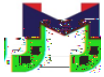


Value	Unit
650	V
3.3	V
19	A
159	mΩ

Marking	MSL	Form	Reel(pcs)	Per Carton (pcs)
H65R190PF	1	Tape&Reel	3000	30000

Symbol			Unit
V_{DS}			V
V_{GS}			V
I_D	Continuous Drain Current	$T_C = 25^\circ\text{C}$ $T_C = 100^\circ\text{C}$	
I_{DM}			A
E_{AS}			mJ
P_D	Power Dissipation	$T_C = 25^\circ\text{C}$ $T_C = 100^\circ\text{C}$	
T_J, T_{STG}			$^\circ\text{C}$

Symbol	Unit
R	$^\circ\text{C}/\text{W}$
R	



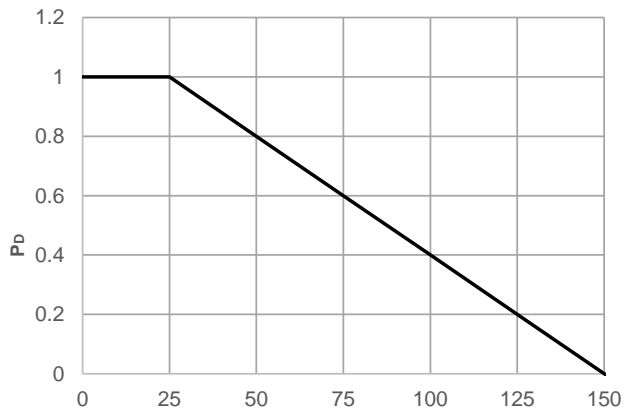
Electrical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$I_D = 250\mu\text{A}, V_{GS} = 0\text{V}$	650	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 650\text{V}, V_{GS} = 0\text{V}$	-	-	10.0	μA
I_{GSS}	Gate-Body Leakage Current	$V_{DS} = 0\text{V}, V_{GS} = \pm 30\text{V}$	-	-	± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	2.3	3.3	4.3	V
$R_{DS(ON)}$	Static Drain-Source ON-Resistance ⁽⁴⁾	$V_{GS} = 10\text{V}, I_D = 10\text{A}$	-	159	190	m Ω
Dynamic Characteristics						
R_g	Gate Resistance	$f = 1\text{MHz}$	-	4.9	-	Ω
C_{iss}	Input Capacitance	$V_{GS} = 0\text{V}, V_{DS} = 325\text{V}, f = 1\text{MHz}$	1084	1517	2049	pF
C_{oss}	Output Capacitance		28	39	52	pF
C_{rss}	Reverse Transfer Capacitance		-	5.9	-	pF
Q_g	Total Gate Charge	$V_{GS} = 0 \text{ to } 10\text{V}$ $V_{DS} = 325\text{V}, I_D = 10\text{A}$	23	32	43	nC
Q_{gs}	Gate Source Charge		-	10	-	nC
Q_{gd}	Gate Drain ("Miller") Charge		-	11	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	$V_{GS} = 10\text{V}, V_{DD} = 310\text{V}$ $I_D = 10\text{A}, R_{GEN} = 24\Omega$	-	36	-	ns
t_r	Turn-On Rise Time		-	38	-	ns
$t_{d(off)}$	Turn-Off Delay Time		-	100	-	ns
t_f	Turn-Off Fall Time		-	30	-	ns
Body Diode Characteristics						
I_S	Maximum Continuous Body Diode Forward Current		-	-	19	A
I_{SM}	Maximum Pulsed Body Diode Forward Current		-	-	76	A
V_{SD}	Body Diode Forward Voltage	$V_{GS} = 0\text{V}, I_S = 10\text{A}$	-	-	1.2	V
t_{rr}	Body Diode Reverse Recovery Time	$I_F = 10\text{A}, di/dt = 100\text{A}/\mu\text{s}$	94	131	177	ns
Q_{rr}	Body Diode Reverse Recovery Charge		-	851	-	nC

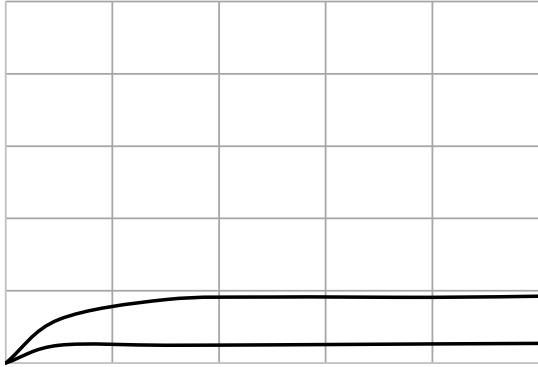
- Notes:
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
 2. E_{AS} condition: Starting $T_J = 25^\circ\text{C}$, $V_{DD} = 50\text{V}$, $V_{GS} = 10\text{V}$, $R_G = 25\text{ohm}$, $L = 10\text{mH}$, $I_{AS} = 3.6\text{A}$, $V_{DD} = 0\text{V}$ during time in avalanche.
 3. $R_{DS(ON)}$ is measured with the device mounted on a 1inch² pad of 2oz copper FR4 PCB.
 4. Pulse Test: Pulse Width 0.5%.

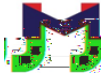


Typical Performance Characteristics



Typical Performance Characteristics





Typical Performance Characteristics

Figure 11: Normalized Breakdown voltage vs. Junction Temperature

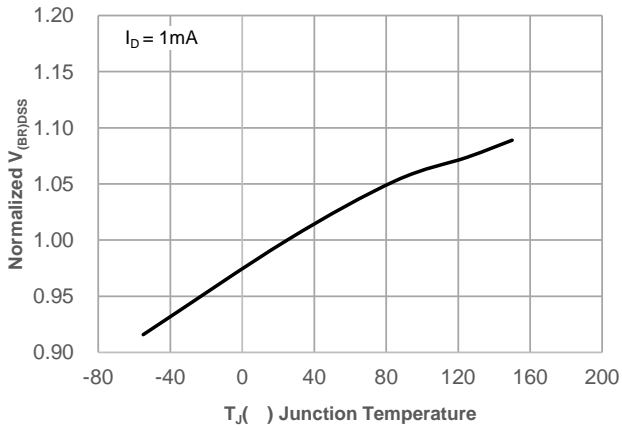


Figure 12: Normalized on Resistance vs. Junction Temperature

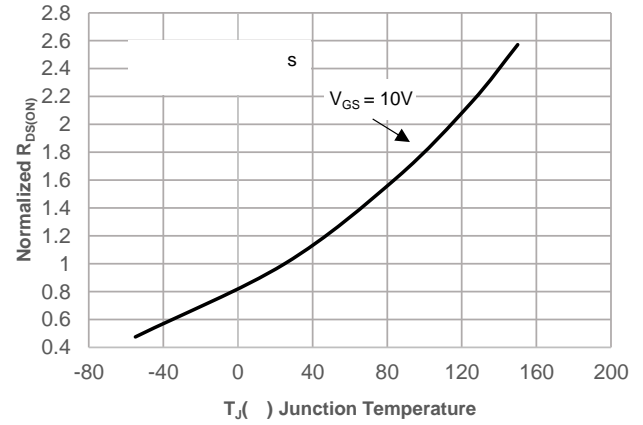


Figure 13: Normalized Threshold Voltage vs. Junction Temperature

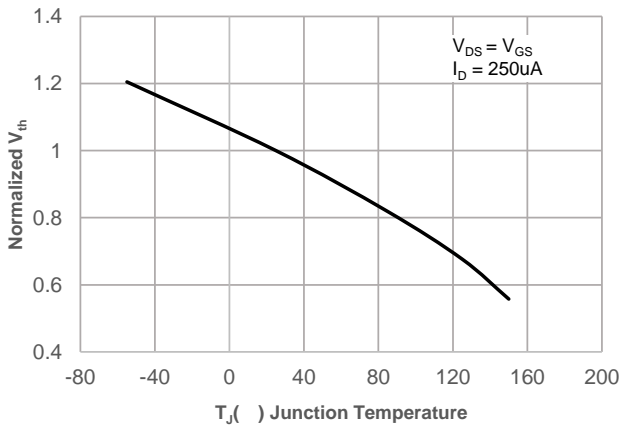


Figure 14: R_DS(ON) vs. V_GS

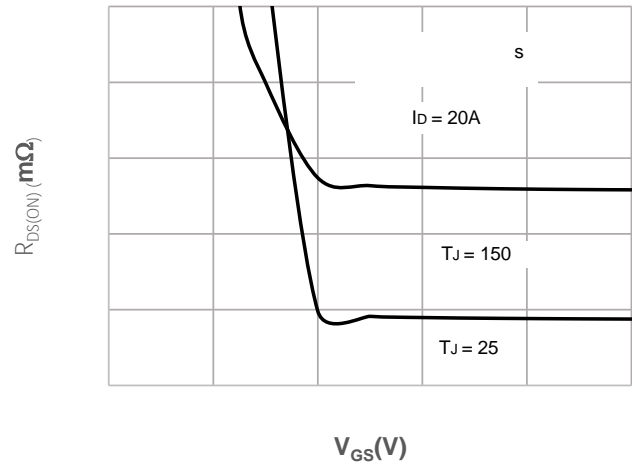
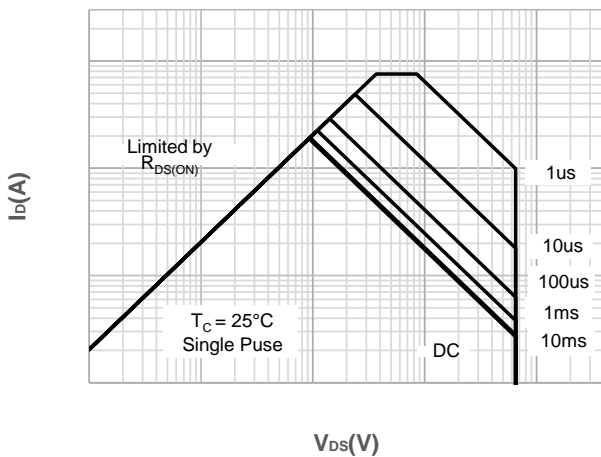


Figure 15: Maximum Safe Operating Area



Test Circuit



Figure 1: Gate Charge Test Circuit & Waveform

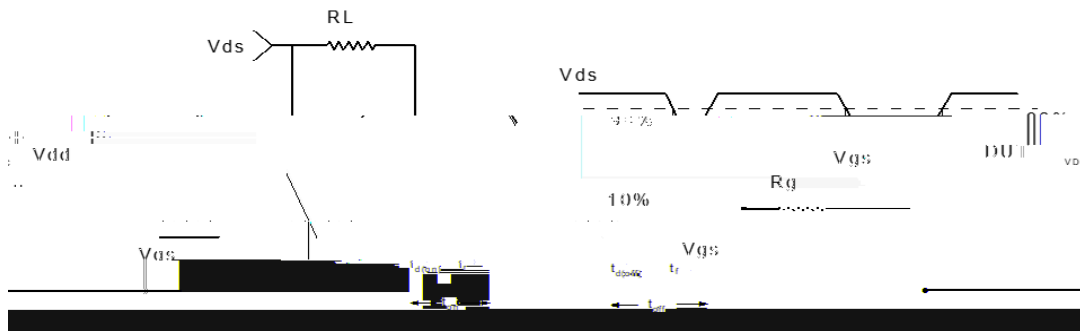


Figure 2: Resistive Switching Test Circuit & Waveform

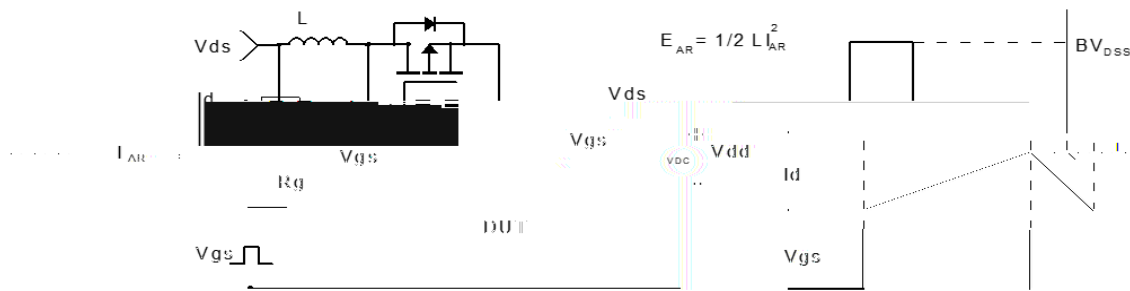


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

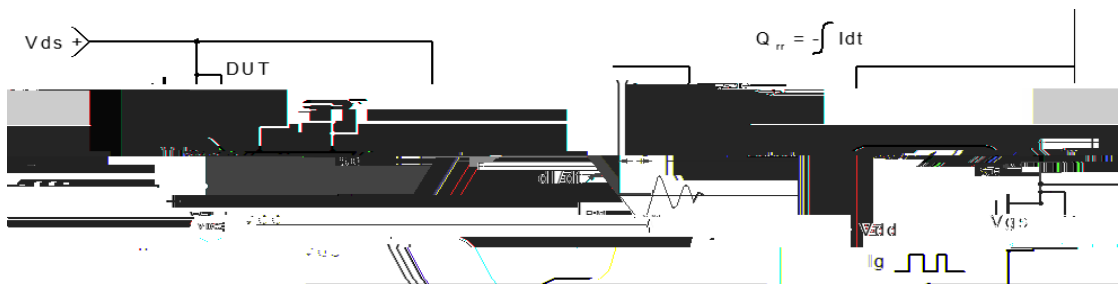


Figure 4: Diode Recovery Test Circuit & Waveform



Package Mechanical Data(DFN8080-4L)