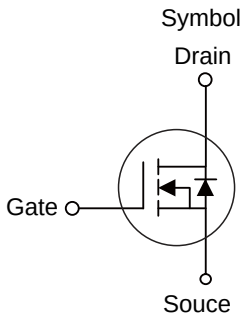
■PRODUCT CHARACTERISTICS

V_{DSS}	100V
$R_{DS(ON)}$Typ(@V_{GS}=10V)	4.8mΩ
$R_{DS(ON)}$Typ(@V_{GS}=4.5V)	7.5mΩ
I_D	90A

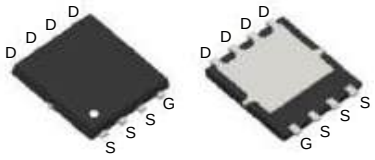


■ APPLICATIONS

* Switching applications

■FEATURES

* Low capacitance
* Lowgate charge
* Fast switching capability
* Avalanche energy specified



■ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT1148G	PDFN5X6-8L	5000 pieces/Reel

■ ABSOLUTE MAXIMUM RATINGS(T_A=25℃ unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	100	V
Gate-Source Voltage		V_{GSS}	±20	V
Continuous Drain Current@V_{GS} =10V	T_C=25°C	I_D	90	A
	T_C=100°C		65	A
Pulsed Drain Current		I_{DM}	360	A
Single Pulse Avalanche Energy		E_{AS}	420	mJ
Power Dissipation		P_D	110	W
Thrmal Resistance,Junction to Case		$R_{\theta JC}$	1.14	°C/W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55~+150	°C

■ELECTRICAL CHARACTERISTICS(T_J =25℃ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	100	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V,V_{GS}=0V	-	-	1.0	μA
Gate to Body Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}= ±20V	-	-	±100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	1.2	1.7	2.2	V
Static Drain-Source on-Resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=20A	-	4.8	6	mΩ
		V_{GS}=4.5V,I_D=20A	-	7.5	8.6	mΩ
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS}=20V,V_{GS}=0V f=1.0MHz	-	3800	-	pF
Ouput Capacitance	C_{oss}		-	1200	-	pF
Reverse Transfer Capacitance	C_{rss}		-	98	-	pF
Total Gate Charge	Q_g	V_{DS}=50V,I_D=20A V_{GS}=10V	-	83	-	nC
Gate-Source Charge	Q_{gs}		-	13	-	nC
Gate-Drain("Miller") Charge	Q_{gd}		-	15	-	nC
Switching characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DS}=50V,I_D=20A R_G=1.6Ω,V_{GS}=10V	-	17	-	ns
Turn-on Rise Time	t_r		-	10.5	-	ns
Turn-off Delay Time	$t_{d(off)}$		-	40	-	ns
Turn-off Fall Time	t_f		-	70	-	ns
Drain-source diode characteristics and maximum ratings						
Maximum Continuous forward Current	I_S		-	-	90	A
Maximum Pulsed forward Current	I_{SM}		-	-	360	A
Drain to Source Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=3A	-	0.73	0.99	V
Body Diode Reverse Recovery Time	t_{rr}	I_S=45A di/dt=100A/μs	-	68	-	ns
Body Diode Reverse Recovery Charge	Q_{rr}		-	110	-	nC

■ TYPICAL CHARACTERISTICS

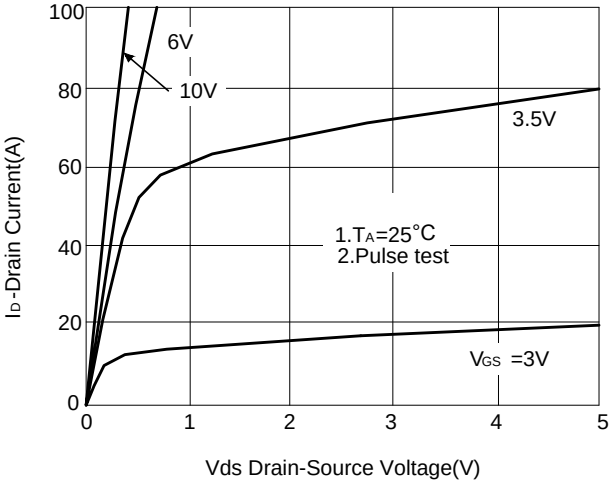


Figure 1 Output Characteristics

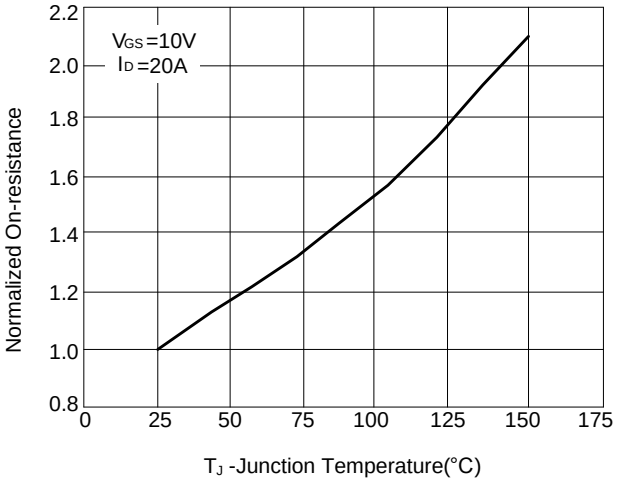


Figure 2 Rdson-Junction Temperature

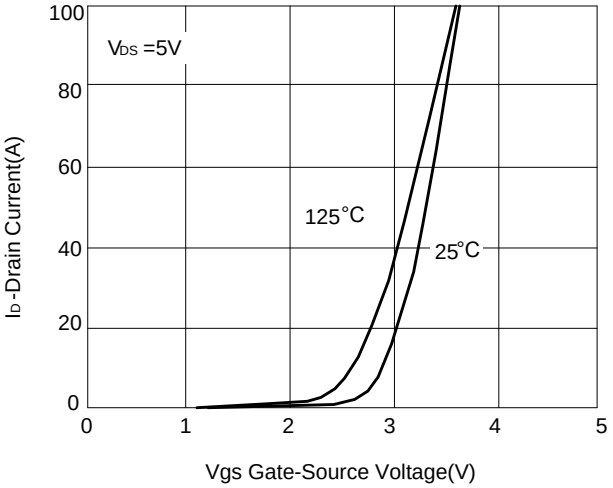


Figure 3 Transfer Characteristics

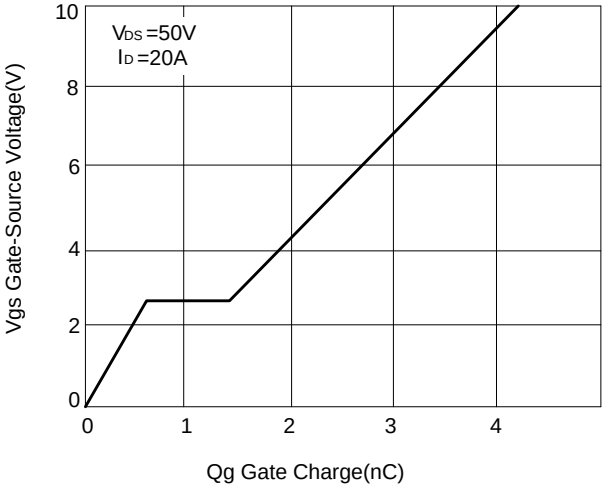


Figure 4 Gate Charge

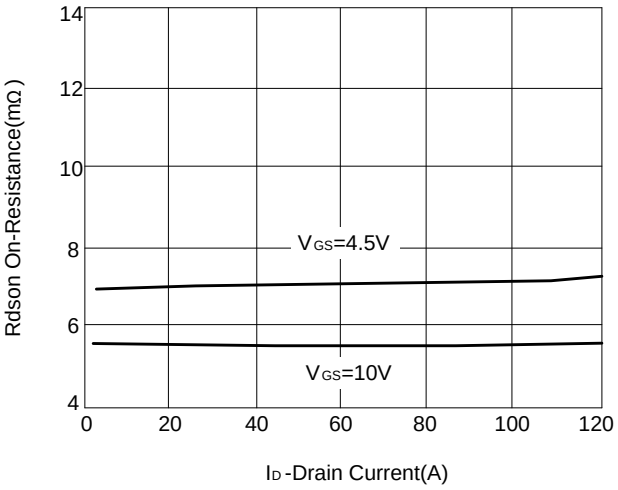


Figure 5 Rdson-Drain Current

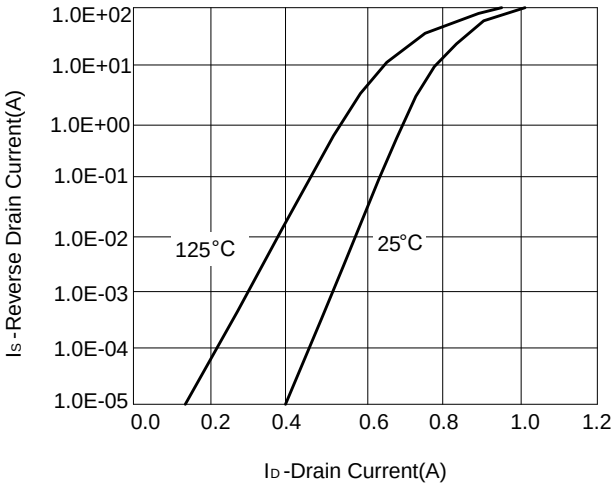


Figure 6 Source-Drain Diode Forward

■ TYPICAL CHARACTERISTICS(Cont.)

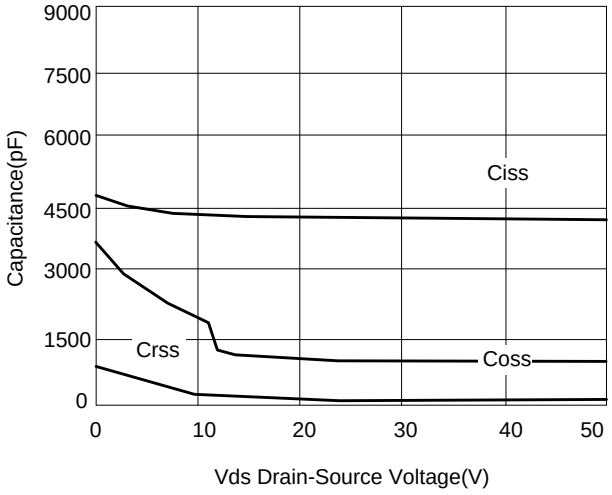


Figure 7 Capacitance vs Vds

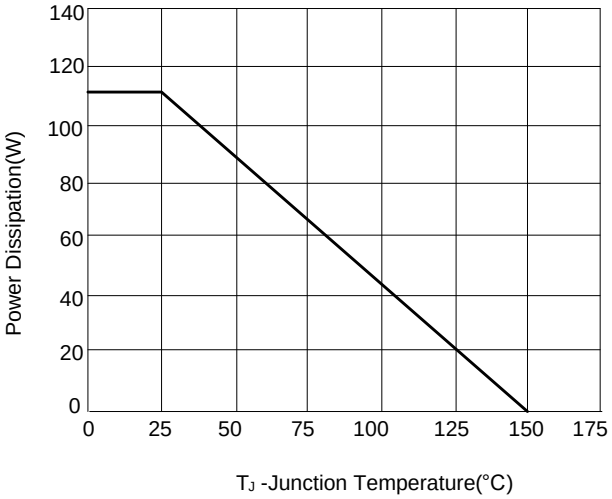


Figure 8 Power De-rating

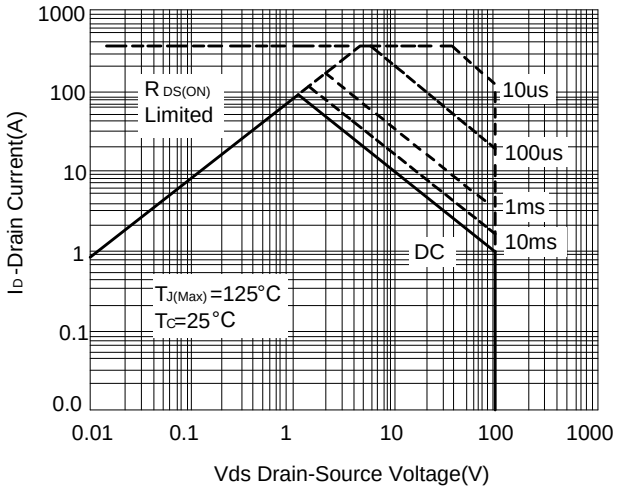


Figure 9 Safe Operation Area

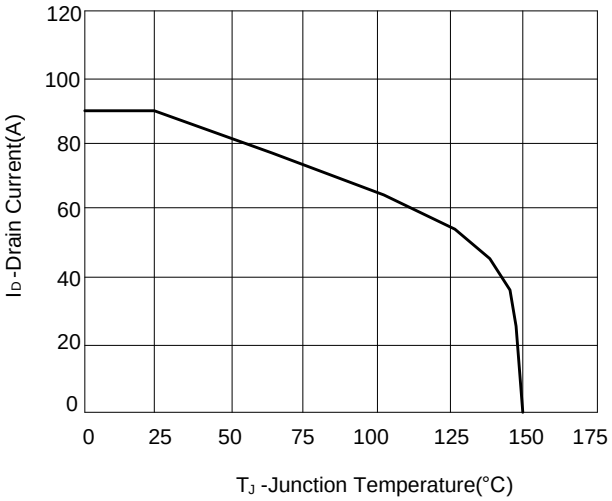
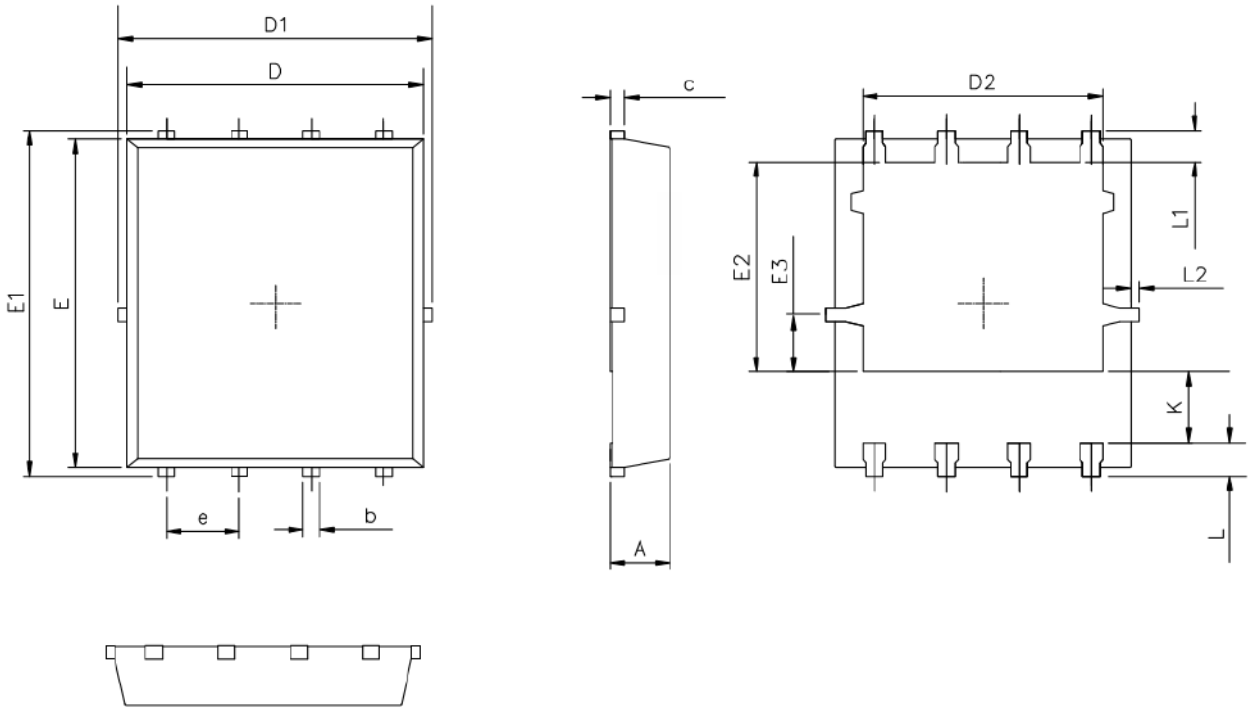


Figure 10 Current De-rating

■ PDFN5X6-8L Package Mechanical Date



UNIT:mm

	MIN	NOM	MAX
A	0.90	1.00	1.10
b	0.25	0.35	0.50
c	0.10	0.20	0.30
D	4.80	5.00	5.30
D1	4.90	5.10	5.50
D2	3.92	4.02	4.20
E	5.65	5.75	5.85
E1	5.90	6.05	6.20
E2	3.325	3.525	3.775
E3	0.80	0.90	1.00
e		1.27	
L	0.40	0.55	0.70
L1		0.65	
L2	0.00		0.15
K	1.00	1.30	1.50

RECOMMENDED LAND PATTERN