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

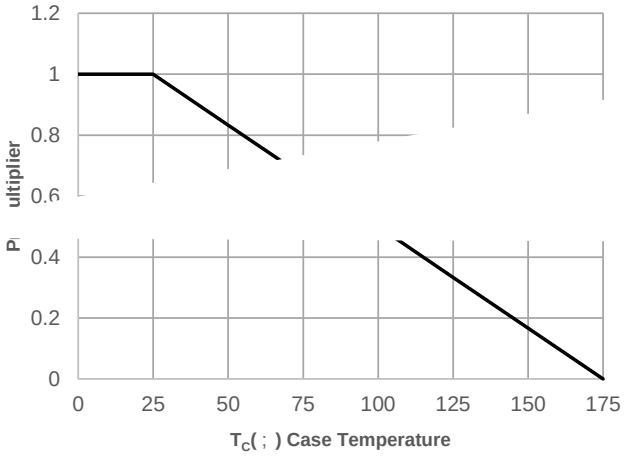
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	I_D = 250 A, V_{GS} = 0V	40	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 32V, V_{GS} = 0V	-	-	1.0	A
I_{GSS}	Gate-Body Leakage Current	V_{DS} = 0V, V_{GS} = ±20V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250 A	2.0	2.8	3.7	V
$R_{DS(ON)}$	Static Drain-Source ON-Resistance(4)	V_{GS} = 10V, I_D = 20A	-	2.8	3.7	m
Dynamic Characteristics						
R_g	Gate Resistance	f = 1MHz	-	0.7	-	
C_{iss}	Input Capacitance	V_{GS} = 0V, V_{DS} = 20V, f = 1MHz	1398	1958	2643	pF
C_{oss}	Output Capacitance		890	1246	1682	pF
C_{rss}	Reverse Transfer Capacitance		65	91	123	pF
Q_g	Total Gate Charge	V_{GS} = 0 to 10V V_{DS} = 20V, I_D = 20A	22	30	41	nC
Q_{gs}	Gate Source Charge		-	10	-	nC
Q_{gd}	Gate Drain("Miller") Charge		-	8	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-On DelayTime	V_{GS} = 10V, V_{DD} = 20V I_D= 20A, R_{GEN} = 3	-	13	-	ns
t_r	Turn-On Rise Time		-	28	-	ns
$t_{d(off)}$	Turn-Off DelayTime		-	21	-	ns
t_f	Turn-Off Fall Time		-	8	-	ns
Body Diode Characteristics						
I_S	Maximum Continuous Body Diode Forward Current		-	-	137	A
I_{SM}	Maximum Pulsed Body Diode Forward Current		-	-	550	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	27	38	52	ns
Qrr	Body Diode Reverse Recovery Charge		-	35	-	nC

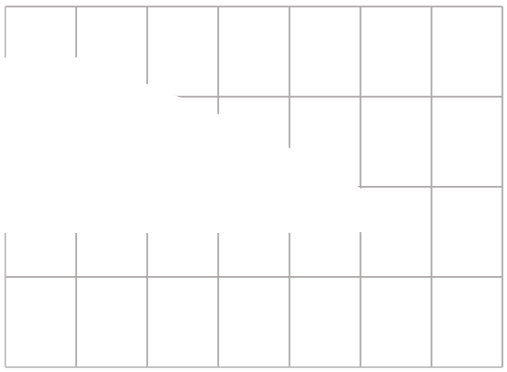
Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
2. E_{AS} condition: Starting T_J=25C, V_{DD}=20V, V_{GS}=10V, R_G=25ohm, L=3mH, I_{AS}=11.9A, V_{DD}=0V during time in avalanche.
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%.

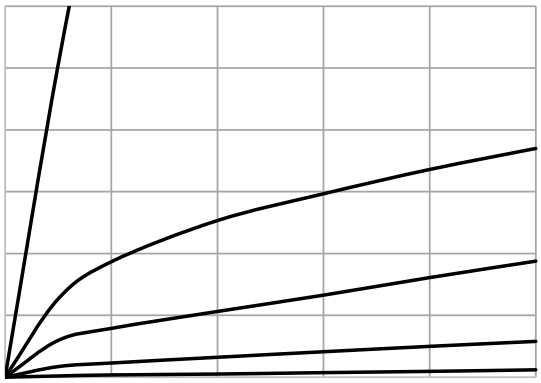
Typical Performance Characteristics

Figure 1: Power De-rating





Typical Performance Characteristics



Test Circuit

Figure 1: Gate Charge Test Circuit & Waveform

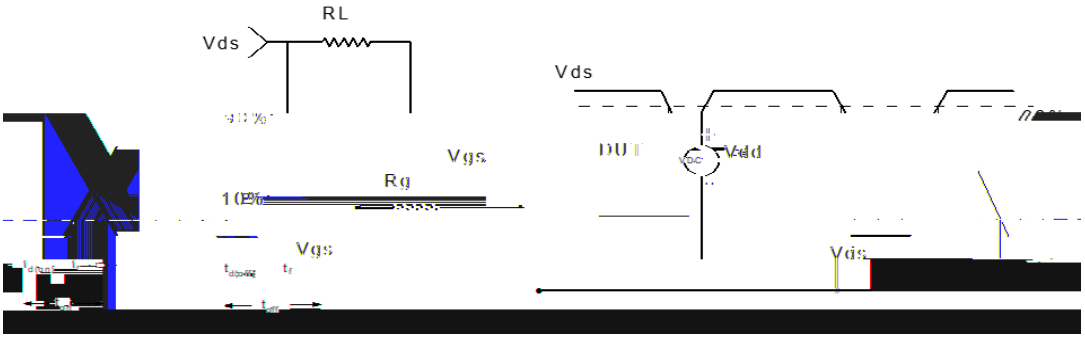


Figure 2: Resistive Switching Test Circuit & Waveform

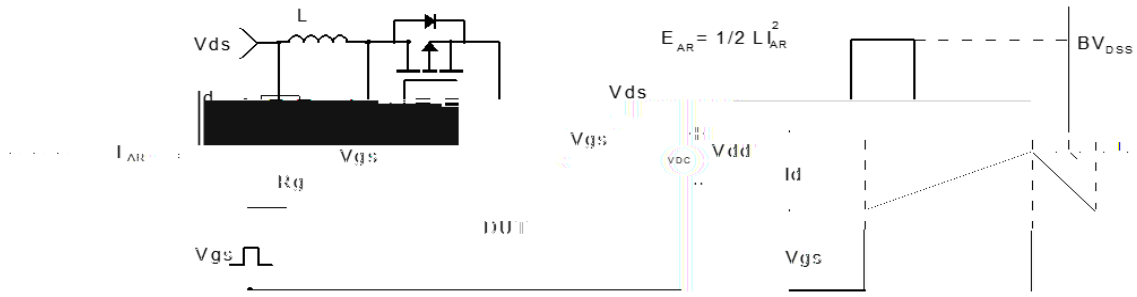


Figure 3: Unclamped Inductive Switching Test Circuit& Waveform

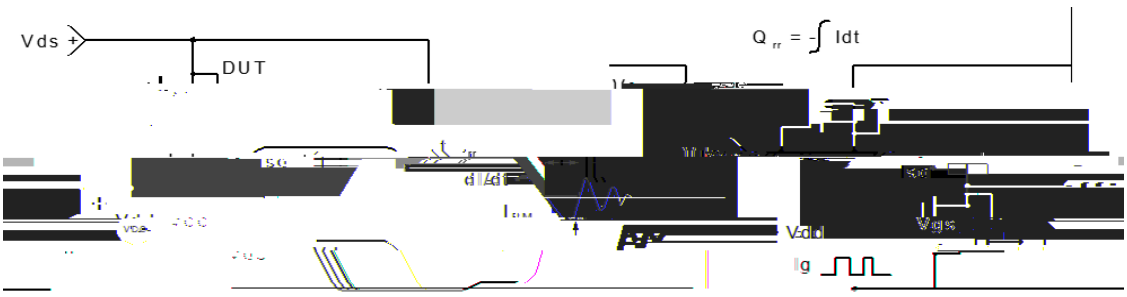
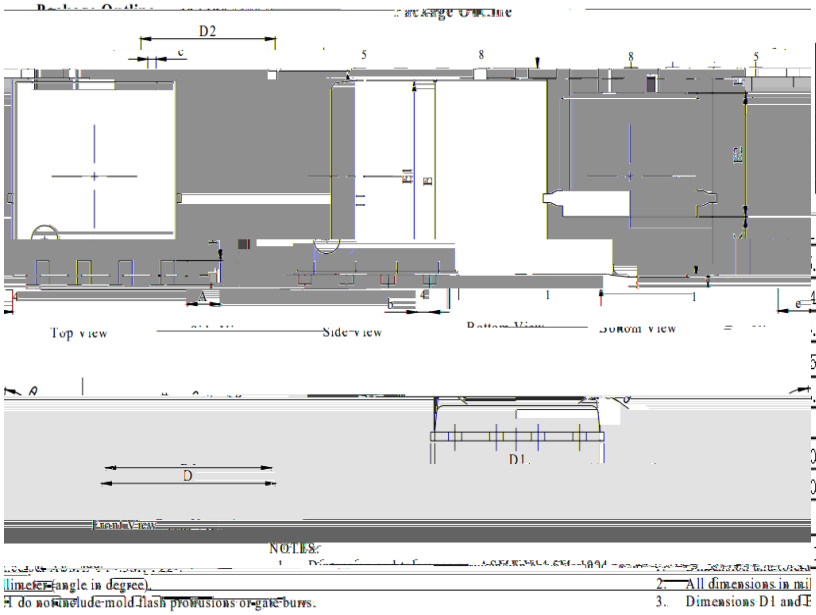


Figure 4: Diode Recovery Test Circuit & Waveform

Package Mechanical Data(PDFN5X6-8L)



DIM.	MILLIMETER		
	MIN.	NOM.	MAX.
A	0.9	1	1.15
b	0.31	0.41	0.51
D1	4.95		5.05
D2	4		4.1
E	6.05		6.15
E1	5.5		5.6
E2	3.42		3.53
e		1.27BSC	
H	0.6		0.7
L	0.5		0.7
K		1.23 REF	
θ