

Symbol	Test Conditions	Characteristic Values		
	(T _J = 25°C, Unless Otherwise Specified)	Min.	Typ.	Max.
g_{fs}	V _{DS} = 30V, I _D = 1.5A, Note 1	1.3	2.1	S
C_{iss}	V _{GS} = -10V, V _{DS} = 25V, f = 1MHz		1070	pF
C_{oss}			102	pF
C_{rss}			24	pF
t_{d(on)}	Resistive Switching Times V _{GS} = ± 5V, V _{DS} = 250V, I _D = 1.5A R _G = 3.3Ω (External)		27	ns
t_r			71	ns
t_{d(off)}			56	ns
t_f			42	ns
Q_{g(on)}	V _{GS} = 5V, V _{DS} = 250V, I _D = 1.5A		40	nC
Q_{gs}			5	nC
Q_{gd}			20	nC
R_{thJC}	TO-220		0.50	1.00 °C/W
R_{thCS}				°C/W

Safe-Operating-Area Specification

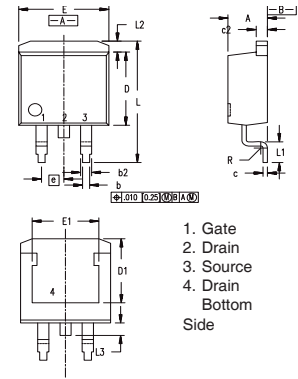
Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
SOA	V _{DS} = 400V, I _D = 0.19A, T _C = 75°C, T _p = 5s	75		W

Source-Drain Diode

Symbol	Test Conditions	Characteristic Values		
	(T _J = 25°C, Unless Otherwise Specified)	Min.	Typ.	Max.
V_{SD}	I _F = 3A, V _{GS} = -10V, Note 1		0.8	1.3 V
t_{rr}	I _F = 3A, -di/dt = 100A/μs V _R = 100V, V _{GS} = -10V		340	ns
I_{RM}			10.9	A
Q_{RM}			1.86	μC

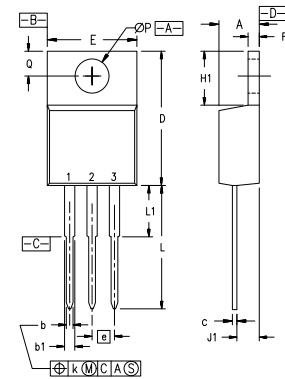
Note 1. Pulse test, t ≤ 300μs, duty cycle, d ≤ 2%.

TO-263 (IXTA) Outline



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.06	4.83	.160	.190
b	0.51	0.99	.020	.039
b2	1.14	1.40	.045	.055
c	0.40	0.74	.016	.029
c2	1.14	1.40	.045	.055
D	8.64	9.65	.340	.380
D1	8.00	8.89	.280	.320
E	9.65	10.41	.380	.405
E1	6.22	8.13	.270	.320
e	2.54	BSC	.100	BSC
L	14.61	15.88	.575	.625
L1	2.29	2.79	.090	.110
L2	1.02	1.40	.040	.055
L3	1.27	1.78	.050	.070
L4	0	0.13	0	.005

TO-220 (IXTP) Outline



Pins: 1 - Gate 2 - Drain
3 - Source

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.170	.190	4.32	4.83
b	.025	.040	0.64	1.02
b1	.045	.065	1.15	1.65
c	.014	.022	0.35	0.56
D	.580	.630	14.73	16.00
E	.390	.420	9.91	10.66
e	.100	BSC	2.54	BSC
F	.045	.055	1.14	1.40
H1	.230	.270	5.85	6.85
J1	.090	.110	2.29	2.79
k	0	.015	0	0.38
L	.500	.550	12.70	13.97
L1	.110	.230	2.79	5.84
ØP	.139	.161	3.53	4.08
Q	.100	.125	2.54	3.18

IXYS Reserves the Right to Change Limits, Test Conditions, and Dimensions.

IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents:	4,835,592	4,931,844	5,049,961	5,237,481	6,162,665	6,404,065 B1	6,683,344	6,727,585	7,005,734 B2	7,157,338B2
	4,850,072	5,017,508	5,063,307	5,381,025	6,259,123 B1	6,534,343	6,710,405 B2	6,759,692	7,063,975 B2	
	4,881,106	5,034,796	5,187,117	5,486,715	6,306,728 B1	6,583,505	6,710,463	6,771,478 B2	7,071,537	

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

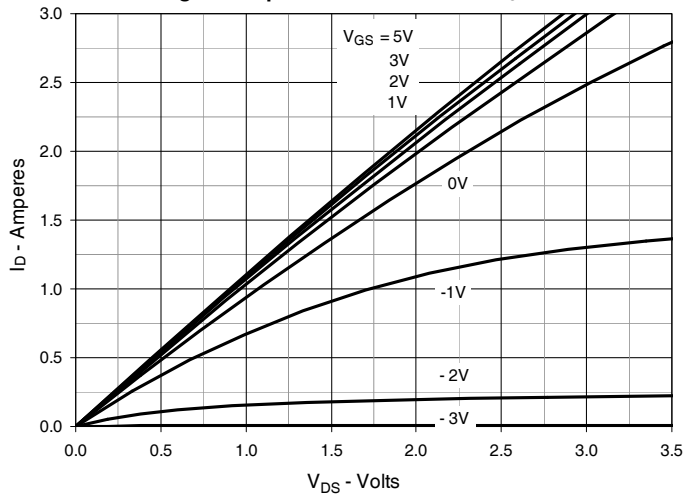


Fig. 2. Extended Output Characteristics @ $T_J = 25^\circ\text{C}$

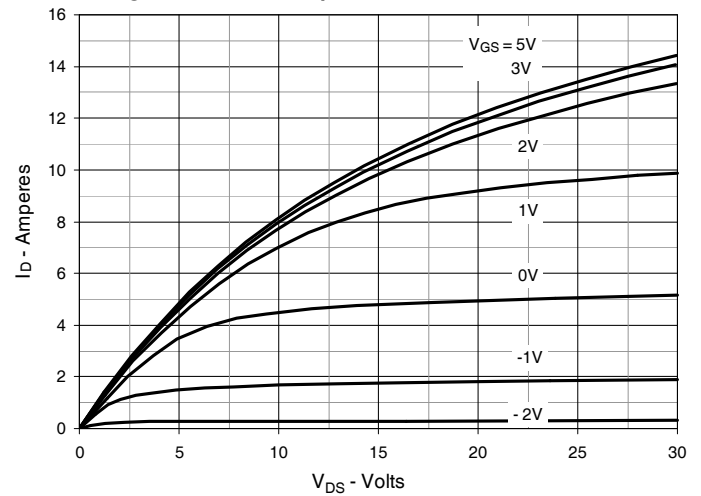


Fig. 3. Output Characteristics @ $T_J = 125^\circ\text{C}$

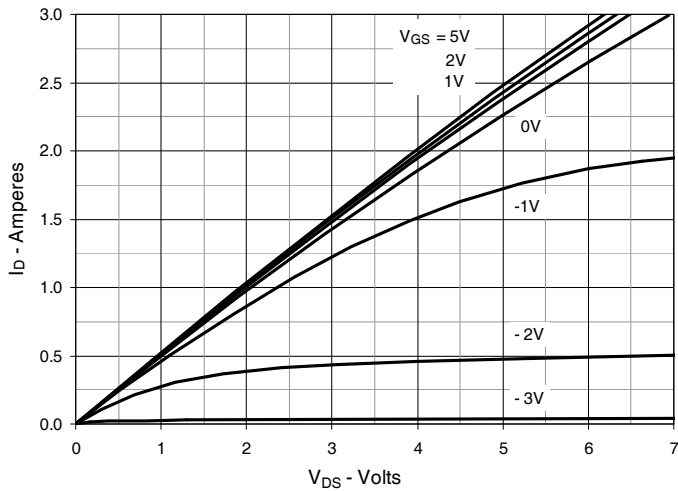


Fig. 4. Drain Current @ $T_J = 25^\circ\text{C}$

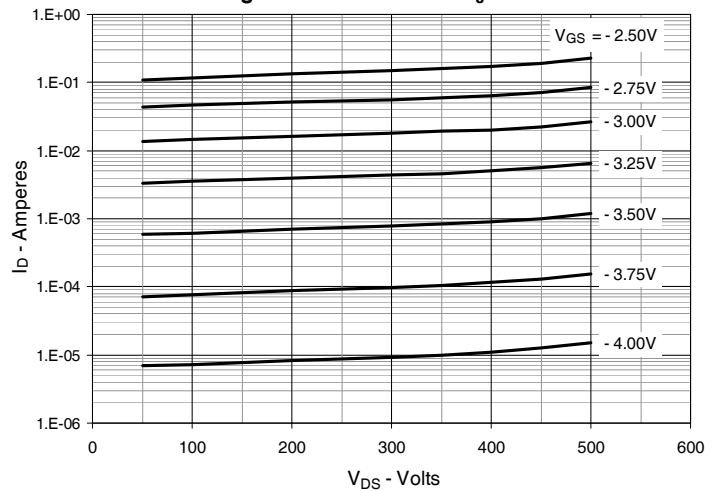


Fig. 5. Drain Current @ $T_J = 100^\circ\text{C}$

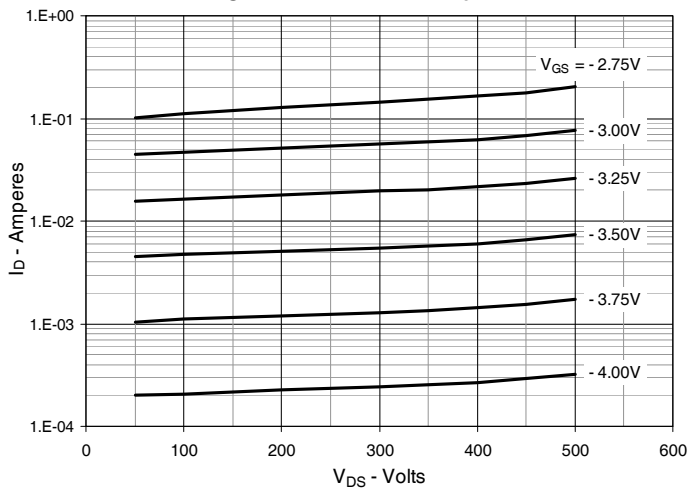


Fig. 6. Dynamic Resistance vs. Gate Voltage

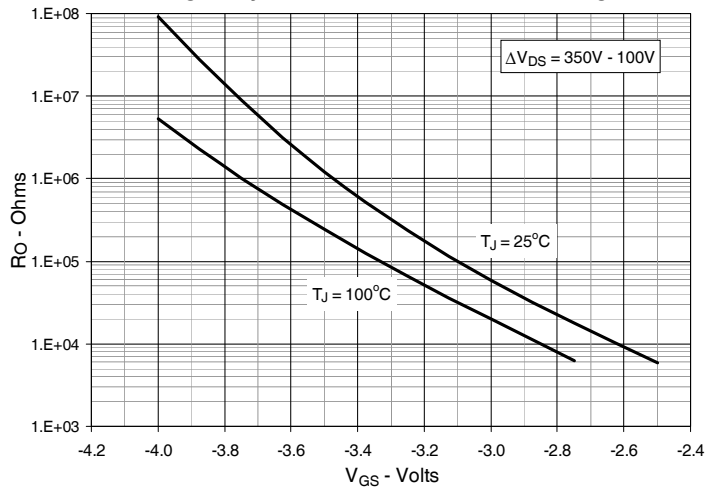


Fig. 7. Normalized $R_{DS(on)}$ vs. Junction Temperature

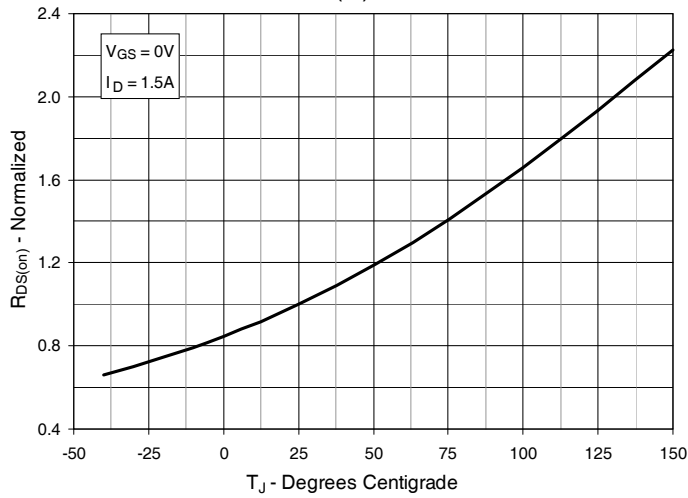


Fig. 8. $R_{DS(on)}$ Normalized to $I_D = 1.5A$ Value vs. Drain Current

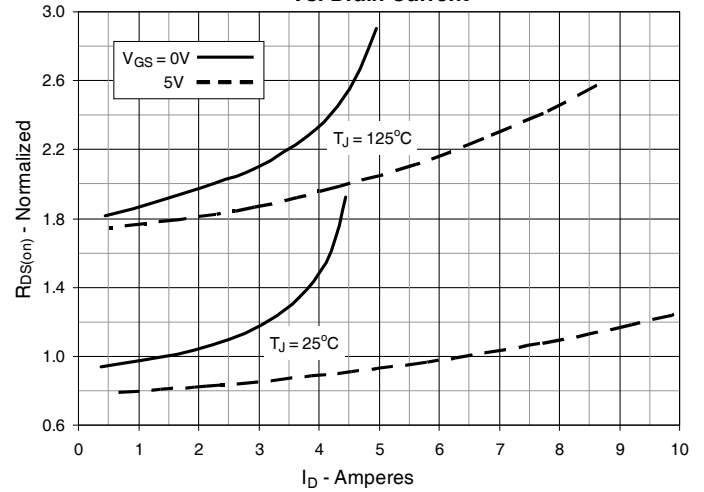


Fig. 9. Input Admittance

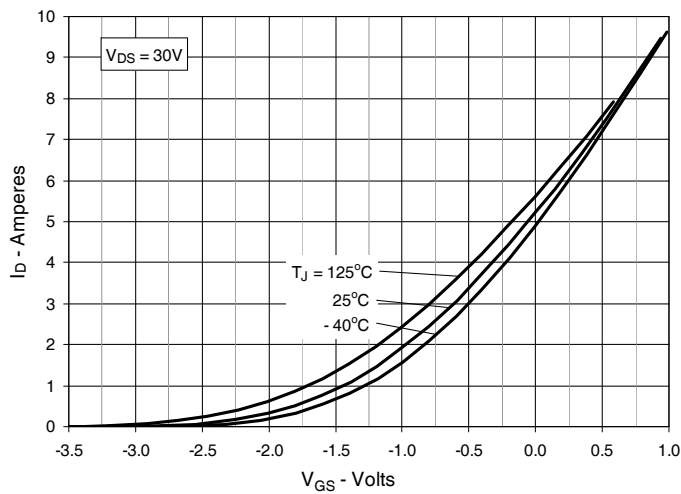


Fig. 10. Transconductance

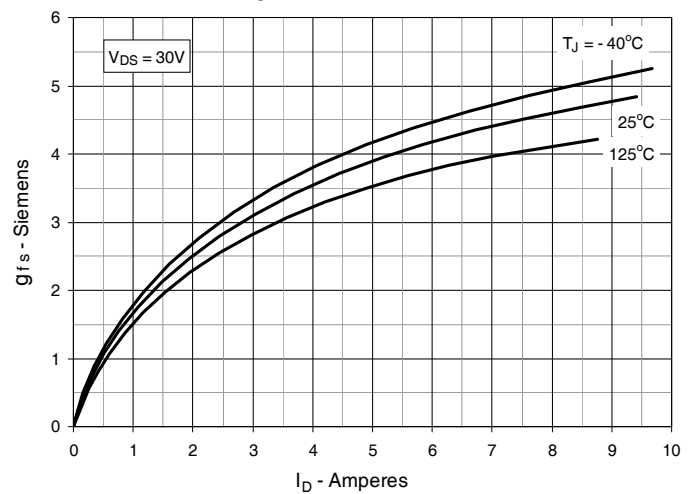


Fig. 11. Breakdown and Threshold Voltages vs. Junction Temperature

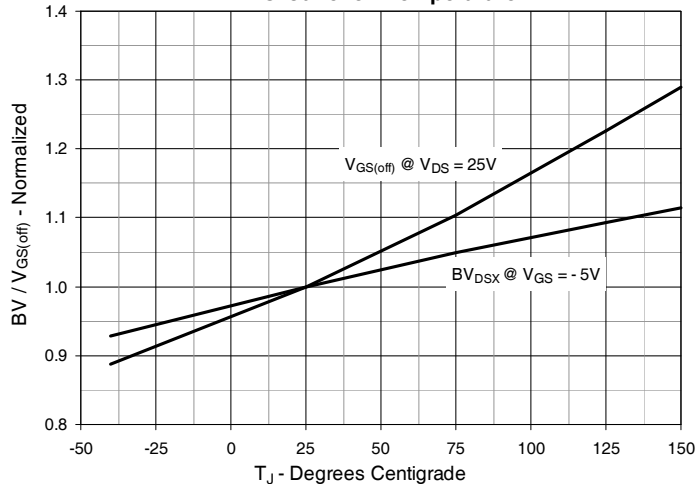


Fig. 12. Forward Voltage Drop of Intrinsic Diode

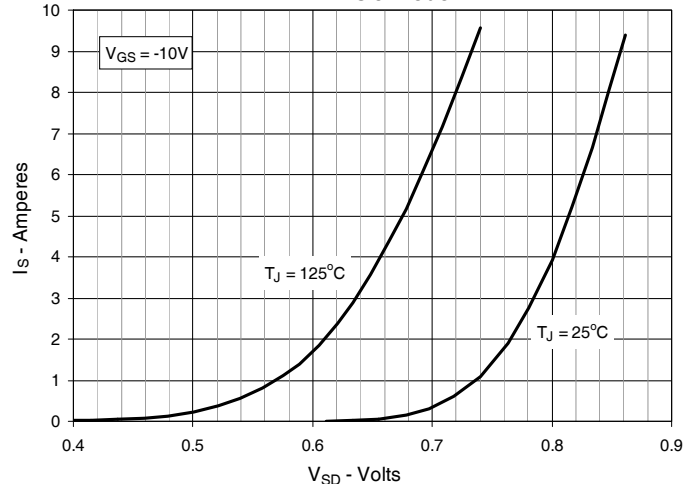


Fig. 13. Capacitance

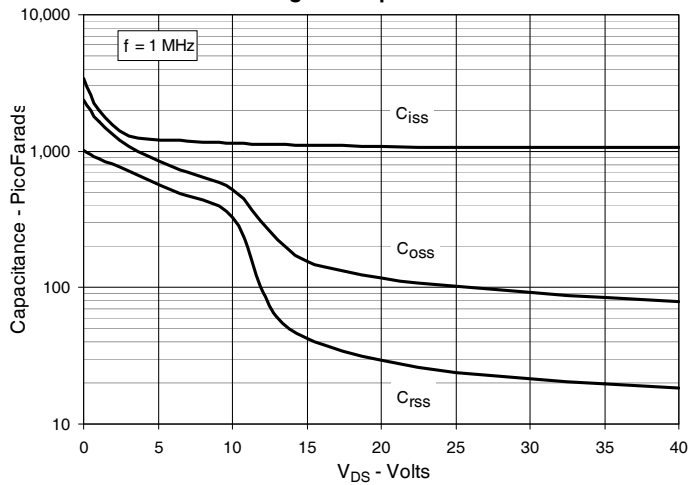


Fig. 14. Gate Charge

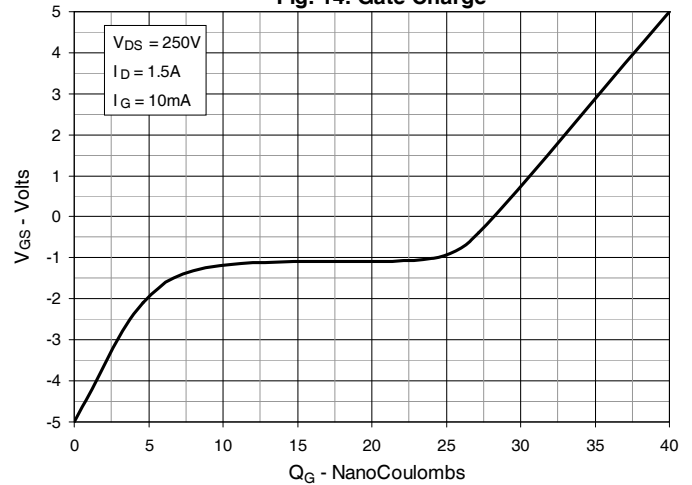


Fig. 15. Forward-Bias Safe Operating Area
@ $T_C = 25^\circ\text{C}$

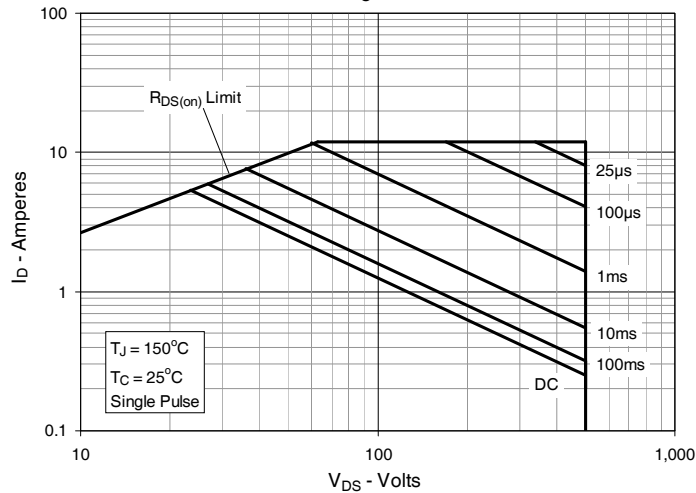


Fig. 16. Forward-Bias Safe Operating Area
@ $T_C = 75^\circ\text{C}$

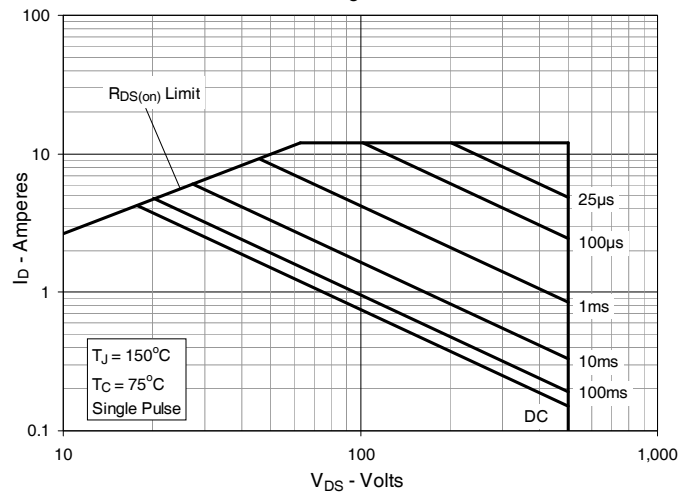
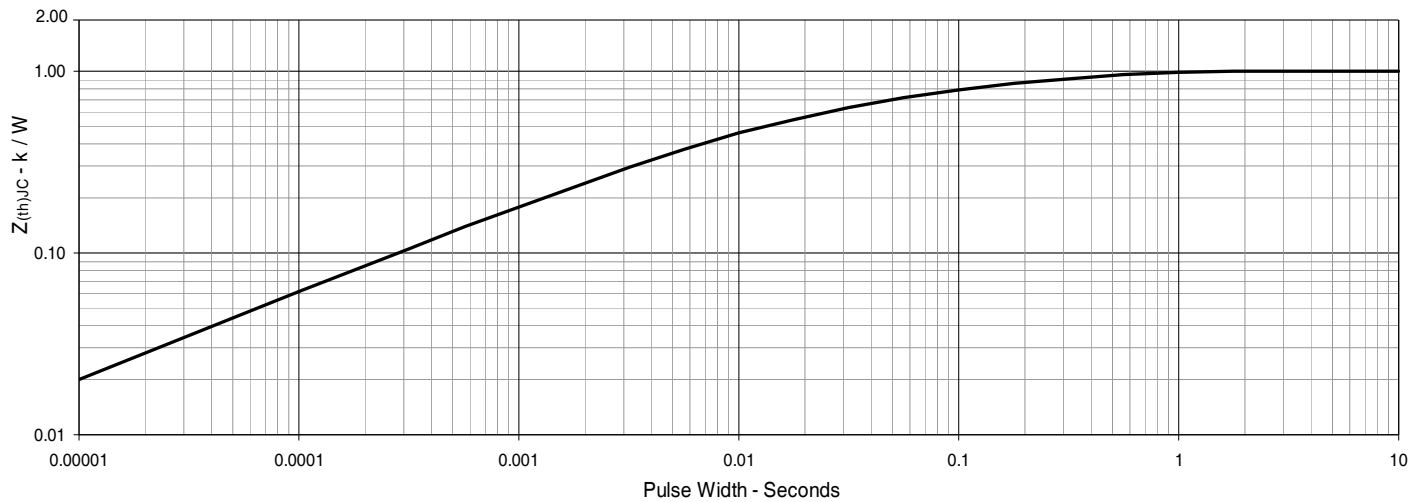


Fig. 17. Maximum Transient Thermal Impedance





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