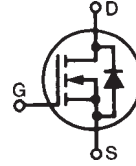


**Trench™ HiperFET™
Power MOSFET**

**IXFH86N30T
IXFT86N30T**

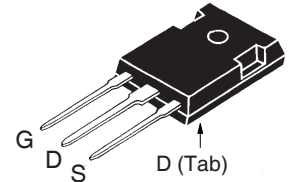
V_{DSS} = 300V
I_{D25} = 86A
R_{DS(on)} ≤ 46mΩ

N-Channel Enhancement Mode
Avalanche Rated
Fast Intrinsic Rectifier

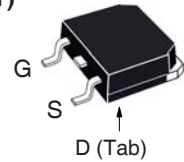


Symbol	Test Conditions	Maximum Ratings	
V _{DSS}	T _J = 25°C to 150°C	300	V
V _{DGR}	T _J = 25°C to 150°C, R _{GS} = 1MΩ	300	V
V _{GSS}	Continuous	±20	V
V _{GSM}	Transient	±30	V
I _{D25}	T _C = 25°C	86	A
I _{DM}	T _C = 25°C, Pulse Width Limited by T _{JM}	190	A
I _A	T _C = 25°C	43	A
E _{AS}		1.5	J
P _D	T _C = 25°C	860	W
dV/dt	I _S ≤ I _{DM} , V _{DD} ≤ V _{DSS} , T _J ≤ 150°C	20	V/ns
T _J		-55 to +150	°C
T _{JM}		+150	°C
T _{stg}		-55 to +150	°C
T _L	1.6mm (0.063in) from Case for 10s	300	°C
T _{SOLD}	Plastic Body for 10s	260	°C
M _d	Mounting Torque (TO-247)	1.13/10	Nm/lb.in.
Weight	TO-247	6.0	g
	TO-268	4.0	g

TO-247 (IXFH)



TO-268 (IXFT)



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

Features

- International Standard Packages
- Avalanche Rated
- High Current Handling Capability
- Fast Intrinsic Rectifier
- Low R_{DS(on)}

Advantages

- Easy to Mount
- Space Savings
- High Power Density

Applications

- DC-DC Converters
- Battery Chargers
- Switch-Mode and Resonant-Mode Power Supplies
- DC Choppers
- AC Motor Drives
- Uninterruptible Power Supplies
- High Speed Power Switching

Symbol	Test Conditions (T _J = 25°C, Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
BV _{DSS}	V _{GS} = 0V, I _D = 1mA	300		V
V _{GS(th)}	V _{DS} = V _{GS} , I _D = 4mA	3.0		5.0 V
I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±200 nA
I _{DSS}	V _{DS} = V _{DSS} , V _{GS} = 0V T _J = 125°C			25 μA 1 mA
R _{DS(on)}	V _{GS} = 10V, I _D = 0.5 • I _{D25} , Note 1			46 mΩ

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

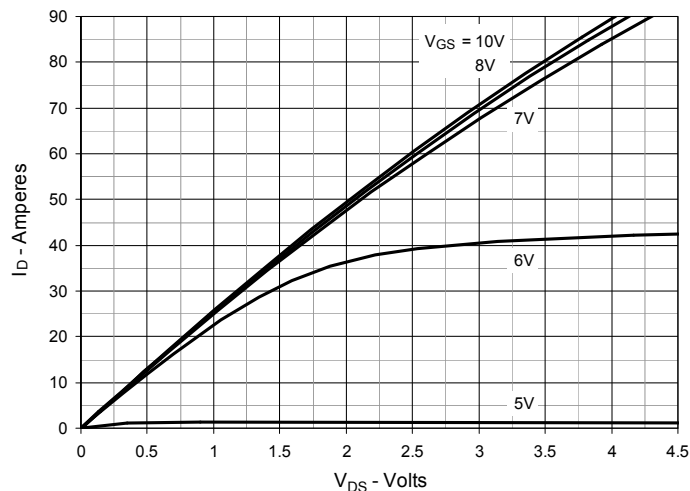


Fig. 2. Extended Output Characteristics @ $T_J = 25^\circ\text{C}$

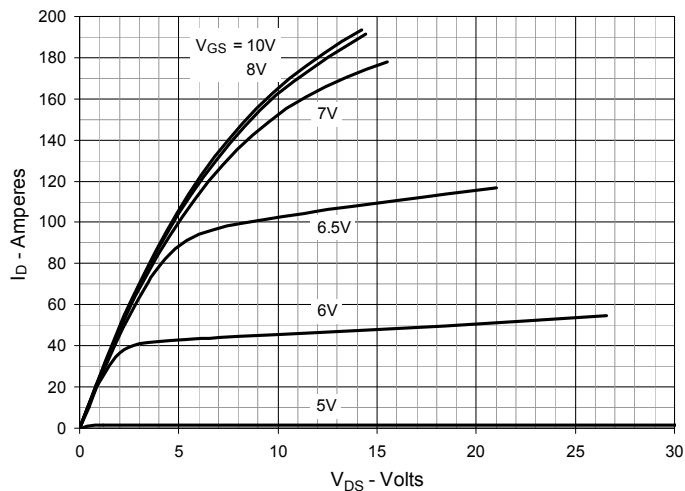


Fig. 3. Output Characteristics @ $T_J = 125^\circ\text{C}$

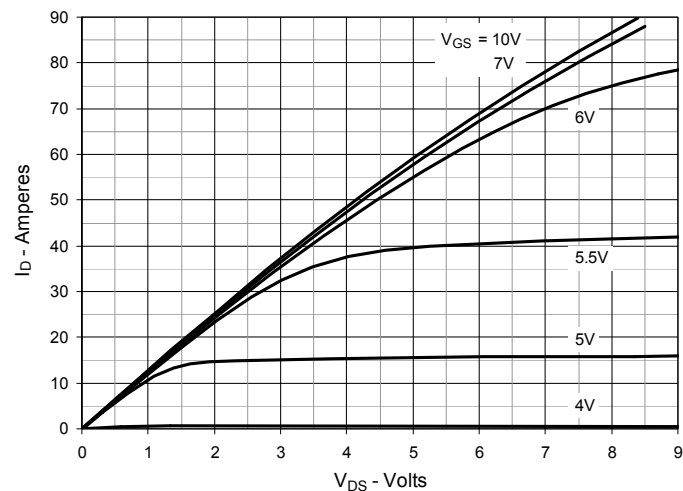


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 43\text{A}$ Value vs. Junction Temperature

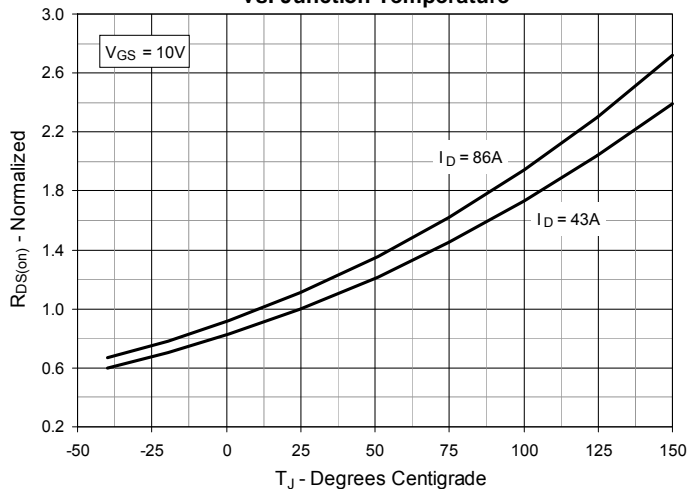


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 43\text{A}$ Value vs. Drain Current

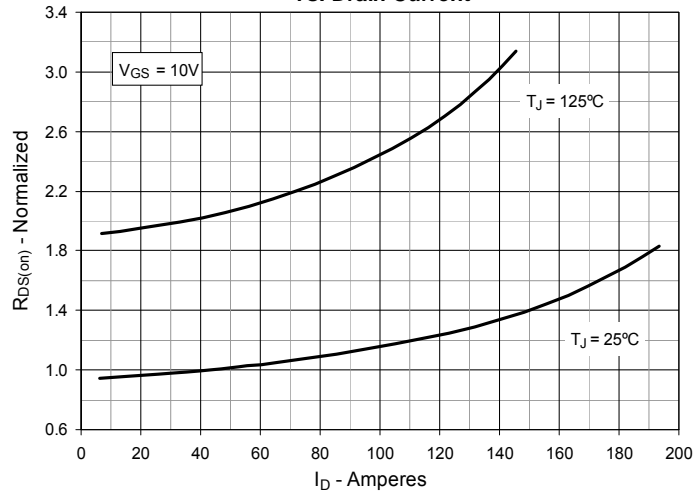


Fig. 6. Maximum Drain Current vs. Case Temperature

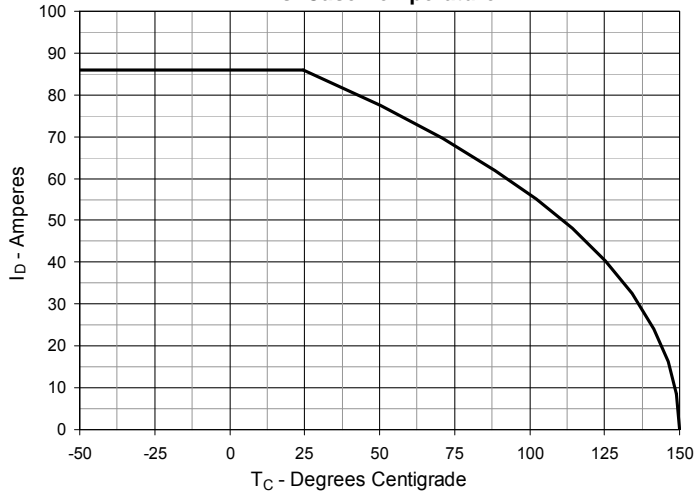


Fig. 7. Input Admittance

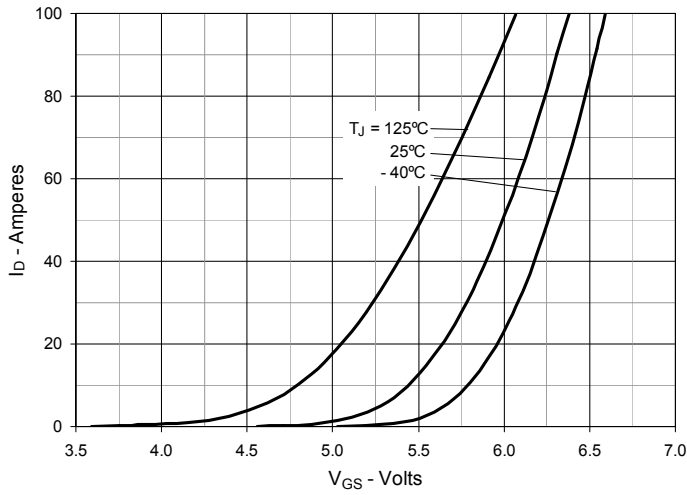


Fig. 8. Transconductance

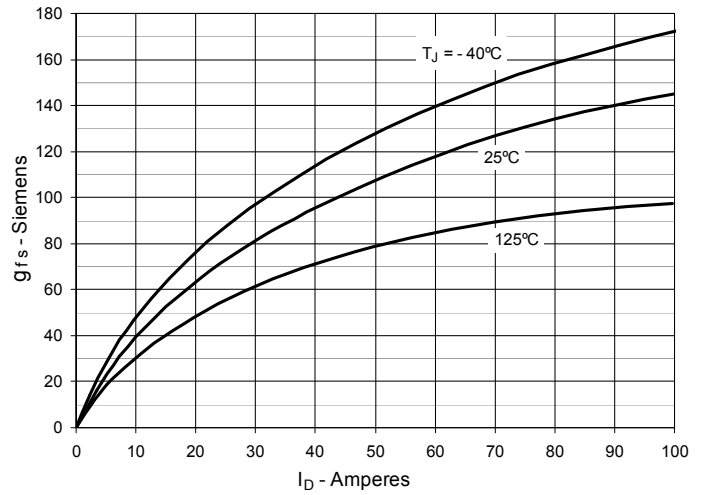


Fig. 9. Forward Voltage Drop of Intrinsic Diode

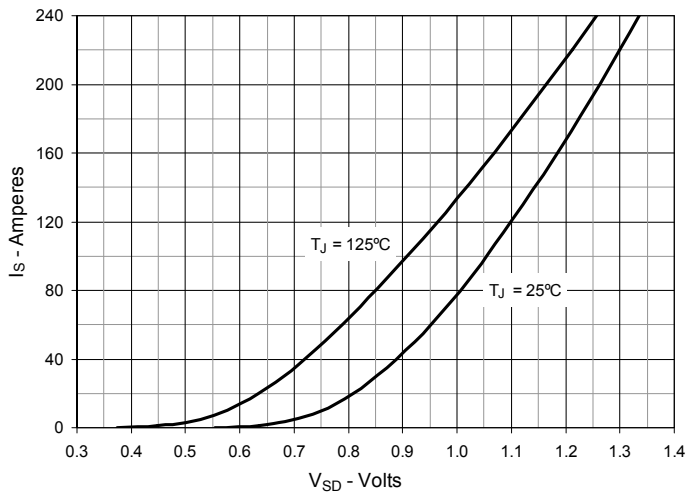


Fig. 10. Gate Charge

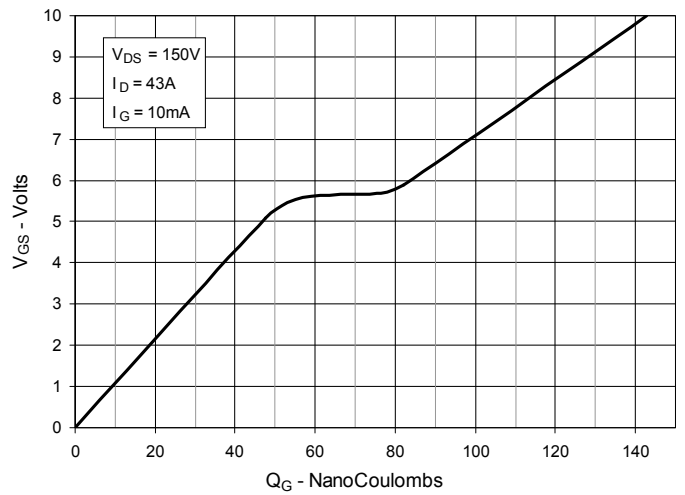


Fig. 11. Capacitance

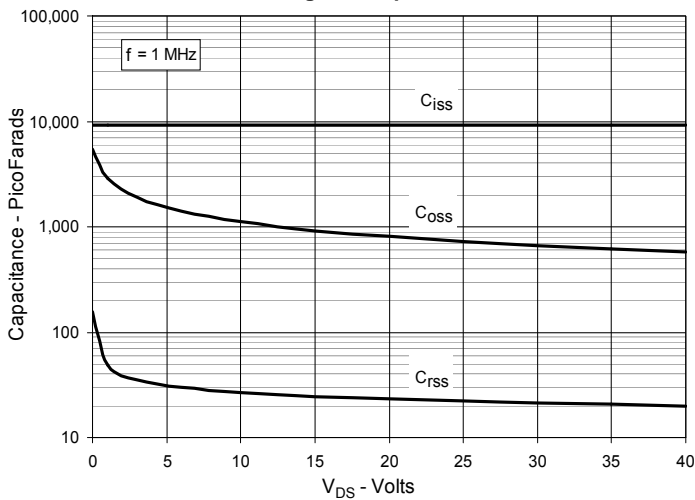


Fig. 12. Forward-Bias Safe Operating Area

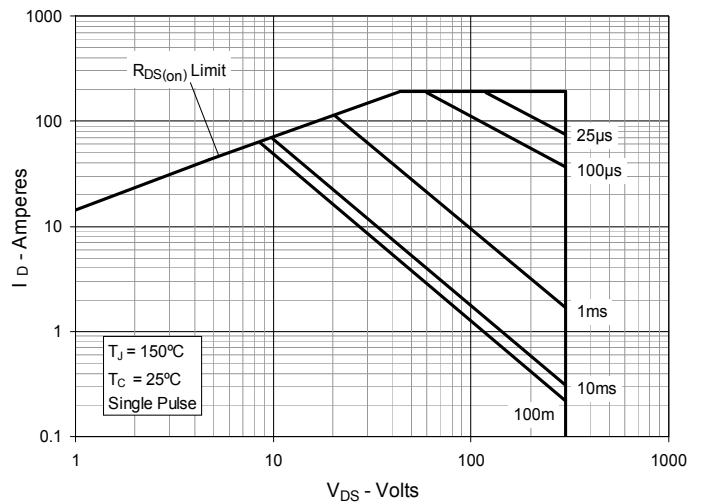


Fig. 13. Resistive Turn-on Rise Time vs. Junction Temperature

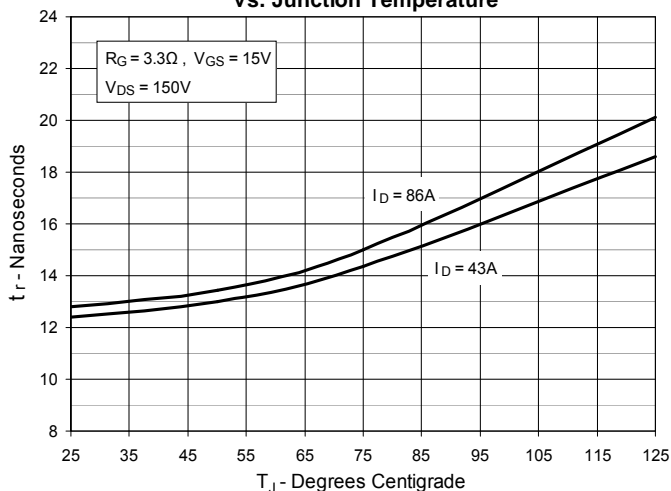


Fig. 14. Resistive Turn-on Rise Time vs. Drain Current

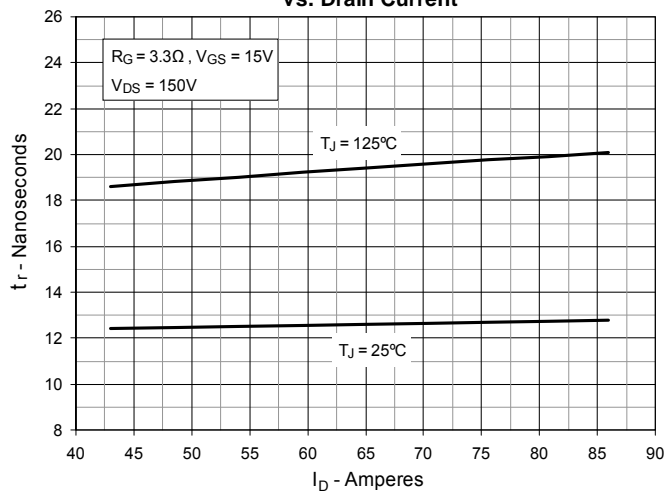


Fig. 15. Resistive Turn-on Switching Times vs. Gate Resistance

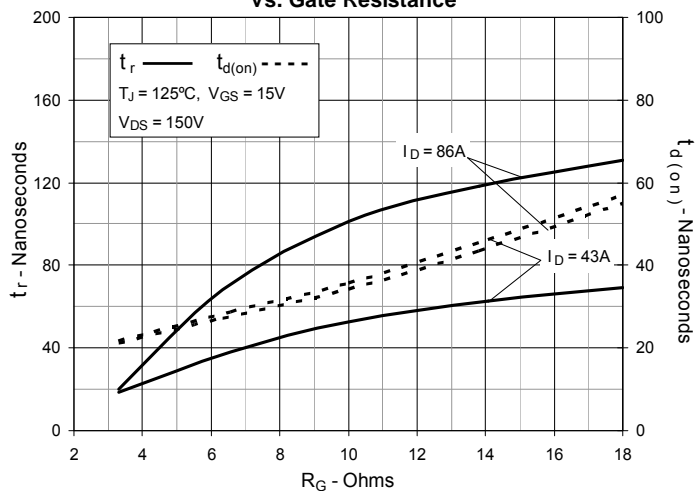


Fig. 16. Resistive Turn-off Switching Times vs. Junction Temperature

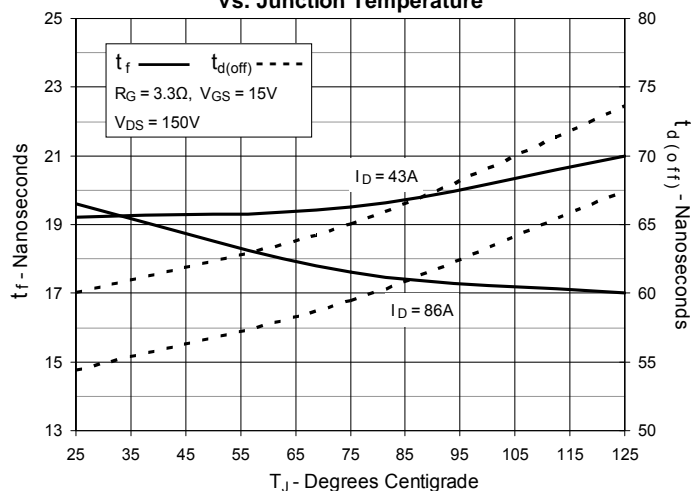


Fig. 17. Resistive Turn-off Switching Times vs. Drain Current

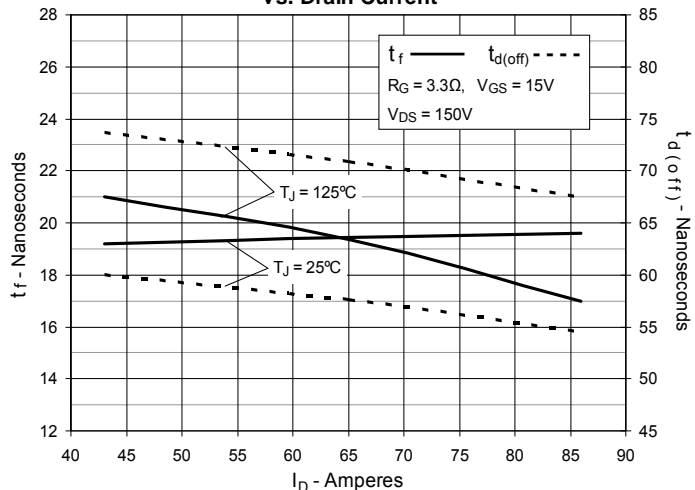


Fig. 18. Resistive Turn-off Switching Times vs. Gate Resistance

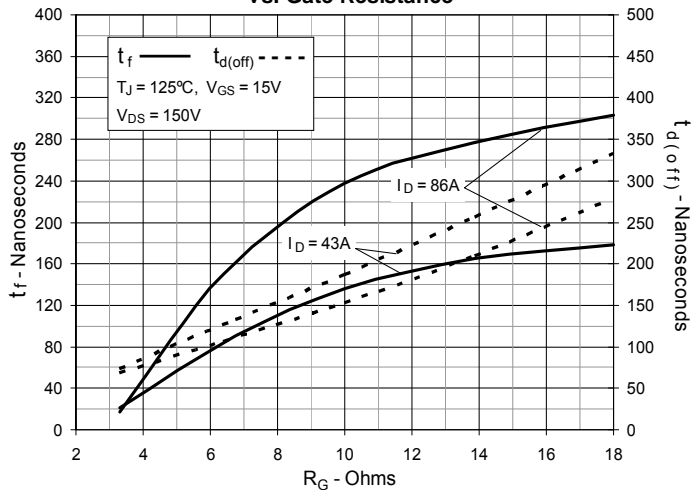
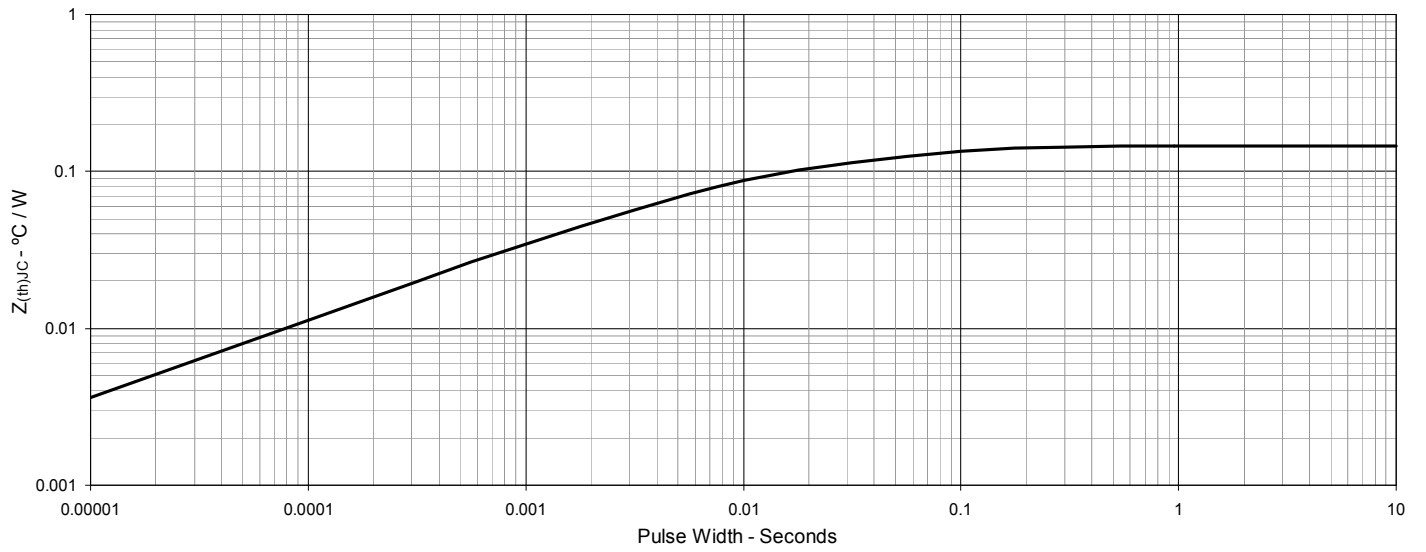


Fig. 19. Maximum Transient Thermal Impedance





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