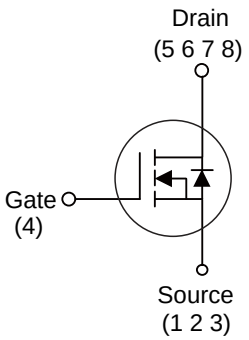
■ PRODUCT CHARACTERISTICS

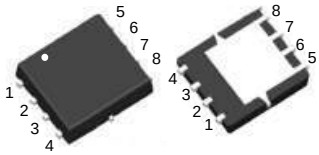
V_{DSS}	30V
$R_{DS(ON)}$ Typ(@V_{GS}=10V)	0.8mΩ
$R_{DS(ON)}$ Typ(@V_{GS}=4.5V)	1.1mΩ
I_D	210A

Symbol



■ APPLICATIONS

* Motor Control
* High Performance SMPS
* DC/DC Coverter



PDFN5X6

■ FEATURE

* Low Gate Charge
* Ultra-low RDS(ON)

■ ORDER INFORMATION

Order Codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT3108G	PDFN5X6	5000 pieces/Reel

■ ABSOLUTE MAXIMUM RATINGS(T_A=25°C,unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	±20	V
Drain Current Continuous(@V_{GS}=10V ,T_A=25°C)	I_D	210	A
Drain Current Pulsed	I_{DM}	840	A
Avalanche Energy *	E_{AS}	810	mJ
Power Dissipation	P_D	96	W
Junction Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-55~ +150	°C

■ THERMAL CHARACTERISTICS

Parameter	Symbol	Typ	Unit
Junction to Case	R_{thJC}	1.3	°C/W

Note: * EAS condition: T_J=25°C ,V_{DD}=25V ,V_G=10V ,L=0.5mH,R_g=25Ω

■ ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain to Source Breakdown Voltage	V_{DSS}	V_{GS}=0V,I_D=250μA	30	-	-	V
Drain to Source Leakage Current	I_{DSS}	V_{DS}=30V,V_{GS}=0V	-	-	1	μA
Gate to Source Forward Leakage	$I_{GSS(F)}$	V_{DS}=0V, V_{GS}=+20V	-	-	100	nA
Gate to Source Reverse Leakage	$I_{GSS(R)}$	V_{DS}=0V, V_{GS}=-20V	-	-	-100	nA
On characteristics						
Drain to Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V,I_D=20A	-	0.8	1.1	mΩ
		V_{GS}=4.5V,I_D=20A	-	1.1	1.4	mΩ
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS},I_D=250μA	1	1.52	2.5	V
Dynamic characteristics						
Gate capacitance	R_g	V_{GS}=0V,V_{DS}=0V ,f=1.0MHz	-	1.3	-	Ω
Forward Transconductance	g_{fs}	V_{DS}=10V,I_D=3A	-	24	-	S
Input Capacitance	C_{iss}	V_{DS}=15V,V_{GS}=0V f=1.0MHz	-	5867	-	pF
Output Capacitance	C_{oss}		-	1651	-	pF
Reverse Transfer Capacitance	C_{rss}		-	274	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	$t_{d(ON)}$	I_D=100A, V_{DS}=15V R_G=1.6Ω ,V_{GS}=10V	-	13	-	ns
Rise Time	t_r		-	8	-	ns
Turn-off Delay Time	$t_{d(OFF)}$		-	55	-	ns
Fall Time	t_f		-	10	-	ns
Total Gate Charge	Q_g	I_D=100A, V_{DS}=15V V_{GS}=10V	-	137	-	nC
Gate to Source Charge	Q_{gs}		-	19	-	nC
Gate to Drain("Miller") Charge	Q_{gd}		-	14	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	I_S		-	-	210	A
Maximum Pulsed Current(Body Diode)	I_{SM}		-	-	840	A
Diode Forward Voltage	V_{SD}	I_{SD}=1A, V_{GS}=0V	-	0.67	1.2	V
Reverse Recovery Time	t_{rr}	I_{SD}=100 A, T_J=25°C dI/dt=100A/μs	-	35	-	ns
Reverse Recovery Charge	Q_{rr}		-	120	-	nC

■ TYPICAL CHARACTERISTICS

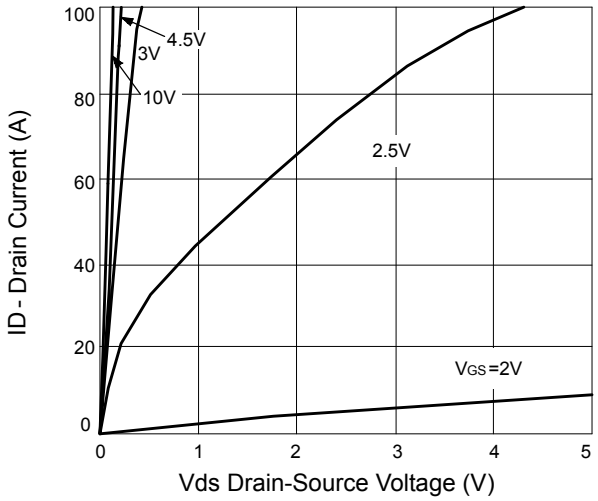


Figure 1 Output characteristics

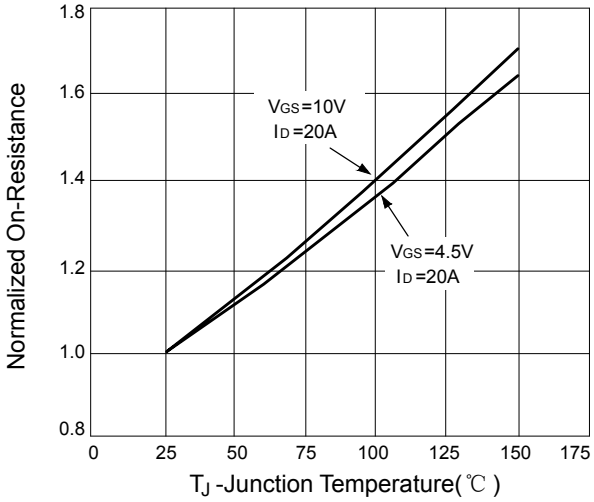


Figure 2 Rdson-junction temperature

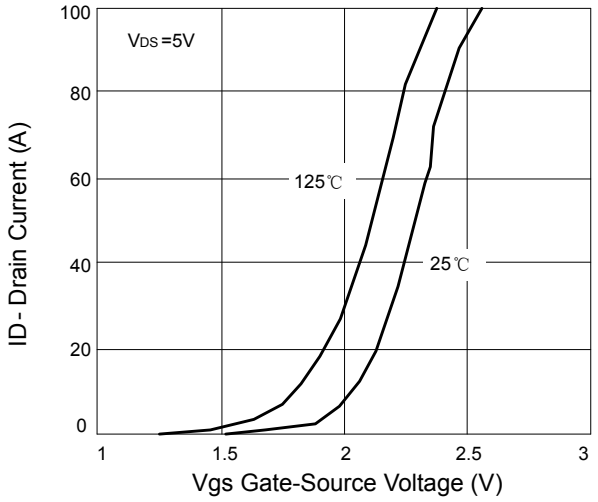


Figure 3 Transfer characteristics

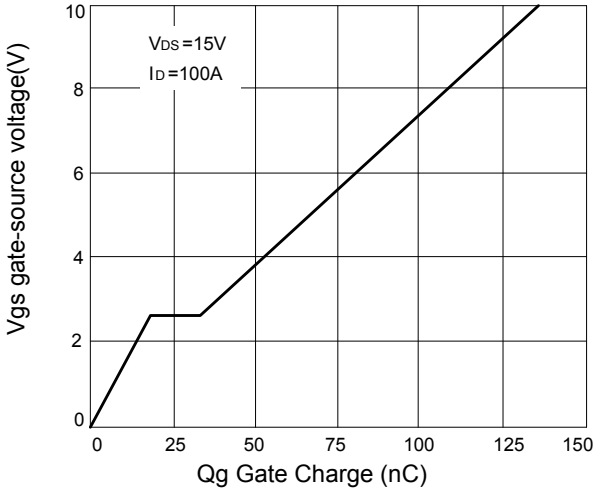


Figure 4 Gate charge

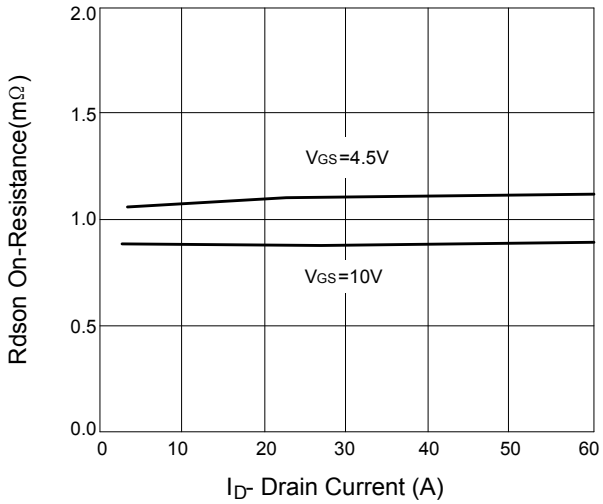


Figure 5 Rdson-drain current

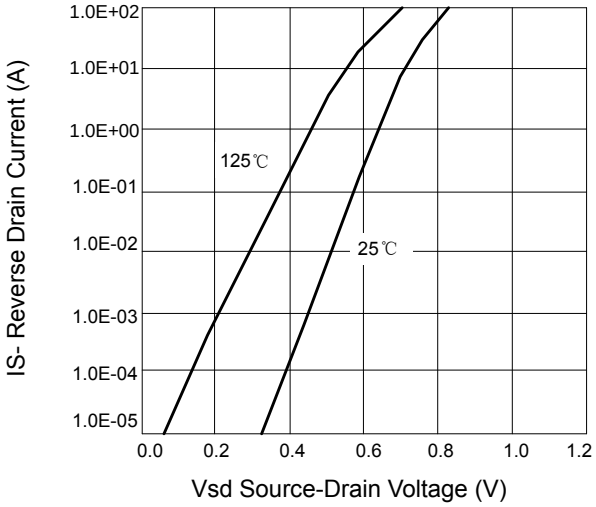


Figure 6 Source-drain diode forward

■ TYPICAL CHARACTERISTICS(Cont.)

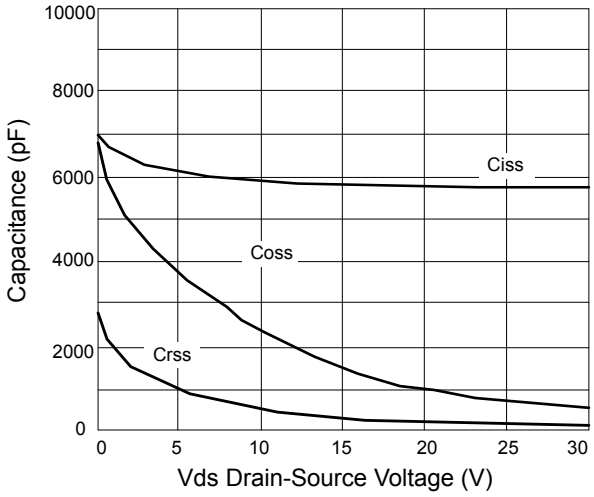


Figure 7 Capacitance vs. vds

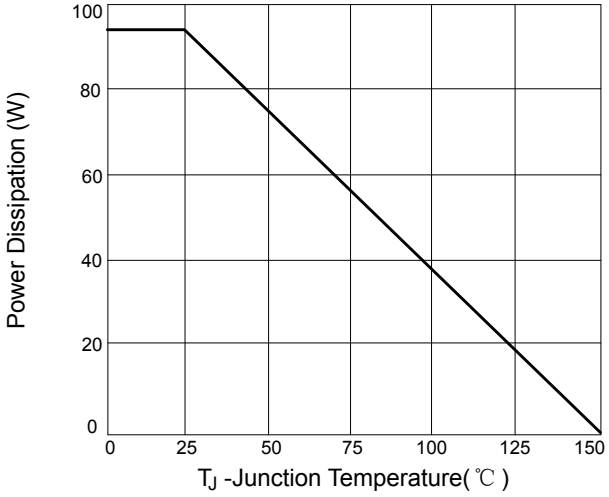


Figure 8 Power de-rating

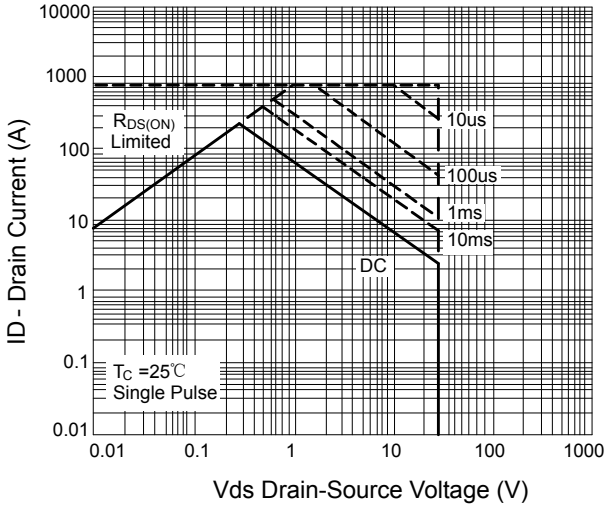


Figure 9 Safe operation area

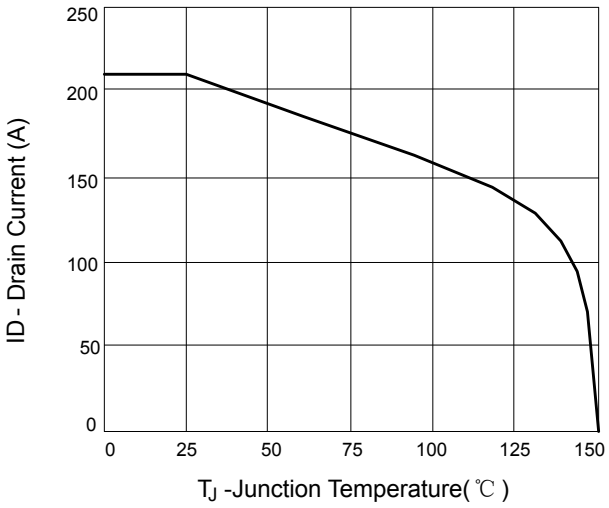
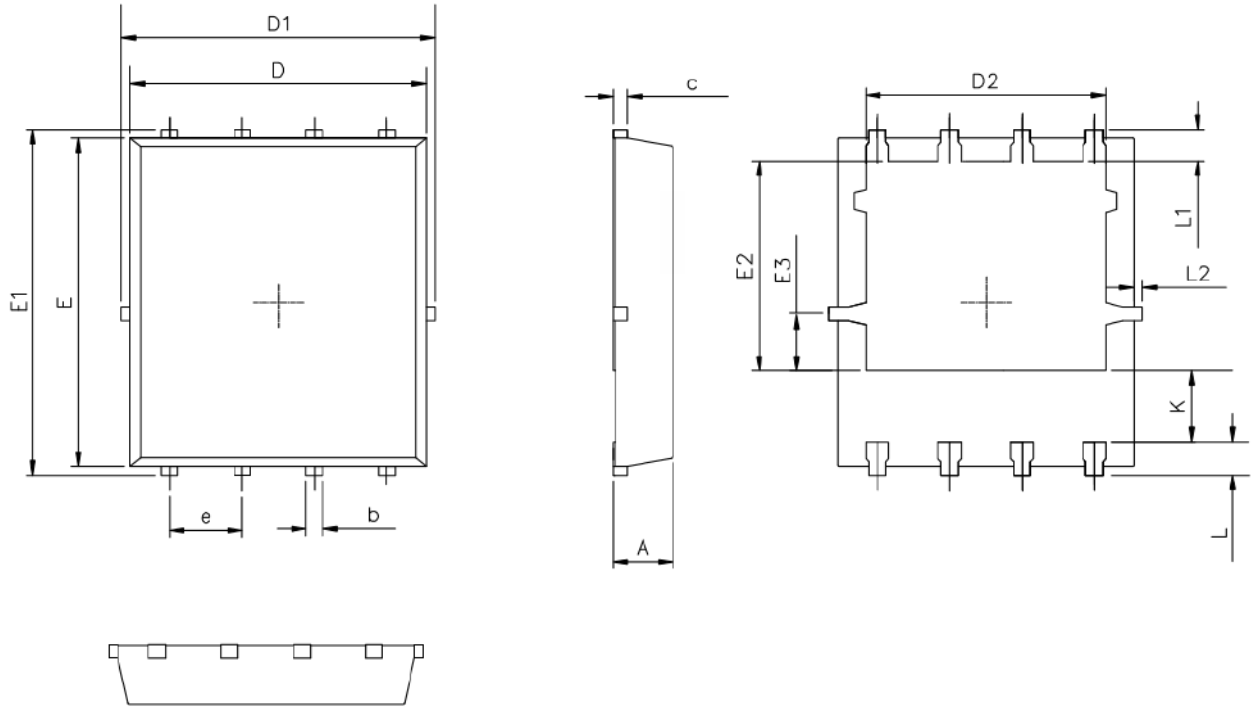
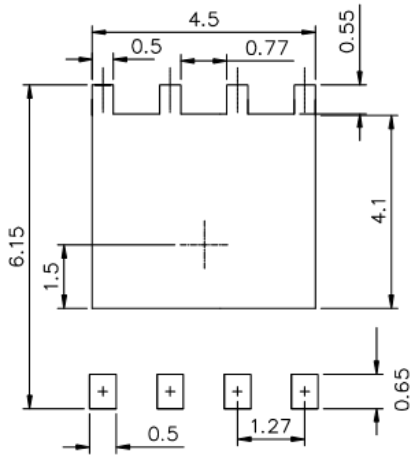


Figure 10 Current de-rating

■ PDFN5X6 PACKAGE OUTLINE DIMENSIONS



RECOMMENDED LAND PATTERN



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