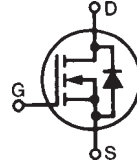
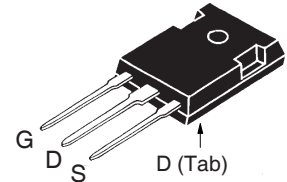


**Trench™ HiperFET™  
Power MOSFET**
**IXFH46N30T  
IXFT46N30T**
 $V_{DSS} = 300V$   
 $I_{D25} = 46A$   
 $R_{DS(on)} \leq 80m\Omega$ 

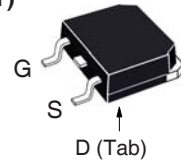
 N-Channel Enhancement Mode  
 Avalanche Rated  
 Fast Intrinsic Rectifier


Symbol	Test Conditions	Maximum Ratings	
$V_{DSS}$	$T_J = 25^\circ C$ to $150^\circ C$	300	V
$V_{DGR}$	$T_J = 25^\circ C$ to $150^\circ C$ , $R_{GS} = 1M\Omega$	300	V
$V_{GSS}$	Continuous	$\pm 20$	V
$V_{GSM}$	Transient	$\pm 30$	V
$I_{D25}$	$T_C = 25^\circ C$	46	A
$I_{DM}$	$T_C = 25^\circ C$ , Pulse Width Limited by $T_{JM}$	115	A
$I_A$	$T_C = 25^\circ C$	23	A
$E_{AS}$		1	J
$P_D$	$T_C = 25^\circ C$	460	W
$dv/dt$	$I_S \leq I_{DM}$ , $V_{DD} \leq V_{DSS}$ , $T_J \leq 150^\circ C$	20	V/ns
$T_J$		-55 to +150	$^\circ C$
$T_{JM}$		+150	$^\circ C$
$T_{stg}$		-55 to +150	$^\circ C$
$T_L$	Maximum Lead Temperature for Soldering	300	$^\circ C$
$T_{SOLD}$	Plastic Body for 10s	260	$^\circ C$
$M_d$	Mounting Torque (TO-247)	1.13/10	Nm/lb.in
Weight	TO-247	6	g
	TO-268	4	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 ( $T_J = 25^\circ C$ , 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
$I_{GSS}$	$V_{GS} = \pm 20V$ , $V_{DS} = 0V$			$\pm 200$ nA
$I_{DSS}$	$V_{DS} = V_{DSS}$ , $V_{GS} = 0V$ $T_J = 125^\circ C$			25 $\mu A$
				750 $\mu A$
$R_{DS(on)}$	$V_{GS} = 10V$ , $I_D = 0.5 \cdot I_{D25}$ , Note 1			80 m $\Omega$



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

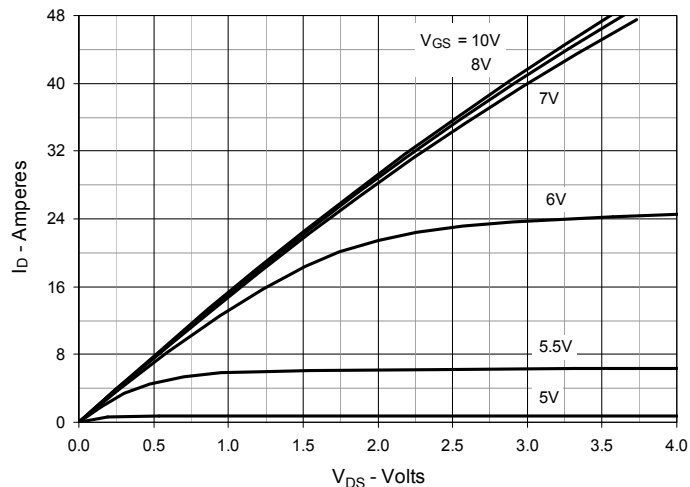


Fig. 2. Extended Output Characteristics @  $T_J = 25^\circ\text{C}$

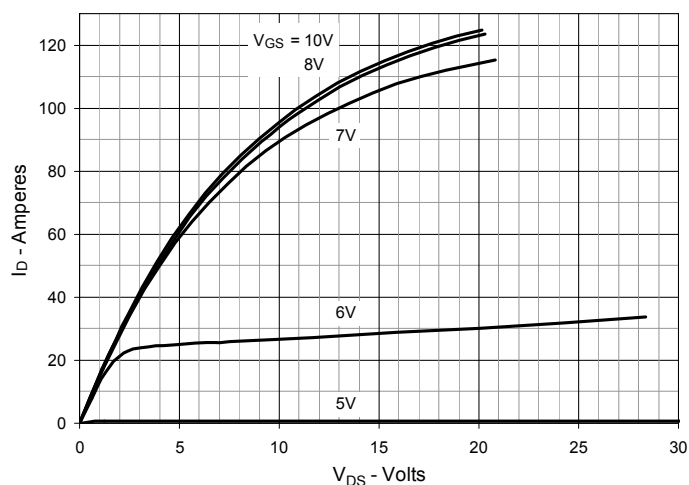


Fig. 3. Output Characteristics @  $T_J = 125^\circ\text{C}$

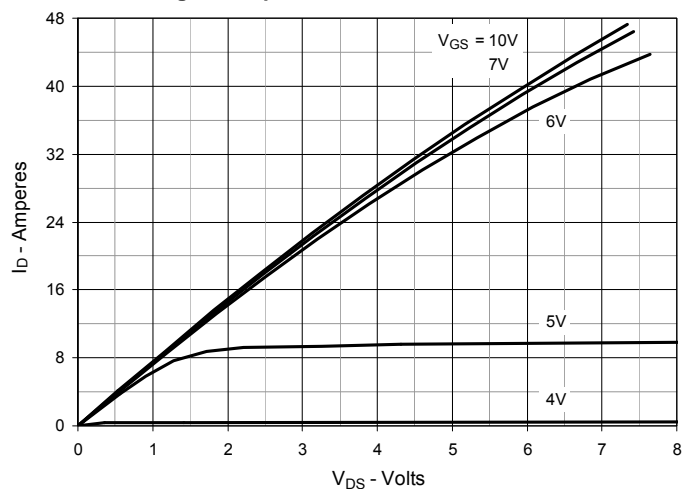


Fig. 4.  $R_{DS(on)}$  Normalized to  $I_D = 23\text{A}$  Value vs. Junction Temperature

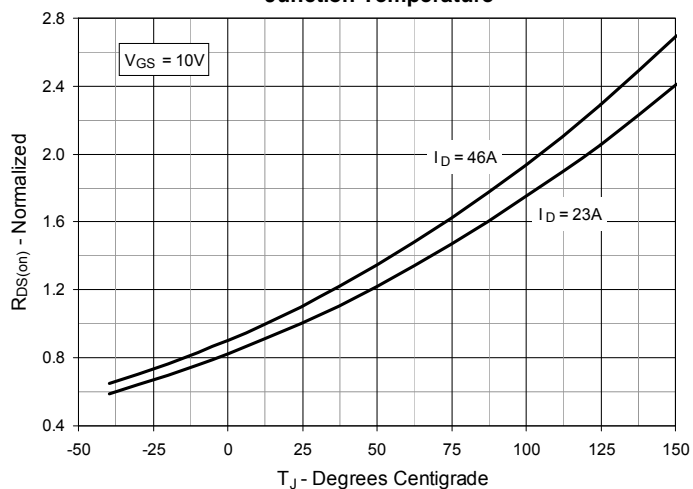


Fig. 5.  $R_{DS(on)}$  Normalized to  $I_D = 23\text{A}$  Value vs. Drain Current

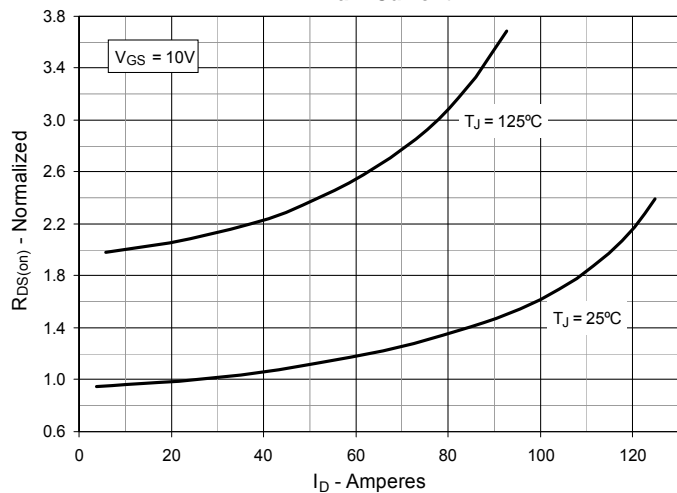
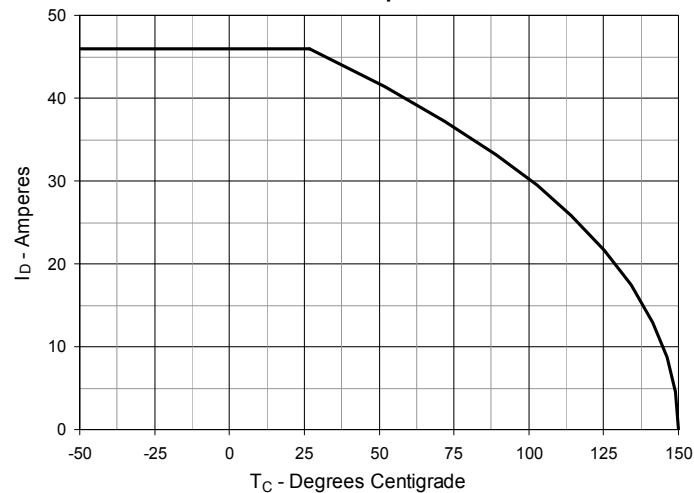
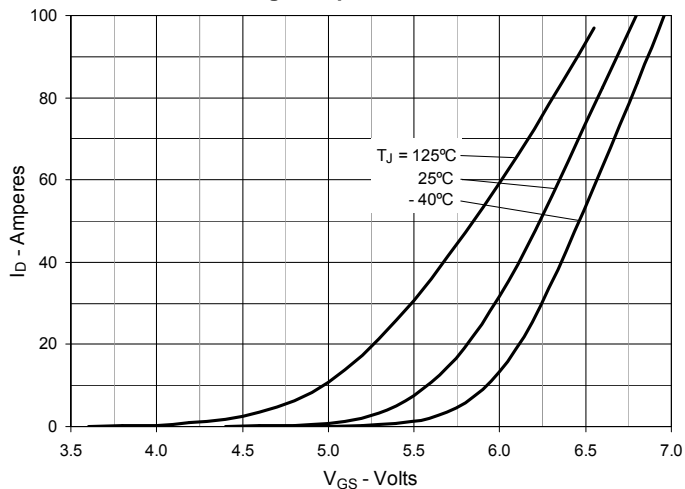


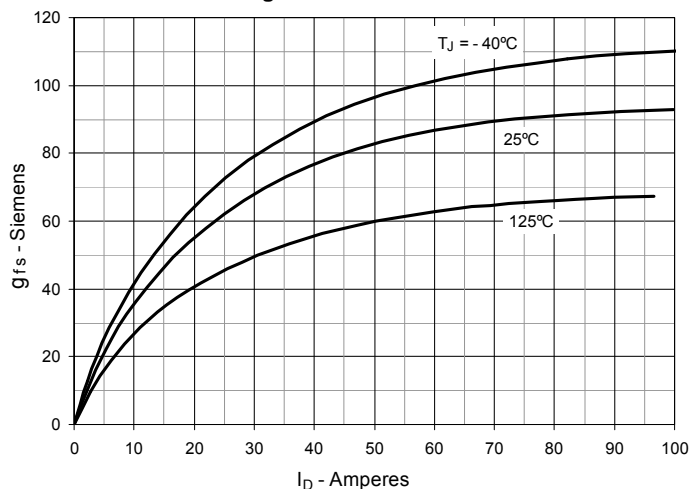
Fig. 6. Maximum Drain Current vs. Case Temperature



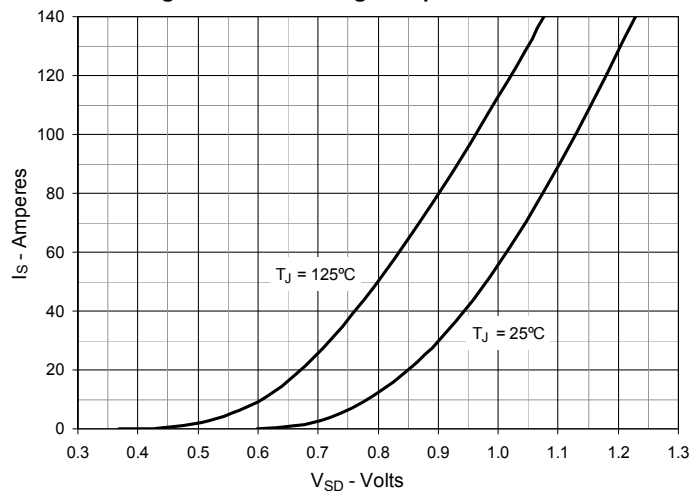
**Fig. 7. Input Admittance**



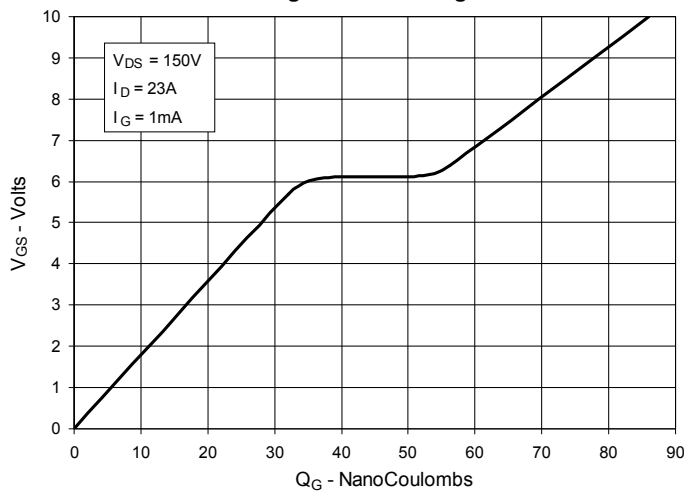
**Fig. 8. Transconductance**



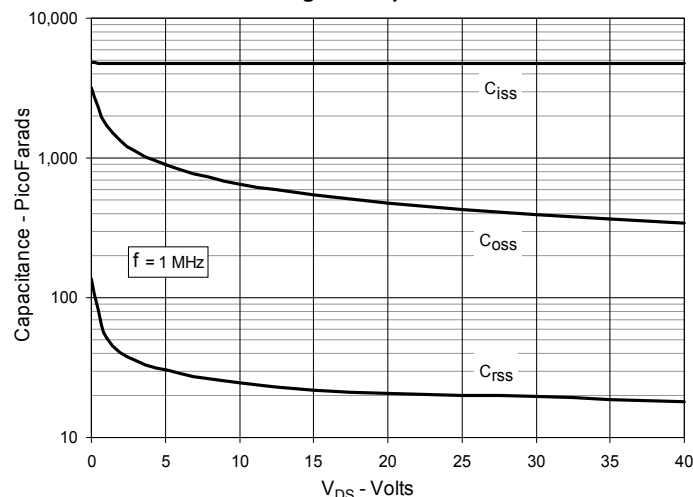
**Fig. 9. Forward Voltage Drop of Intrinsic Diode**



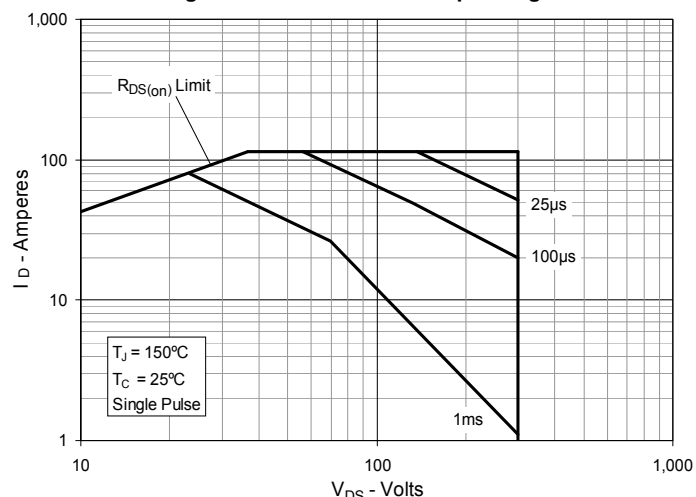
**Fig. 10. Gate Charge**



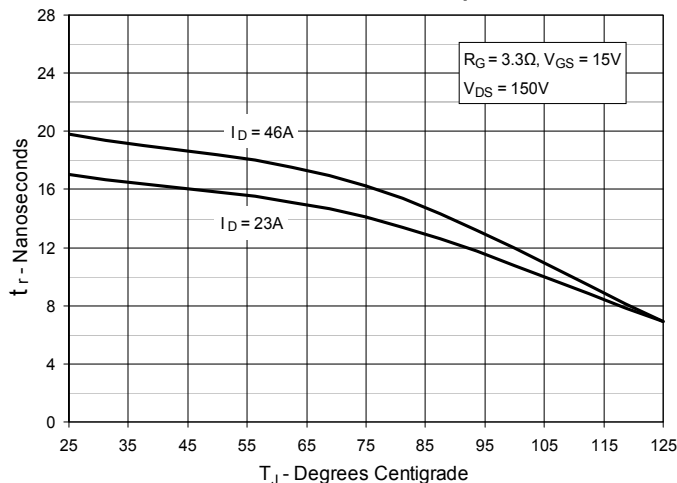
**Fig. 11. Capacitance**



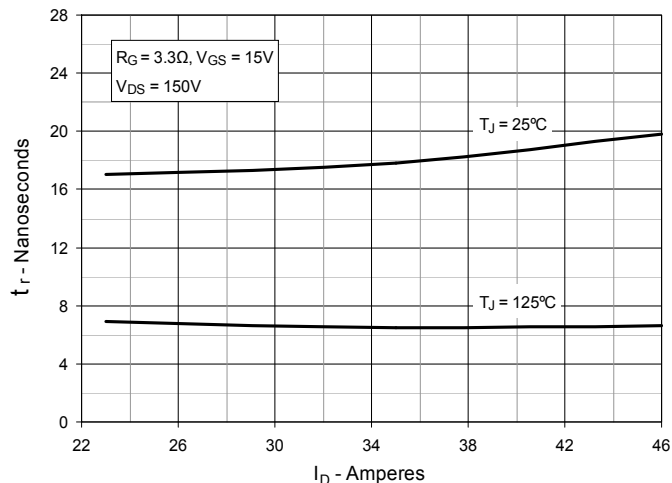
**Fig. 12. Forward-Bias Safe Operating Area**



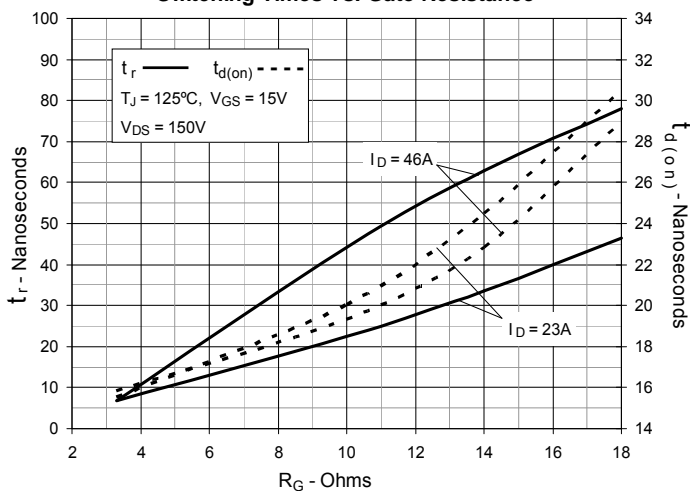
**Fig. 13. Resistive Turn-on  
Rise Time vs. Junction Temperature**



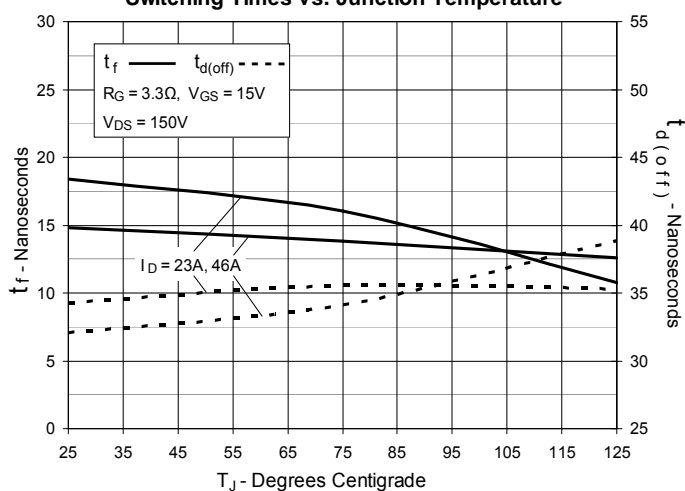
**Fig. 14. Resistive Turn-on  
Rise Time vs. Drain Current**



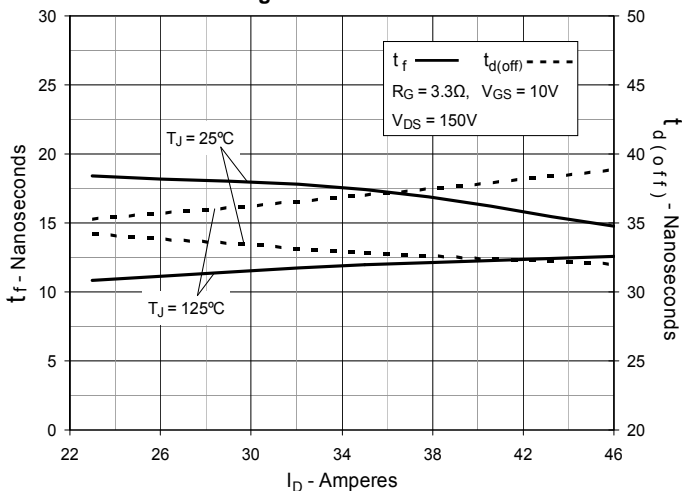
**Fig. 15. Resistive Turn-on  
Switching Times vs. Gate Resistance**



**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**

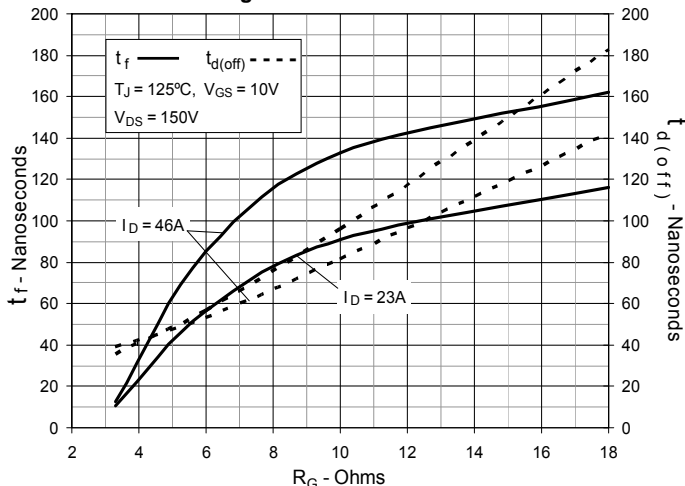
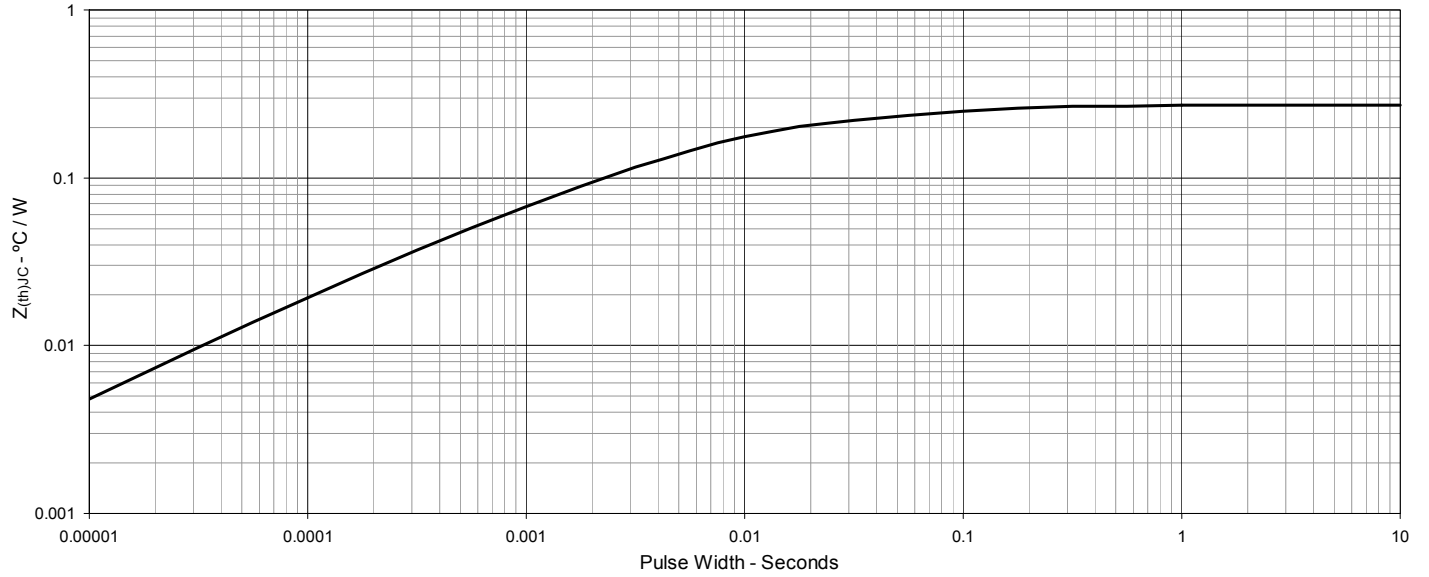


Fig. 19. Maximum Transient Thermal Impedance





---

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](http://www.littelfuse.com/disclaimer-electronics).