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	-40	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = -40V, 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	-1.0	-1.5	-2.5	V
$R_{DS(ON)}$	Static Drain-Source ON-Resistance(4)	V_{GS} = -10V, I_D = -20A	-	9.0	13.0	mΩ
		V_{GS} = -4.5V, I_D = -10A	-	10.6	19.0	mΩ
Dynamic Characteristics						
R_g	Gate Resistance	f = 1MHz	-	9.5	-	Ω
C_{iss}	Input Capacitance	V_{GS} = 0V, V_{DS} = -20V, f = 1MHz	2599	3639	4913	pF
C_{oss}	Output Capacitance		222	311	420	pF
C_{rss}	Reverse Transfer Capacitance		177	247	334	pF
Q_g	Total Gate Charge	V_{GS} = 0 to -10V, V_{DS} = -20V, I_D = -10A	49	69	93	nC
Q_{gs}	Gate Source Charge		-	10.6	-	nC
Q_{gd}	Gate Drain("Miller") Charge		-	11	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-On DelayTime	V_{GS} = -10V, V_{DD} = -20V, I_D= -10A, R_{GEN} = 2.7Ω	-	6.7	-	ns
t_r	Turn-On Rise Time		-	6.1	-	ns
$t_{d(off)}$	Turn-Off DelayTime		-	102	-	ns
t_f	Turn-Off Fall Time		-	117	-	ns
Body Diode Characteristics						
I_S	Maximum Continuous Body Diode Forward Current		-	-	-36	A
I_{SM}	Maximum Pulsed Body Diode Forward Current		-	-	-144	A
V_{SD}	Body Diode Forward Voltage	V_{GS} = 0V, I_S = -20A	-		-1.2	V
trr	Body Diode Reverse Recovery Time	I_F = -10A, di/dt = 100A/us	13	19	25	ns
Qrr	Body Diode Reverse Recovery Charge		-	11	-	nC

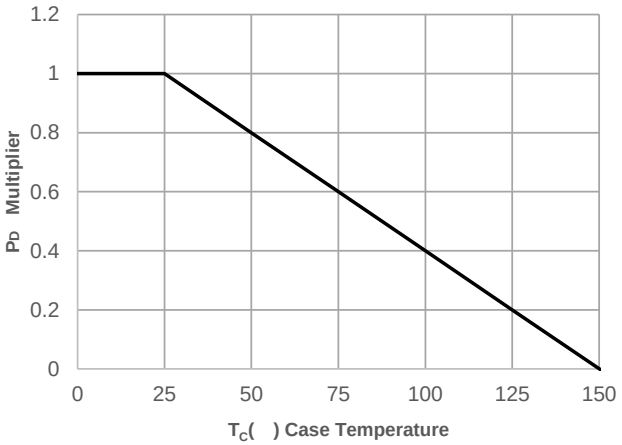
Notes:

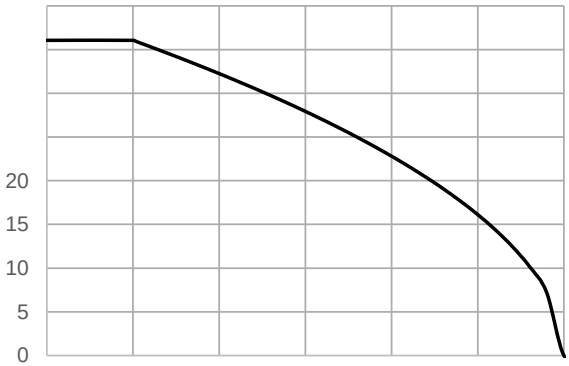
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
2. E_{AS} condition: Starting T_J=25C, V_{DD}=-20V, V_{GS}=-10V, R_G=25ohm, L=0.5mH, I_{AS}=-21A, V_{DD}=0V during time in avalanche.
3. R is measured with the device mounted on a 1inch^2 pad of 2oz copper FR4 PCB.
4. Pulse Test: Pulse Width 0.5%.

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Typical Performance Characteristics

Figure 1: Power De-rating





Typical Performance Characteristics

Figure 11: Normalized Breakdown voltage vs. Junction Temperature

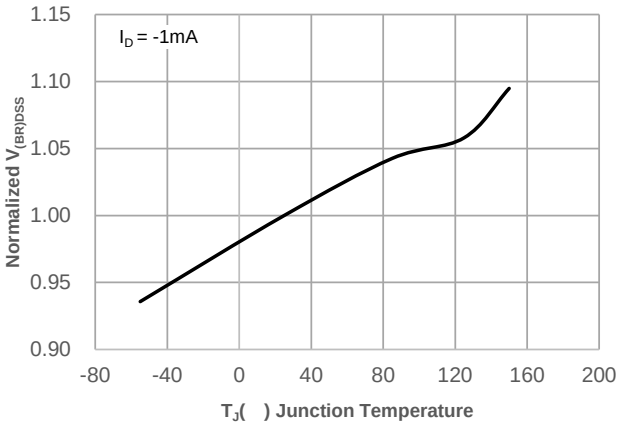
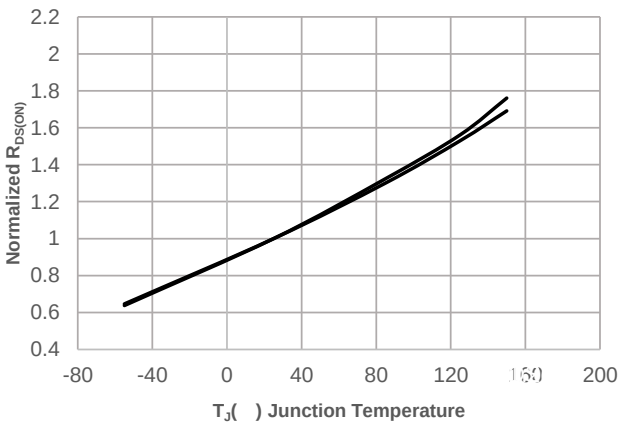


Figure 12: Normalized on Resistance vs.



Test Circuit



Figure 1: Gate Charge Test Circuit & Waveform

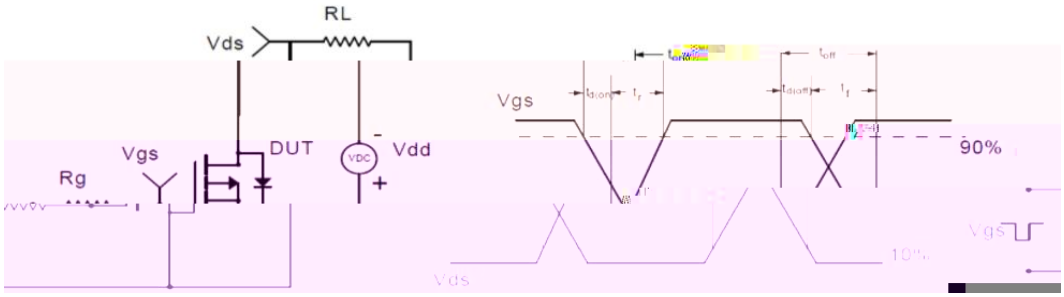


Figure 2: Resistive Switching Test Circuit & Waveform

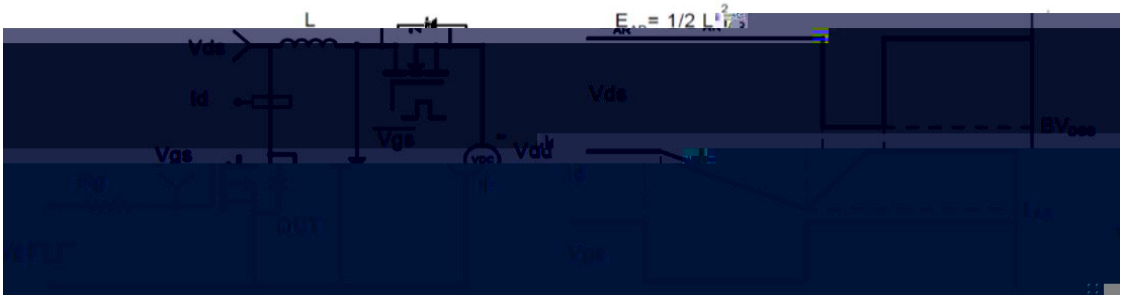


Figure 3: Unclamped Inductive Switching Test Circuit& Waveform

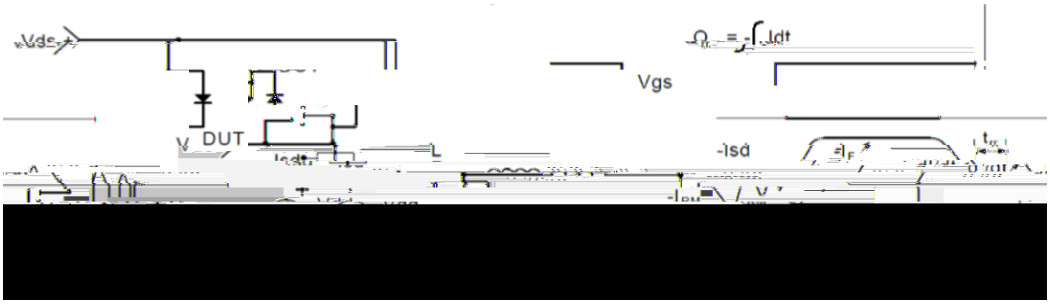
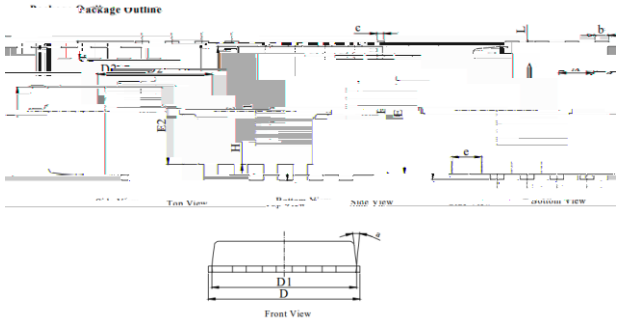


Figure 4: Diode Recovery Test Circuit & Waveform

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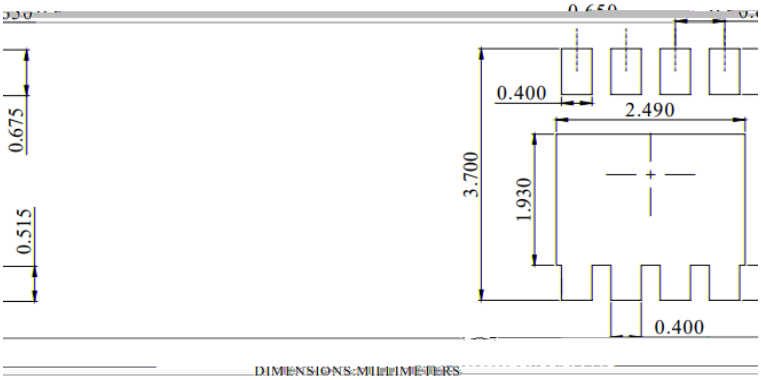
Package Mechanical Data(PDFN3X3-8L)



NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M,1994.
2. ALL DIMNESIONS IN MILLIMETER (ANNGLE IN DEGREE).

DIM.	MILLIMETER MIN.	NOM.	MAX.
A	0.70	0.75	0.80
b	0.25	0.30	0.35
c	0.10	0.20	0.25
D	3.00	3.30	3.40
D1	2.90	3.00	3.10
D2	2.39	2.49	2.59
E	3.00	3.30	3.40
E1	2.95	3.00	3.05
k	1.70	1.80	1.90
e	0.65 BSC		
H	0.30	0.40	0.50
L	0.25	0.40	0.50
a	---	---	15°

Recommended Soldering Footprint



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