



	Value	Unit
	80	V
	2.9	V
	327	A
	1.3	

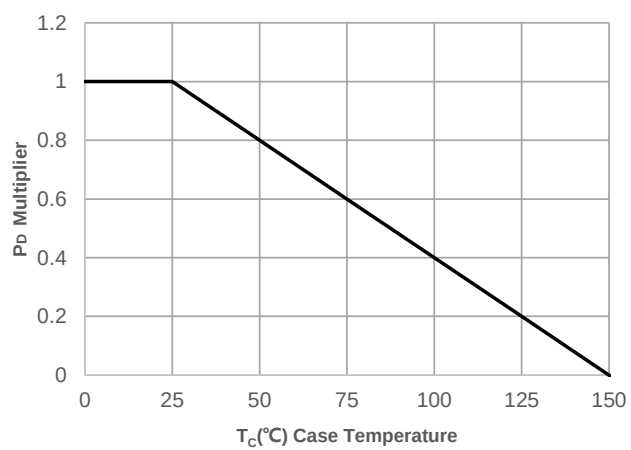


Electrical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise specified)

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 $T_J = 25^\circ\text{C}$, $V_{DD} = 40\text{V}$, $V_{GS} = 10\text{V}$, $R_G = 25\text{ohm}$, $L = 3\text{mH}$, $I_{AS} = 37.1\text{A}$, $V_{DD} = 0\text{V}$ 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 $\leq$ $\leq 0.5\%$.

Typical Performance Characteristics



Typical Performance Characteristics

Figure 5: Output Characteristics

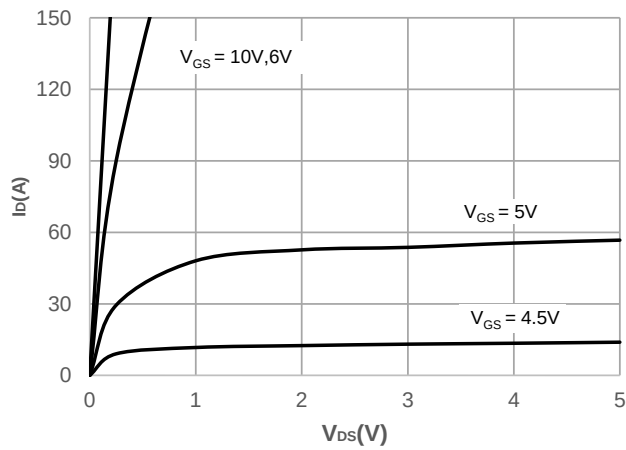


Figure 6: Typical Transfer Characteristics

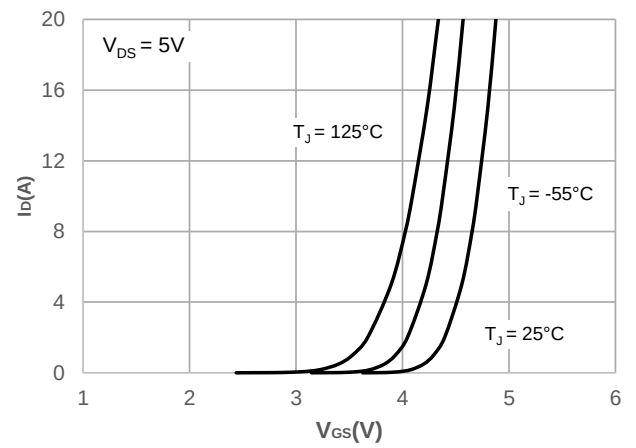


Figure 7: On-resistance vs. Drain Current

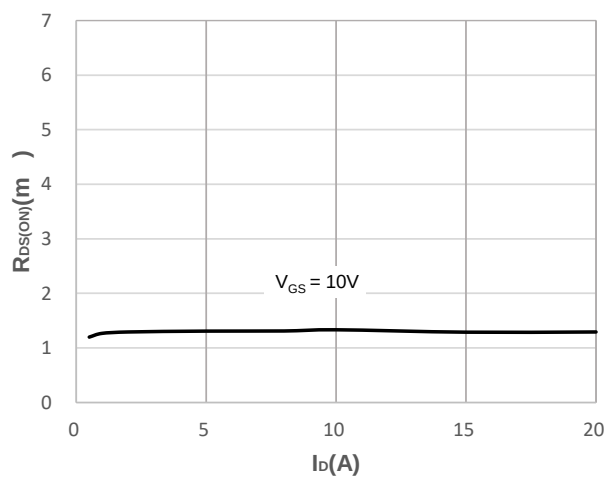
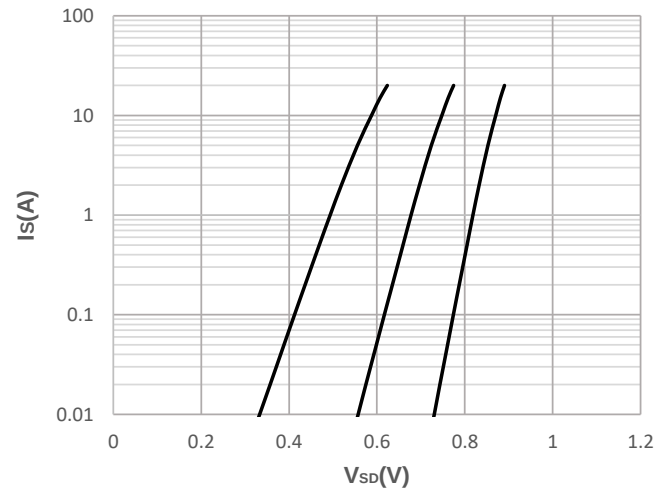


Figure 8: Body Diode Characteristics



Typical Performance Characteristics

Figure 11: Normalized Breakdown voltage vs. Junction Temperature

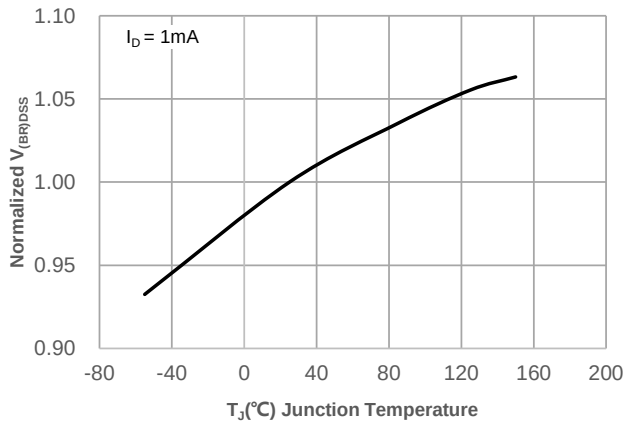


Figure 12: Normalized on Resistance vs. Junction Temperature

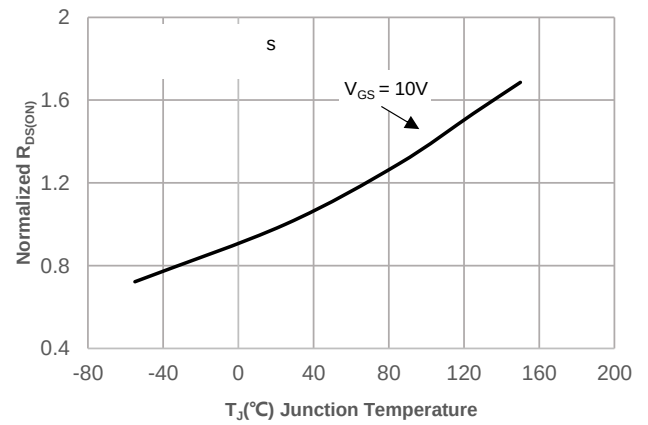


Figure 13: Normalized Threshold Voltage vs. Junction Temperature

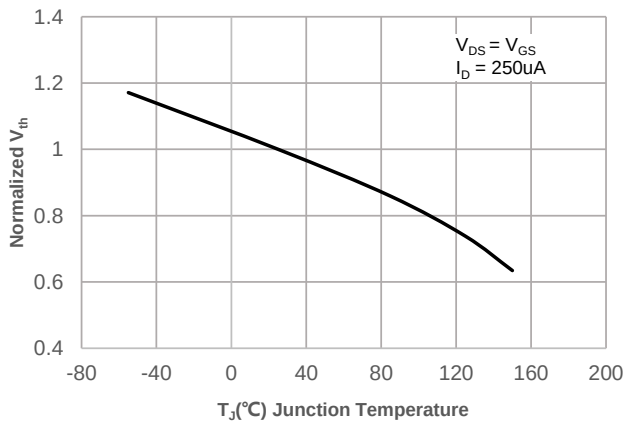


Figure 14: $R_{DS(ON)}$ vs. V_{GS}

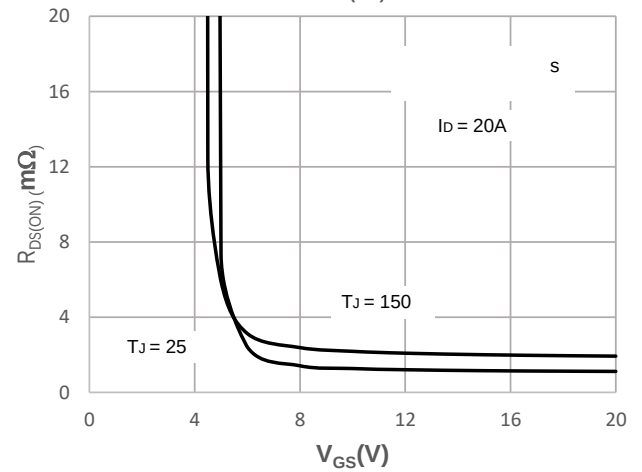
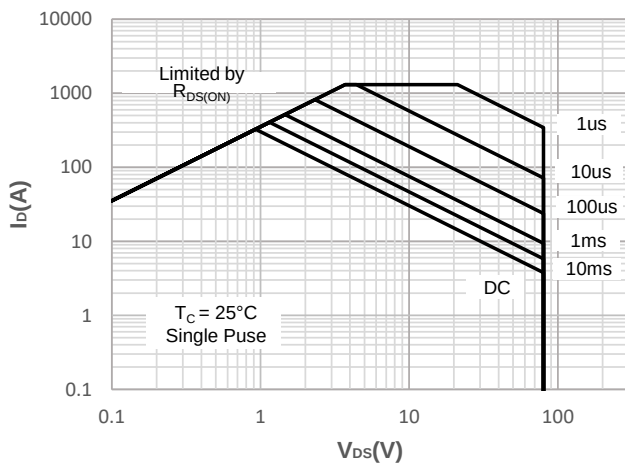


Figure 15: Maximum Safe Operating Area



Test Circuit



Figure 1: Gate Charge Test Circuit & Waveform

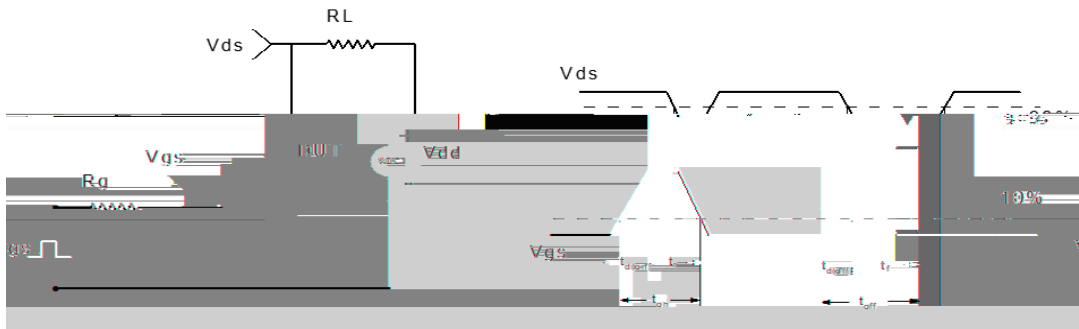


Figure 2: Resistive Switching Test Circuit & Waveform

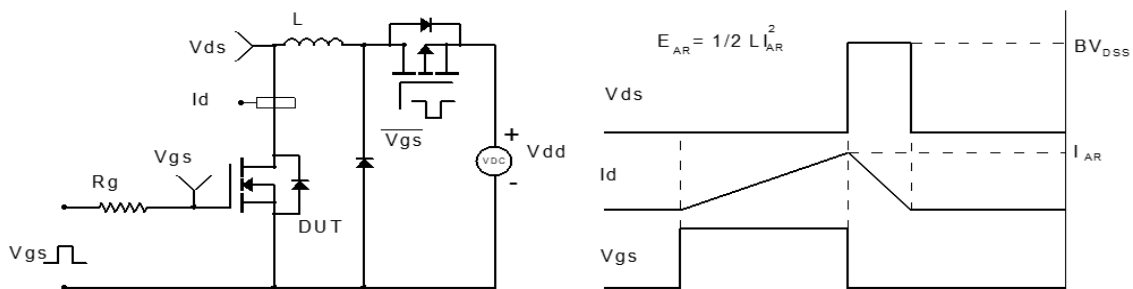


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

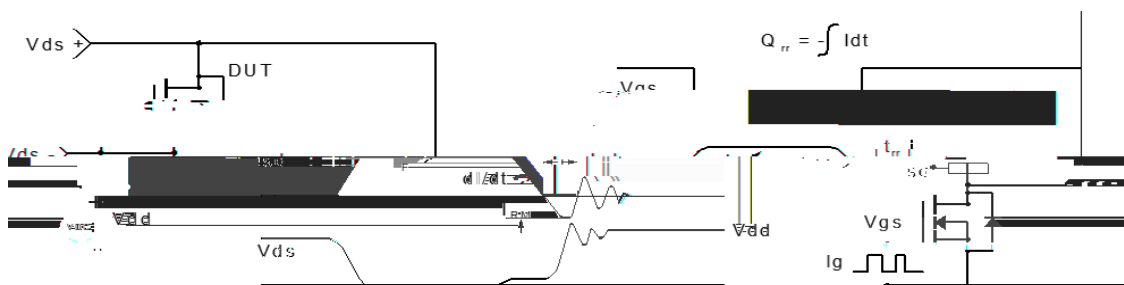
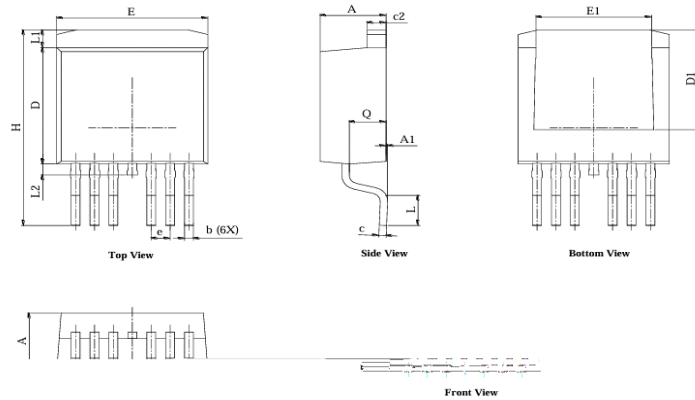


Figure 4: Diode Recovery Test Circuit & Waveform



Package Mechanical Data(TO-263-7L)

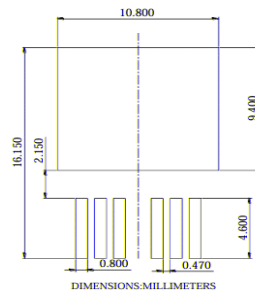
Package Outline



MILLIMETER			
NOM.	MAX.		
4.44	4.64		
0.10	0.25		
0.60	0.70		
0.50	0.60		
4.15	4.35		
8.82	8.92		
7.65	7.65 REF		
9.96	10.16		
6.80	7.80		
	1.27 BSC		
14.61	15.26		
1.78	2.52		
1.36	1.36 REF		
1.20	1.20 REF		
0.25	0.25 BSC		
2.30	2.48		
	2.70		

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

ded Soldering Footprint



Recommen

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