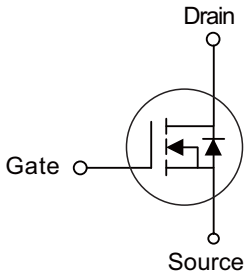
■ PRODUCT CHARACTERISTICS

VDSS	60V
R_{DS}(on)Typ(@V_{GS} =10 V)	57mΩ
R_{DS}(on)Typ(@V_{GS} =4.5 V)	68mΩ
ID	5A

Symbol

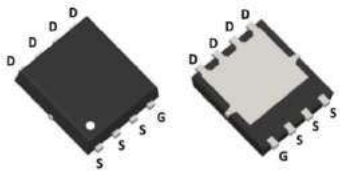


■ APPLICATIONS

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	MOT6568J	PDFN3x3-8L	5000 pieces /Reel

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	5	A
Pulsed Drain Current	I_{DM}	24	A
Maximum Power Dissipation	P_D	2	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	60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V,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		2.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=5A	-	57	68	mΩ
		V_{GS}=4.5V, I_D=5A	-	64	72	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}=20V,V_{GS}=0V, F=1.0MHz	-	564	-	PF
Output Capacitance	C_{oss}		-	65	-	PF
Reverse Transfer Capacitance	C_{rss}		-	20	-	PF
Switching characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{GS}=10V,V_{DS}=30V I_D=5A ,R_{GEN}=3Ω	-	5.2	-	nS
Turn-on Rise Time	t_r		-	3	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	17	-	nS
Turn-Off Fall Time	t_f		-	2.5	-	nS
Total Gate Charge	Q_g	V_{GS}=10V,V_{DS}=30V,I_D=5A	-	22	-	nC
Gate-Source Charge	Q_{gs}		-	3.3	-	nC
Gate-Drain Charge	Q_{gd}		-	5.2	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=5A	-	-	1.2	V
Diode Forward Current	I_S		-	-	5	A

■ TYPICAL CHARACTERISTICS

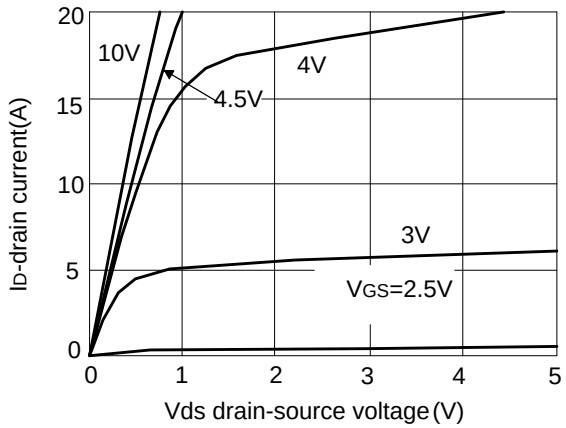


Fig.1 Output characteristics

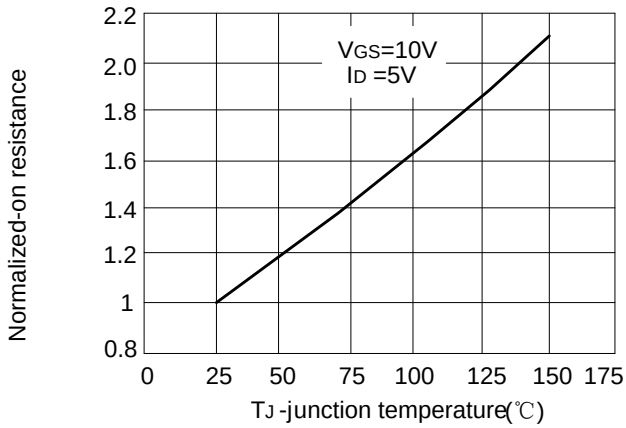


Fig.2 Drain-source on-resistance

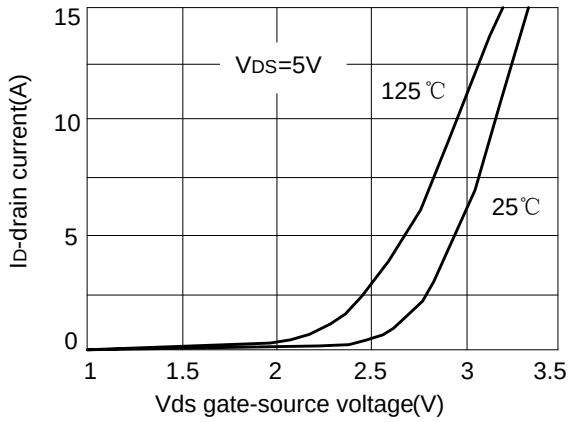


Fig.3 Transfer characteristics

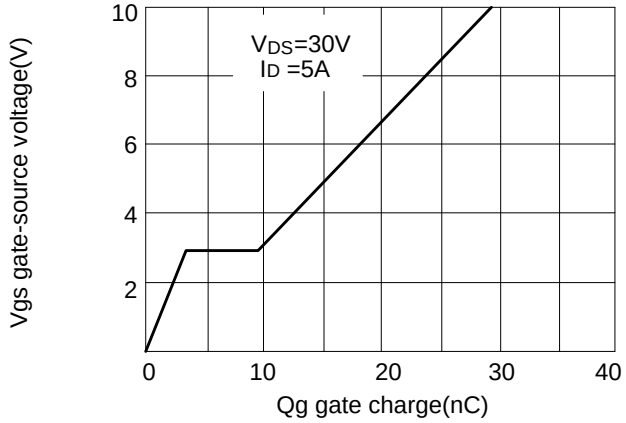


Fig.4 Gate chaerge

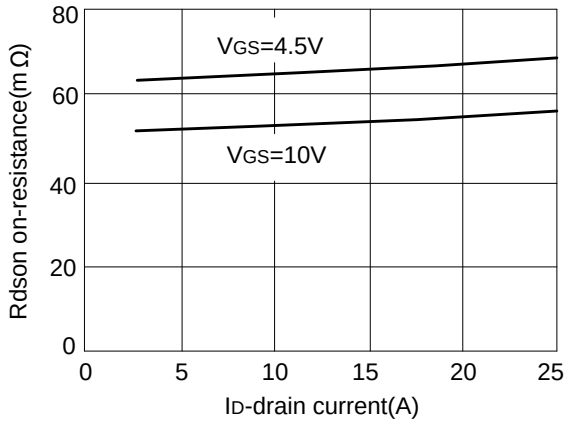


Fig.5 Drain-source on-resistance

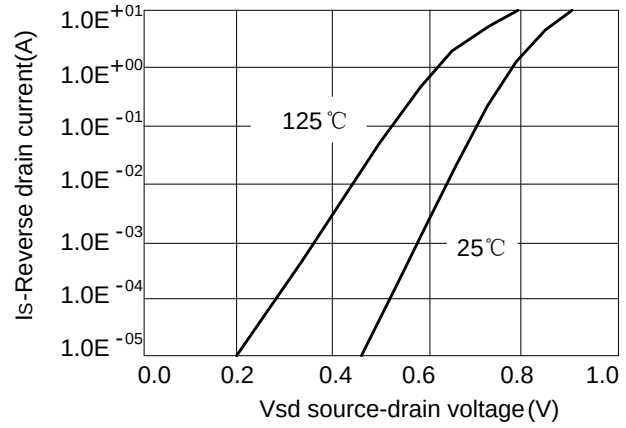


Fig.6 Source-drain diode forward

■ TYPICAL CHARACTERISTICS(Cont.)

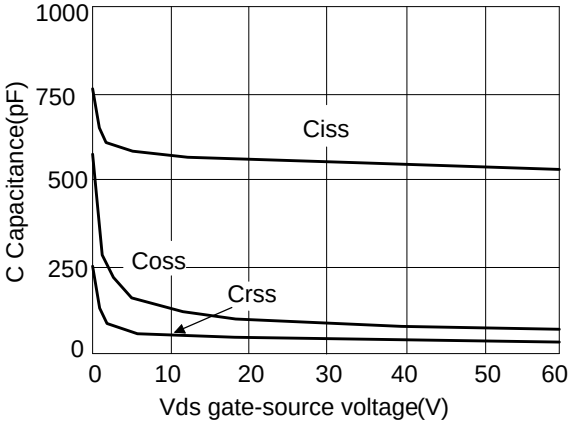


Fig.7 Capacitance vs vds

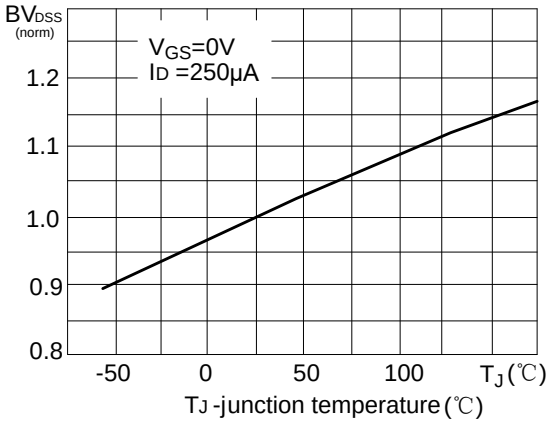


Fig.8 BV_{DSS} vs junction temperature

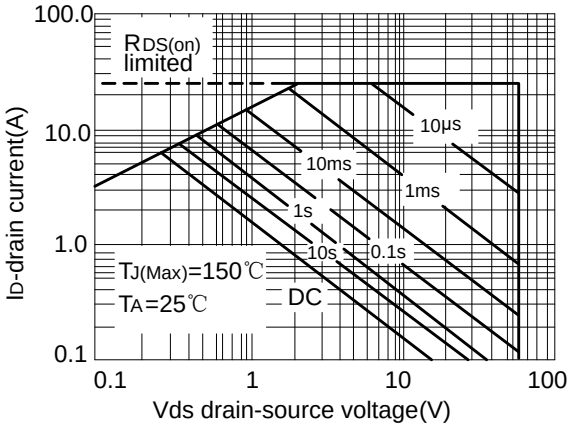


Fig.9 Safe operation area

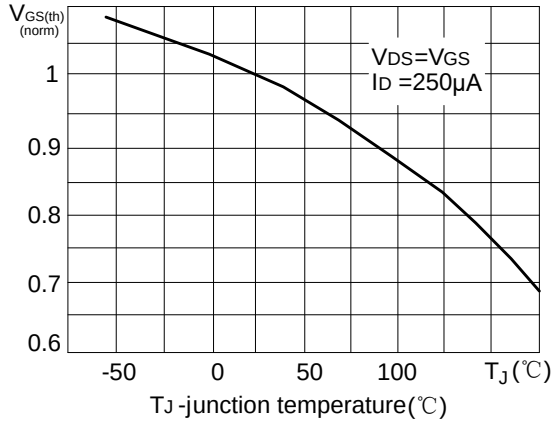
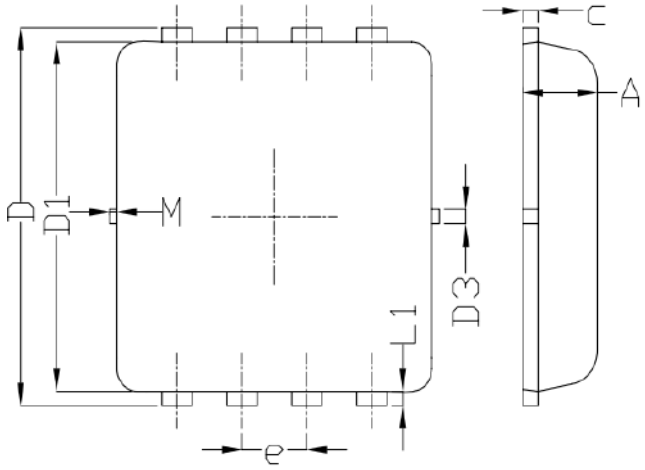
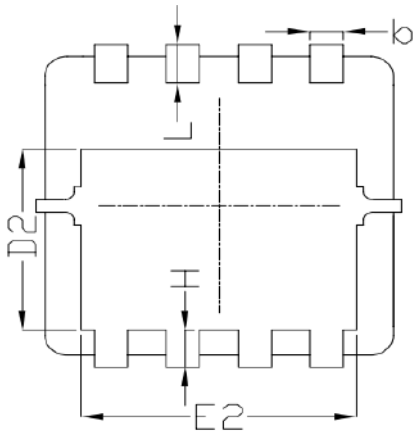
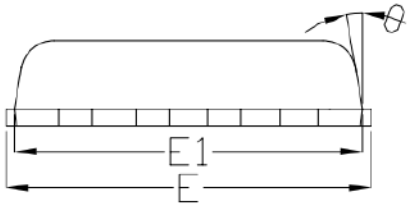


Fig.10 $V_{GS(th)}$ vs junction temperature

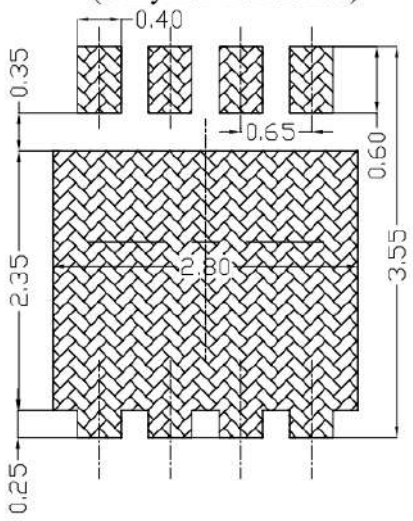
■ PDFN3X3-8L Package Mechanical Data







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			