	Value	Unit
	80	V
	2.9	V
	327	A
	1.3	

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	80	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 64V, V_{GS} = 0V	-	-	1.0	μ
I_{GSS}	Gate-Body Leakage Current	V_{DS} = 0V, V_{GS} = ±20V	-	-	±100	
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250μA	2.0	2.9	3.8	V
$R_{DS(ON)}$	Static Drain-Source ON-Resistance(4)	V_{GS} = 10V, I_D = 20A	-	1.3	1.7	mΩ
Dynamic Characteristics						
R_g	Gate Resistance	f = 1MHz	-	3.2	-	Ω
C_{iss}	Input Capacitance	V_{GS} = 0V, V_{DS} = 40V, f = 1MHz	-	13653	20479	pF
C_{oss}	Output Capacitance		-	4421	6632	pF
C_{rss}	Reverse Transfer Capacitance		-	110	220	pF
Q_g	Total Gate Charge	V_{GS} = 0 to 10V V_{DS} = 40V, I_D = 20A	-	200	-	nC
Q_{gs}	Gate Source Charge		-	68	-	nC
Q_{gd}	Gate Drain("Miller") Charge		-	41	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-On DelayTime	V_{GS} = 10V, V_{DD} = 40V I_D= 20A, R_{GEN} = 3Ω	-	33	-	ns
t_r	Turn-On Rise Time		-	54	-	ns
$t_{d(off)}$	Turn-Off DelayTime		-	138	-	ns
t_f	Turn-Off Fall Time		-	73	-	ns
Body Diode Characteristics						
I_S	Maximum Continuous Body Diode Forward Current		-	-	327	A
I_{SM}	Maximum Pulsed Body Diode Forward Current		-	-	1308	A
V_{SD}	Body Diode Forward Voltage	V_{GS} = 0V, I_S = 20A	-		1.2	V
trr	Body Diode Reverse Recovery Time	I_F = 20A, di/dt = 100A/us	58	115	173	ns
Qrr	Body Diode Reverse Recovery Charge		-	331	-	nC

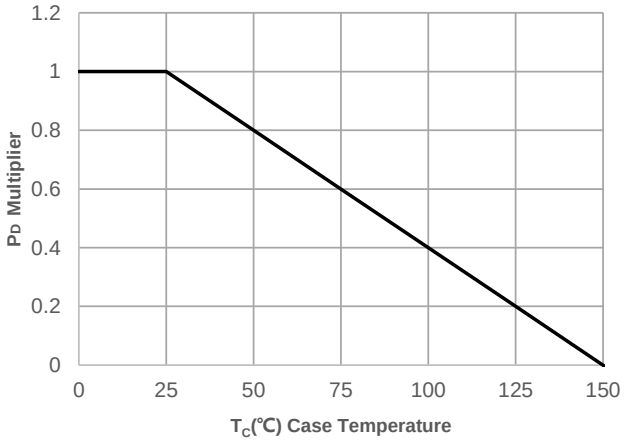
Notes: 1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.

2. E_{AS} condition: Starting T_J=25C, V_{DD}=40V, V_{GS}=10V, R_G=25ohm, L=3mH, I_{AS}=37.1A, V_{DD}=0V during time in avalanche.

3. R is measured with the device mounted on a 1inch^2 pad of 2oz copper FR4 PCB.

4. Pulse Test: Pulse Width ≤ ≤ 0.5%.

Typical Performance Characteristics



Typical Performance Characteristics

Figure 5: Output Characteristics

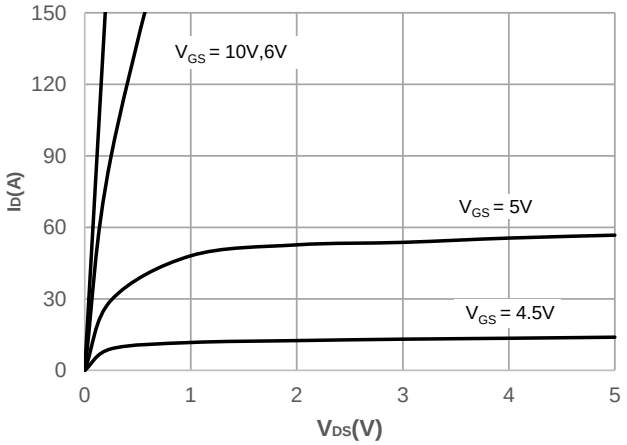


Figure 6: Typical Transfer Characteristics

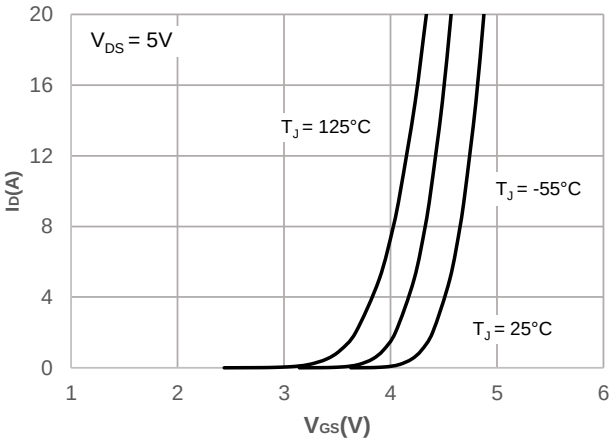


Figure 7: On-resistance vs. Drain Current

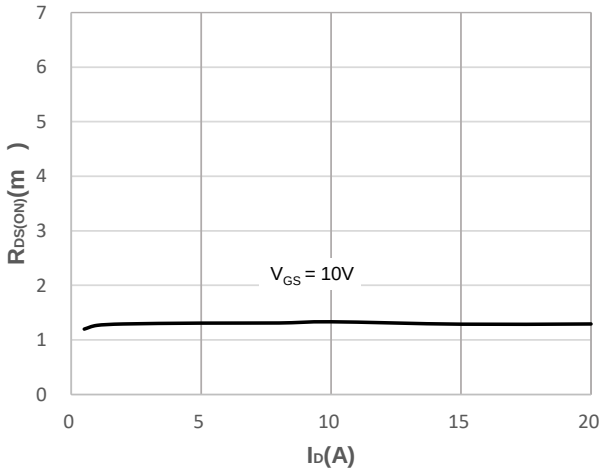
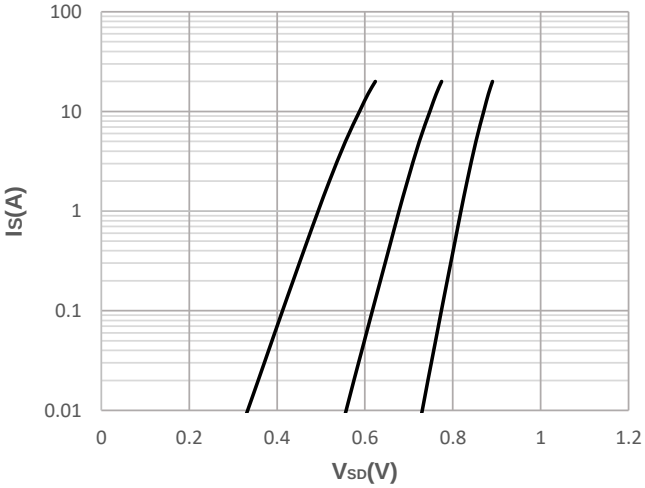


Figure 8: Body Diode Characteristics



Typical Performance Characteristics

Figure 11: Normalized Breakdown voltage vs. Junction Temperature

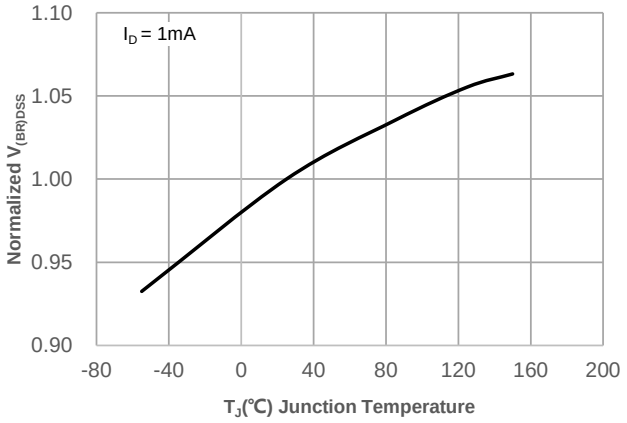


Figure 12: Normalized on Resistance vs. Junction Temperature

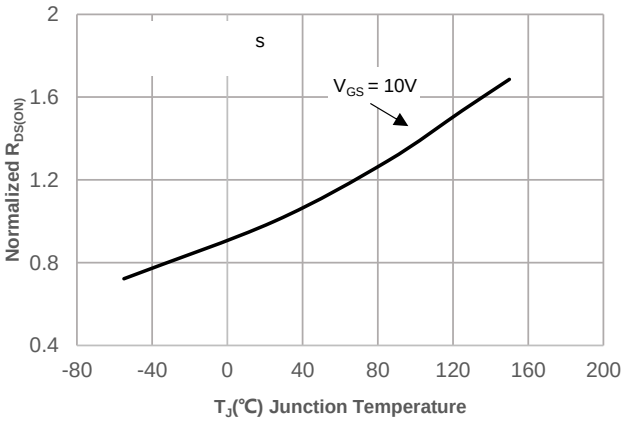


Figure 13: Normalized Threshold Voltage vs. Junction Temperature

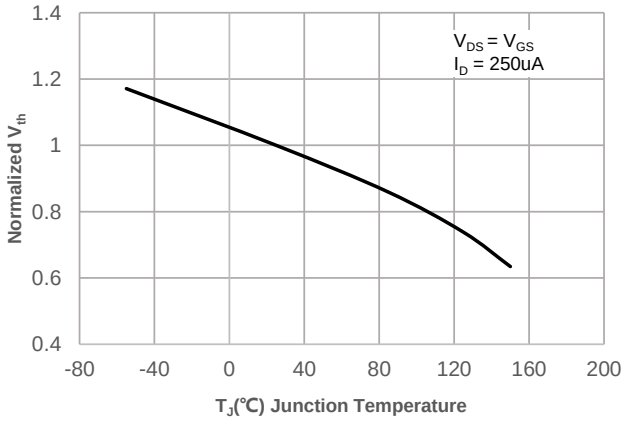


Figure 14: $R_{DS(ON)}$ vs. V_{GS}

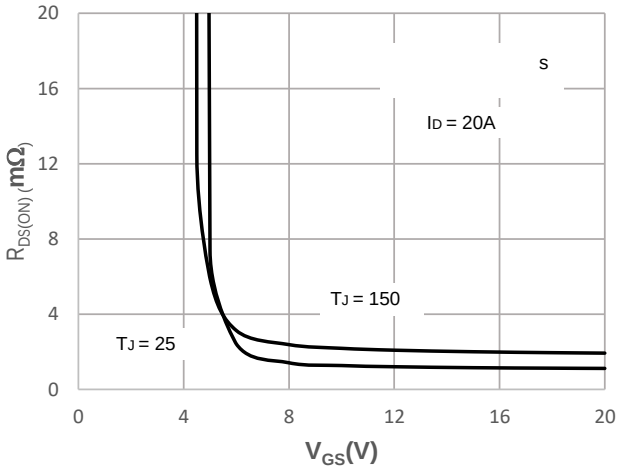
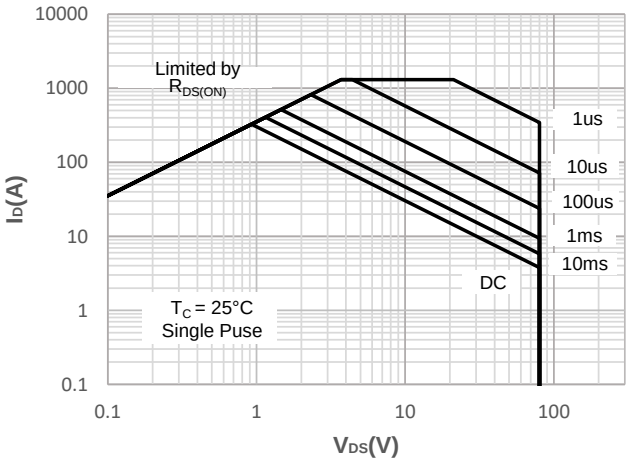


Figure 15: Maximum Safe Operating Area



Test Circuit

Figure 1: Gate Charge Test Circuit & Waveform

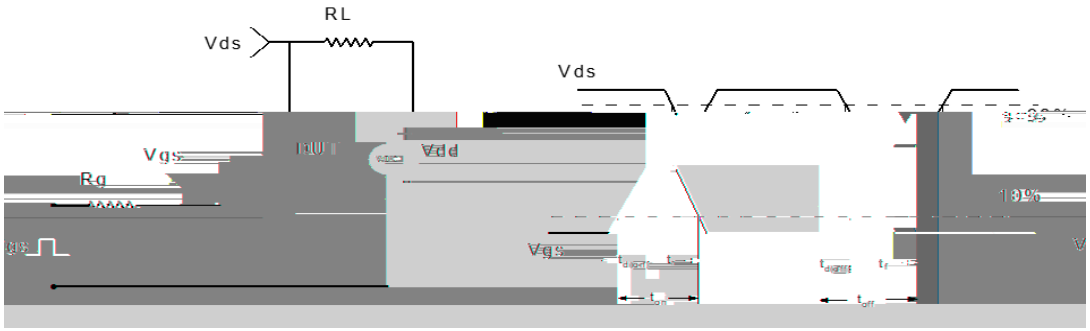


Figure 2: Resistive Switching Test Circuit & Waveform

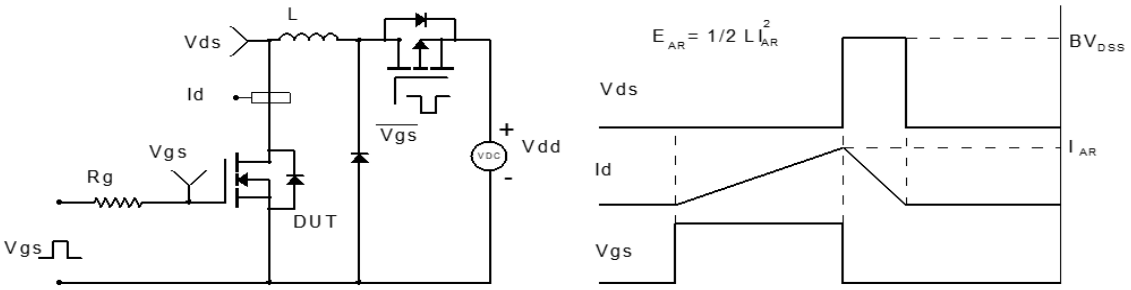


Figure 3: Unclamped Inductive Switching Test Circuit& Waveform

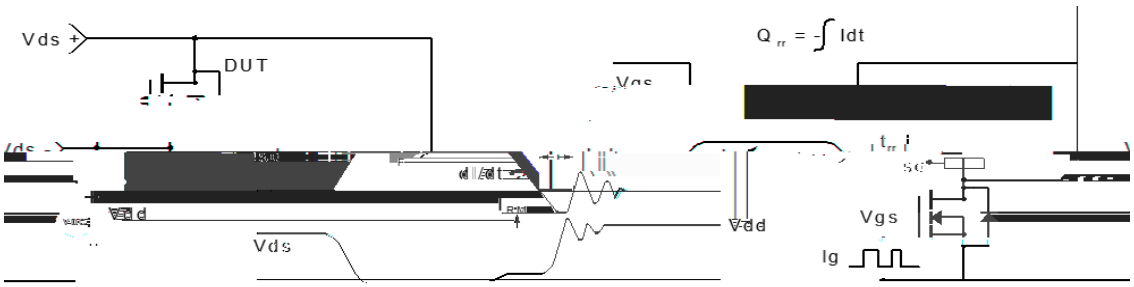
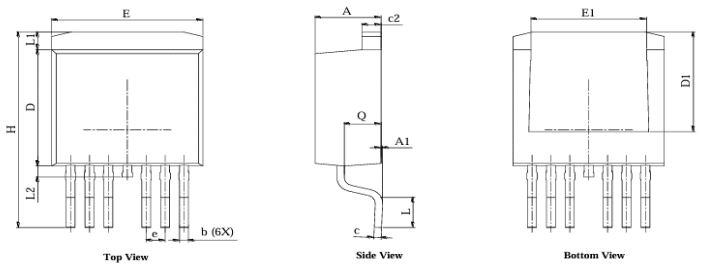


Figure 4: Diode Recovery Test Circuit & Waveform

Package Mechanical Data(TO-263-7L)

Package Outline



MILLIMETER		
	NOM.	MAX.
A	4.44	4.64
A1	0.10	0.25
b	0.60	0.70
c	0.50	0.60
D	8.42	8.92
D1	7.65 REF	
E	9.96	10.16
E1	6.86	7.86
e	1.27 BSC	
H	14.61	15.50
L	1.75	2.32
L1	1.36 REF.	
L2	1.20 REF.	
L3	0.25 BSC	
Q	2.30	2.48

DIM.	MIN.
A	4.24
A1	0.00
b	0.50
c	0.40

Recommended Soldering Footprint