

# Polar™ Power MOSFET

**IXTA14N60P**  
**IXTP14N60P**  
**IXTQ14N60P**

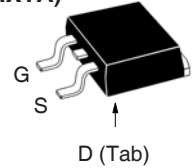
**V<sub>DSS</sub> = 600V**  
**I<sub>D25</sub> = 14A**  
**R<sub>DS(on)</sub> ≤ 550mΩ**

Enhancement Mode  
Avalanche Rated

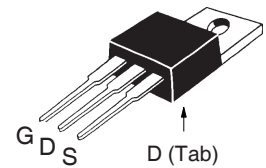


Symbol	Test Conditions	Maximum Ratings	
V <sub>DSS</sub>	T <sub>J</sub> = 25°C to 150°C	600	V
V <sub>DGR</sub>	T <sub>J</sub> = 25°C to 150°C, R <sub>GS</sub> = 1MΩ	600	V
V <sub>GSS</sub>	Continuous	±30	V
V <sub>GSM</sub>	Transient	±40	V
I <sub>D25</sub>	T <sub>C</sub> = 25°C	14	A
I <sub>DM</sub>	T <sub>C</sub> = 25°C, pulse width limited by T <sub>JM</sub>	42	A
I <sub>A</sub>	T <sub>C</sub> = 25°C	14	A
E <sub>AS</sub>	T <sub>C</sub> = 25°C	900	mJ
P <sub>D</sub>	T <sub>C</sub> = 25°C	300	W
T <sub>J</sub>		-55 ... +150	°C
T <sub>JM</sub>		150	°C
T <sub>stg</sub>		-55 ... +150	°C
T <sub>L</sub>	Maximum Lead Temperature for Soldering	300	°C
T <sub>SOLD</sub>	Plastic Body for 10s	260	°C
M <sub>d</sub>	Mounting torque (TO-220 & TO-3P)	1.13/10	Nm/lb.in.
Weight	TO-263	2.5	g
	TO-220	3.0	g
	TO-3P	5.5	g

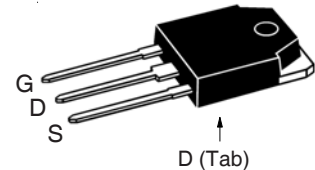
TO-263 AA (IXTA)



TO-220AB (IXTP)



TO-3P (IXTQ)



G = Gate      D = Drain  
S = Source    Tab = Drain

## Features

- International Standard Packages
- Fast Intrinsic Rectifier
- Avalanche Rated
- Low R<sub>DS(ON)</sub> and Q<sub>G</sub>
- Low Package Inductance

## Advantages

- High Power Density
- Easy to Mount
- Space Savings

## Applications

- Switch-Mode and Resonant-Mode Power Supplies
- DC-DC Converters
- Laser Drivers
- AC and DC Motor Drives
- Robotics and Servo Controls

Symbol	Test Conditions (T <sub>J</sub> = 25°C, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV <sub>DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	600		V
V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	3.0		5.5 V
I <sub>GSS</sub>	V <sub>GS</sub> = ±30V, V <sub>DS</sub> = 0V			±100 nA
I <sub>DSS</sub>	V <sub>DS</sub> = V <sub>DSS</sub> , V <sub>GS</sub> = 0V T <sub>J</sub> = 125°C			5 μA 100 μA
R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 0.5 • I <sub>D25</sub> , Note 1	450	550	mΩ



Fig. 1. Output Characteristics @  $T_J = 25^\circ\text{C}$

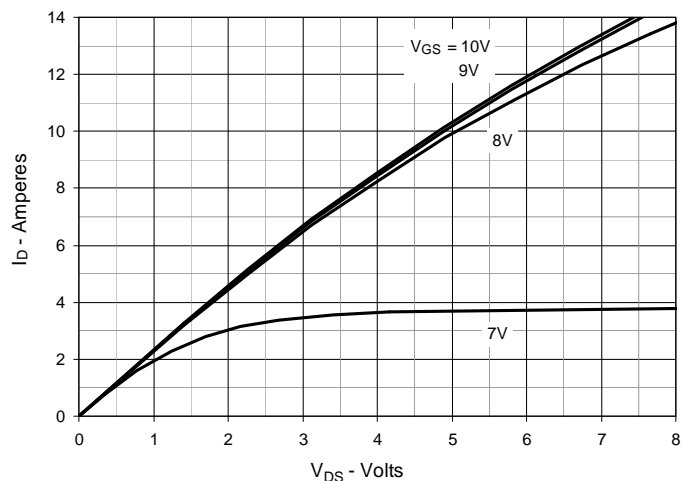


Fig. 2. Extended Output Characteristics @  $T_J = 25^\circ\text{C}$

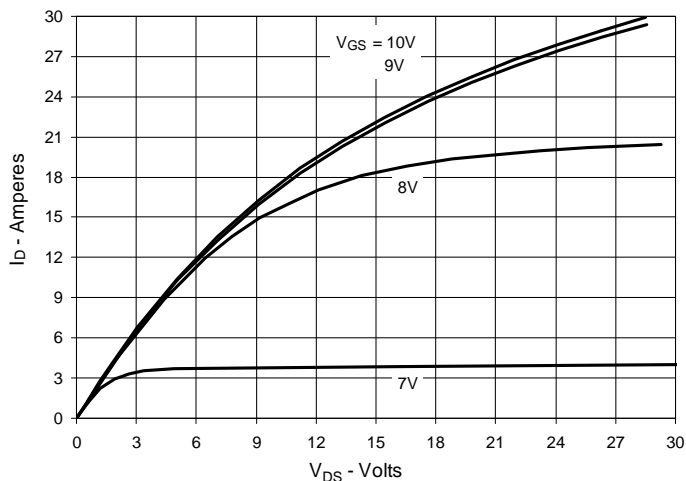


Fig. 3. Output Characteristics @  $T_J = 125^\circ\text{C}$

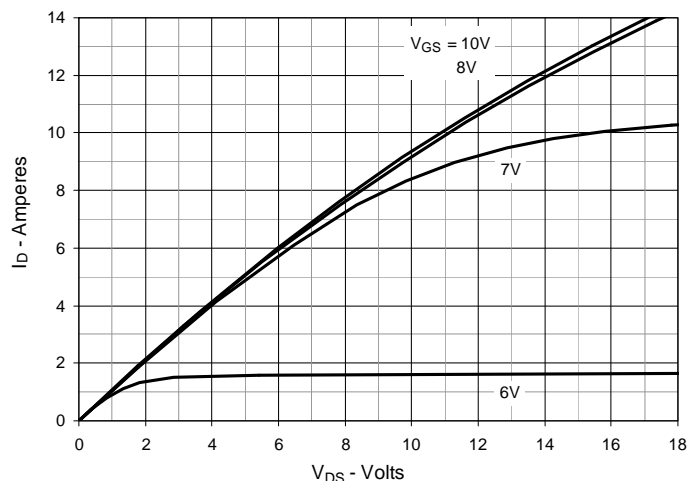


Fig. 4.  $R_{DS(on)}$  Normalized to  $I_D = 7\text{A}$  Value vs. Junction Temperature

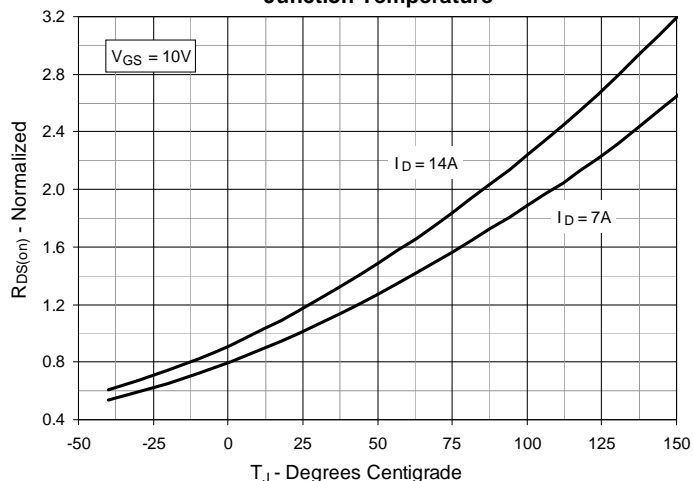


Fig. 5.  $R_{DS(on)}$  Normalized to  $I_D = 7\text{A}$  Value vs. Drain Current

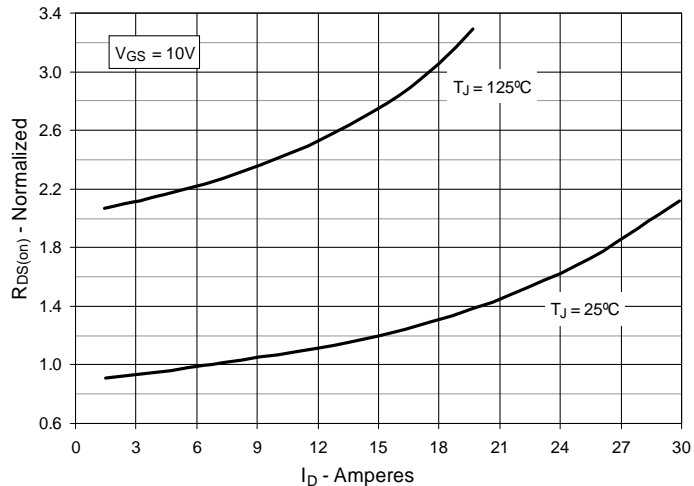


Fig. 6. Maximum Drain Current vs. Case Temperature

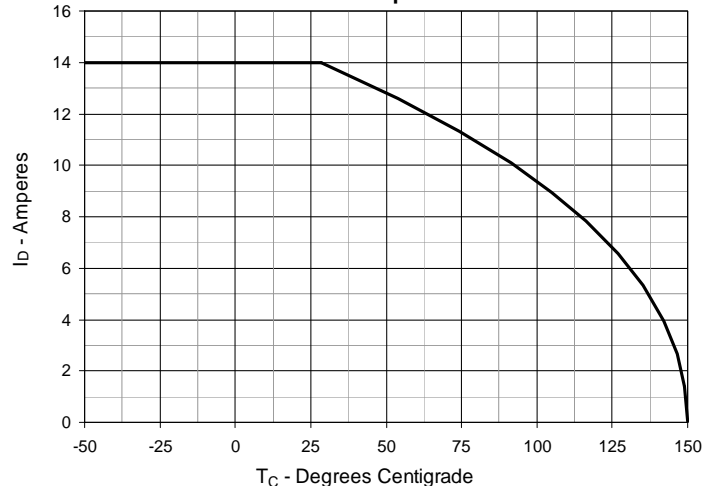


Fig. 7. Input Admittance

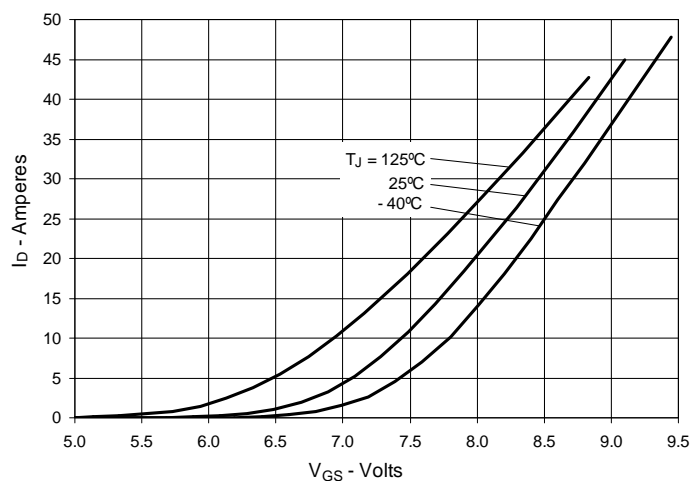


Fig. 8. Transconductance

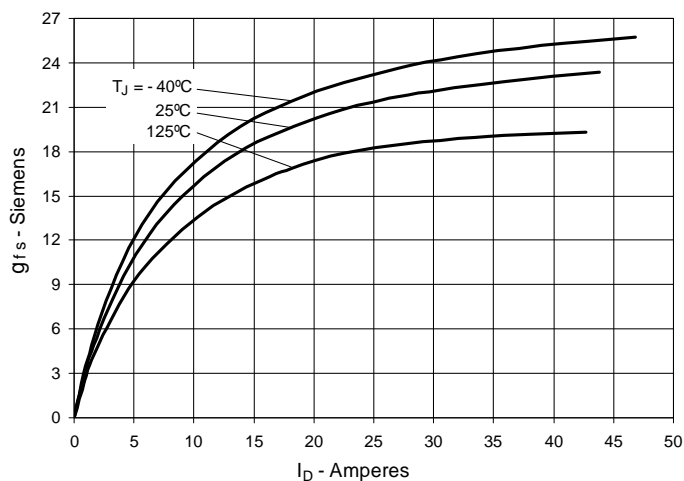


Fig. 9. Forward Voltage Drop of Intrinsic Diode

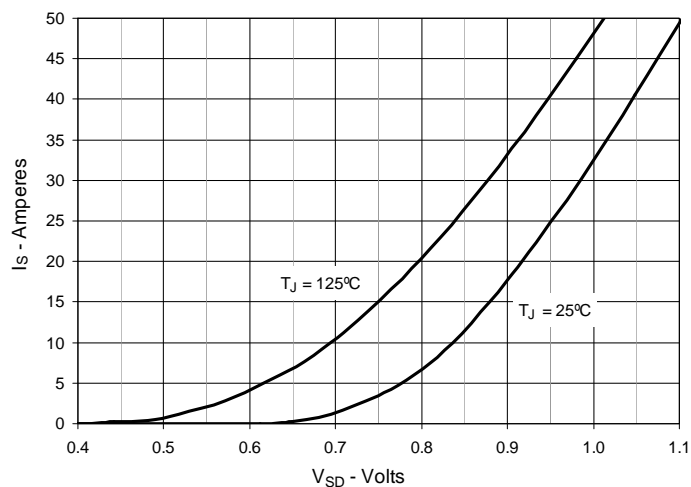


Fig. 10. Gate Charge

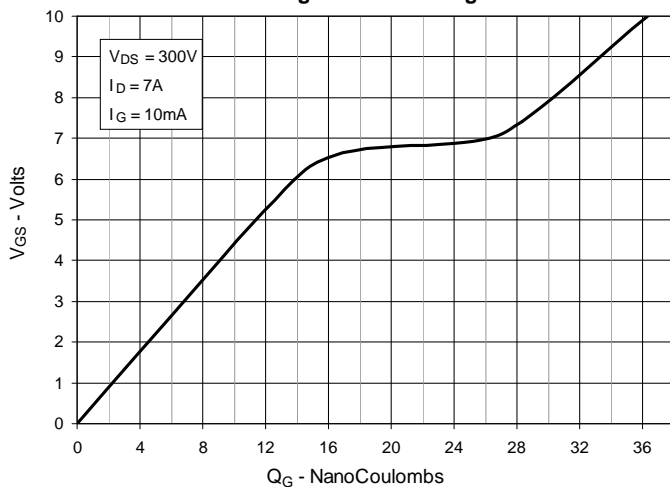


Fig. 11. Capacitance

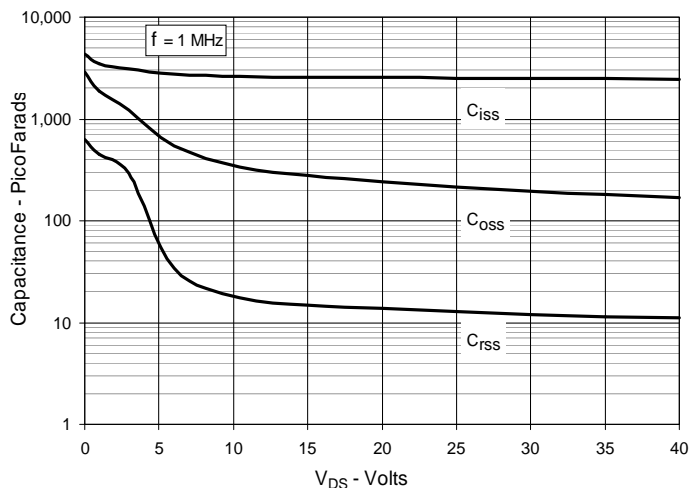
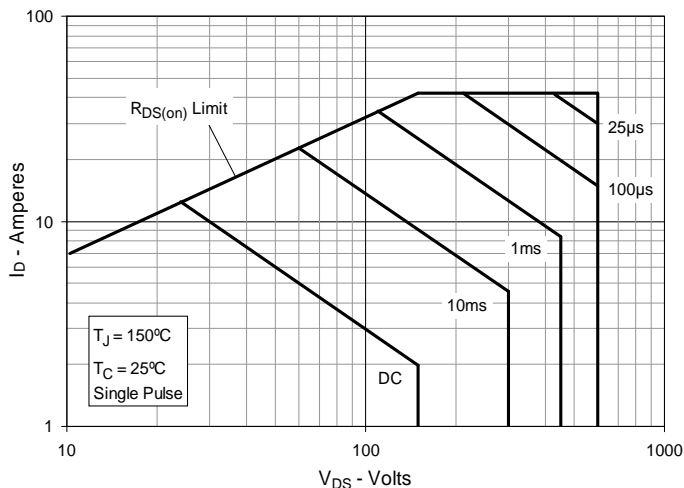
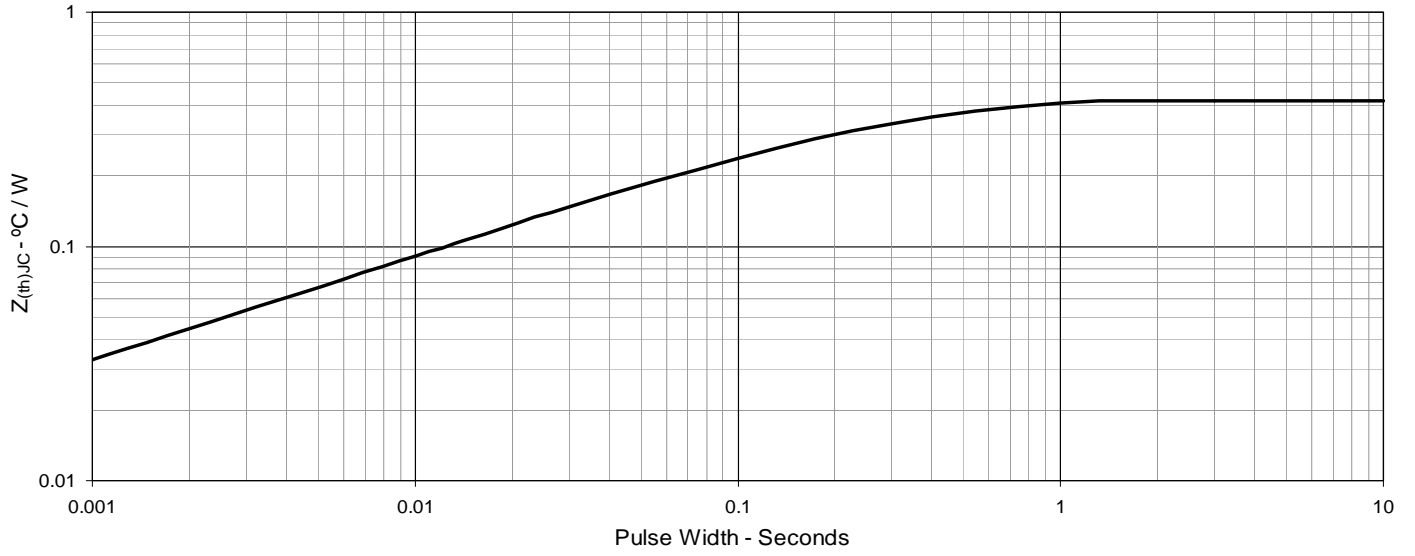


Fig. 12. Forward-Bias Safe Operating Area



**Fig. 13. Maximum Transient Thermal Impedance**





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