

PRODUCT CHARACTERISTICS

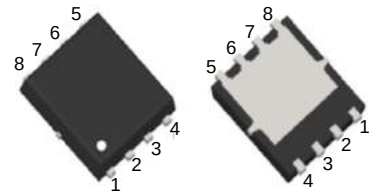
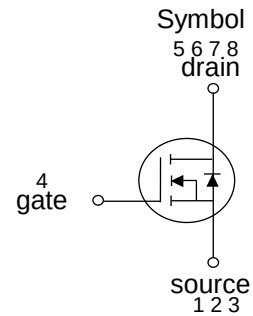
V_{DS}	30V
$R_{DS(on)}$ Typ(@ $V_{GS}=4.5V$)	9m Ω
$R_{DS(on)}$ Typ(@ $V_{GS}=10V$)	5.5m Ω
I_D	40A

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	MOT3180J	PDFN3X3-8L	5000pieces/Reel

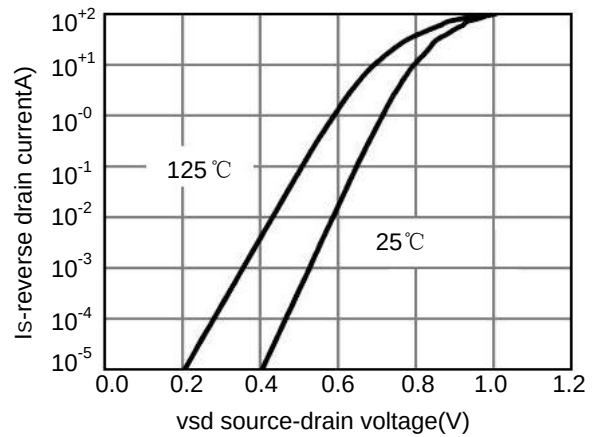
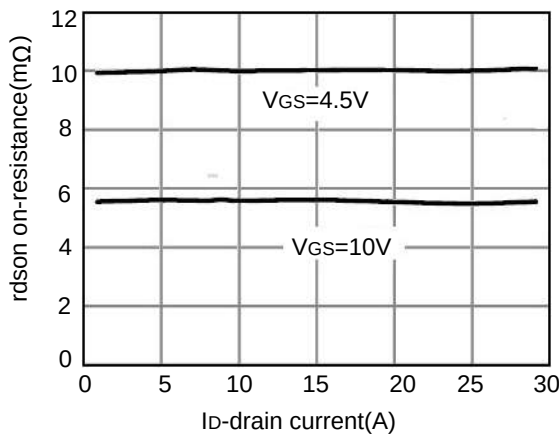
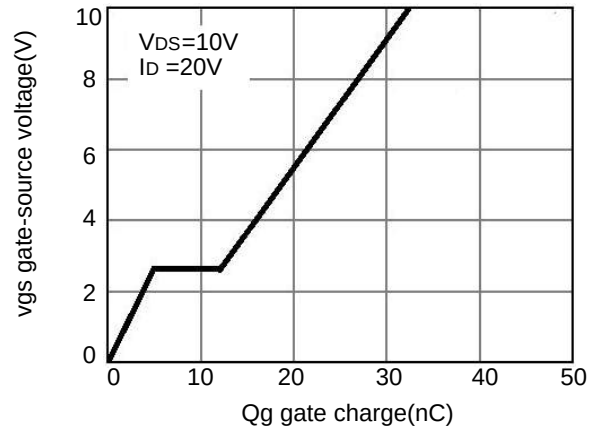
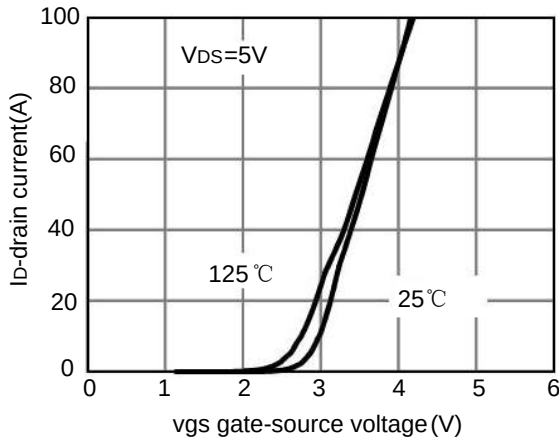
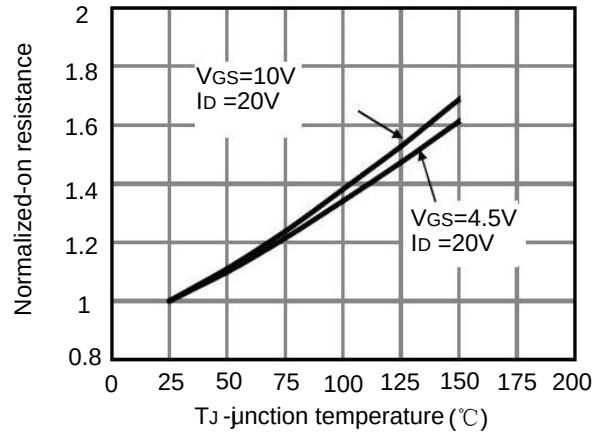
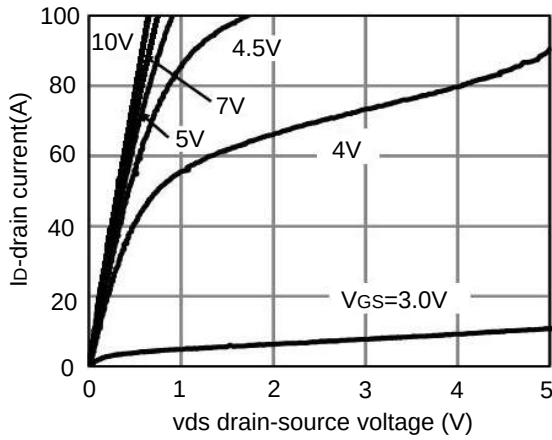
ABSOLUTE MAXIMUM RATINGS($T_C=25^{\circ}C$, unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	30	V
Gate-source voltage	V_{GS}	± 20	V
Drain current	$T_C=25(^{\circ}C)$	I_D	40
	$T_C=100(^{\circ}C)$	I_D	28.3
Pulsed drain current	I_{DM}	160	A
Avalanche energy single pulsed	E_{AS}	150	mJ
Power dissipation	P_D	35	W
Junction temperature	T_J	$+150$	$^{\circ}C$
Storage temperature	T_{STG}	$-55 \sim +150$	$^{\circ}C$

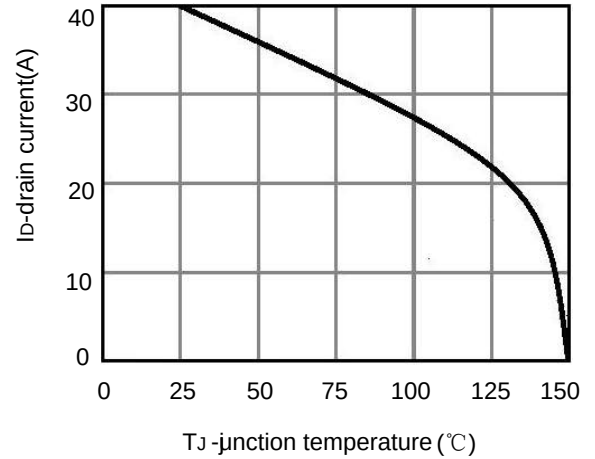
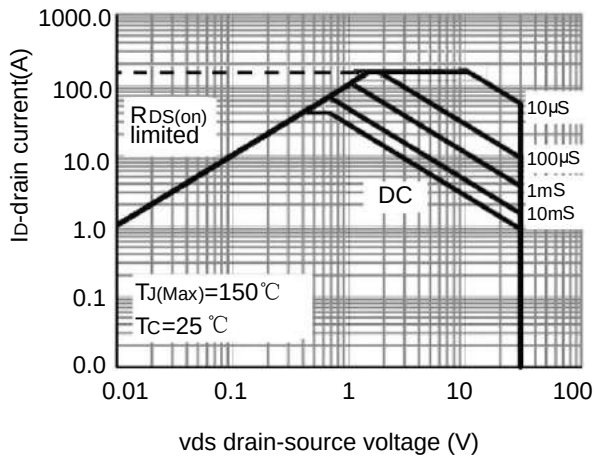
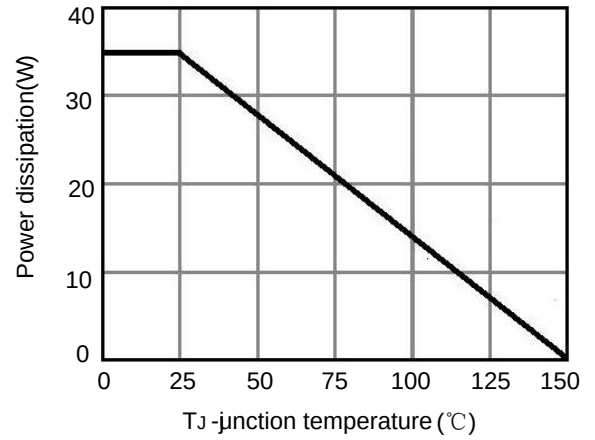
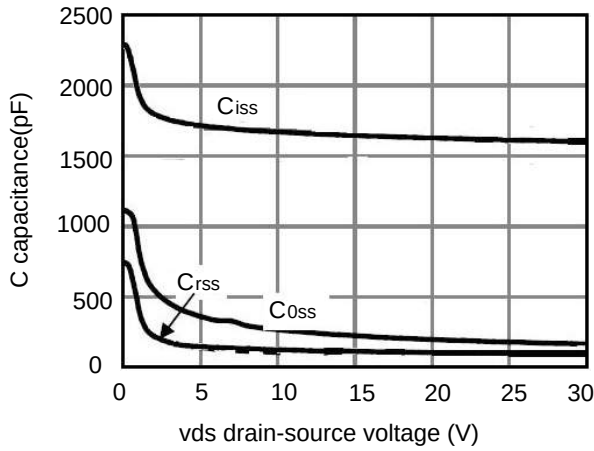
■ ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} =0V,I _{DS} =250μA	30	-	-	V
Drain-source leakage current	I _{DSS}	V _{DS} =30V,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 =20A	-	5.5	8	mΩ
		V _{GS} =4.5V,I _D =20A	-	9	13	mΩ
Forward transconductance	g _{FS}	V _{DS} =10V,I _D =20A	10	-	-	S
Dynamic characteristics						
Input capacitance	C _{iss}	V _{GS} =0V,V _{DS} =15V f=1MHz	-	1650	-	pF
Out capacitance	C _{oss}		-	205	-	pF
Reverse transfer capacitance	C _{rss}		-	177	-	pF
Switching characteristics						
Total gate charge	Q _g	V _{GS} =10V,V _{DS} =15V I _D =20A	-	32.3	-	nC
Gate-source charge	Q _{gs}		-	4.9	-	nC
Gate-drain charge	Q _{gd}		-	6.9	-	nC
Turn-on delay time	t _{d(on)}	V _{DD} =15V,I _D =20A R _G =6Ω, V _{GS} =10V	-	9	-	nS
Turn-on rise time	t _r		-	8	-	nS
Turn-off delay time	t _{d(off)}		-	28	-	nS
Turn-off fall time	t _f		-	5	-	nS
Source-drain diode ratings and characteristics						
Continuous diode forward current	I _{SD}		-	-	40	A
Diode forward current	V _{SD}	V _{GS} =0V,I _{SD} =20A	-	-	1.2	V
Reverse recovery time	t _{rr}	I _F =20A di/dt=100A/ us	-	27	-	nS
Reverse recovery charge	Q _{rr}		-	20	-	nC

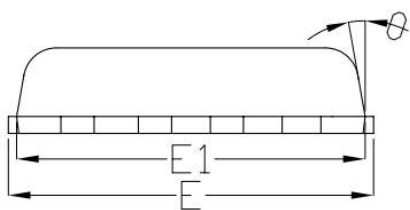
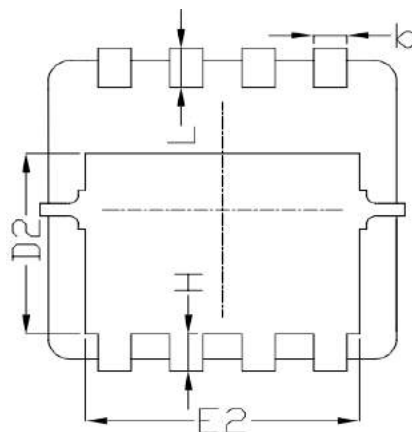
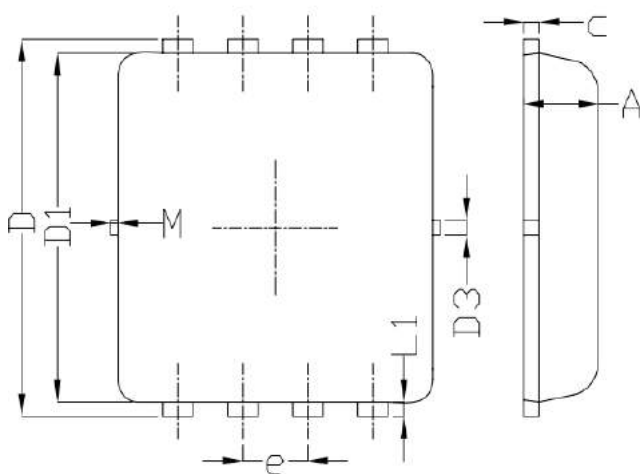
■ TYPICAL CHARACTERISTICS



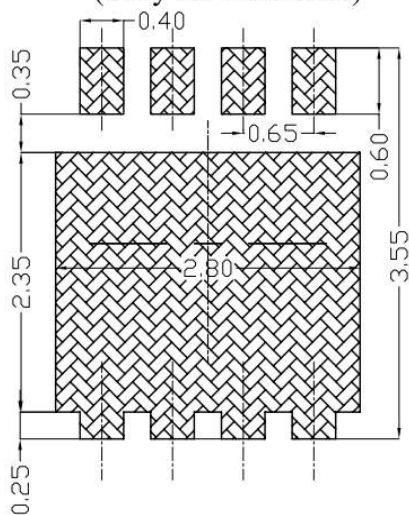
■ TYPICAL CHARACTERISTICS(Cont.)



■ PDFN3X3-8L PACEAGE MECHANICAL DATA



Land Pattern
(Only for Reference)



SYMBOL	DIMENSIONAL REOMTS		
	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			