

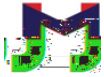


	Value	Unit
	650	V
	3.3	V
	19	A
	159	mΩ

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	$T_C = 25^{\circ}C$ $T_C = 100^{\circ}C$		
I_{DM}				A
E_{AS}				mJ
P_D	Power Dissipation	$T_C = 25^{\circ}C$ $T_C = 100^{\circ}C$		
T_J, T_{STG}				$^{\circ}C$

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

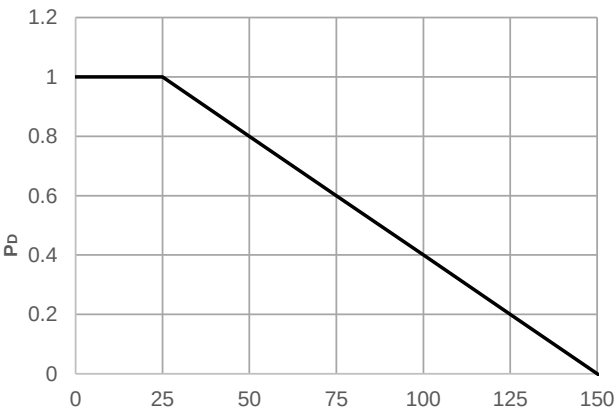
**Electrical Characteristics** ($T_J = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	I _D = 250μA, V _{GS} = 0V	650	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 650V, V _{GS} = 0V	-	-	10.0	μA
I _{GSS}	Gate-Body Leakage Current	V _{DS} = 0V, V _{GS} = ±30V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	2.3	3.3	4.3	V
R _{DS(ON)}	Static Drain-Source ON-Resistance ⁽⁴⁾	V _{GS} = 10V, I _D = 10A	-	159	190	mΩ
Dynamic Characteristics						
R _g	Gate Resistance	f = 1MHz	-	4.9	-	Ω
C _{iss}	Input Capacitance	V _{GS} = 0V, V _{DS} = 325V, f = 1MHz	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 to 10V V _{DS} = 325V, I _D = 10A	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 DelayTime	V _{GS} = 10V, V _{DD} = 310V I _D = 10A, R _{GEN} = 24Ω	-	36	-	ns
t _r	Turn-On Rise Time		-	38	-	ns
t _{d(off)}	Turn-Off DelayTime		-	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} = 0V, I _S = 10A	-		1.2	V
trr	Body Diode Reverse Recovery Time	I _F = 10A, di/dt = 100A/us	94	131	177	ns
Qrr	Body Diode Reverse Recovery Charge		-	851	-	nC

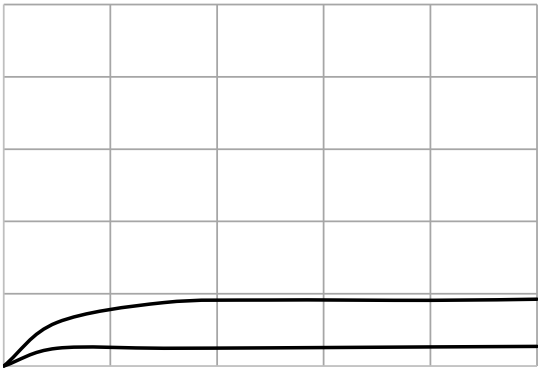
- Notes:
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
 2. E_{AS} condition: Starting $T_J = 25^\circ\text{C}$, $V_{DD} = 50\text{V}$, $V_{GS} = 10\text{V}$, $R_G = 25\text{ohm}$, $L = 10\text{mH}$, $I_{AS} = 3.6\text{A}$, $V_{DD} = 0\text{V}$ during time in avalanche.
 3.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

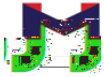


Typical Performance Characteristics



Typical Performance Characteristics





Typical Performance Characteristics

Figure 11: Normalized Breakdown voltage vs. Junction Temperature

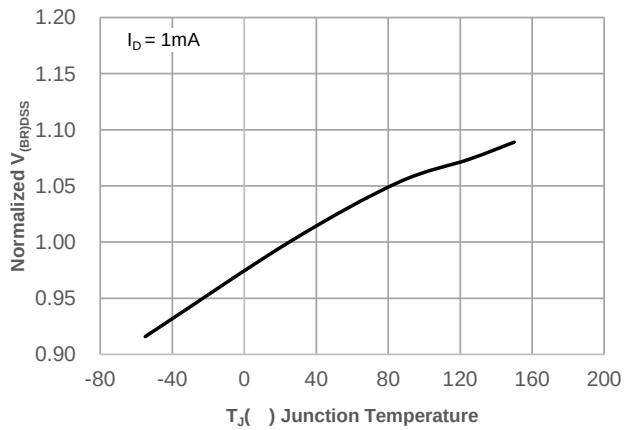


Figure 12: Normalized on Resistance vs. Junction Temperature

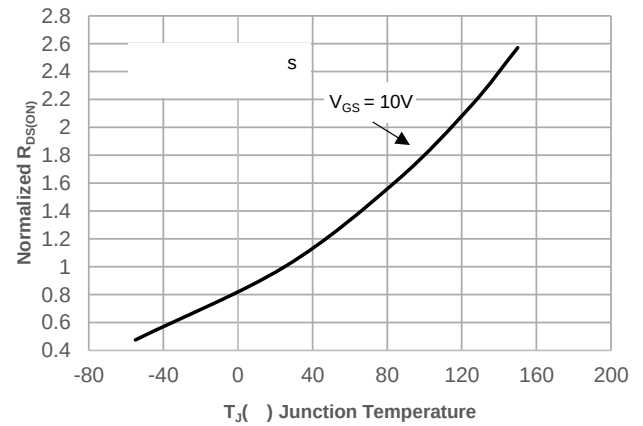


Figure 13: Normalized Threshold Voltage vs. Junction Temperature

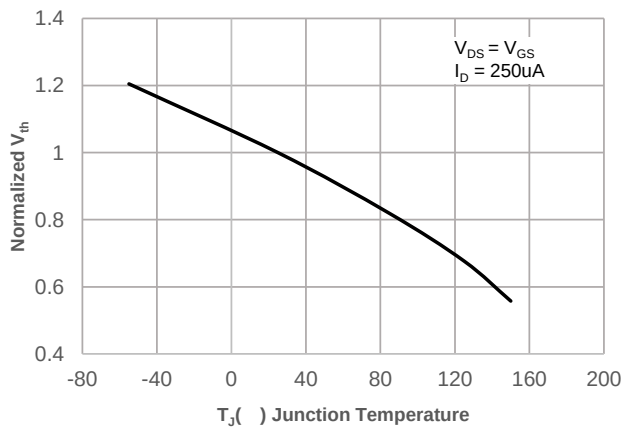


Figure 14: $R_{DS(ON)}$ vs. V_{GS}

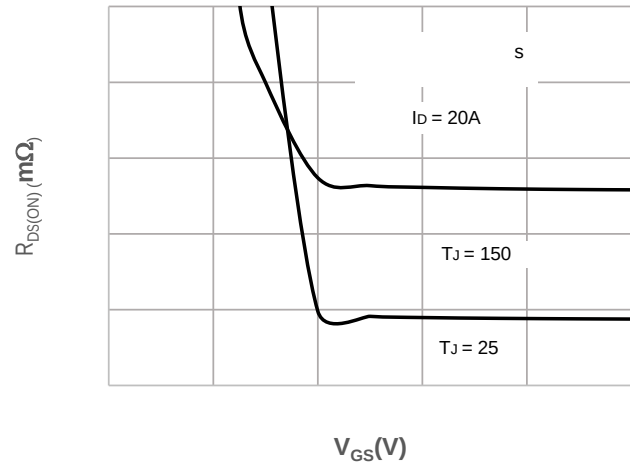
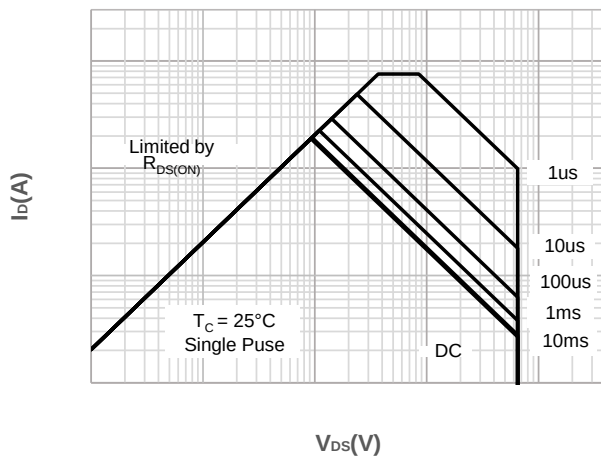


Figure 15: Maximum Safe Operating Area





Test Circuit



Figure 1: Gate Charge Test Circuit & Waveform

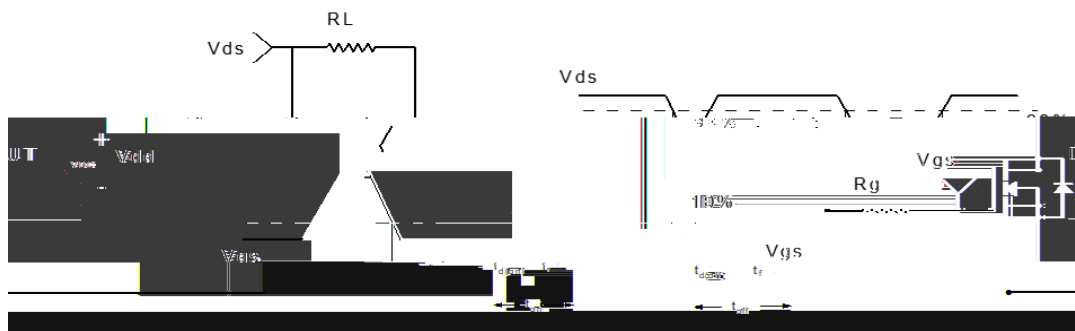


Figure 2: Resistive Switching Test Circuit & Waveform

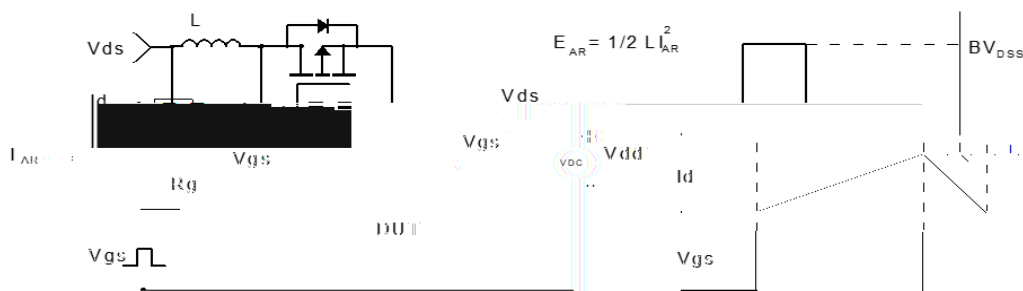


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

Figure 4: Diode Recovery Test Circuit & Waveform



Package Mechanical Data(DFN8080-4L)