

■ PRODUCT CHARACTERISTICS

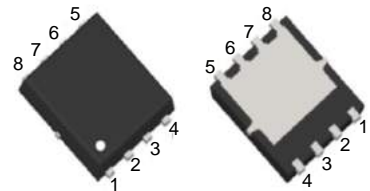
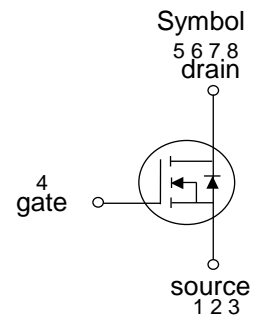
V _{DSS}	100V
R _{DS(on)} Typ(@V _{GS} =10V)	68mΩ
R _{DS(on)} Typ(@V _{GS} =4.5V)	100mΩ
I _D	7A

■ APPLICATIONS

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

■ FEATURES

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



PDFN5X6-8L

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-free	Halogen		
N/A	MOT1592G	PDFN5X6-8L	5000pieces/Reel

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

Parameter	Symbol	Value	Unit
Drain-source voltage	V _{DSS}	100	V
Gate-source voltage	V _{GSS}	±20	V
Drain current	I _D	7	A
Pulsed drain current	I _{DM}	28	A
Avalanche energy single pulsed	E _{AS}	20	mJ
Power dissipation	P _D	2.5	W
Junction temperature	T _J	+150	°C
Storage temperature	T _{STG}	-55~ +150	°C

■ ELECTRICAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS}=0V, I_{DS}=250\mu A$	100	-	-	V
Drain-source leakage current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$	-	-	1	μA
Gate-source leakage current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	100	nA
On characteristics						
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	1	-	2.5	V
On-state characteristics	$R_{DS(ON)}$	$V_{GS}=10V, I_D=7A$	-	68	92	m Ω
		$V_{GS}=4.5V, I_D=7A$	-	100	150	m Ω
Forward transconductance	g_{FS}	$V_{DS}=5V, I_D=7A$	3	-	-	S
Dynamic characteristics						
Input capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=50V$ $f=1MHz$	-	443	-	pF
Out capacitance	C_{oss}		-	80	-	pF
Reverse transfer capacitance	C_{rss}		-	15.4	-	pF
Switching characteristics						
Total gate charge	Q_g	$V_{GS}=10V, V_{DS}=50V$ $I_D=7A$	-	7.2	-	nC
Gate-source charge	Q_{gs}		-	1.3	-	nC
Gate-drain charge	Q_{gd}		-	1	-	nC
Turn-on delay time	$t_{d(on)}$	$V_{DD}=50V, I_D=7A$ $R_G=2.5\Omega, V_{GS}=10V$	-	6	-	nS
Turn-on rise time	t_r		-	2.5	-	nS
Turn-off delay time	$t_{d(off)}$		-	18	-	nS
Turn-off fall time	t_f		-	2.5	-	nS
Source-drain diode ratings and characteristics						
Continuous diode forward current	I_{SD}		-	-	7	A
Diode forward current	V_{SD}	$V_{GS}=0V, I_{SD}=7A$	-	-	1.2	V
Reverse recovery time	t_{rr}	$I_F=3.5A$ $di/dt=100A/\mu s$	-	31.2	-	nS
Reverse recovery charge	Q_{rr}		-	41.2	-	nC

■ TYPICAL CHARACTERISTICS

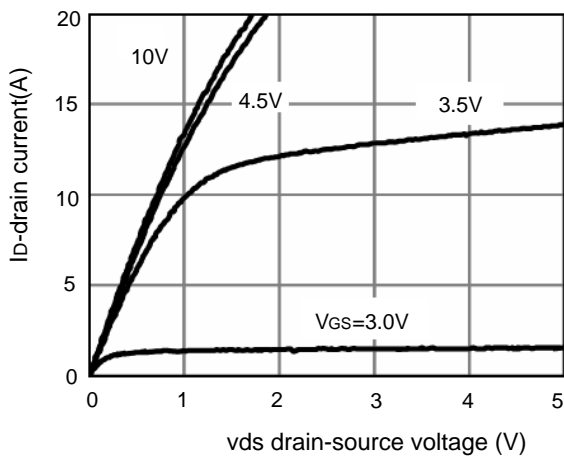


Fig.1 output characteristics

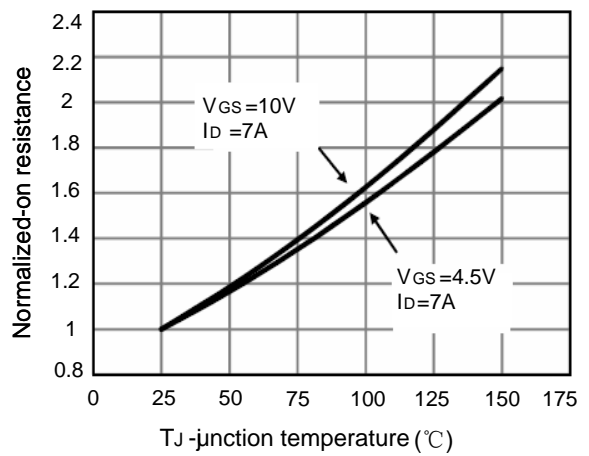


Fig.2 rdson-junction temperature

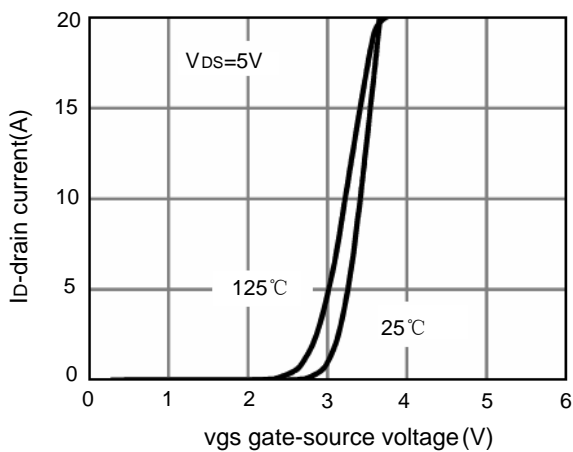


Fig.3 transfer characteristics

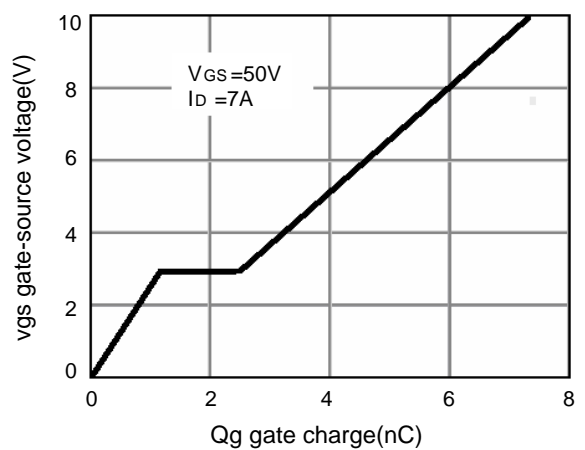


Fig.4 gate charge

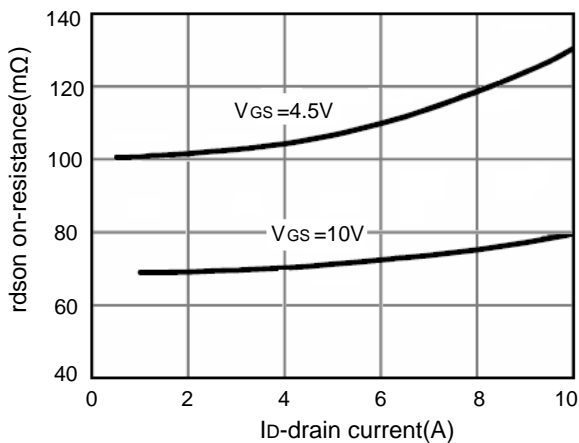


Fig.5 rdson-drain current

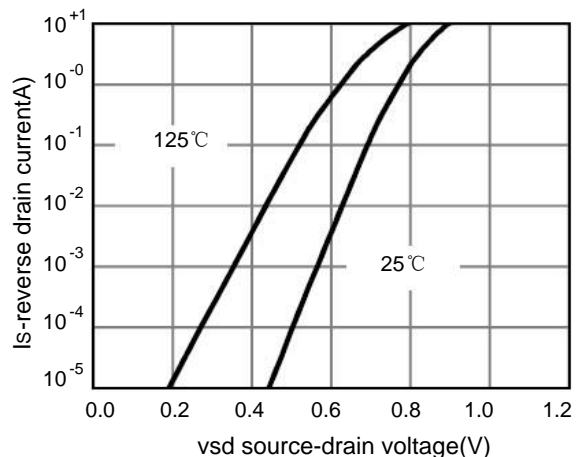


Fig.6 source-drain diode forward

■ TYPICAL CHARACTERISTICS(cCont.)

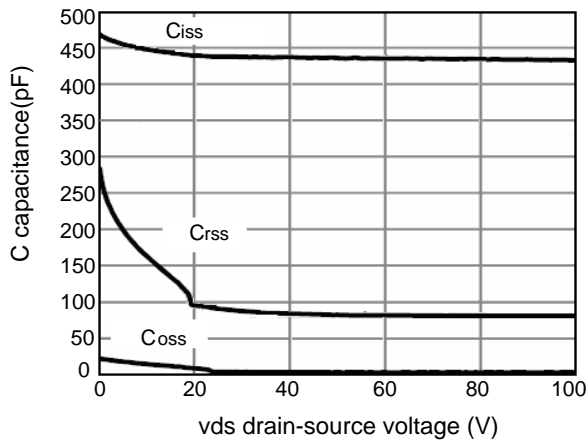


Fig.7 capacitance vs vds

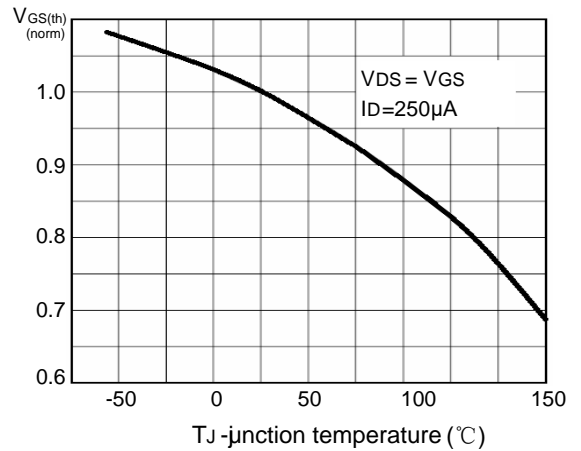


Fig.8 $V_{GS(th)}$ vs junction temperature

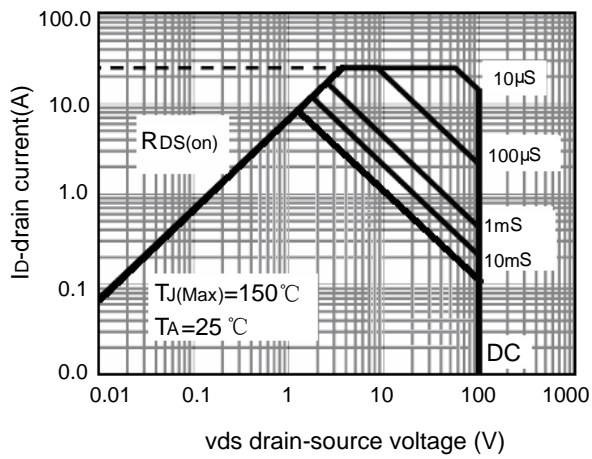


Fig.9 safe operation area

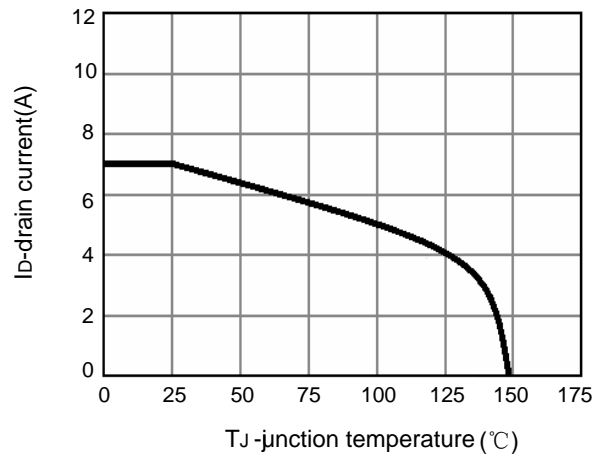
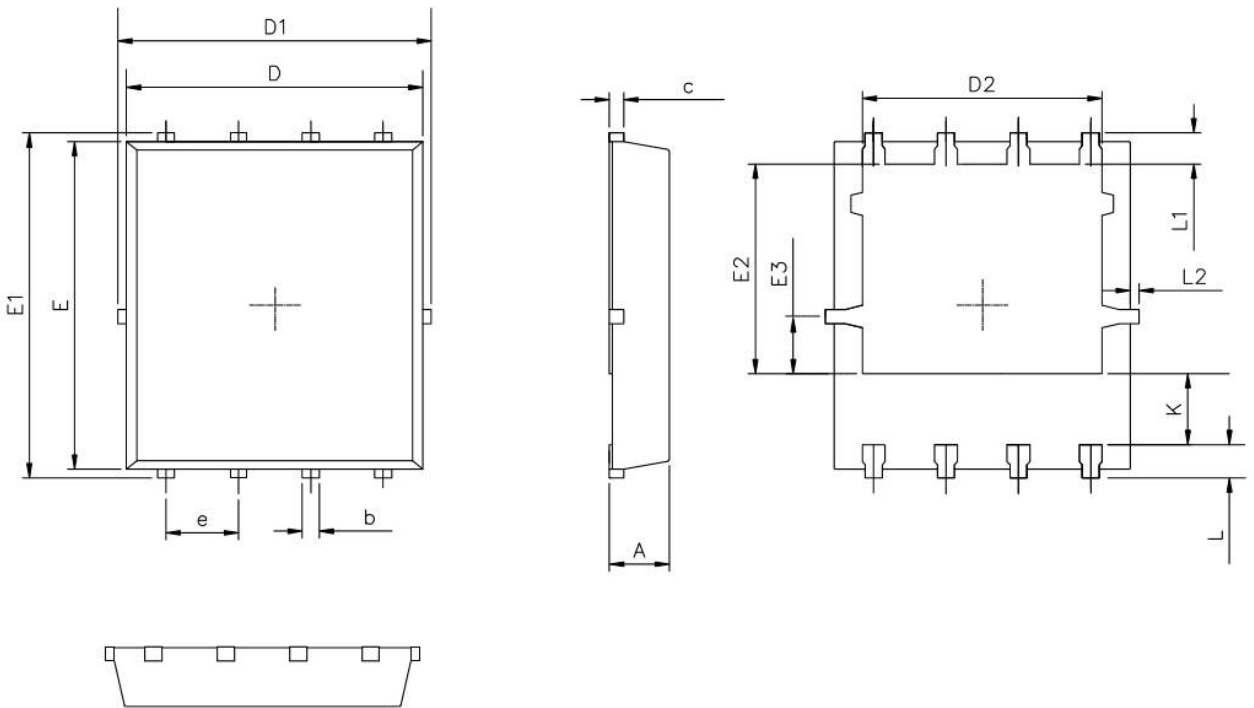
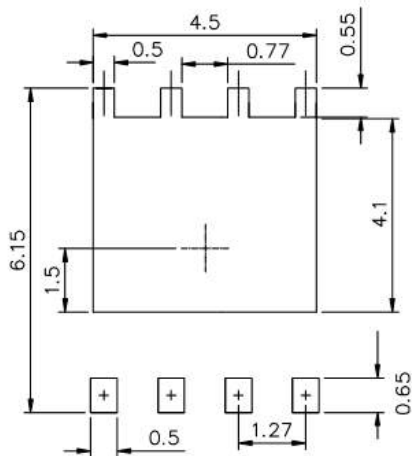


Fig.10 current de-rating

■ PDFN5X6-8L PACEAGE MECHANICAL DATA



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