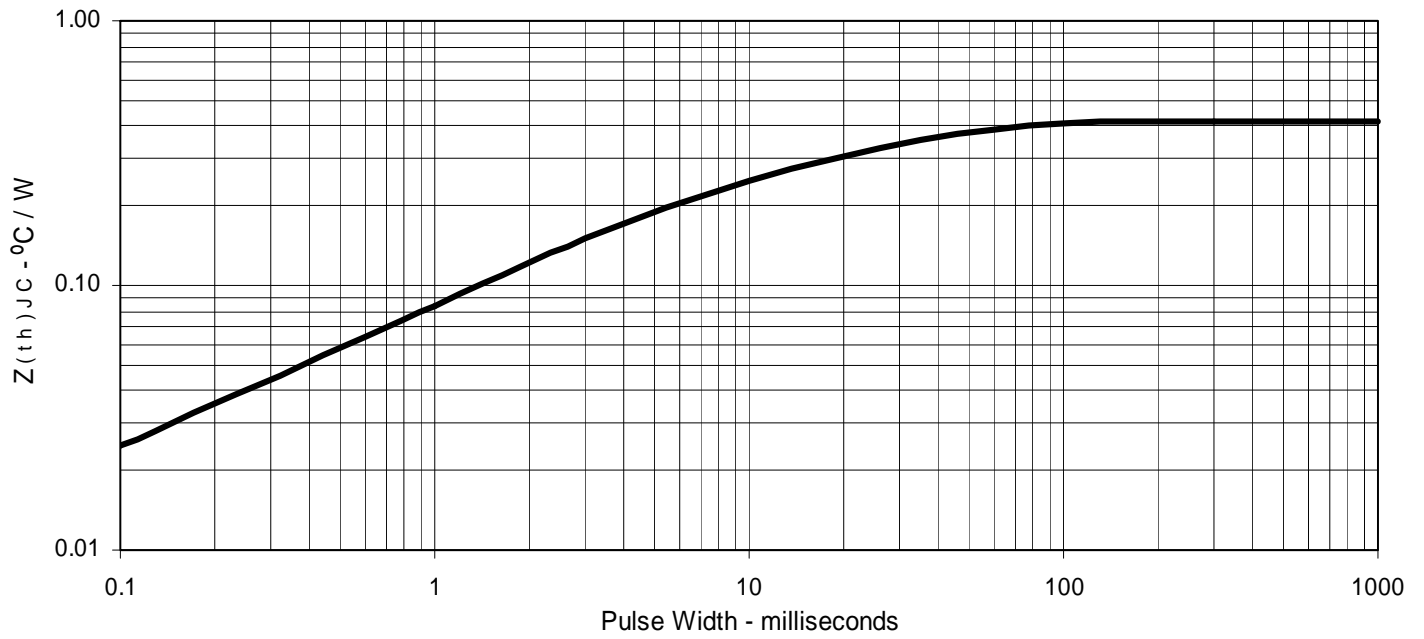


Fig. 13. Maximum Transient Thermal Impedance



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