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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	I_D = -250μA, V_{GS} = 0V	-30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = -30V, V_{GS} = 0V	-	-	-1.0	μA
I_{GSS}	Gate-Body Leakage Current	V_{DS} = 0V, V_{GS} = ±20V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = -250μA	-1.2	-1.7	-2.2	V
$R_{DS(ON)}$	Static Drain-Source ON-Resistance(5)	V_{GS} = -10V, I_D = -10A	-	12	17	mΩ
		V_{GS} = -4.5V, I_D = -5A	-	16	27	mΩ
Dynamic Characteristics						
R_g	Gate Resistance	f = 1MHz	-	7	-	Ω
C_{iss}	Input Capacitance	V_{GS} = 0V, V_{DS} = -15V, f = 1MHz	1763	2468	3331	pF
C_{oss}	Output Capacitance		184	258	348	pF
C_{rss}	Reverse Transfer Capacitance		164	230	310	pF
Q_g	Total Gate Charge	V_{GS} = 0 to -10V, V_{DS} = -15V, I_D = -10A	33	46	62	nC
Q_{gs}	Gate Source Charge		-	8.2	-	nC
Q_{gd}	Gate Drain("Miller") Charge		-	8.1	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-On DelayTime	V_{GS} = -10V, V_{DD} = -30V, I_D= -9A, R_{GEN} = 3Ω	-	7	-	ns
t_r	Turn-On Rise Time		-	2	-	ns
$t_{d(off)}$	Turn-Off DelayTime		-	76	-	ns
t_f	Turn-Off Fall Time		-	33	-	ns
Body Diode Characteristics						
I_S	Maximum Continuous Body Diode Forward Current		-	-	-11	A
I_{SM}	Maximum Pulsed Body Diode Forward Current		-	-	-44	A
V_{SD}	Body Diode Forward Voltage	V_{GS} = 0V, I_S = -10A	-		-1.2	V
trr	Body Diode Reverse Recovery Time	I_F = -10A, di/dt = 100A/us	10	14	19	ns
Qrr	Body Diode Reverse Recovery Charge		-	5.3	-	nC

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
2. E_{AS} condition: Starting T_J=25C, V_{DD}=-15V, V_{GS}=-10V, R_G=25ohm, L=0.5mH, I_{AS}=-16.1A, V_{DD}=0V during time in avalanche.
3. R $_{\theta JA}$ is measured with the device mounted on a minimum recommended pad of 2oz copper FR4 PCB.
4. R $_{\theta JA}$ is measured with the device mounted on a 1inch^2 pad of 2oz copper FR4 PCB.
5. Pulse Test: Pulse Width≤633 v Gxw F f ϕn≤0.5%.

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Typical Performance Characteristics

Figure 1: Power De-rating

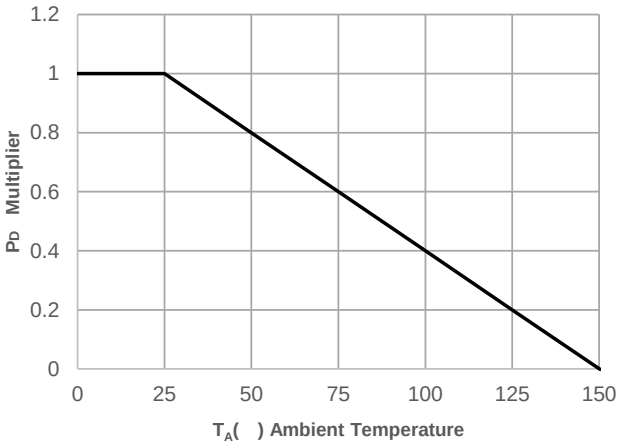
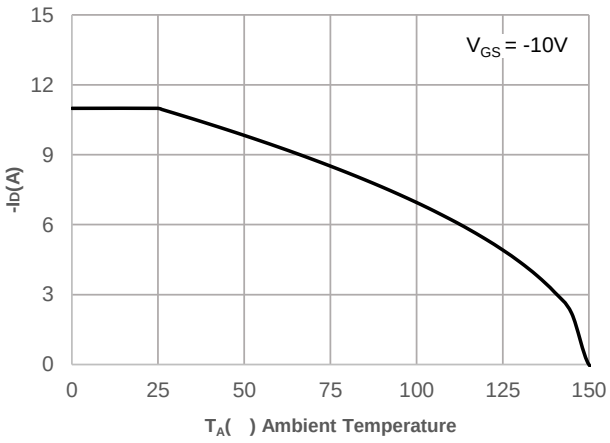
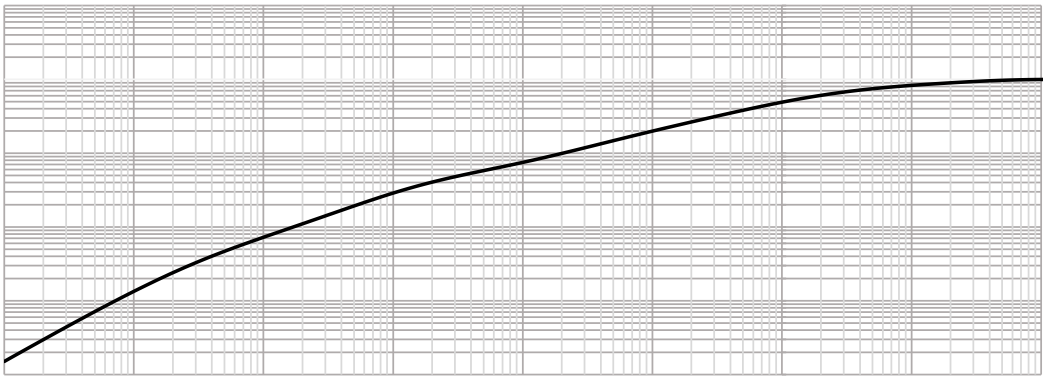


Figure 2: Current De-rating





Typical Performance Characteristics

Figure 5: Output Characteristics

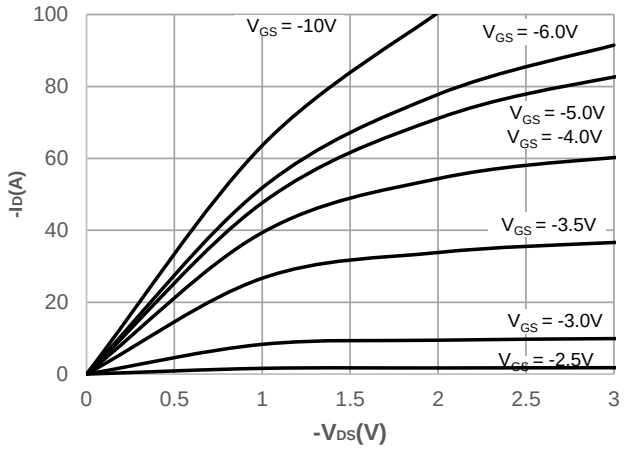


Figure 6: Typical Transfer Characteristics

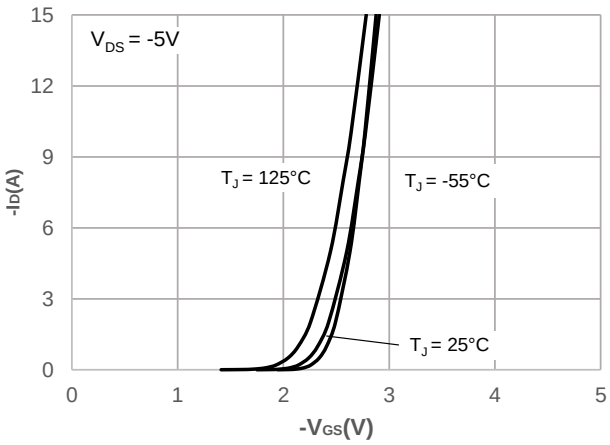


Figure 7: On-resistance vs. Drain Current

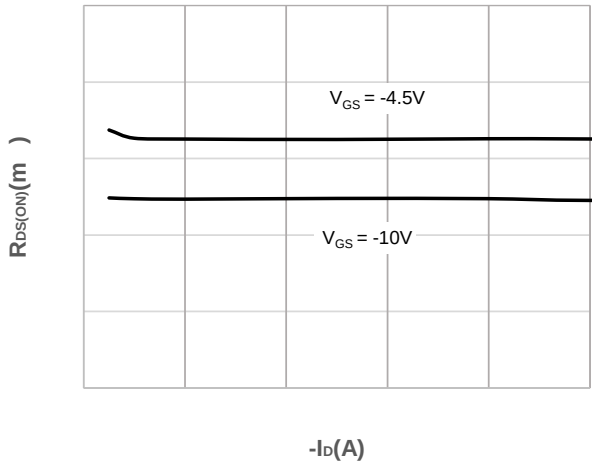


Figure 8: Body Diode Characteristics

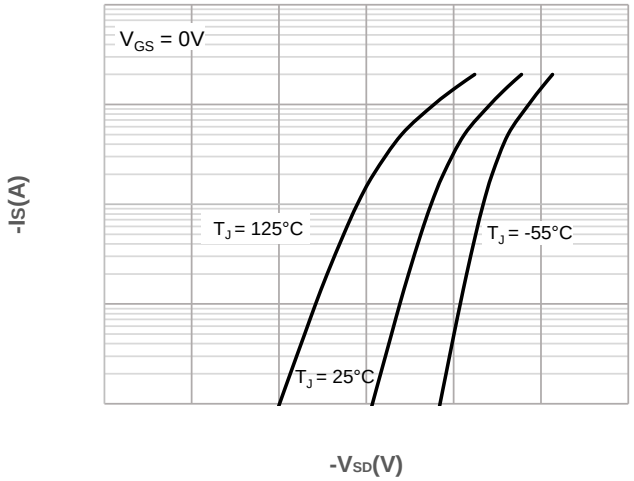


Figure 9: Gate Charge Characteristics

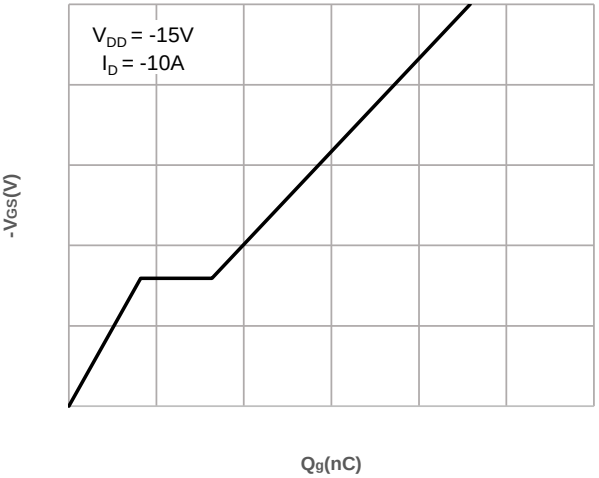
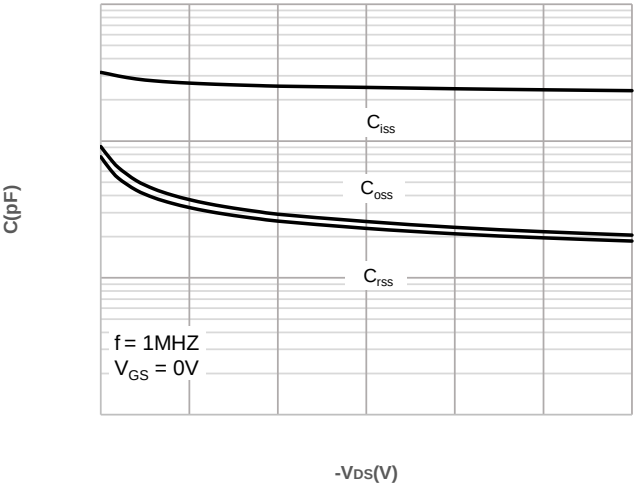


Figure 10: Capacitance Characteristics



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Typical Performance Characteristics

Figure 11: Normalized Breakdown voltage vs. Junction Temperature

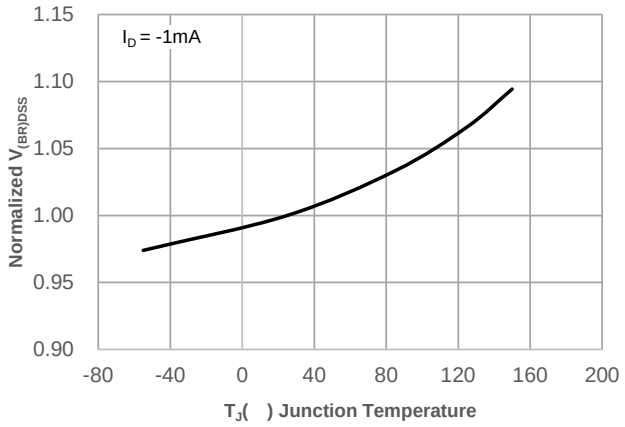


Figure 12: Normalized on Resistance vs. Junction Temperature

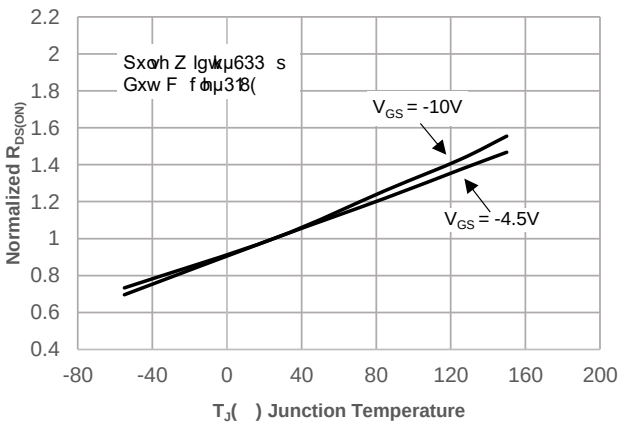


Figure 13: Normalized Threshold Voltage vs. Junction Temperature

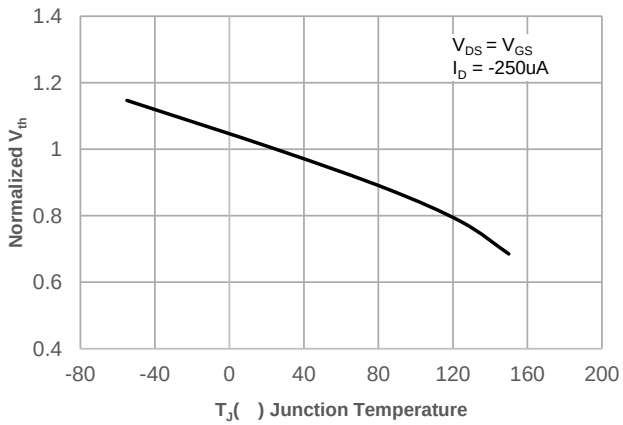


Figure 14: $R_{DS(ON)}$ vs. V_{GS}

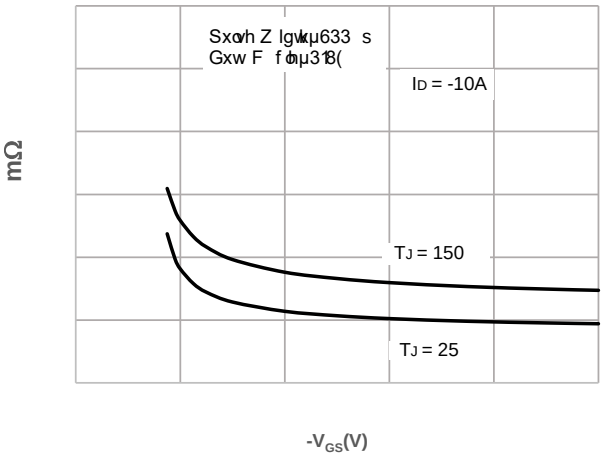
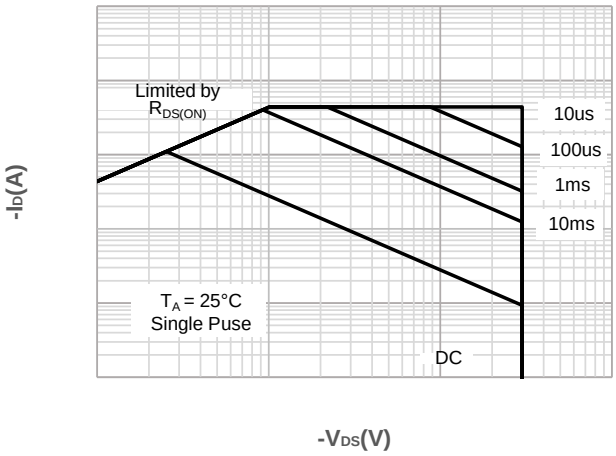


Figure 15: Maximum Safe Operating Area



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Test Circuit

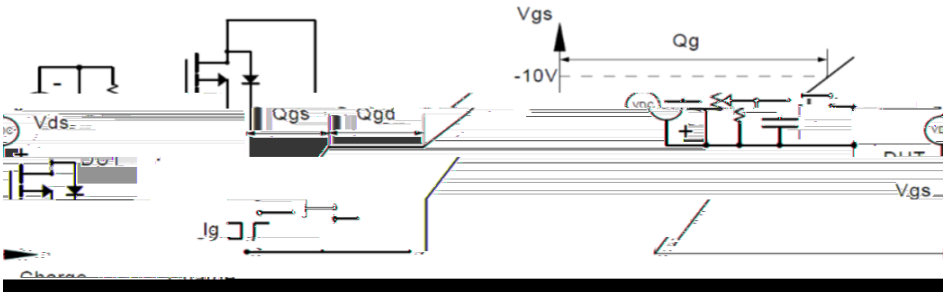

Figure 1: Gate Charge Test Circuit & Waveform

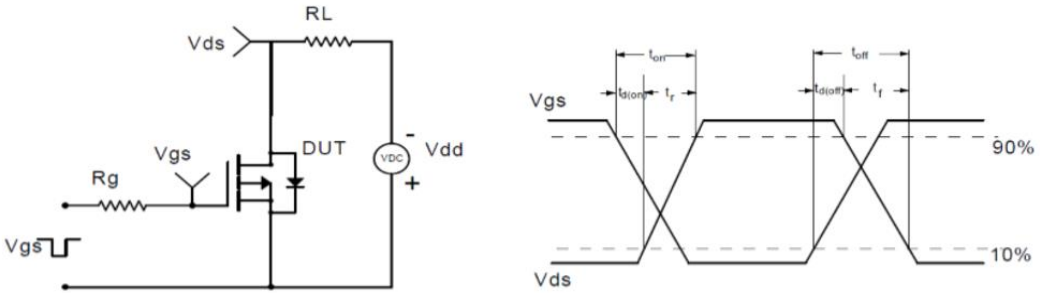

Figure 2: Resistive Switching Test Circuit & Waveform

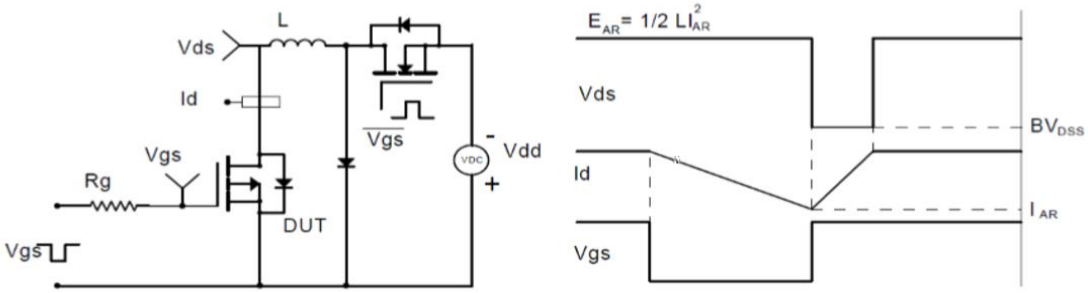

Figure 3: Unclamped Inductive Switching Test Circuit& Waveform

Figure 4: Diode Recovery Test Circuit & Waveform

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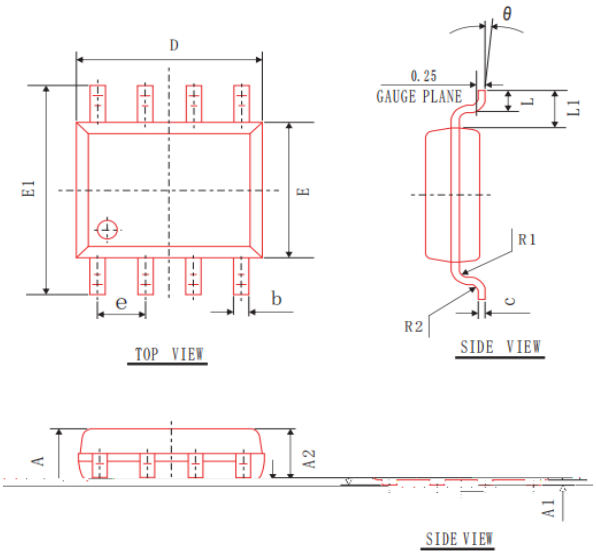
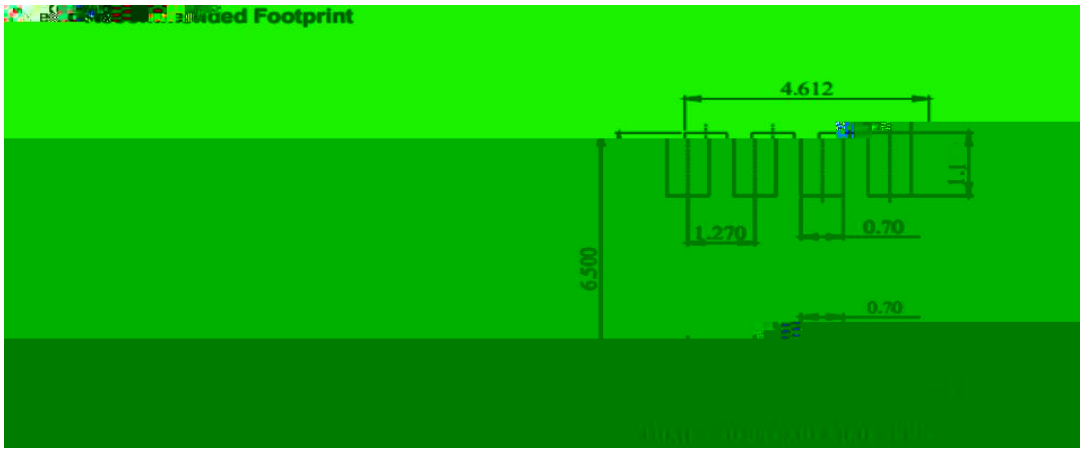
Package Mechanical Data(SOP-8L)



COMMON DIMENSIONS
(UNITS OF MEASURE=mm)

SYMBOL	MIN	NOM	MAX
A	1.40	1.60	1.80
A1	0.05	0.15	0.25
A2	1.35	1.45	1.55
b	0.30	0.40	0.50
c	0.153	0.203	0.253
D	4.80	4.90	5.00
E	3.80	3.90	4.00
E1	5.80	6.00	6.20
θ		2°	
R1		0.07 TYP	
R2		0.07 TYP	



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