

■ PRODUCT CHARACTERISTICS

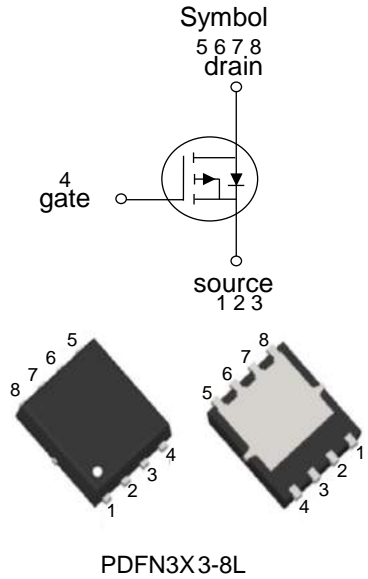
V <sub>DSS</sub>	-30V
R <sub>DS(on) Typ(@V<sub>GS</sub>=-4.5V)</sub>	14mΩ
R <sub>DS(on) Typ(@V<sub>GS</sub>=-10V)</sub>	9.5mΩ
I <sub>D</sub>	-20A

■ APPLICATIONS

- PWM applications
- Load switch
- Power management

■ FEATURES

- High power and current handling capability
- Led free product is acquired
- Surface mount package



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-free	Halogen		
N/A	MOT3712J	PDFN3X3-8L	5000pieces/Reel

■ ABSOLUTE MAXIMUM RATINGS(T<sub>C</sub>=25°C , unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-source voltage	V <sub>DSS</sub>	-30	V
Gate-source voltage	V <sub>GSS</sub>	±20	V
Drain current	I <sub>D</sub>	-20	A
Pulsed drain current	I <sub>DM</sub>	-80	A
Power dissipation	P <sub>D</sub>	35	W
Junction temperature	T <sub>J</sub>	+150	°C
Storage temperature	T <sub>STG</sub>	-55~+150	°C

■ ELECTRICAL CHARACTERISTICS (T<sub>C</sub>=25°C, unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>DS</sub> =-250uA	-30	-	-	V
Drain-source leakage current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V	-	-	-1	μA
Gate-source leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> =0V	-	-	100	nA
On characteristics						
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>DS</sub> =-250uA	-1.2	-	-2.5	V
On-state characteristics	R <sub>DS(ON)</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-15A	-	14	18	mΩ
		V <sub>GS</sub> =-10V, I <sub>D</sub> =-15A	-	9.5	12	mΩ
Forward transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-15A	10	-	-	S
Dynamic characteristics						
Input capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-25V f=1MHz	-	2130	-	pF
Out capacitance	C <sub>oss</sub>		-	302	-	pF
Reverse transfer capacitance	C <sub>rss</sub>		-	227	-	pF
Switching characteristics						
Total gate charge	Q <sub>g</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-15V I <sub>D</sub> =-20A	-	10	-	nC
Gate-source charge	Q <sub>gs</sub>		-	2	-	nC
Gate-drain charge	Q <sub>gd</sub>		-	2.7	-	nC
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> =-15V, I <sub>D</sub> =-15A R <sub>G</sub> =1 V <sub>GS</sub> =-10V	-	12	-	nS
Turn-on rise time	t <sub>r</sub>		-	10	-	nS
Turn-off delay time	t <sub>d(off)</sub>		-	25	-	nS
Turn-off fall time	t <sub>f</sub>		-	13	-	nS
Source-drain diode ratings and characteristics						
Continuous diode forward current	I <sub>SD</sub>		-	-	-20	A
Diode forward current	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>SD</sub> =-20A	-	-	-1.2	V

■ TYPICAL CHARACTERISTICS

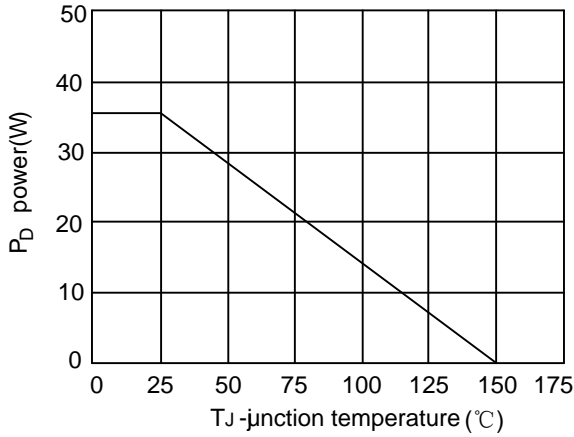


Fig.1 power dissipation

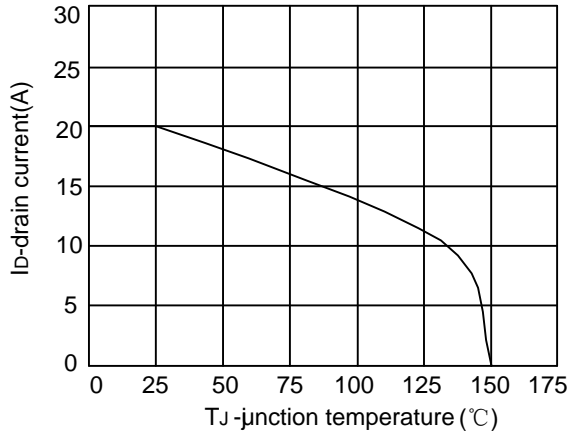


Fig.2 current vs junction temperature

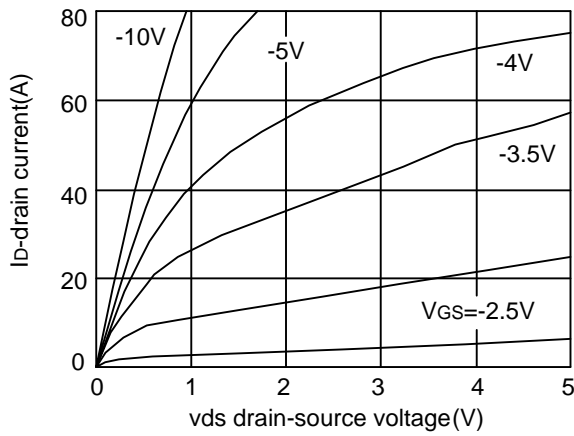


Fig.3 output characteristics

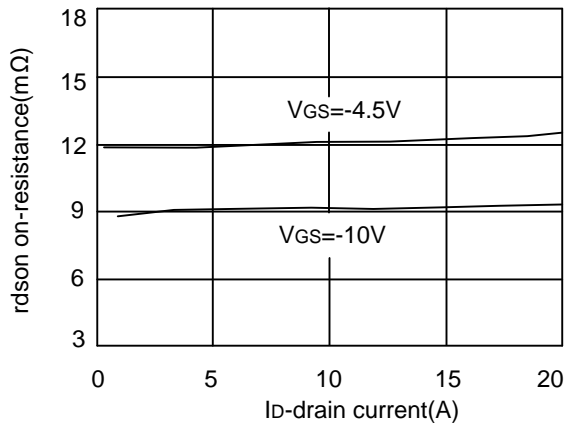


Fig.4 drain-source on-resistance

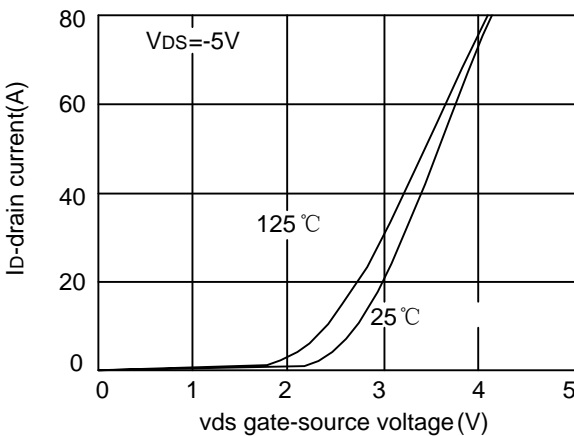


Fig.5 transfer characteristics

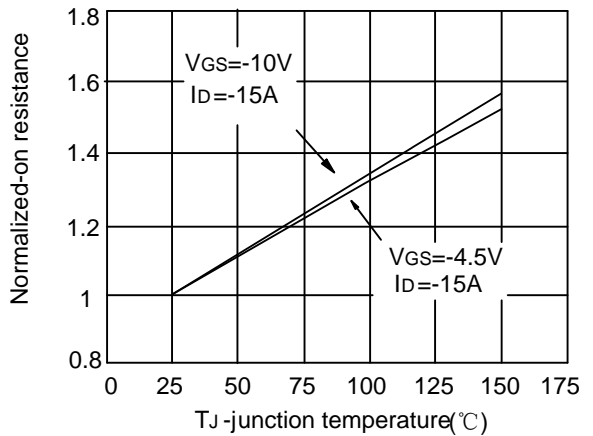


Fig.6 drain-source on-resistance

■ TYPICAL CHARACTERISTICS(Cont.)

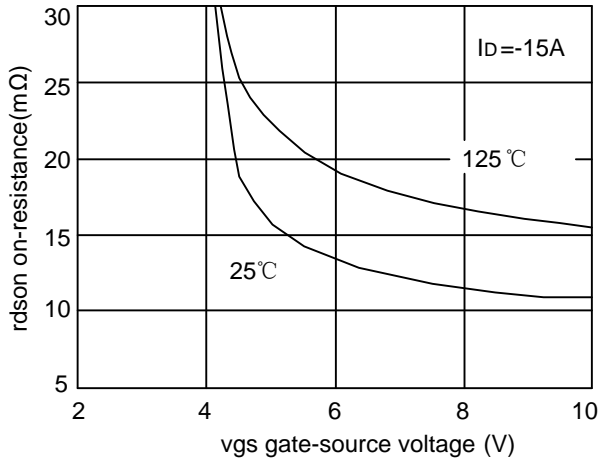


Fig.7 rdson vs vgs

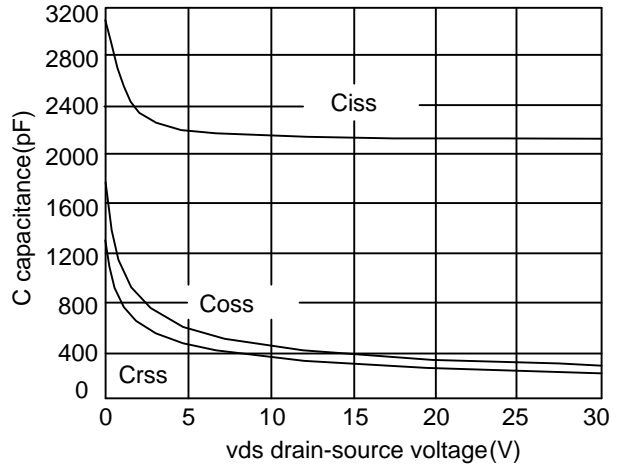


Fig.8 capacitance vs vds

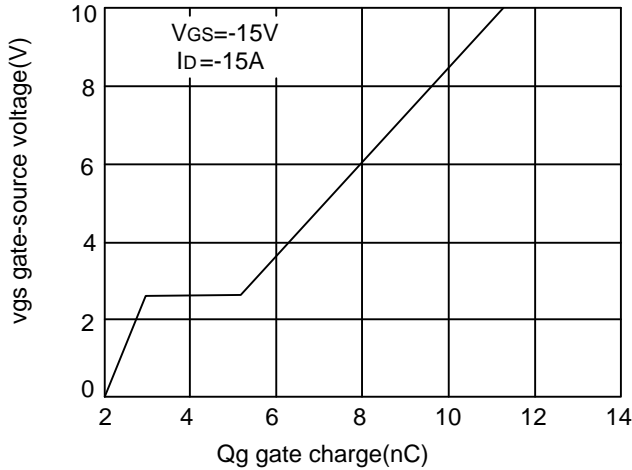


Fig.9 gate charge

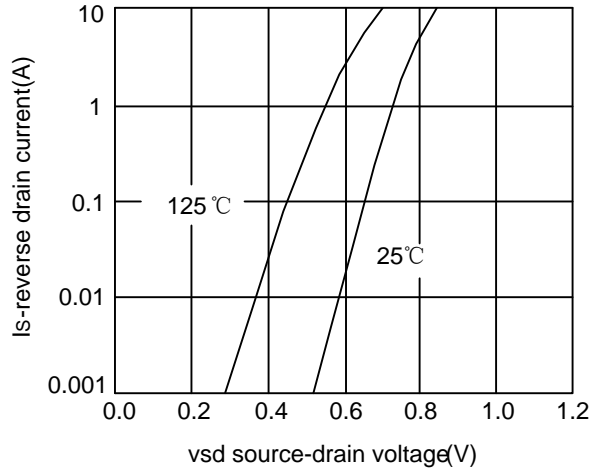


Fig.10 source-drain diode forward

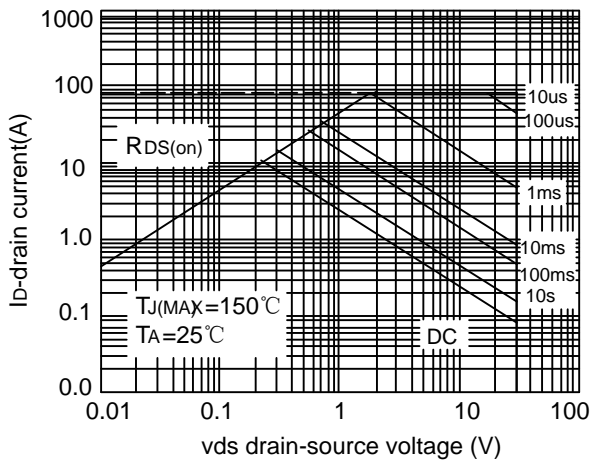


Fig.11 safe operation area

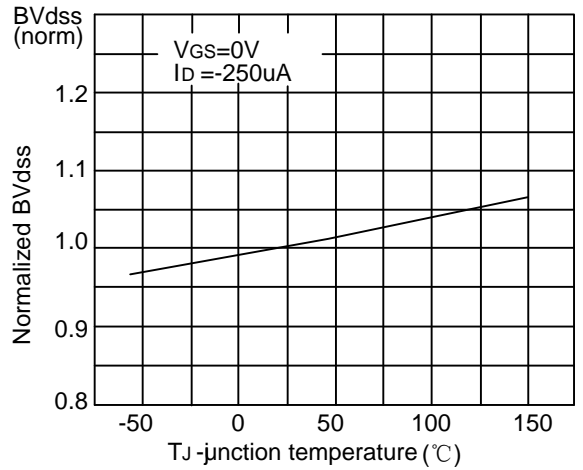
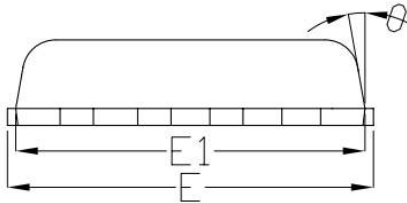
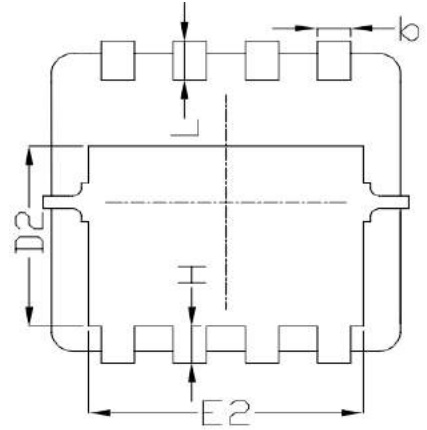
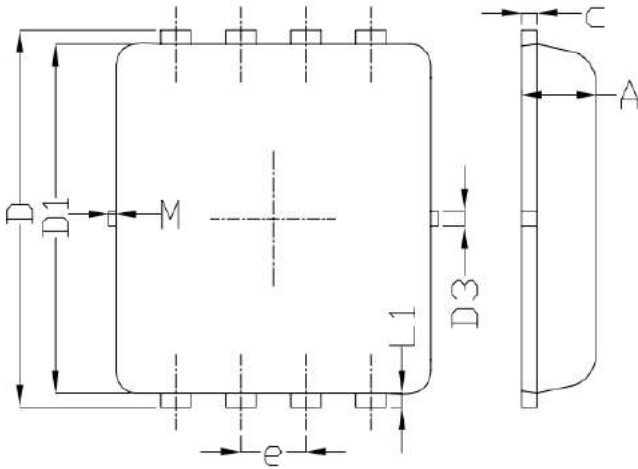
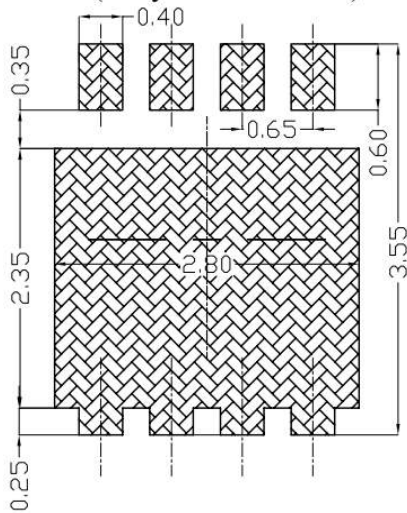


Fig.12 BVdss vs junction temperature

■ 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			