



	Value	Unit
	80	V
	2.9	V
	327	A
	1.3	



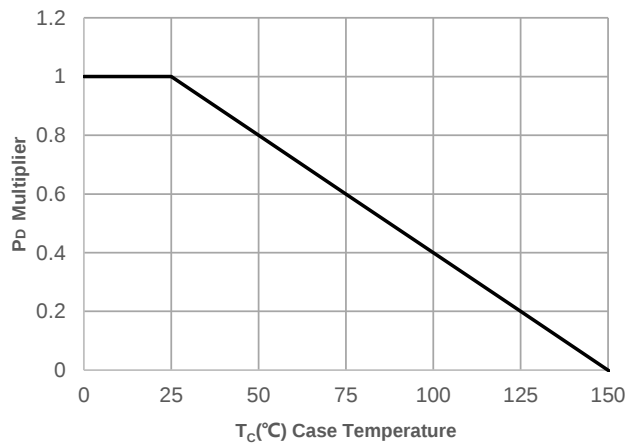
**Electrical Characteristics** ($T_J = 25^\circ\text{C}$ unless otherwise specified)

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

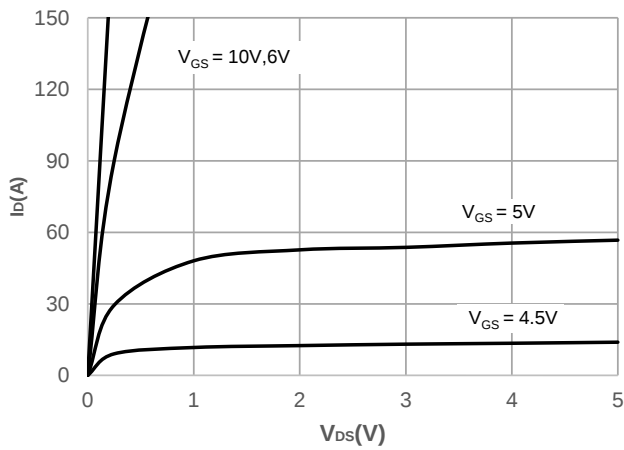


Figure 6: Typical Transfer Characteristics

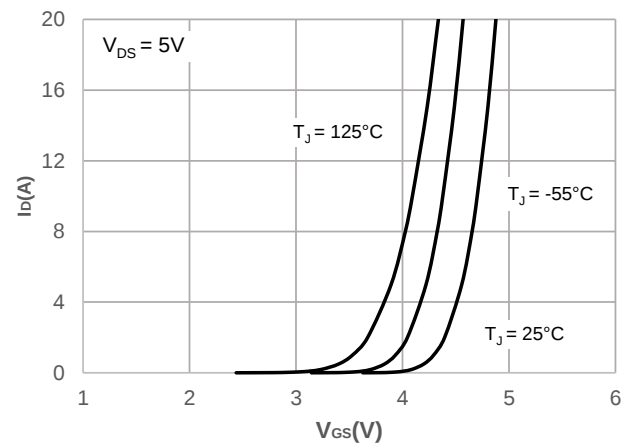


Figure 7: On-resistance vs. Drain Current

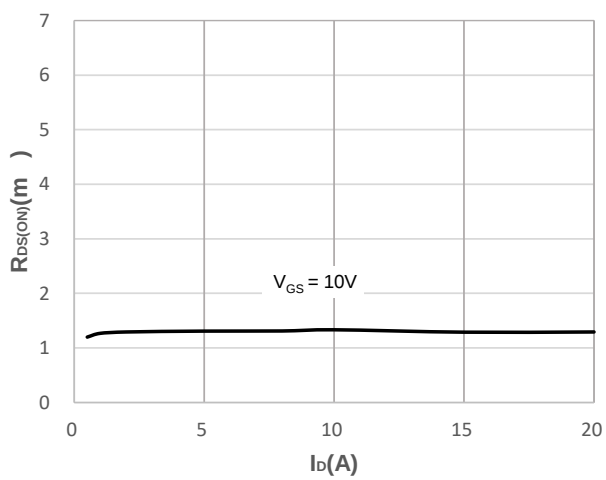
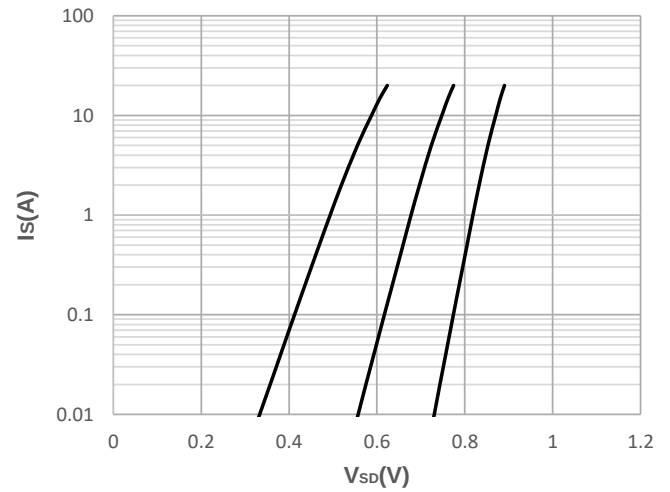


Figure 8: Body Diode Characteristics



Typical Performance Characteristics

Figure 11: Normalized Breakdown voltage vs. Junction Temperature

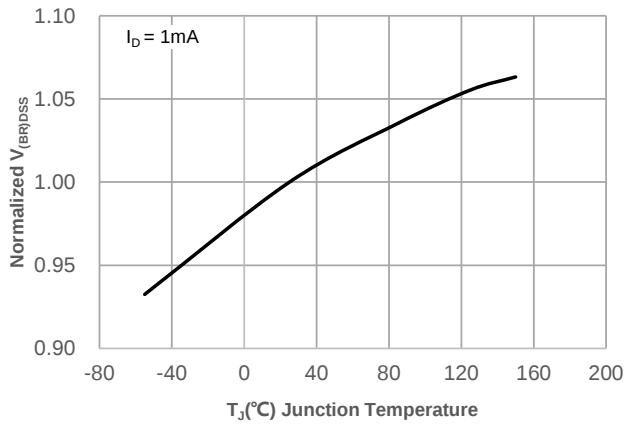


Figure 12: Normalized on Resistance vs. Junction Temperature

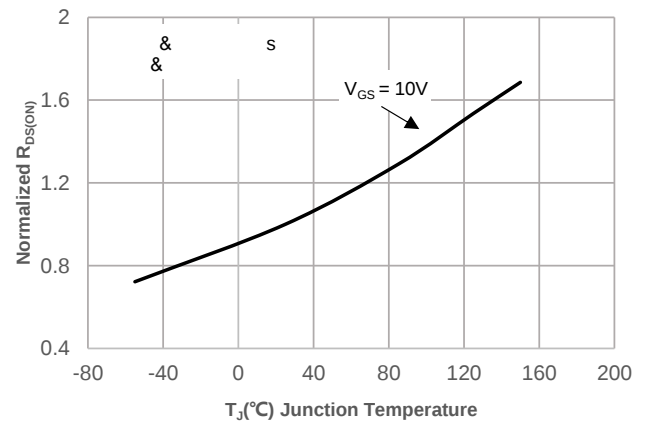


Figure 13: Normalized Threshold Voltage vs. Junction Temperature

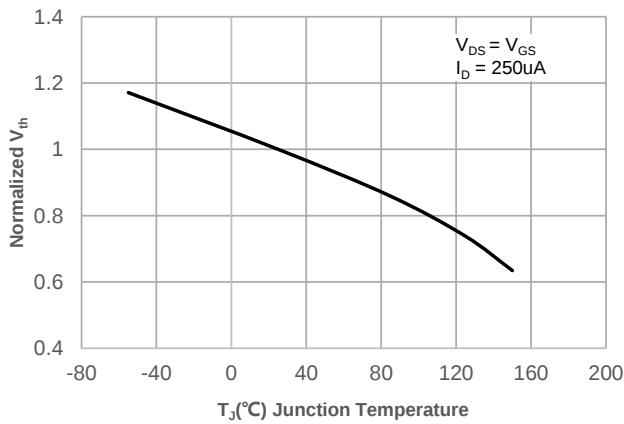


Figure 14: $R_{DS(ON)}$ vs. V_{GS}

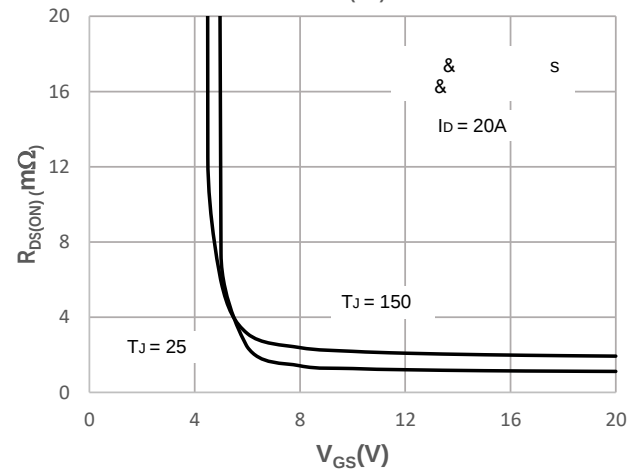
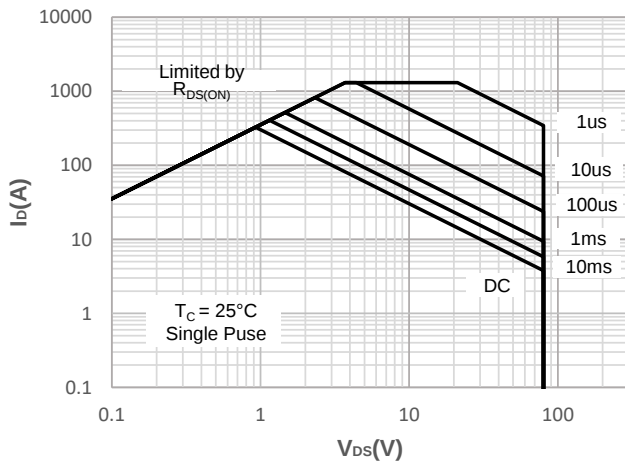


Figure 15: Maximum Safe Operating Area



Test Circuit



Figure 1: Gate Charge Test Circuit & Waveform

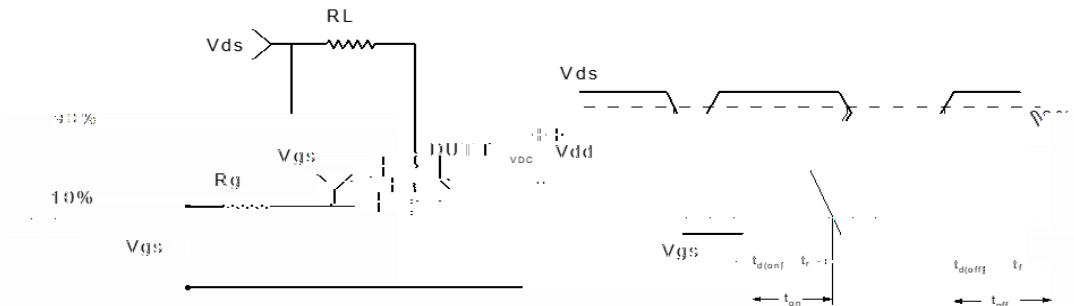


Figure 2: Resistive Switching Test Circuit & Waveform

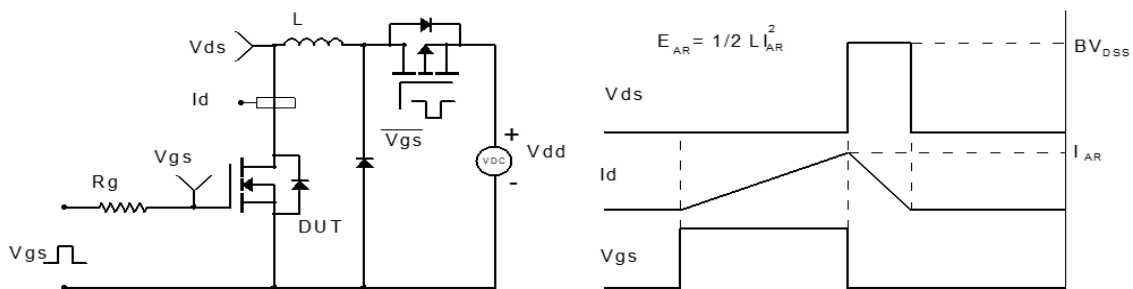


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

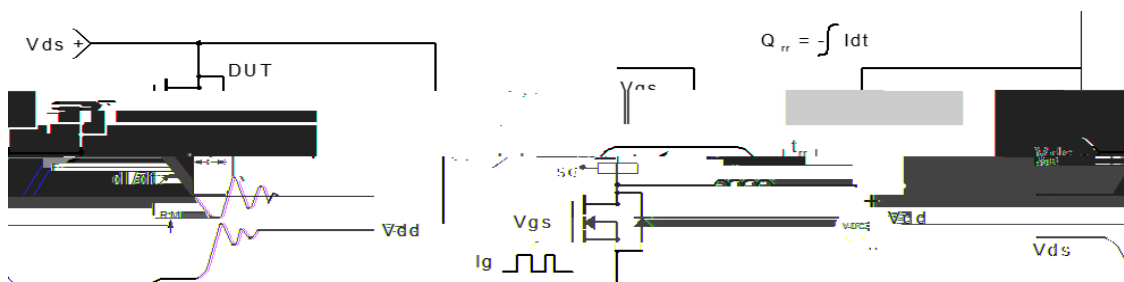
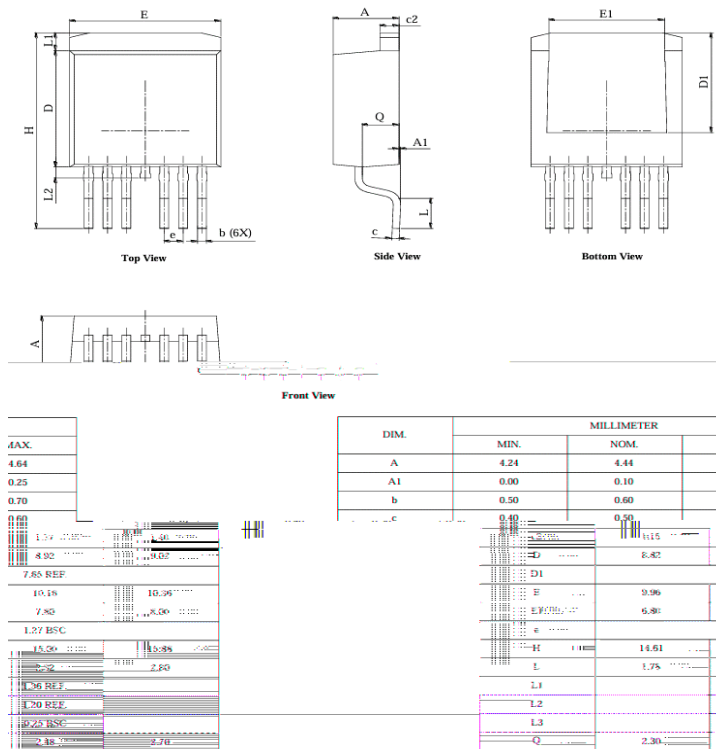


Figure 4: Diode Recovery Test Circuit & Waveform

Package Mechanical Data(TO-263-7L)

Package Outline



Recommended Soldering Footprint



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