

■ PRODUCT CHARACTERISTICS

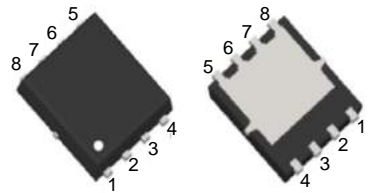
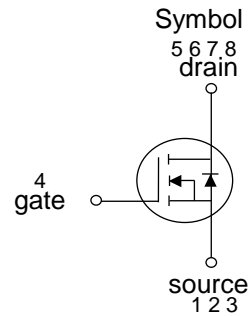
V _{DSS}	20V
R _{DS(on)} Typ(@V _{GS} =2.5V)	11mΩ
R _{DS(on)} Typ(@V _{GS} =4.5V)	8mΩ
I _D	12A

■ APPLICATIONS

DC/DC converter
Notebook vcore

■ FEATURES

High density cell design for ultra low R_{dson}
Fully characterized avalanche voltage and current



PDFN3X3-8L

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-free	Halogen		
N/A	MOT2514J	PDFN3X3-8L	5000pieces/Reel

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

Parameter	Symbol	Value	Unit
Drain-source voltage	V _{DSS}	20	V
Gate-source voltage	V _{GSS}	±12	V
Drain current	I _D	12	A
Pulsed drain current	I _{DM}	40	A
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°C, unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} =0V, I _{DS} ≤ 100mA	20	-	-	V
Drain-source leakage current	I _{DSS}	V _{DS} =20V, V _{GS} =0V	-	-	1	μA
Gate-source leakage current	I _{GSS}	V _{GS} = ±12V, V _{DS} =0V	-	-	100	nA
On characteristics						
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _{DS} ≤ 100mA	0.5	-	1.2	V
On-state characteristics	R _{DS(ON)}	V _{GS} =2.5V, I _D =5A	-	11	20	mΩ
		V _{GS} =4.5V, I _D =6A	-	8	14	mΩ
Forward transconductance	g _{FS}	V _{DS} =10V, I _D =6A	10	-	-	S
Dynamic characteristics						
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =10V f=1MHz	-	2000	-	pF
Out capacitance	C _{oss}		-	402	-	pF
Reverse transfer capacitance	C _{rss}		-	170	-	pF
Switching characteristics						
Total gate charge	Q _g	V _{GS} =10V, V _{DS} =10V I _D =6A	-	42	-	nC
Gate-source charge	Q _{gs}		-	10.8	-	nC
Gate-drain charge	Q _{gd}		-	9.2	-	nC
Turn-on delay time	t _{d(on)}	V _{DD} =10V, I _D =6A R _G =1 Ω V _{GS} =4.5V	-	25	-	nS
Turn-on rise time	t _r		-	15	-	nS
Turn-off delay time	t _{d(off)}		-	25	-	nS
Turn-off fall time	t _f		-	15	-	nS
Source-drain diode ratings and characteristics						
Continuous diode forward current	I _{SD}		-	-	12	A
Diode forward current	V _{SD}	V _{GS} =0V, I _{SD} =6A	-	-	1.2	V

■ TYPICAL CHARACTERISTICS

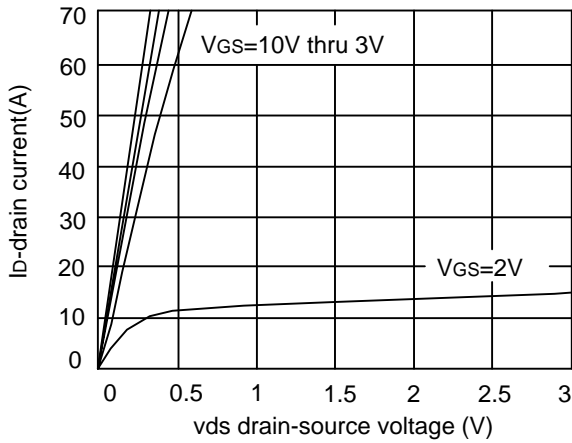


Fig.1 output characteristics

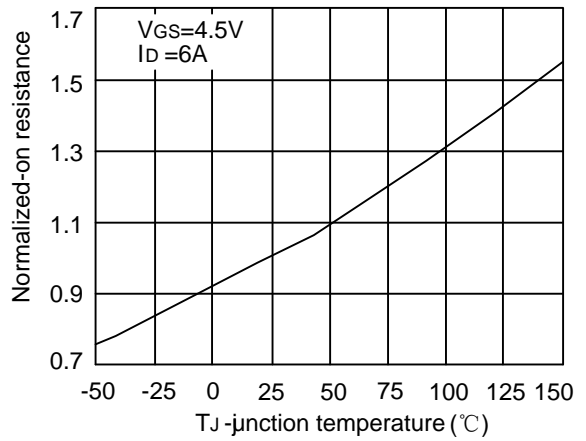


Fig.2 drain-source on-resistance

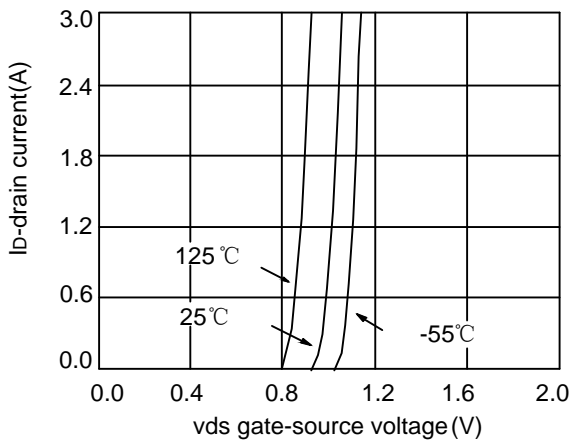


Fig.3 transfer characteristics

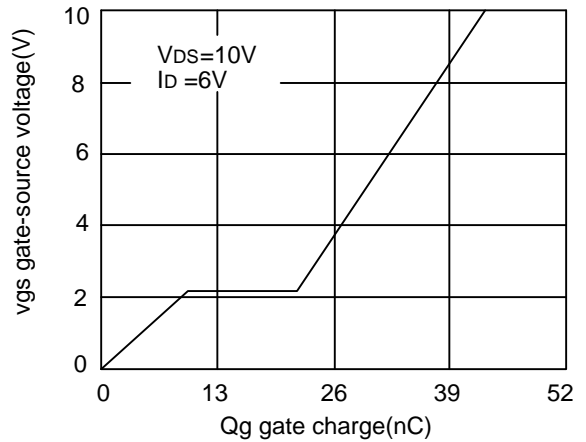


Fig.4 gate charge

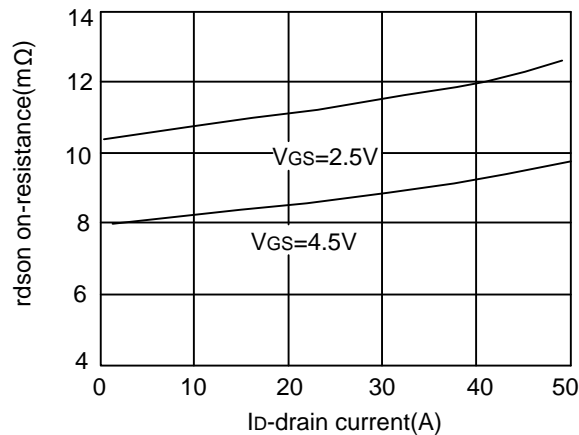


Fig.5 drain-source on-resistance

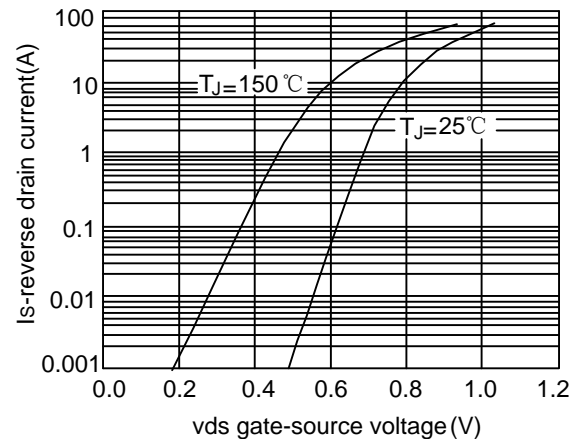


Fig.5 source-drain diode forward

■ TYPICAL CHARACTERISTICS(Cont.)

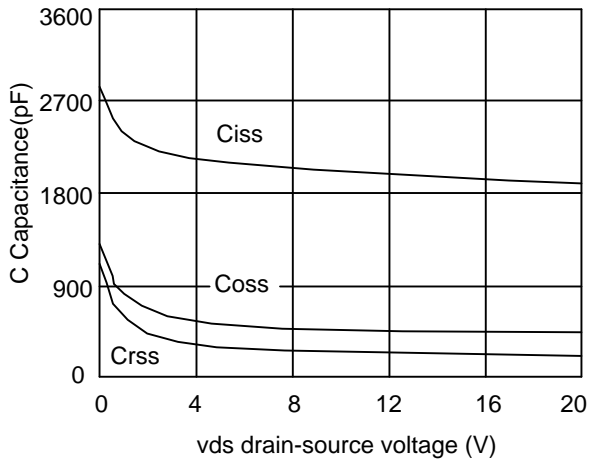


Fig.7 capacitance vs vds

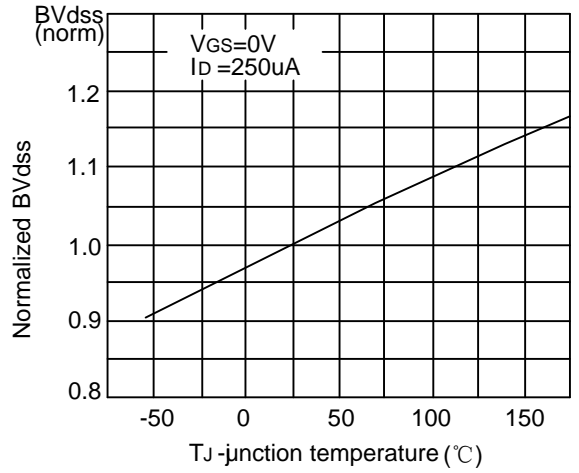


Fig.8 BVdss vs junction temperature

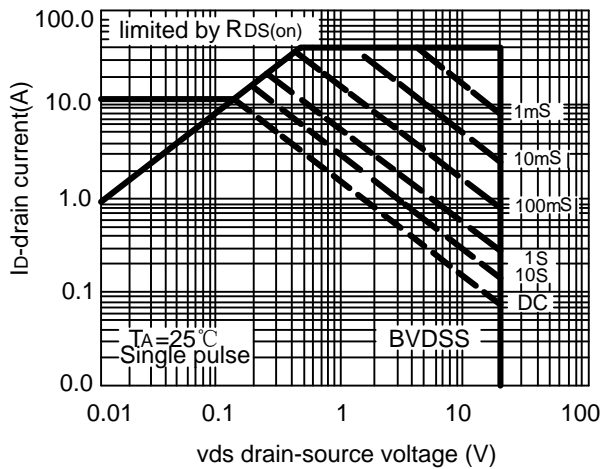


Fig.9 safe operation area

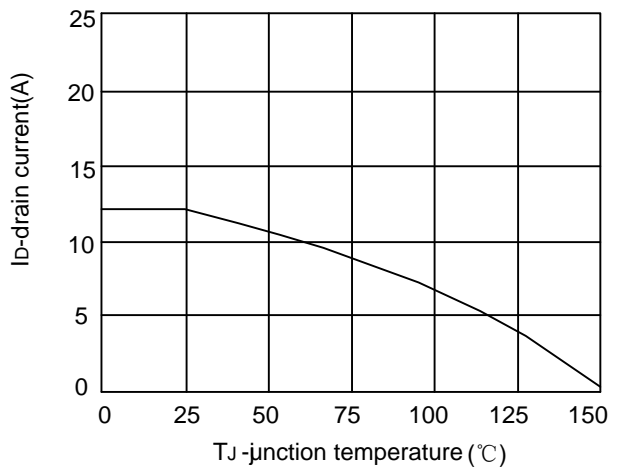
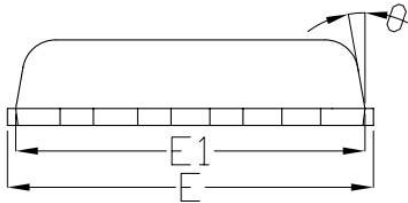
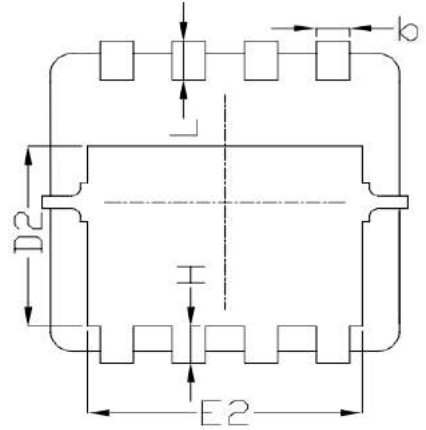
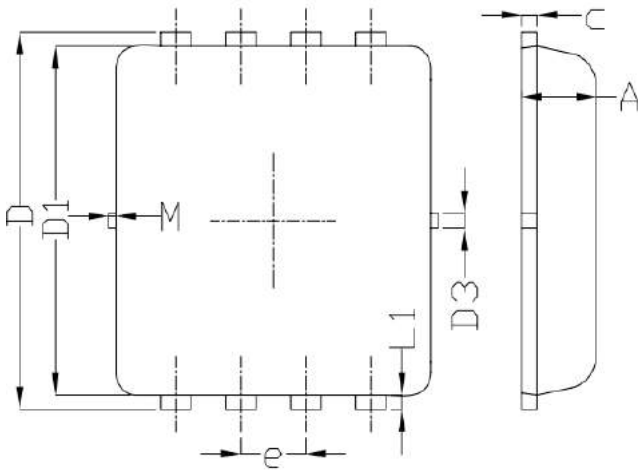
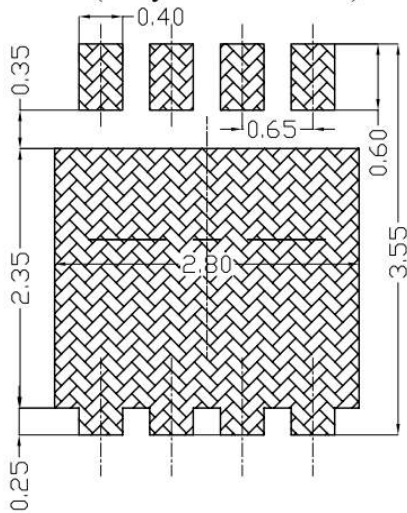


Fig.10 current vs junction temperature

■ 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			