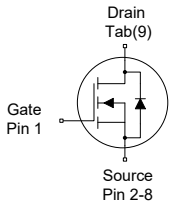
DAM367N010L1

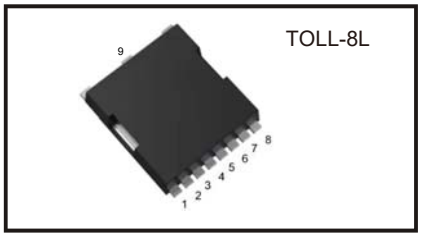
N-Channel Enhancement Power MOSFET

V_{DSS}	100 V
$I_{D(@25℃)}$	367 A
$R_{DS(ON)}$ typ.	1.2 mΩ

Features

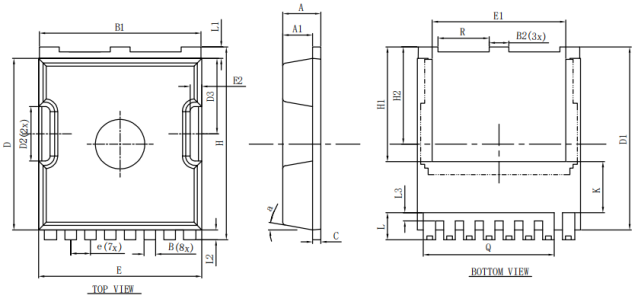
- Excellent RDS(ON) and Low Gate Charge
- 100% UIS Tested
- 100% ΔVds Tested
- Halogen-free; RoHS-compliant

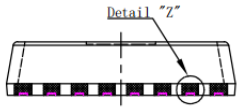


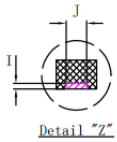


Applications

- Power appliances
- BMS appliances
- High power inverter system
- Light electric vehicles







Absolute Maximum Ratings

(T_J=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (Tc =25℃) (1)	I_D	367	A
Pulsed Drain Current (1)	I_{DM}	1468	A
Single Pulsed Avalanche Energy (V_{DD} =50V,L=1.0mH) (2)	E_{AS}	1838	mJ
Drain Power Dissipation	P_D	500	W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	0.25	℃/W
Thermal Resistance- Junction to Ambient(3)	$R_{\theta JA}$	34	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

SYMBOL	MILLIMETER		
	MIN.	NOM.	MAX.
A	2.200	2.300	2.400
A1	1.700	1.800	1.900
B	0.700	0.800	0.900
B1	9.700	9.800	9.900
B2	1.100	1.200	1.300
C	0.400	0.500	0.600
D	10.300	10.400	10.500
D1	11.000	11.100	11.200
D2	3.200	3.300	3.400
D3	4.470	4.570	4.670
E	9.800	9.900	10.000
E1	8.000	8.100	8.200
E2	0.500	0.600	0.700
e	1.200 BSC		
H	11.600	11.700	11.800
H1	6.950 BSC		
H2	5.900 BSC		
I	0.050	0.100	0.15
J	0.350 REF.		
K	3.100 REF.		
L	1.550	1.650	1.750
L1	0.600	0.700	0.800
L2	0.500	0.600	0.700
L3	0.400	0.500	0.600
Q	8.000 REF.		
R	3.000	3.100	3.200
a	10° REF.		

Package Marking and Ordering Information

Device	Device Package	Reel Size	Tape width	Quantity (PCS)
DAM367N010L1	TOLL-8L	-	-	2000

Electrical Characteristics @ T_J =25°C (unless otherwise specified)

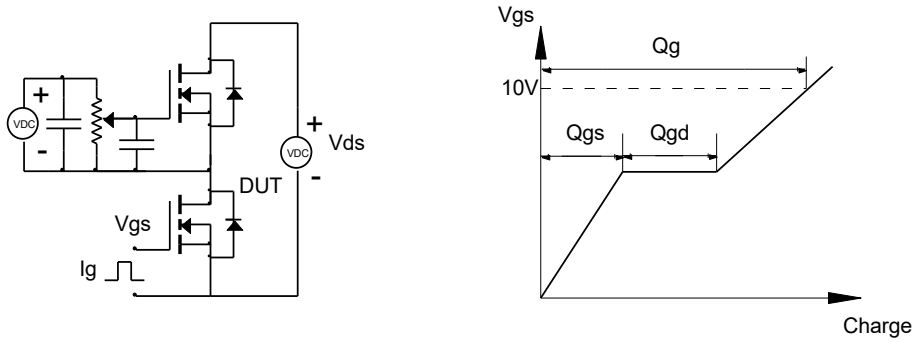
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	100	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS} =80V, V_{GS} = 0V	-	-	1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V	-	-	±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2.0	2.8	4.0	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =20A	-	1.2	1.6	mΩ
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS} =50V, V_{GS} =0V, f =1.0MHz	-	12667	-	pF
Output Capacitance	C_{oss}		-	4368	-	
Reverse Transfer Capacitance	C_{rss}		-	76	-	
Switching characteristics						
Turn-on delay time	$t_{d(on)}$	V_{DD}=50V, I_D=20A, R_G=3.0Ω,,V_G=10V	-	37	-	ns
Turn-on rise time	t_r		-	44	-	
Turn-off delay time	$t_{d(off)}$		-	115	-	
Turn-off fall time	t_f		-	59	-	
Total Gate Charge	Qg	V_{DS}=50V, I_D=20A, V_{GS}=10V	-	178	-	nC
Gate-Source Charge	Qgs		-	61	-	
Gate-Drain Charge	Qgd		-	31	-	
Source-Drain Diode characteristics						
Diode Forward voltage	V_{SD}	T_J=25℃, V_{GS} =0V, I_S=20A	-	-	1.2	V
Diode Forward current	I_S	T_C=25℃	-	-	367	A
Body Diode Reverse Recovery Time	trr	T_J=25℃， IF=20A,di/dt=100A/us		120		ns
Body Diode Reverse Recovery Charge	Qrr	T_J=25℃， IF=20A,di/dt=100A/us		325		uc

Notes:

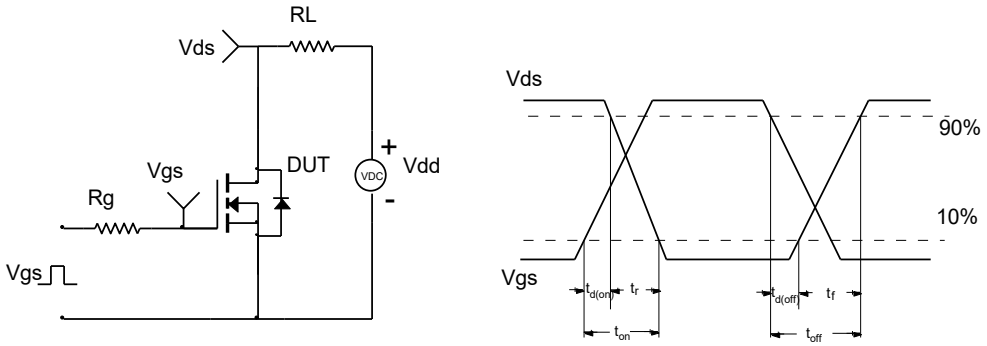
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
2. E_{AS} condition: Starting T_J=25C, V_{DD}=50V, V_{GS}=10V, R_G=25ohm, L=3mH, I_{AS}=35A.
3. $R_{\theta JA}$ is measured with the device mounted on a $1inch^2$ pad of 2oz copper FR4 PCB.
4. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%.

Test Circuit

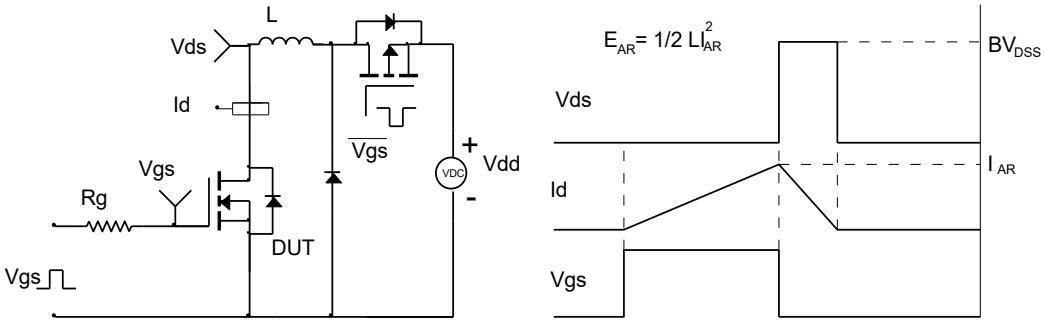
Gate Charge Test Circuit & Waveform



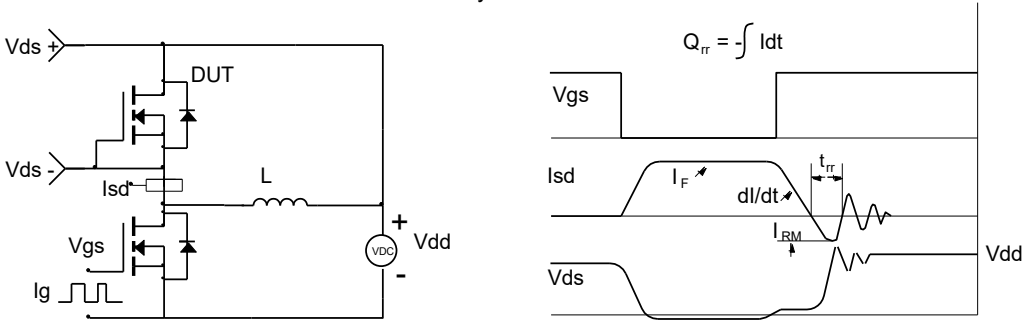
Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms



Typical Performance Characteristics

Figure 1: Output Characteristics

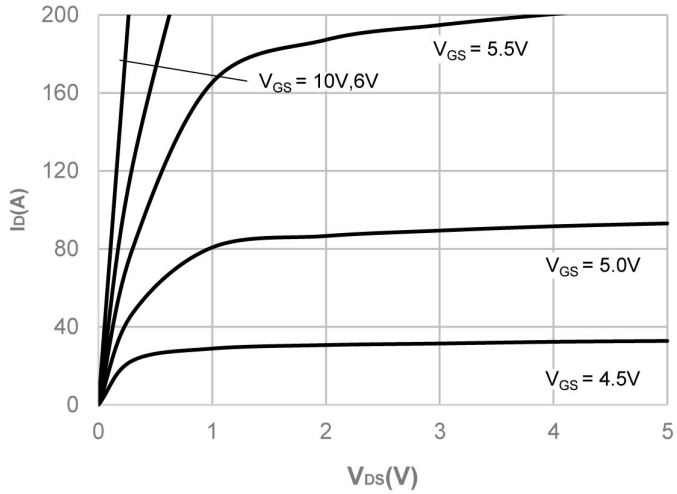


Figure 2: Typical Transfer Characteristics

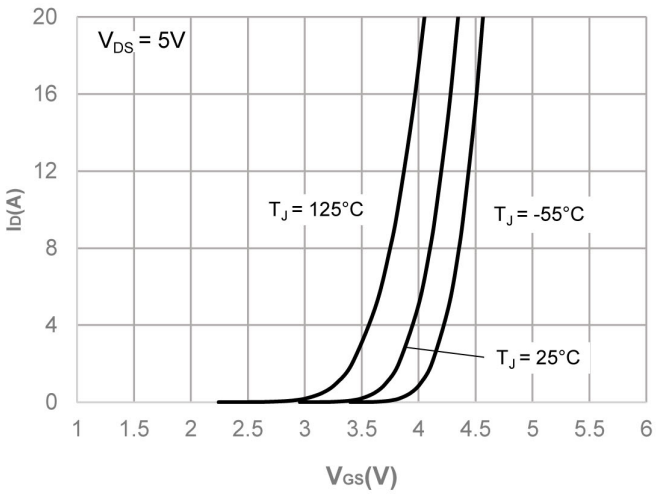


Figure 3: On-resistance vs. Drain Current

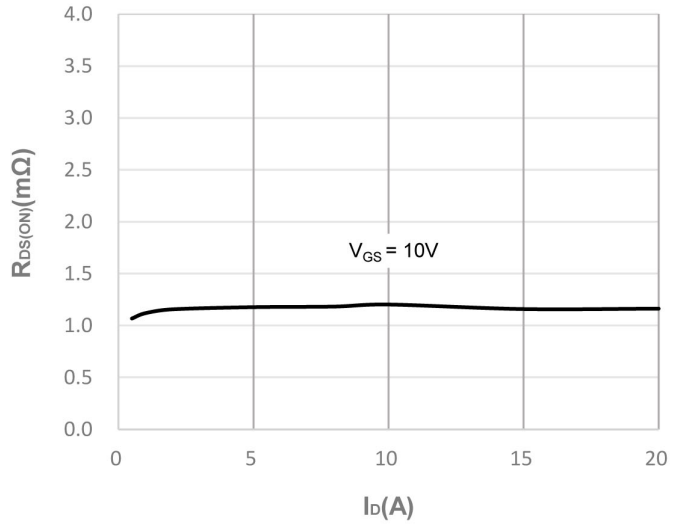


Figure 4: Body Diode Characteristics

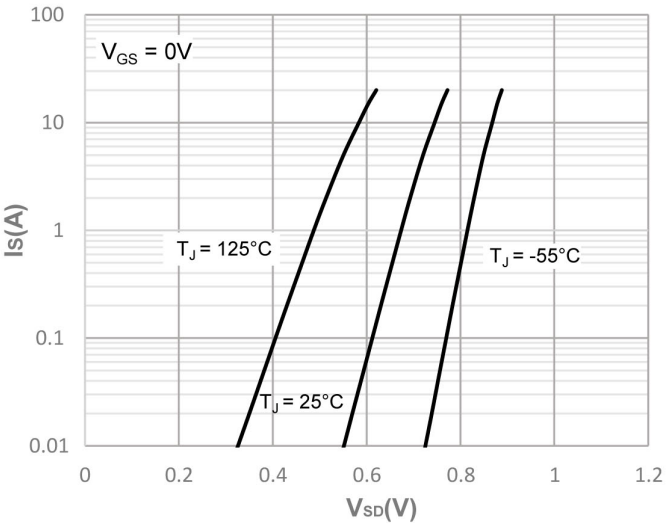


Figure 5: Gate Charge Characteristics

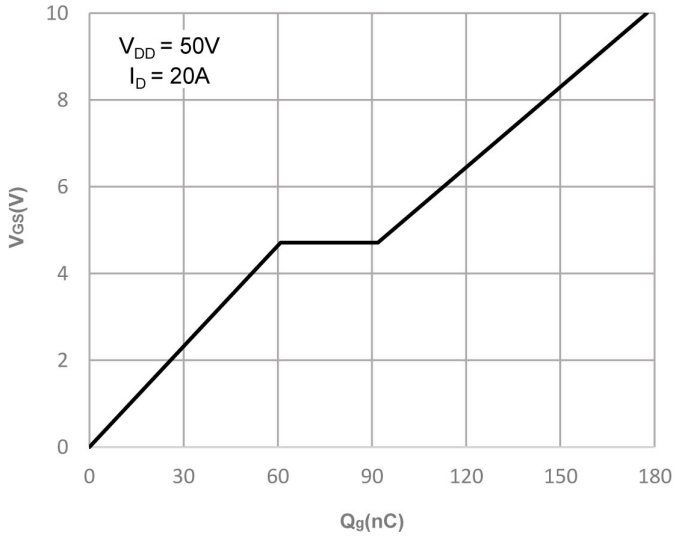
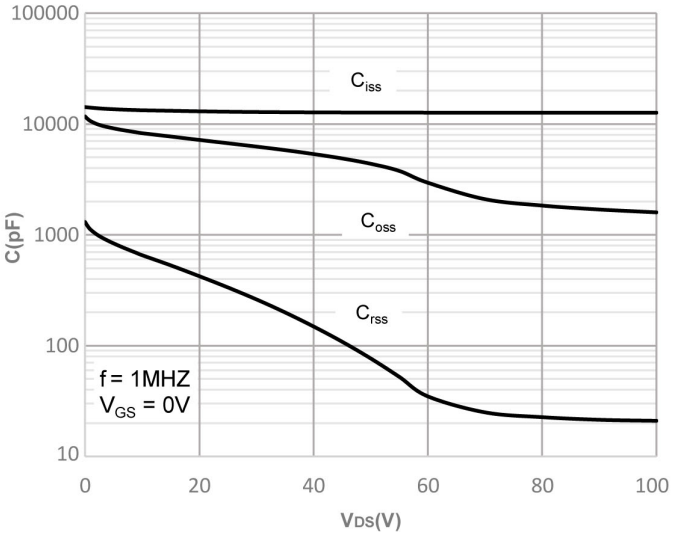


Figure 6: Capacitance Characteristics



Typical Performance Characteristics

Figure 7: Normalized Breakdown voltage vs. Junction Temperature

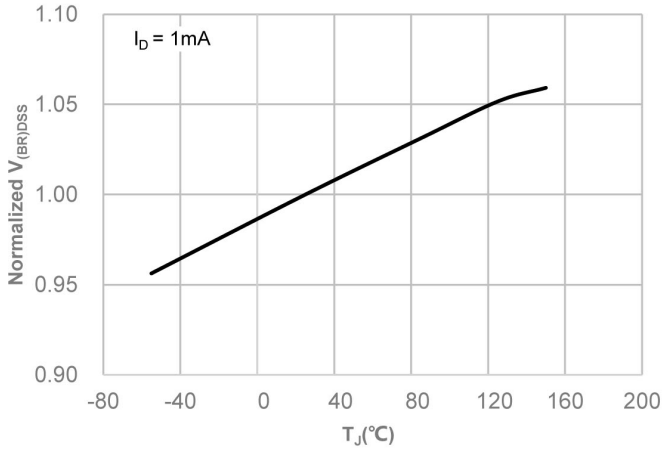


Figure 8: Normalized on Resistance vs. Junction Temperature

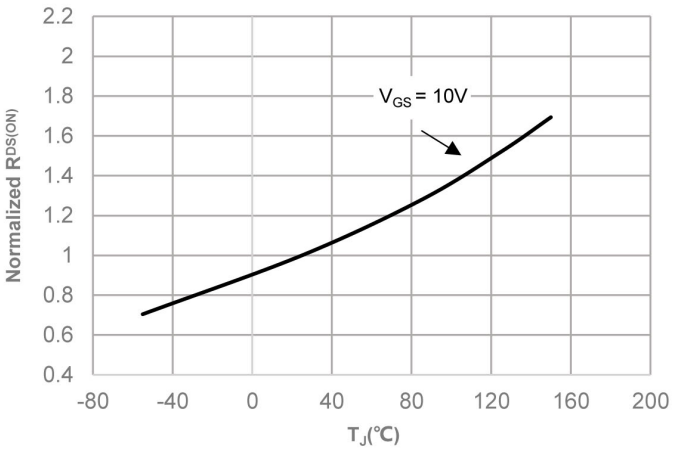


Figure 9: Normalized Threshold Voltage vs. Junction Temperature

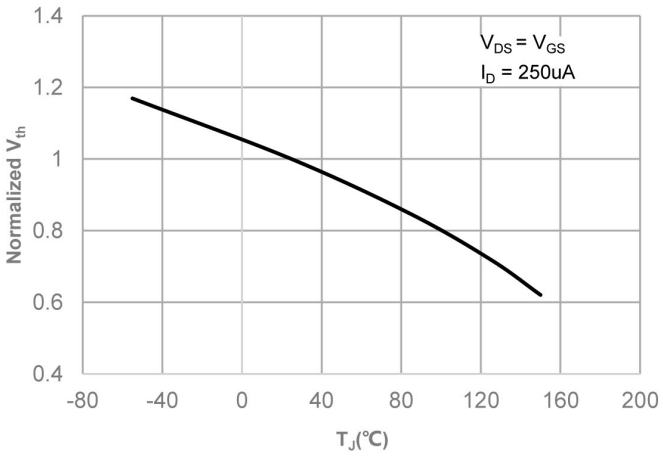


Figure 10: $R_{DS(ON)}$ vs. V_{GS}

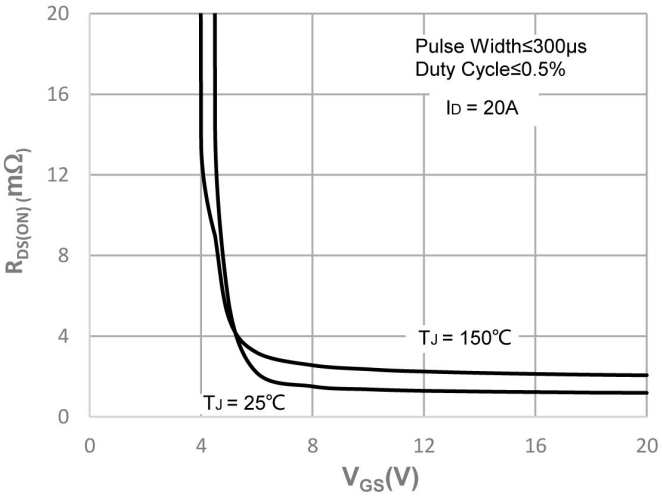


Figure 11: Power De-rating

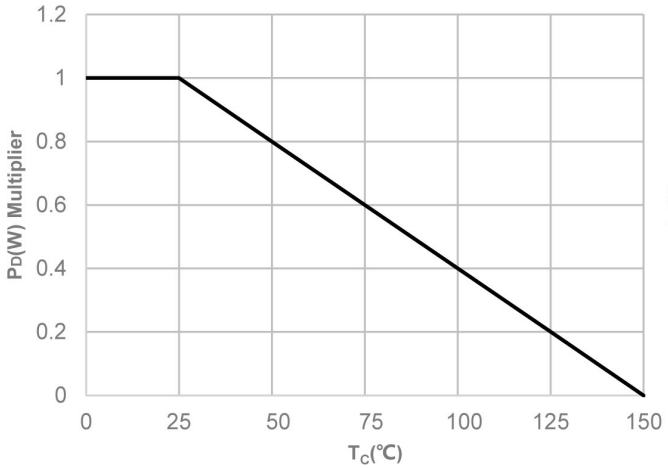
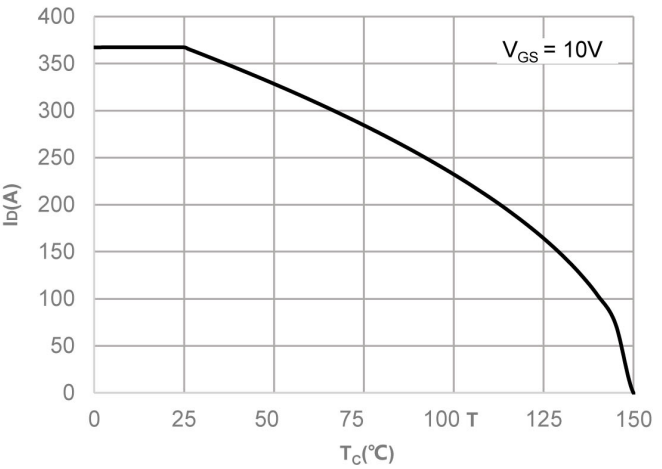


Figure 12: Current De-rating



Typical Performance Characteristics

Figure 13: Maximum Safe Operating Area

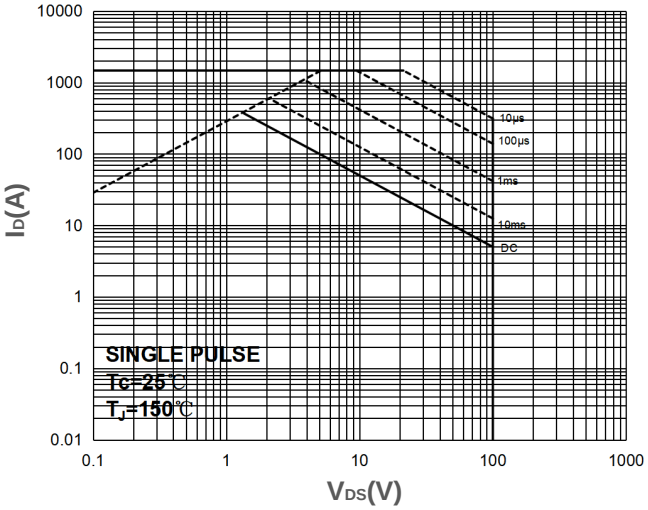
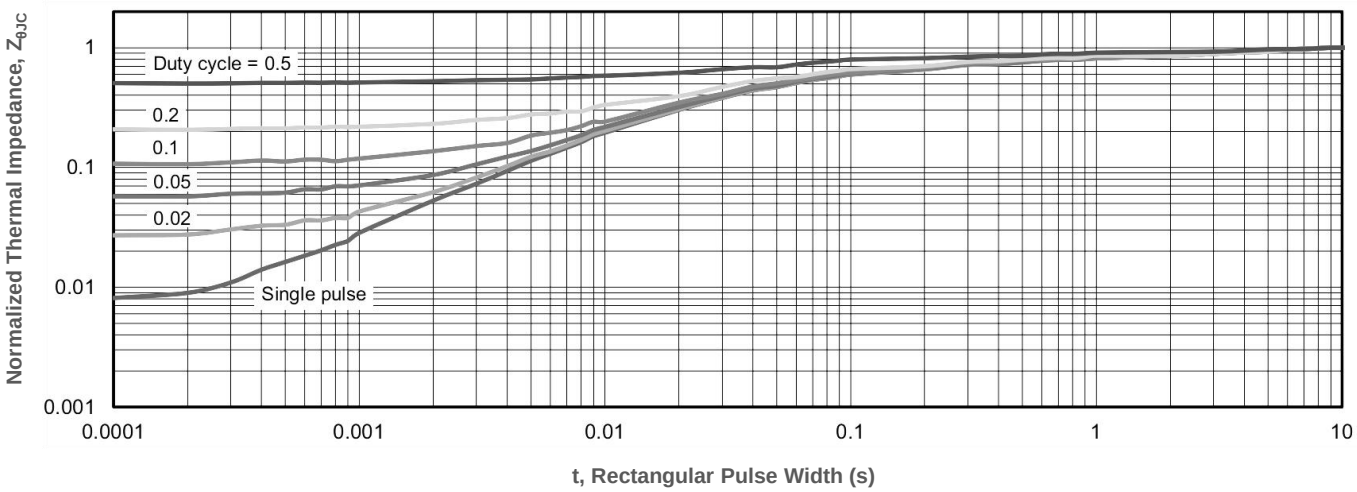


Figure 14: Normalized Maximum Transient Thermal Impedance



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