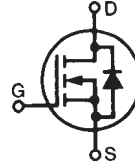


Trench™ Power MOSFET

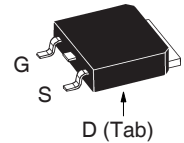
IXTY44N10T IXTP44N10T

$V_{DSS} = 100V$
 $I_{D25} = 44A$
 $R_{DS(on)} \leq 30m\Omega$

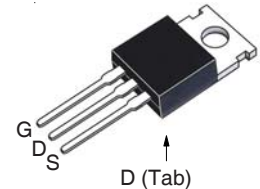
N-Channel Enhancement Mode
 Avalanche Rated



TO-252
(IXTY)



TO-220
(IXTP)



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

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ C$ to $175^\circ C$	100	V
V_{DGR}	$T_J = 25^\circ C$ to $175^\circ C$, $R_{GS} = 1M\Omega$	100	V
V_{GSS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ C$	44	A
I_{LRMS}	Lead Current Limit, (RMS) (TO-252)	25	A
I_{DM}	$T_C = 25^\circ C$, Pulse Width Limited by T_{JM}	110	A
I_A	$T_C = 25^\circ C$	10	A
E_{AS}	$T_C = 25^\circ C$	250	mJ
dv/dt	$I_S \leq I_{DM}$, $V_{DD} \leq V_{DSS}$, $T_J \leq 175^\circ C$	12	V/ns
P_D	$T_C = 25^\circ C$	130	W
T_J		-55 ... +175	$^\circ C$
T_{JM}		175	$^\circ C$
T_{stg}		-55 ... +175	$^\circ C$
T_L	Maximum Lead Temperature for Soldering	300	$^\circ C$
T_{SOLD}	1.6 mm (0.062in.) from Case for 10s	260	$^\circ C$
M_d	Mounting Torque (TO-220)	1.13 / 10	Nm/lb.in.
Weight	TO-252	0.35	g
	TO-220	3.00	g

Features

- International Standard Packages
- 175°C Operating Temperature
- Avalanche Rated
- Low $R_{DS(on)}$
- High Current Handling Capability

Advantages

- Easy to Mount
- Space Savings
- High Power Density

Applications

- Automotive
 - Motor Drives
 - 24 / 48V Power Bus
 - ABS Systems
- DC/DC Converters and Off-Line UPS
- Primary- Side Switch
- High Current Switching Applications

Symbol	Test Conditions ($T_J = 25^\circ C$ Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0V$, $I_D = 250\mu A$	100		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 25\mu A$	2.5		4.5 V
I_{GSS}	$V_{GS} = \pm 20V$, $V_{DS} = 0V$			± 100 nA
I_{DSS}	$V_{DS} = V_{DSS}$, $V_{GS} = 0V$ $T_J = 150^\circ C$			1 μA
				200 μA
$R_{DS(on)}$	$V_{GS} = 10V$, $I_D = 0.5 \cdot I_{D25}$, Notes 1, 2			30 m Ω

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

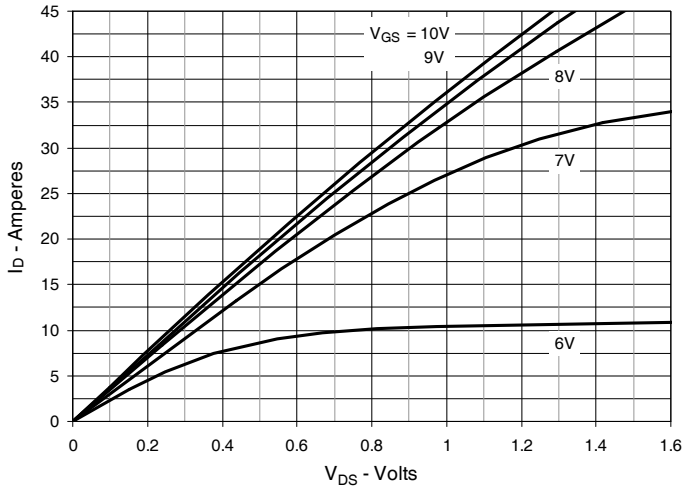


Fig. 2. Extended Output Characteristics @ $T_J = 25^\circ\text{C}$

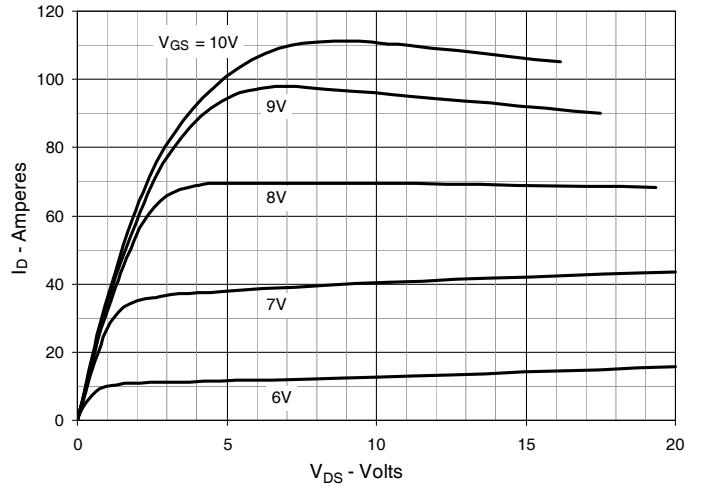


Fig. 3. Output Characteristics @ $T_J = 150^\circ\text{C}$

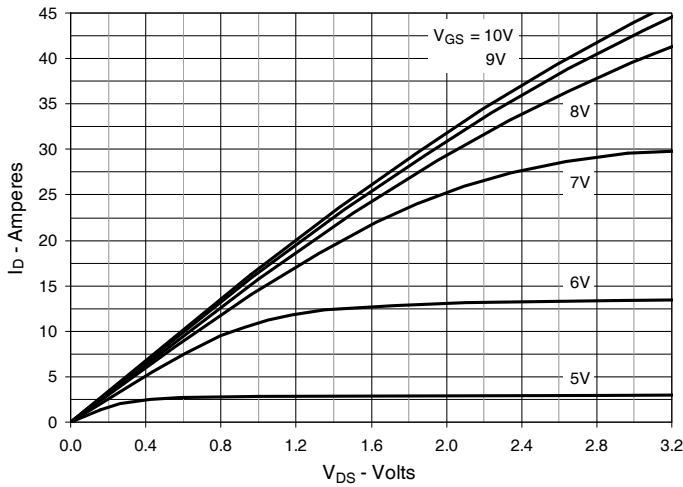


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 22\text{A}$ Value vs. Junction Temperature

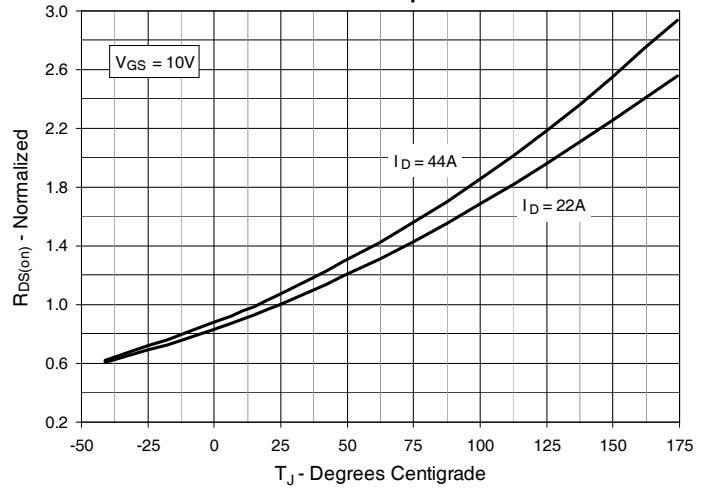


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 22\text{A}$ Value vs. Drain Current

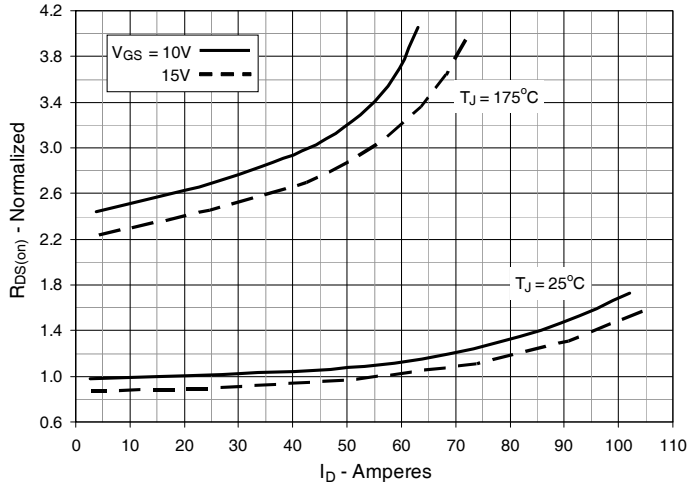


Fig. 6. Drain Current vs. Case Temperature

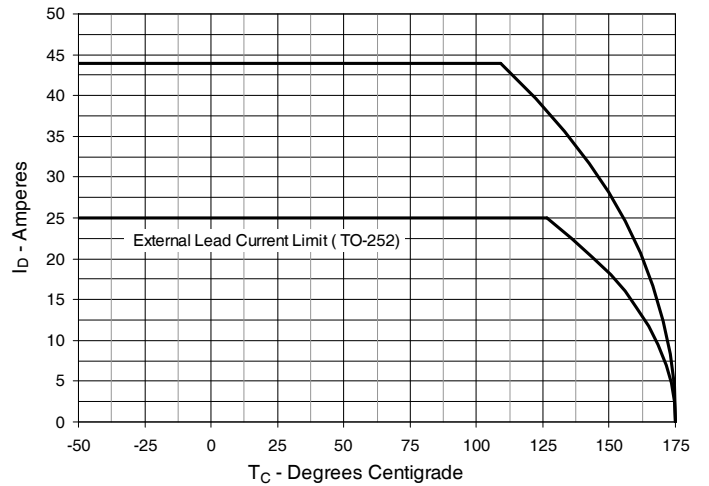


Fig. 7. Input Admittance

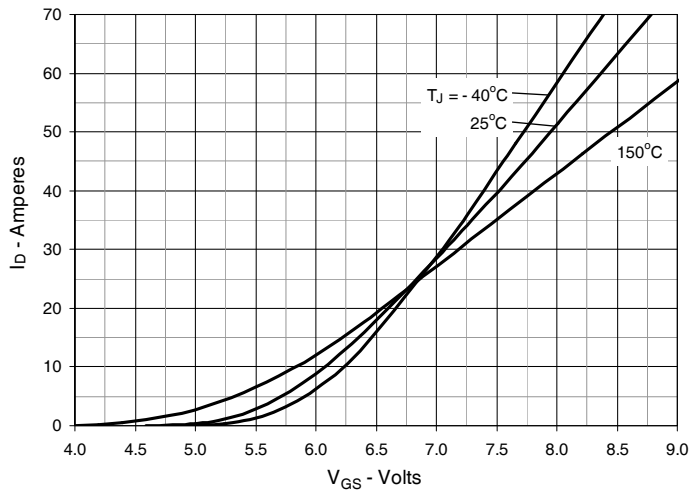


Fig. 8. Transconductance

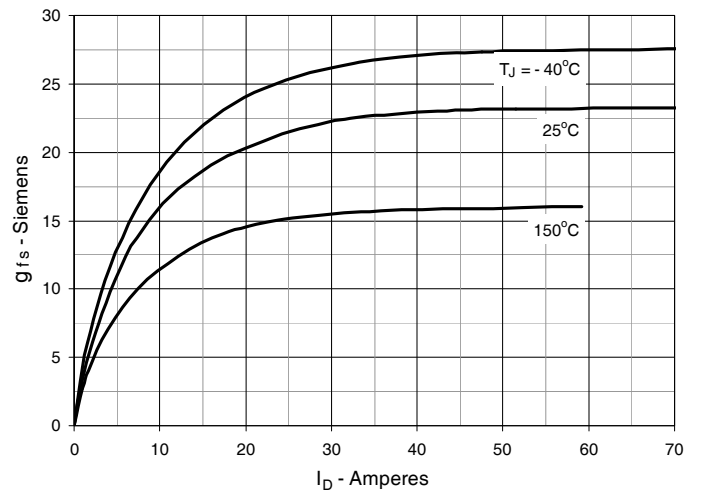


Fig. 9. Forward Voltage Drop of Intrinsic Diode

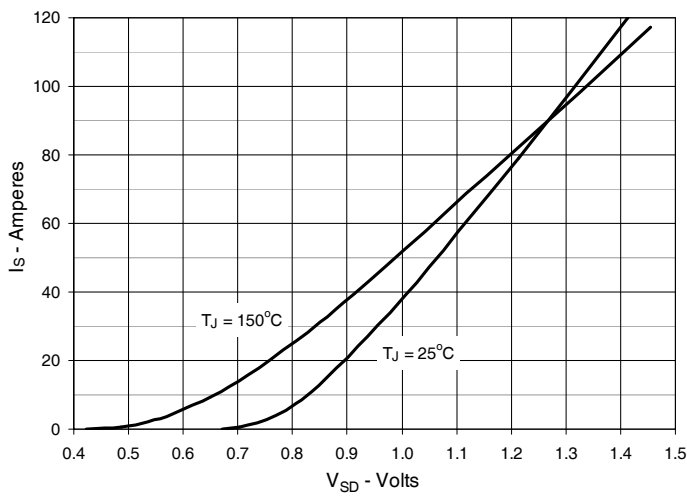


Fig. 10. Gate Charge

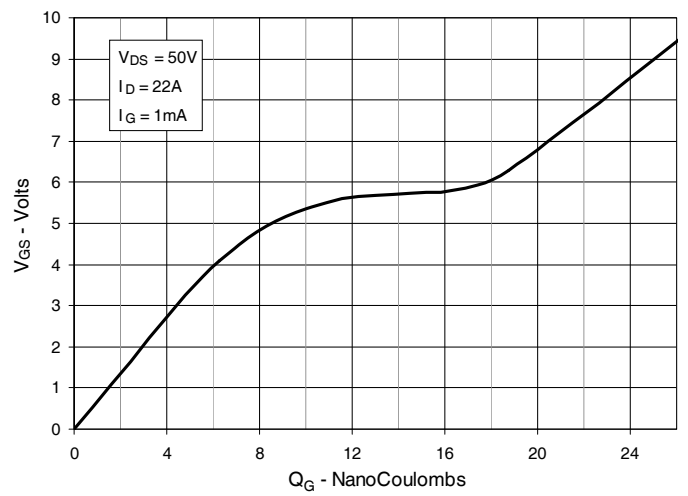


Fig. 11. Capacitance

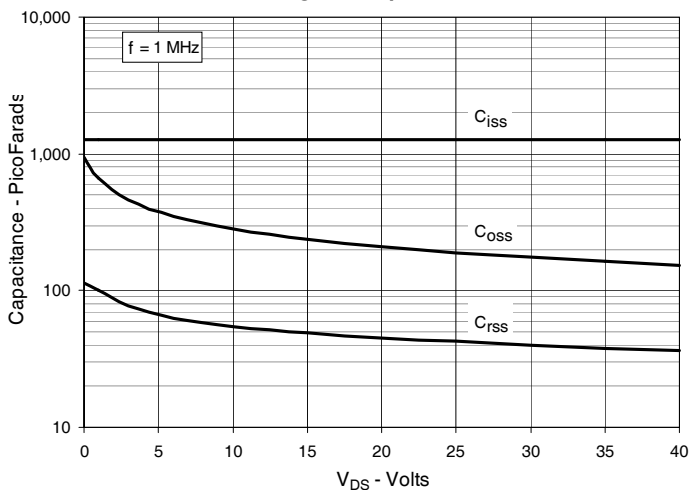


Fig. 12. Forward-Bias Safe Operating Area

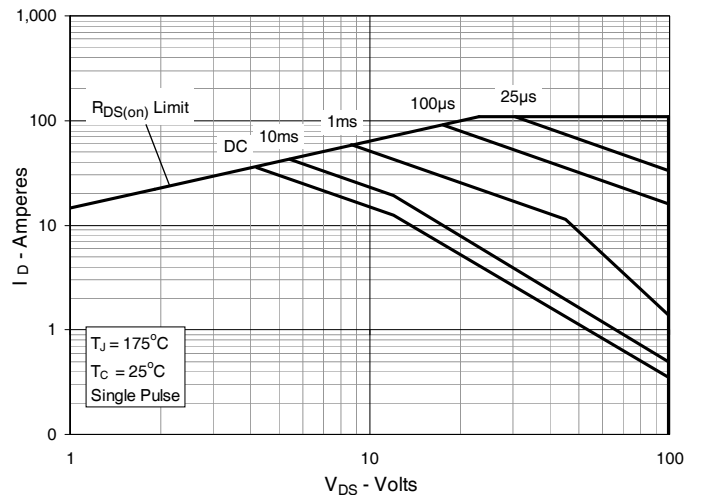


Fig. 13. Resistive Turn-on Rise Time vs. Junction Temperature

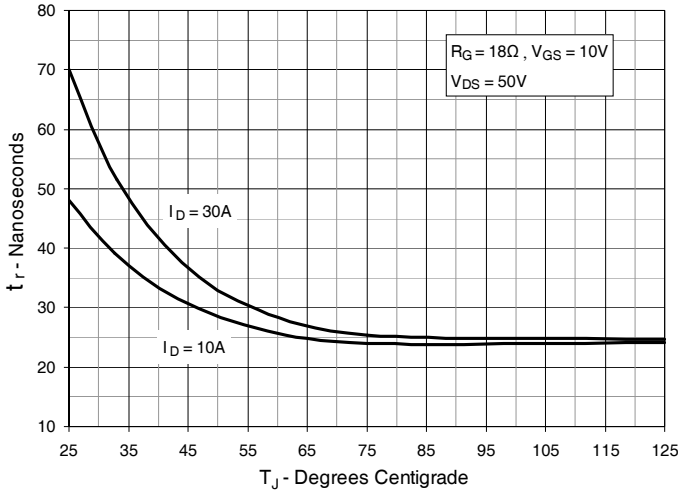


Fig. 14. Resistive Turn-on Rise Time vs. Drain Current

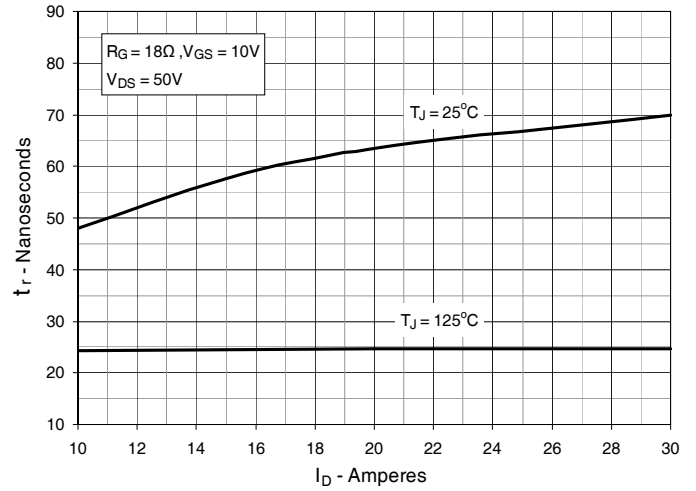


Fig. 15. Resistive Turn-on Switching Times vs. Gate Resistance

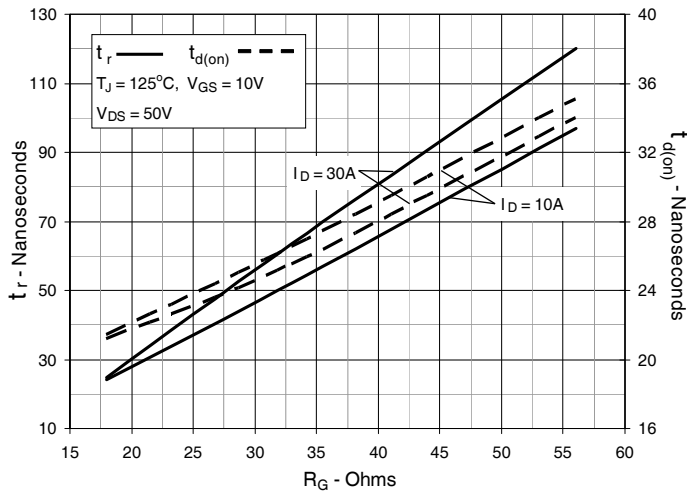


Fig. 16. Resistive Turn-off Switching Times vs. Junction Temperature

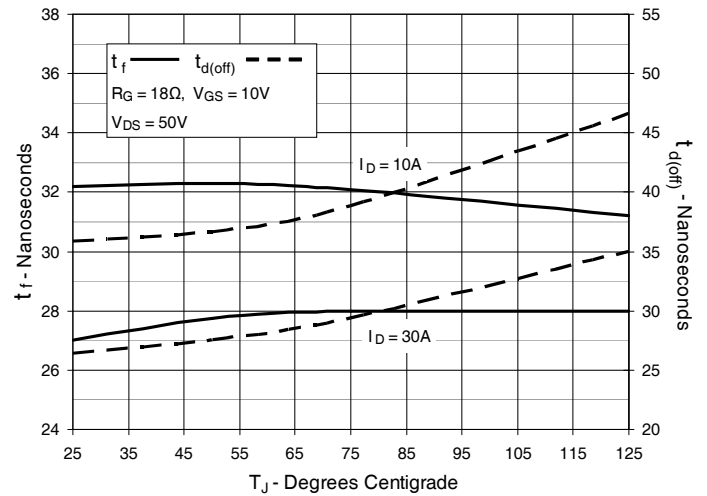


Fig. 17. Resistive Turn-off Switching Times vs. Drain Current

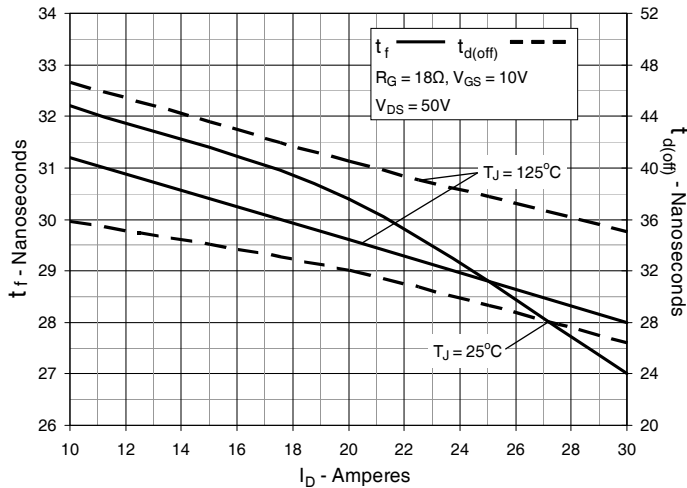


Fig. 18. Resistive Turn-off Switching Times vs. Gate Resistance

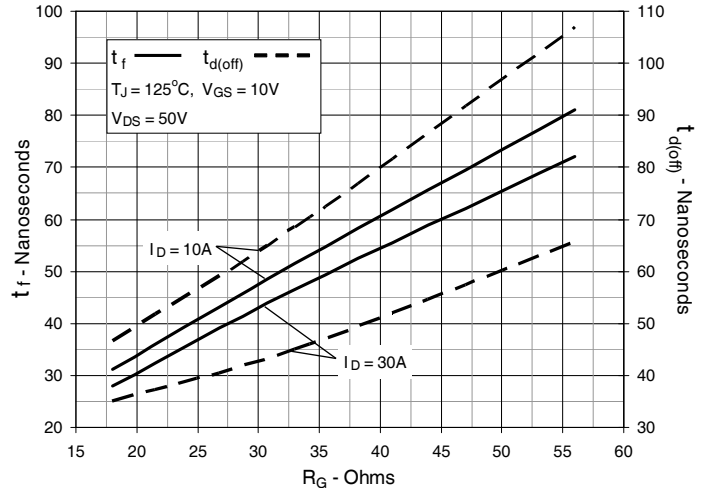
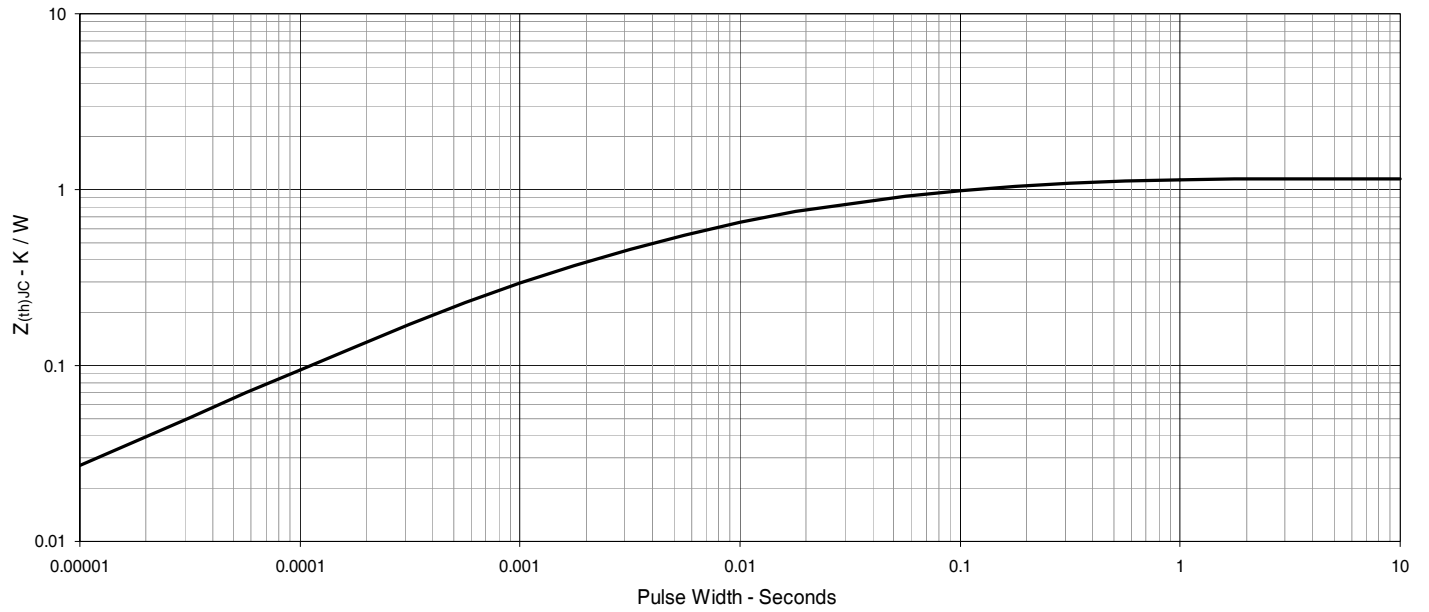


Fig. 19. Maximum Transient Thermal Impedance





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