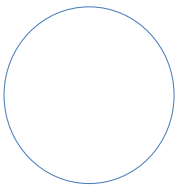
100V N-Ch Power MOSFET

V_{DS}		100	V
$R_{DS(on),typ}$	V_{GS}=10V	8.0	mΩ
$R_{DS(on),typ}$	V_{GS}=4.5V	10.5	mΩ
$I_{D\ (Sillicon\ Limited)}$		47.2	A
$I_{D\ (Package\ Limited)}$		36	A



Part Number	Package	Marking
HGM098N10AL	DFN 3.3*3.3	GM098N10AL

Absolute Maximum Ratings at T_j=25 (unless otherwise specified)

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	T_C=25	47	A
		T_C=100	30	
Continuous Drain Current (Package Limited)		T_C=25	36	
Drain to Source Voltage	V_{DS}	-	100	V
Gate to Source Voltage	V_{GS}	-	±20	V
Pulsed Drain Current	I_{DM}	-	160	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.1mH, T_C=25	31	mJ
Power Dissipation	P_D	T_C=25	42	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to150	

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	50	/W
Thermal Resistance Junction-Case	$R_{\theta JC}$	3	/W

Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=100V, T_j=25	-	-	1 100	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
		V_{GS}=10V, I_D=20A	-	8	9.8 13	mΩ
	g_{fs}	V_{DS}=5V, I_D=10A	-	80	-	S
Gate Resistance	R_G	V_{GS}=0V, V_{DS} Open, f=1MHz	-	1.4	-	Ω

Dynamic Characteristics

Input Capacitance	C_{iss}		-	1450	-	
Output Capacitance	C_{oss}	V_{GS}=0V, V_{DS}=50V, f=1MHz	-	273	-	pF
Reverse Transfer Capacitance	C_{rss}		-	5.0	-	
Total Gate Charge	Q_g(10V)		-	24	-	
Total Gate Charge	Q_g(4.5V)	V_{DD}=50V, I_D=20A, V_{GS}=10V	-	12	-	nC
Gate to Source Charge	Q_{gs}		-	4	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	6	-	
Turn on Delay Time	$t_{d(on)}$		-	6	-	
Rise time	t_r	V_{DD}=50V, I_D=20A, V_{GS}=10V,	-	4	-	ns
Turn off Delay Time	$t_{d(off)}$	R_G=10Ω,	-	18	-	
Fall Time	t_f		-	3	-	

Reverse Diode Characteristics

Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_F=20A	-	0.9	1.2	V
Reverse Recovery Time	t_{rr}	V_R=50V, I_F=20A, dI_F/dt=500A/μs	-	40	-	ns
Reverse Recovery Charge	Q_{rr}		-	152	-	nC

Fig 1. Typical Output Characteristics

Figure 2. On-Resistance vs. Gate-Source Voltage

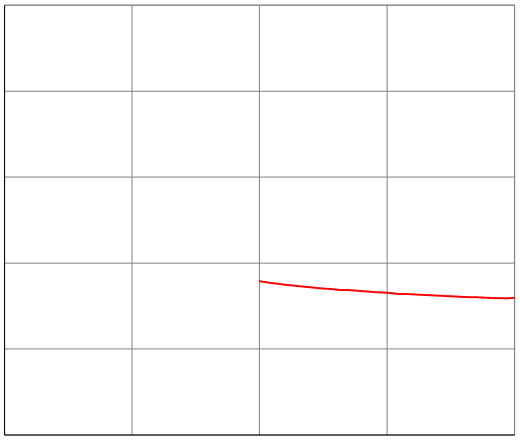


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

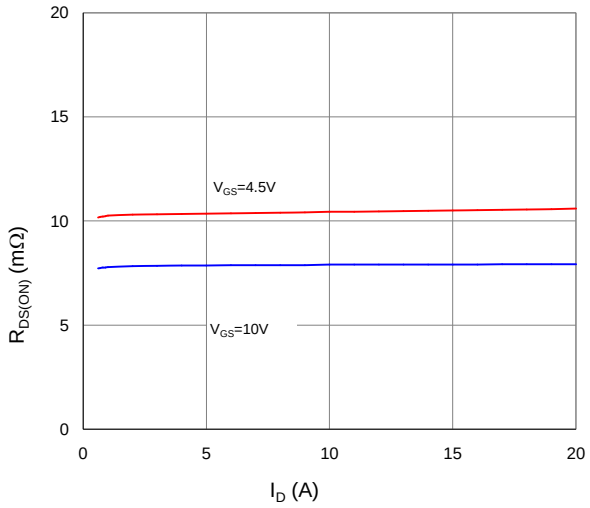


Figure 4. Normalized On-Resistance vs. Junction Temperature

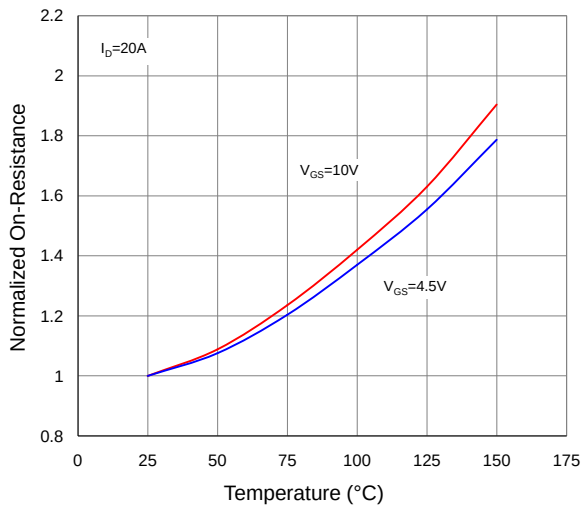


Figure 5. Typical Transfer Characteristics

Figure 6. Typical Source-Drain Diode Forward Voltage

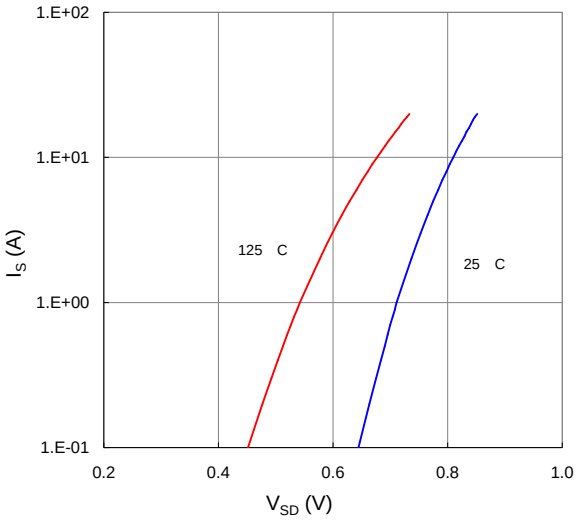


Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage	Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

Figure 9. Maximum Safe Operating Area	Figure 10. Maximun Drain Current vs. Case Temperature

Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Ambient

Inductive switching Test

Gate Charg
Uclamped Inductive Sw
Diode Recov

Package Outline

DFN3.3*3.3_P, 8 Leads