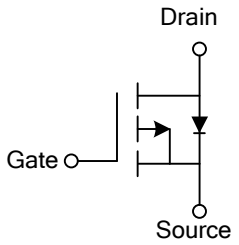
■ PRODUCT CHARACTERISTICS

VDSS	-40V
R_{DS}(on)typ(@V_{GS}=-10V)	7mΩ
R_{DS}(on)typ(@V_{GS}=-4.5V)	8mΩ
ID	-50A

Symbol



■ FEATURES

Advanced Trench Technology

Excellent $R_{DS(ON)}$ and Low Gate Charge

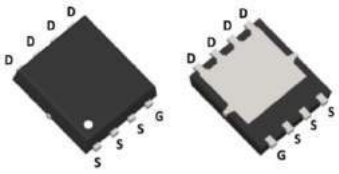
Lead free product is acquired

■ APPLICATION

PWM Applications

Load Switch

Power Management



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT4710G	PDFN5X6-8L	5000 pieces /Reel

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

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DSS}	-40	V
Gate-Source Voltage		V_{GSS}	±20	V
Continuous Drain Current	T_C = 25℃	I_D	-50	A
	T_C = 100℃		-33	A
Pulsed Drain Current		I_{DM}	-200	A
Single Pulsed Avalanche Energy		E_{AS}	552	mJ
Power Dissipation		P_D	45	W
Thermal Resistance,Junction to Case		$R_{\theta JC}$	3.3	℃/W
Operating and Storage Temparature Range		T_J, T_{STG}	-55 to +175	℃

■ 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	-40	-		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-40V , V_{GS}=0V	-	-	-1	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		-2.5	V
Static Drain-Source on-resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-20A	-	7	9.5	mΩ
		V_{GS}=-4.5V, I_D=-10A	-	8	10	mΩ
Dynamic characteristics						
Input capacitance	C_{iss}	V_{DS}=-20V, V_{GS}=0V, f=1.0MHz	-	6800	-	pF
Output capacitance	C_{oss}		-	485	-	pF
Reverse Transfer capacitance	C_{rss}		-	440	-	pF
Total Gate Charge	Q_g	V_{DS}=-20V, I_D=-20A, V_{GS}=-10V	-	115	-	nC
Gate-Source Charge	Q_{gs}		-	23	-	nC
Gate-Drain("Miller") Charge	Q_{gd}		-	20	-	nC
Switching characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=-20V , I_D=-20A , V_{GS}=-10V, R_{GEN}=3Ω	-	15	-	ns
Turn-on Rise Time	t_r		-	88	-	ns
Turn-off Delay Time	$t_{d(off)}$		-	122	-	ns
Turn-off Fall Time	t_f		-	101	-	ns
Drain-source diode characteristics and maximum ratings						
Maximum Continuous Forward Current	I_S		-	-	-50	A
Maximum Pulsed Forward Current	I_{SM}		-	-	-200	A
Drain to Source Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-50A	-	-	-1.2	V
Reverse Recovery Time	t_{rr}	V_{GS}=0V, I_S=-20A, di/dt=100A/μs	-	25	-	ns
Reverse Recovery Charge	Q_{rr}		-	17	-	nC

■ TY PICAL CHARACTERISTICS

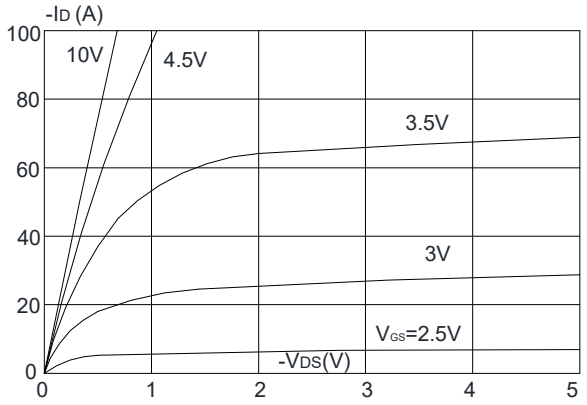


Figure 1: Output Characteristics

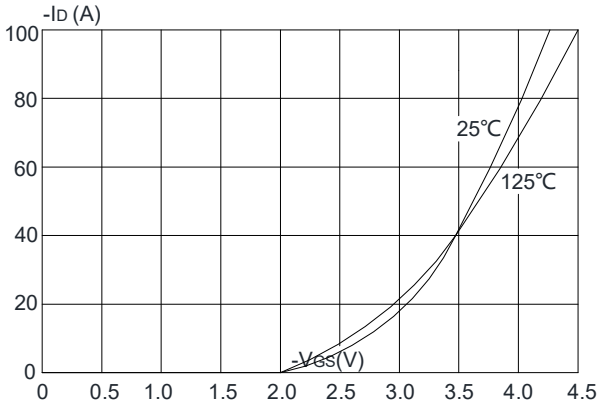


Figure 2: Typical Transfer Characteristics

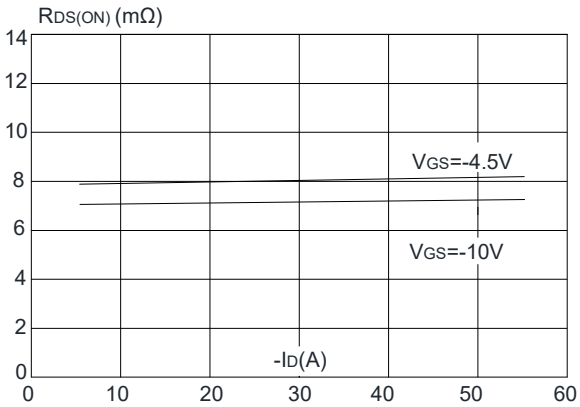


Figure 3: On-resistance vs. Drain Current

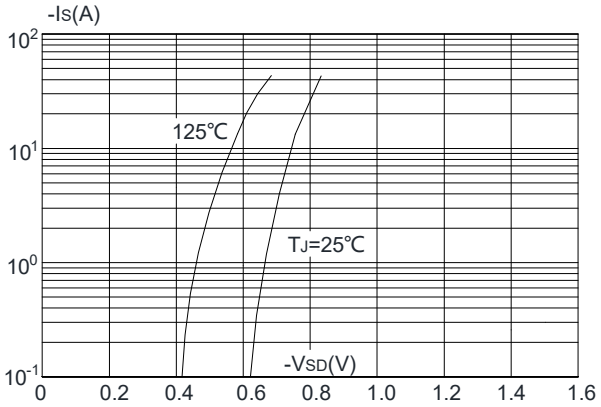


Figure 4: Body Diode Characteristics

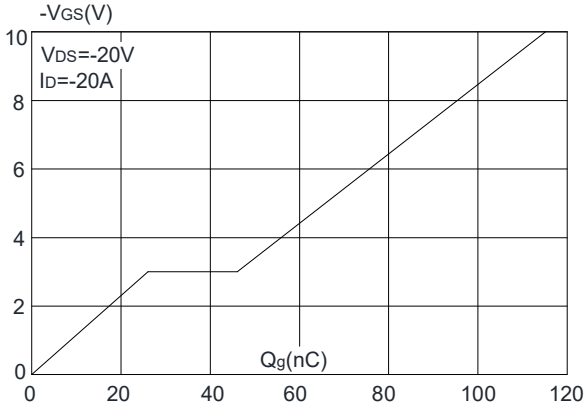


Figure 5: Gate Charge Characteristics

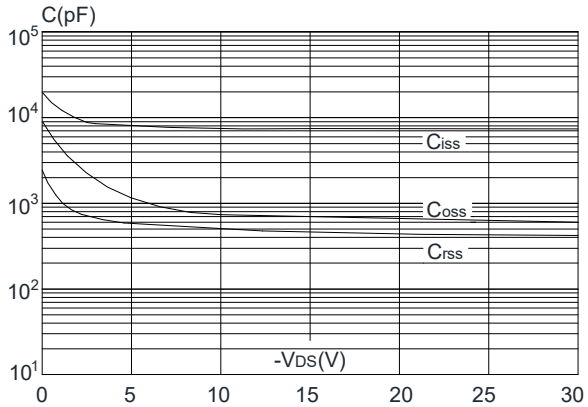


Figure 6: Capacitance Characteristics

■ TY PICAL CHARACTERISTICS(Cont.)

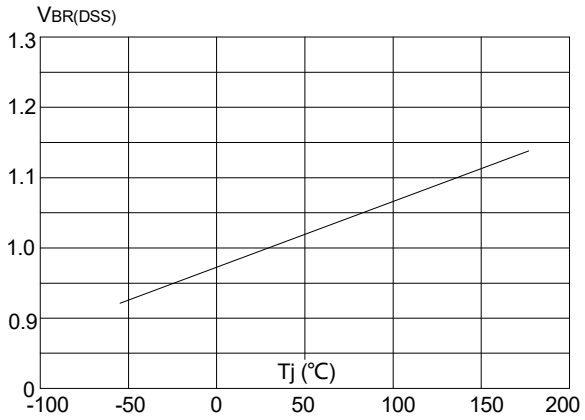


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

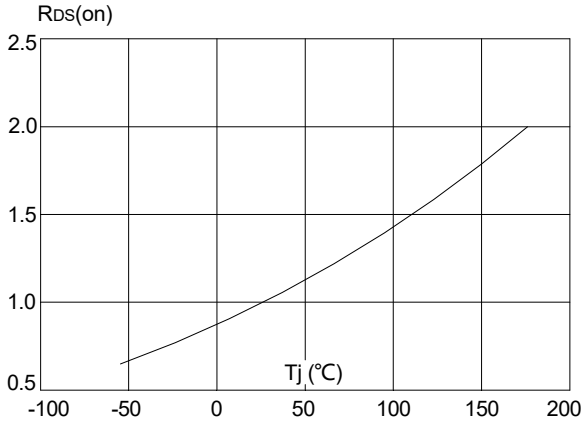


Figure 8: Normalized on Resistance vs. Junction Temperature

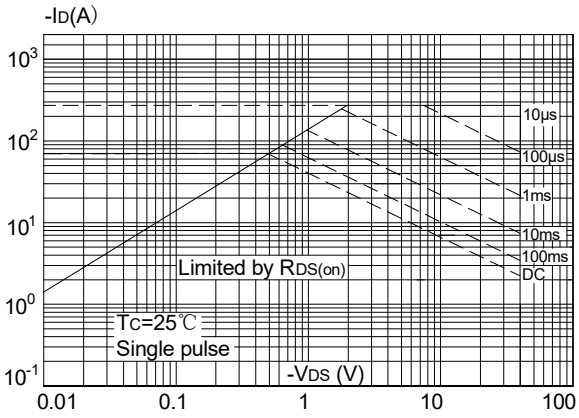


Figure 9: Maximum Safe Operating Area

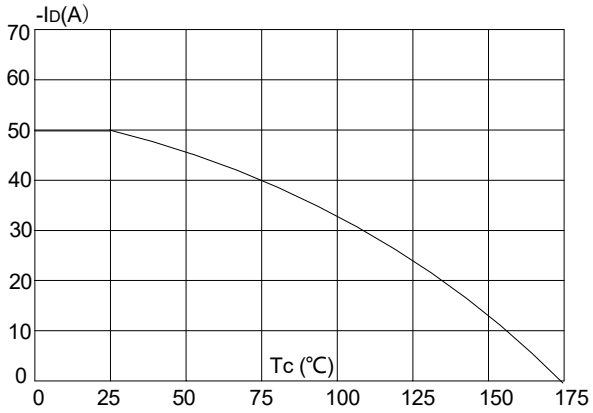
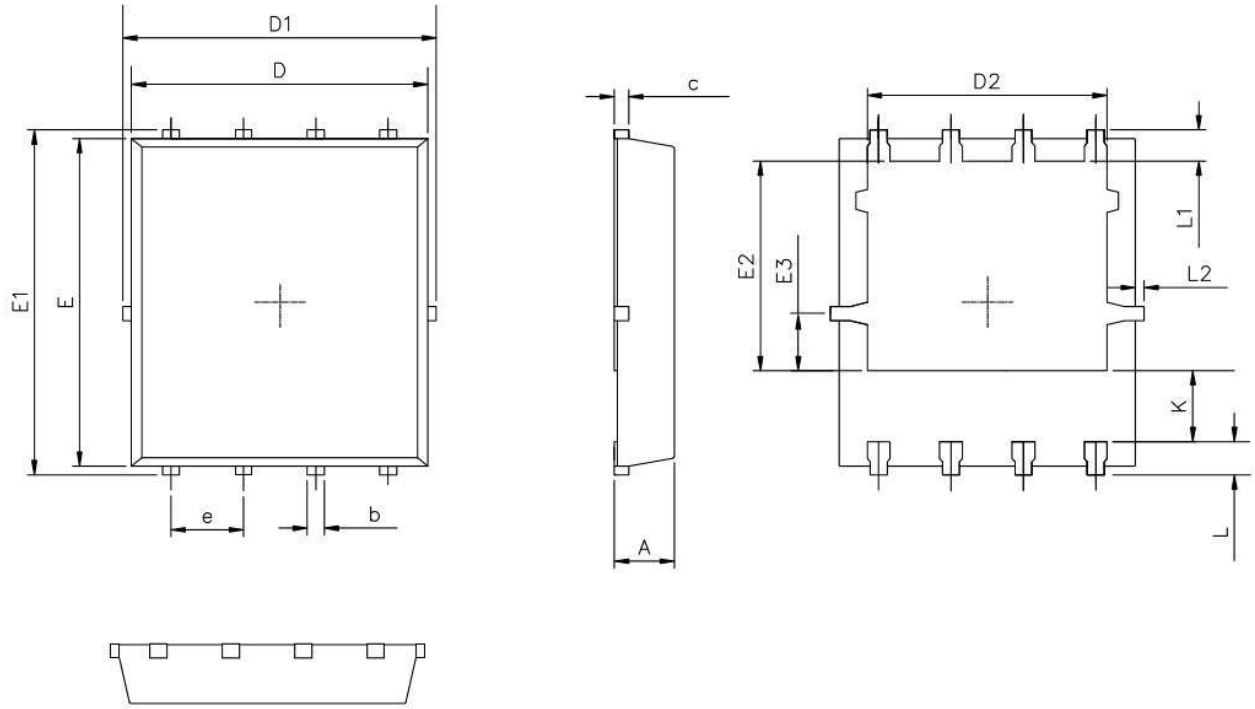


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

■ PDFN5X6-8L Package Mechanical Data



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