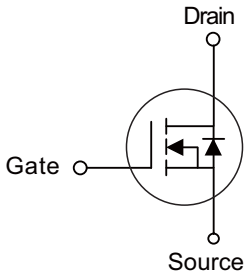
■ PRODUCT CHARACTERISTICS

VDSS	30V
R_{DS}(on)Typ(@V_{GS} =10 V)	15mΩ
R_{DS}(on)Typ(@V_{GS} =4.5 V)	20mΩ
ID	8A

Symbol

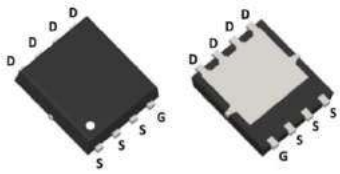


■ APPLICATIONS

DC/DC converter
Ideal for high-freqency switching
and synchronous rectification

■ FEATURES

Very low on-resistance $R_{DS(on)}$
Good stability and uniformity with high E_{AS}
Pb-free lead plating



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT3520G	PDFN5x6-8L	5000 pieces /Reel

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	8	A
Pulsed Drain Current	I_{DM}	30	A
Maximum Power Dissipation	P_D	3.5	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	1	1.5	3	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=8A	-	15	20	mΩ
		V_{GS}=4.5V, I_D=6A	-	20	25	mΩ
Gate resistance	R_G	F=1.0MHz	-	1.2	-	Ω
Forward Transconductance	g_{FS}	V_{DS}=10V,I_D=3A	5	-	-	S
Dynamic characteristics						
Input Capacitance	C_{lss}	V_{DS}=15V,V_{GS}=0V, F=1.0MHz	-	564	-	PF
Output Capacitance	C_{oss}		-	75	-	PF
Reverse Transfer Capacitance	C_{rss}		-	66	-	PF
Switching characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{GS}=10V,V_{DS}=30V I_D=8A ,R_{GEN}=1Ω	-	9	-	nS
Turn-on Rise Time	t_r		-	10	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	15	-	nS
Turn-Off Fall Time	t_f		-	5	-	nS
Total Gate Charge	Q_g	V_{GS}=10V,V_{DS}=15V,I_D=8A	-	19.4	-	nC
Gate-Source Charge	Q_{gs}		-	2.5	-	nC
Gate-Drain Charge	Q_{gd}		-	5	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=8A	-	-	1.2	V
Diode Forward Current	I_S		-	-	8	A
Reverse Recovery Time	t_{rr}	TJ = 25°C, I_F =6A di/dt = 100A/μs	-	27	-	nS
Reverse Recovery Charge	Qrr		-	20	-	nC

■ TYPICAL CHARACTERISTICS(Cont.)

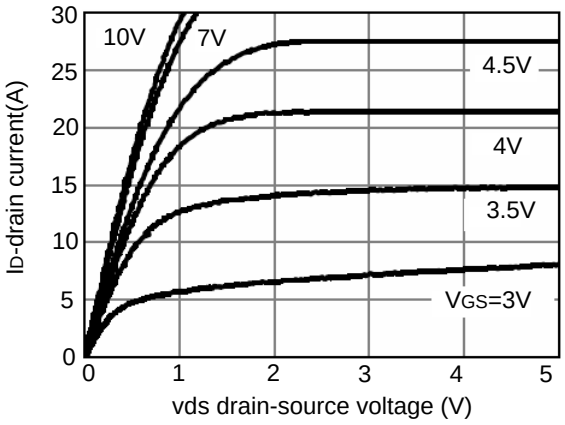


Fig.1 output characteristics

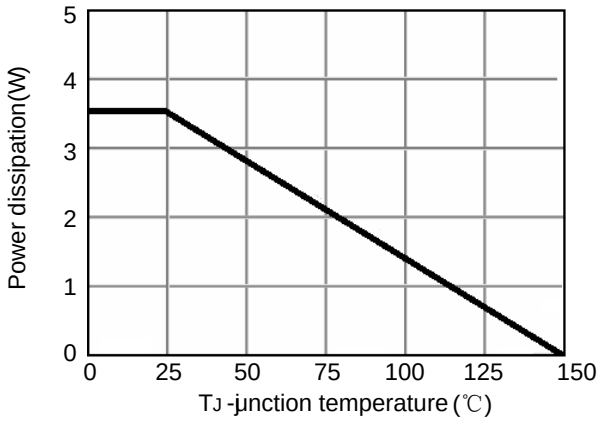


Fig.2 power dissipation

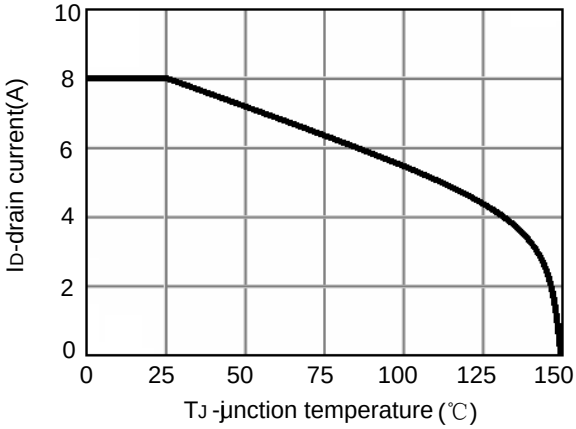


Fig.3 drain current

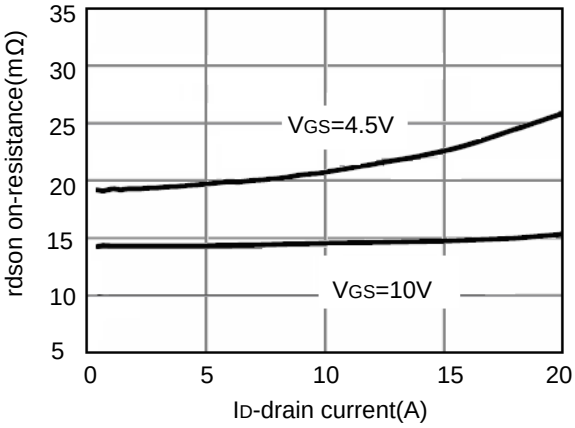


Fig.4 drain-source on-resistance

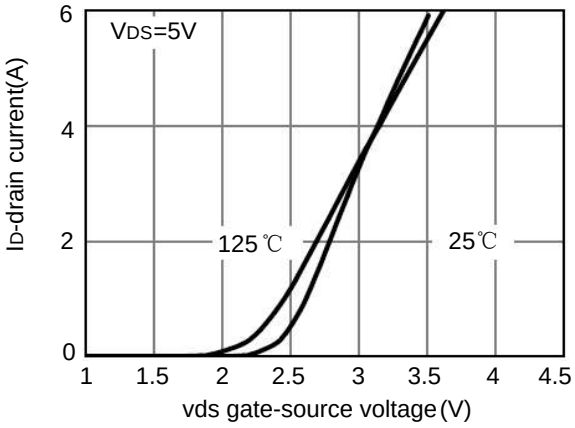


Fig.5 transfer characteristics

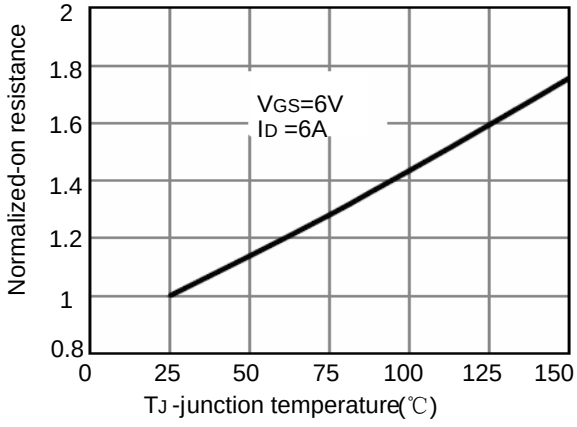


Fig.6 drain-source on-resistance

■ TYPICAL CHARACTERISTICS(Cont.)

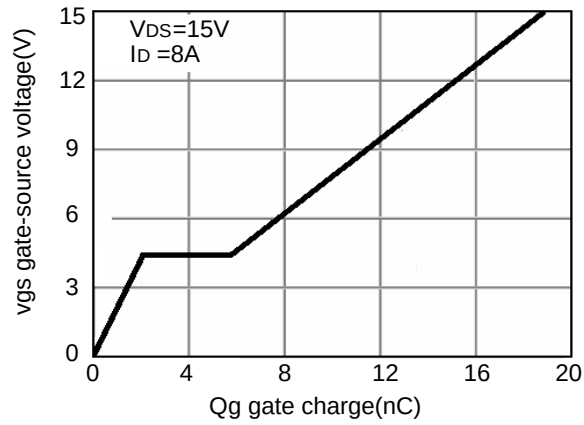


Fig.7 gate chaerge

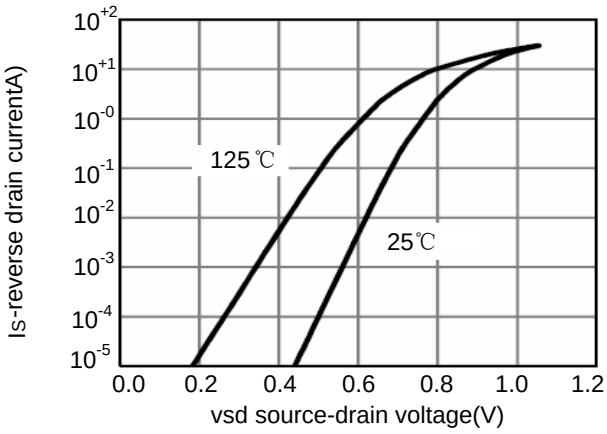


Fig.8 source-drain diode forward

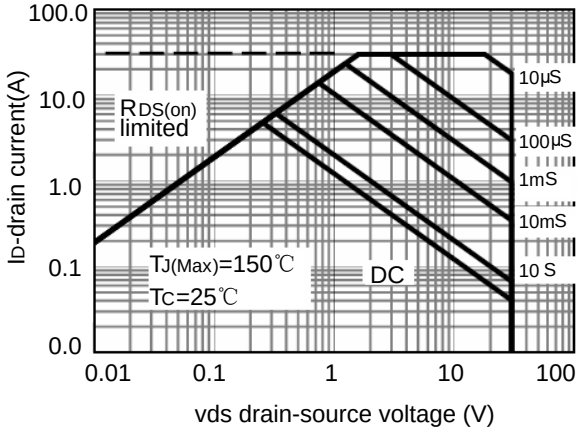


Fig.9 safe operation area

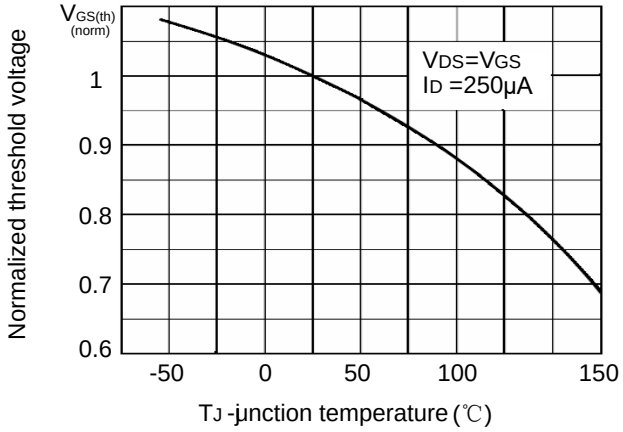
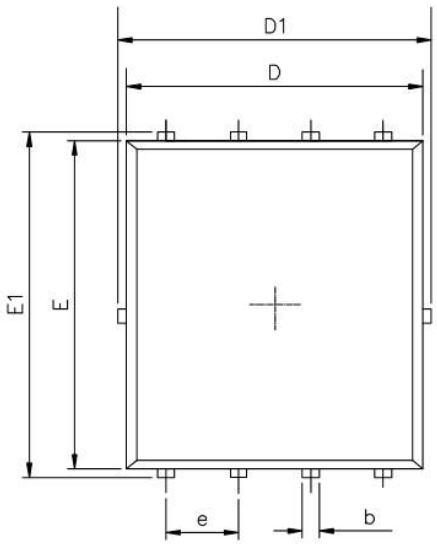
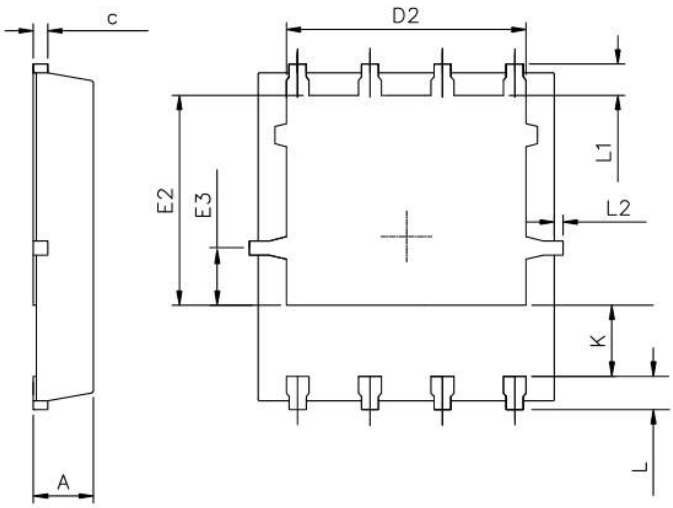


Fig.10 VGS(th) VS junction temperature

■ 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

