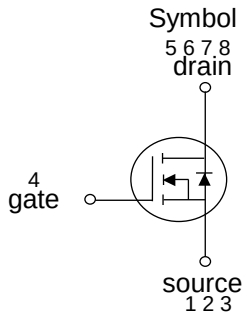
■ PRODUCT CHARACTERISTICS

V_{DSS}	100V
$R_{DS(on)}$ Typ(@V_{GS}=4.5V)	100mΩ
$R_{DS(on)}$ Typ(@V_{GS}=10V)	68mΩ
I_D	7A

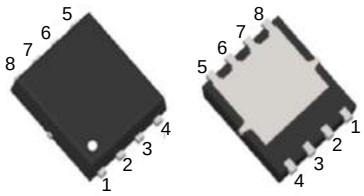


■ APPLICATIONS

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



PDFN3X3-8L

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-free	Halogen		
N/A	MOT1592J	PDFN3X3-8L	5000pieces/Reel

■ ABSOLUTE MAXIMUM RATINGS(T_C=25℃,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 currentcurrent	I_{DM}	28	A
Avalanche energy single pulsed	E_{AS}	20	mJ
Power dissipation	P_D	2.5	W
Junction temperature	T_J	+150	℃
Storage temperature	T_{STG}	-55~+150	℃

■ ELECTRICAL CHARACTERISTICS (T_C=25℃,unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS}=0V,I_{DS}=250μA	100	-	-	V
Drain-source leakage current	I_{DSS}	V_{DS}=100V,V_{GS}=0V	-	-	1	μA
Gate-source 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_{DS}=250μA	1	-	2.5	V
On-state characteristics	$R_{DS(ON)}$	V_{GS}=10V,I_D=7A	-	68	92	mΩ
		V_{GS}=4.5V,I_D=7A	-	100	150	mΩ
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=2.5Ω,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/us	-	31.2	-	nS
Reverse recovery charge	Q_{rr}		-	41.2	-	nC

■ TYPICAL CHARACTERISTICS

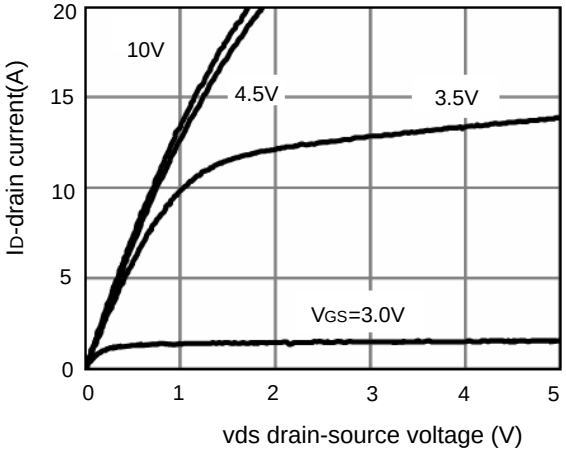


Fig.1 output characteristics

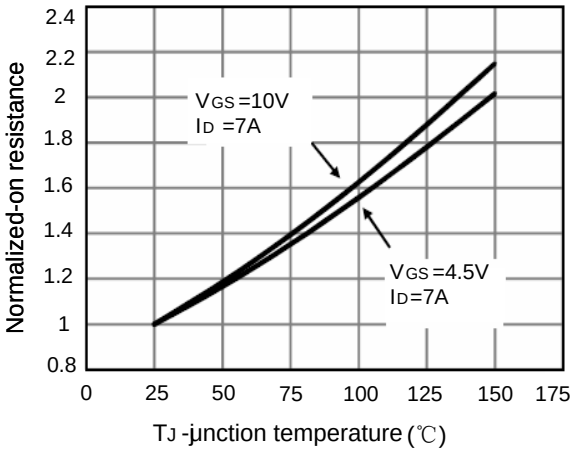


Fig.2 rdson-junction temperature

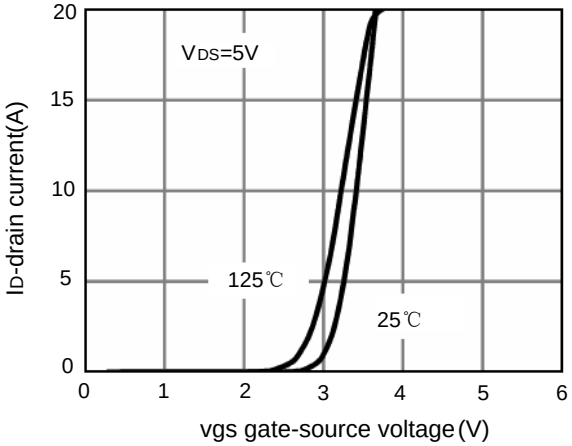


Fig.3 transfer characteristics

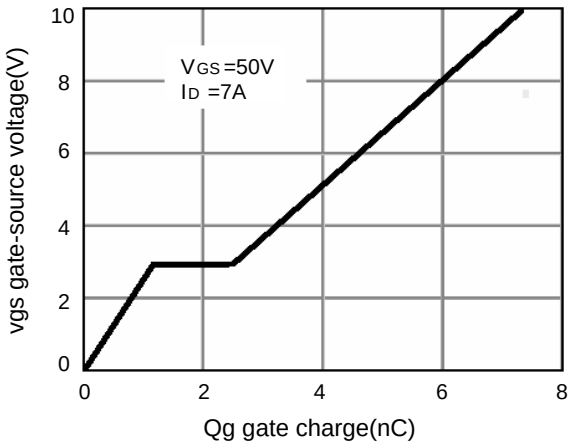


Fig.4 gare charge

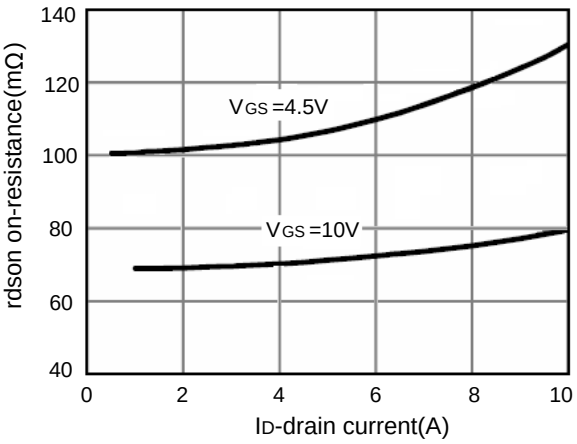


Fig.5 rdson-drain current

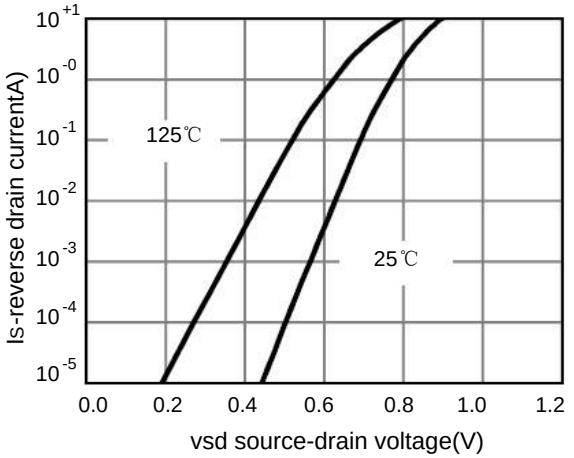


Fig.6 source-drain diode forward

■ TYPICAL CHARACTERISTICS(cCont.)

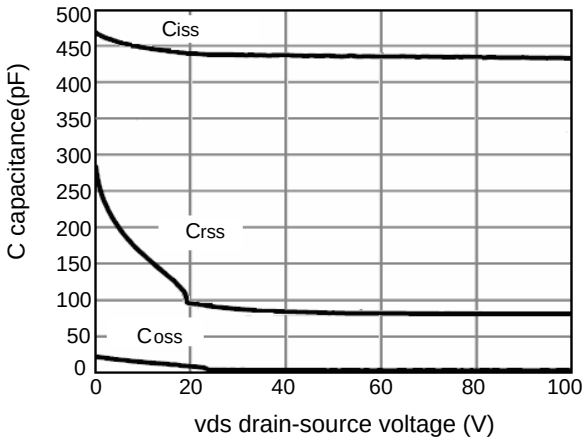


Fig.7 capacitance vs vds

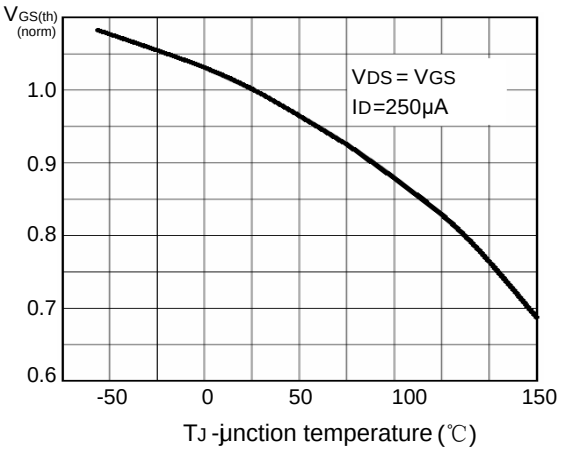


Fig.8 $V_{GS(th)}$ vs junction temperature

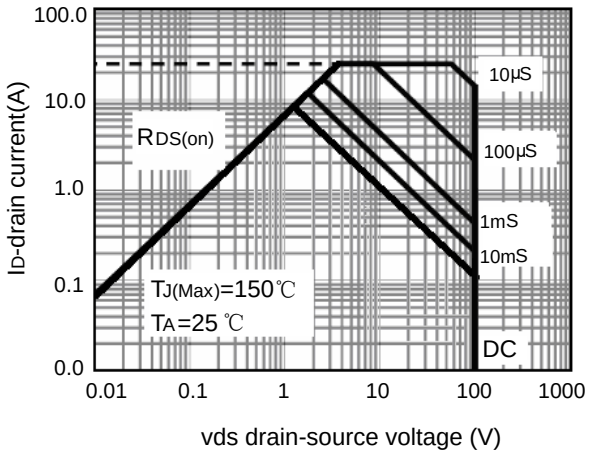


Fig.9 safe operation area

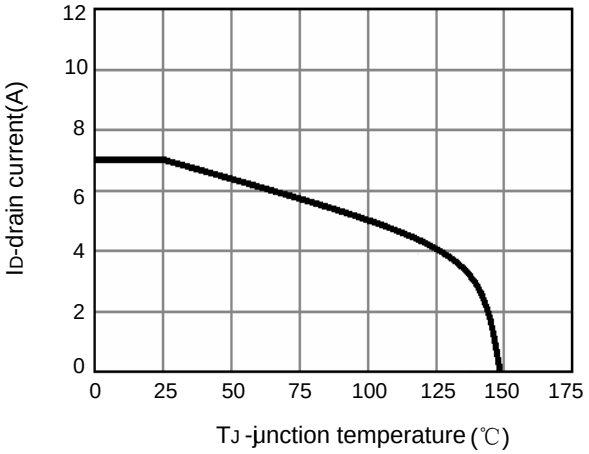
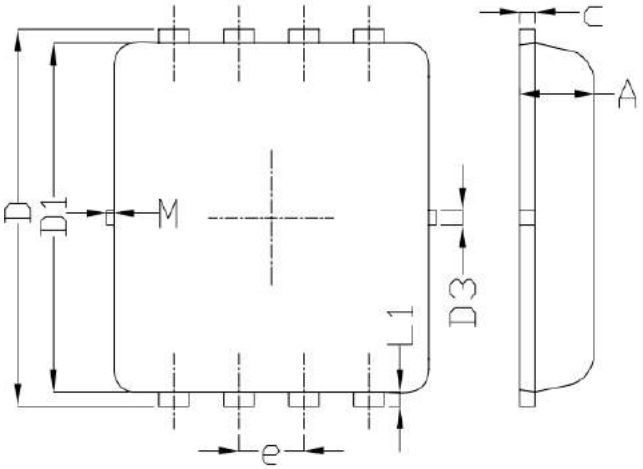
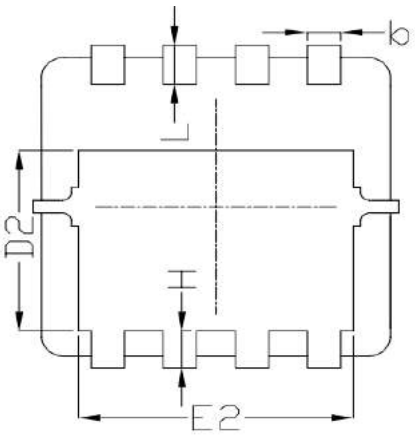
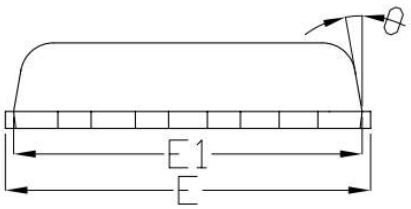


Fig.10 current de-ratina

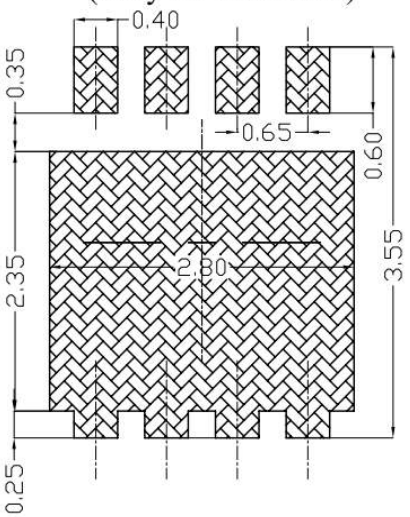
■ PDFN3X3-8L Package Mechanical Data







Land Pattern
(Only for Reference)



SYMBOL	DIMENSIONAL REQMTS		
	MIN	NOM	MAX
A	0.70	0.75	0.80
b	0.25	0.30	0.35
c	0.10	0.15	0.25
D	3.25	3.35	3.45
D1	3.00	3.10	3.20
D2	1.78	1.88	1.98
D3	---	0.13	---
E	3.20	3.30	3.40
E1	3.00	3.15	3.20
E2	2.39	2.49	2.59
e	0.65BSC		
H	0.30	0.39	0.50
L	0.30	0.40	0.50
L1	---	0.13	---
θ	---	10°	12°
M	*	*	0.15
* Not specified			