

PRODUCT CHARACTERISTICS

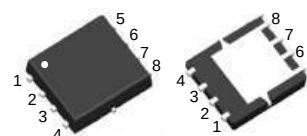
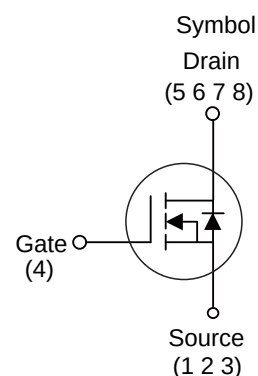
V_{DS}	40V
$R_{DS(ON)}$ Typ(@ $V_{GS}=10V$)	3.2m Ω
Qg@typ	22nC
I_D	117A

APPLICATIONS

* Switching applications

FEATURE

- * Low capacitance
- * Low gate charge
- * Fast switching capability
- * Avalanche energy specified



PDFN3X3

ORDER INFORMATION

Order Codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT4134J	PDFN3X3	5000 pieces/Reel

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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current Continuous(@ $V_{GS}=10V, T_A=25^{\circ}C$)	I_D	117	A
Drain Current Continuous(@ $V_{GS}=10V, T_A=100^{\circ}C$)	I_D	75	A
Drain Current Pulsed	I_{DM}	468	A
Avalanche Energy *	E_{AS}	225	mJ
Power Dissipation	P_D	62	W
Junction Temperature	T_J	+150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

THERMAL CHARACTERISTICS

Parameter	Symbol	Typ	Unit
Junction to Case	R_{thJC}	2	$^{\circ}C/W$

Note: * EAS condition: $T_J=25^{\circ}C, V_{DS}=24V, V_G=10V, L=0.5mH, R_g=25\Omega$

■ ELECTRICAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain to Source Breakdown Voltage	V _{DSS}	V _{GS} =0V, I _D =250μA	40	-	-	V
Drain to Source Leakage Current	I _{DSS}	V _{DS} =40V, V _{GS} =0V	-	-	1	μA
Gate to Source Forward Leakage	I _{GSS(F)}	V _{GS} =+20V, V _{DS} =0V	-	-	100	nA
Gate to Source Reverse Leakage	I _{GSS(R)}	V _{GS} =-20V , V _{DS} =0V	-	-	-100	nA
On characteristics						
Drain to Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =20A	-	3.2	3.6	mΩ
Dynamic characteristics	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	2	-	4	V
Gate capacitance	R _g	V _{GS} =0V, V _{DS} =0V , f=1.0MHz	-	3	-	Ω
Forward Transconductance	g _{fs}	V _{DS} =5V, I _D =5A	-	12	-	S
Input Capacitance	C _{iss}	V _{DS} =20V, V _{GS} =0V f=1.0MHz	-	1625	-	pF
Output Capacitance	C _{oss}		-	814	-	pF
Reverse Transfer Capacitance	C _{rss}		-	36	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	t _{d(ON)}	V _{GS} =10V, V _{DS} =20V, I _D =20A, R _G =1Ω	-	9	-	ns
Rise Time	t _r		-	13.3	-	ns
Turn-off Delay Time	t _{d(OFF)}		-	7.5	-	ns
Fall Time	t _f		-	3.5	-	ns
Total Gate Charge	Q _g	I _D =20A, V _{DS} =20V V _{GS} =10V	-	22	-	nC
Gate to Source Charge	Q _{gs}		-	7.5	-	nC
Gate to Drain("Miller") Charge	Q _{gd}		-	3.5	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	I _s		-	-	117	A
Maximum Pulsed Current(Body Diode)	I _{SM}		-	-	468	A
Diode Forward Voltage	V _{SD}	I _{SD} =1 A, V _{GS} =0V	-	0.7	1.2	V
Reverse Recovery Time	t _{rr}	I _{SD} =20A, T _J =25 °C	-	37	-	ns
Reverse Recovery Charge	Q _{rr}	di /dt=100A/μs	-	23	-	nC

■ TYPICAL CHARACTERISTICS

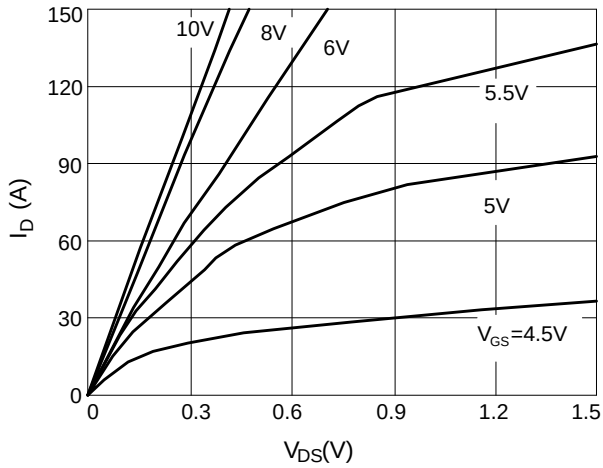


Fig.1 output characteristics

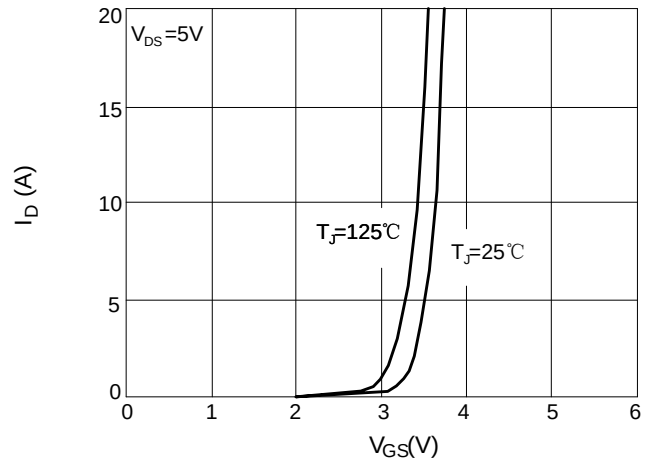


Fig.2 typical transfer characteristics

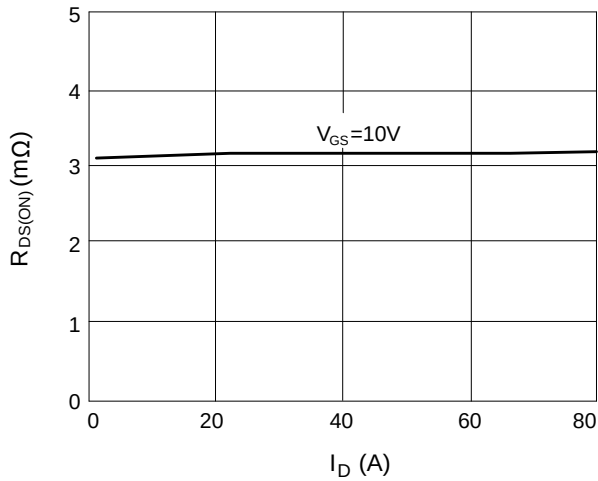


Fig.3 on-resistance vs. drain current

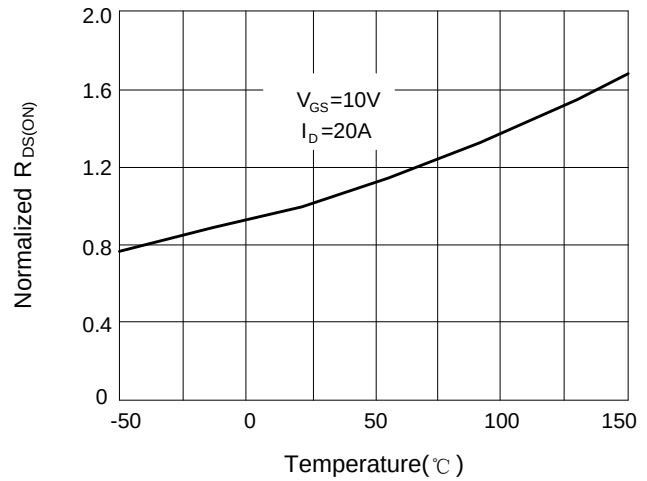


Fig.4 $R_{DS(ON)}$ vs. junction temperature

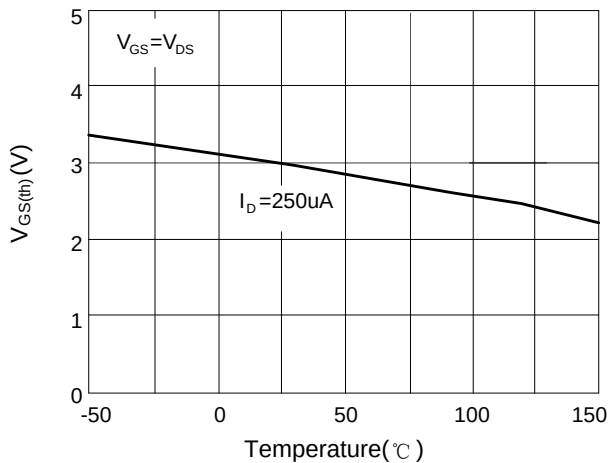


Fig.5 $V_{GS(TH)}$ vs. junction temperature

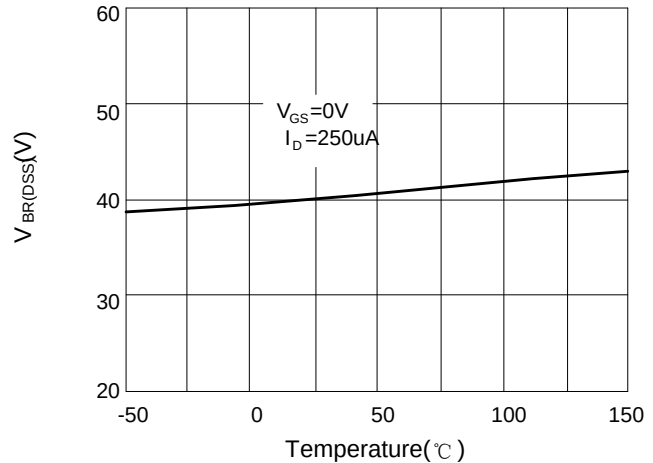
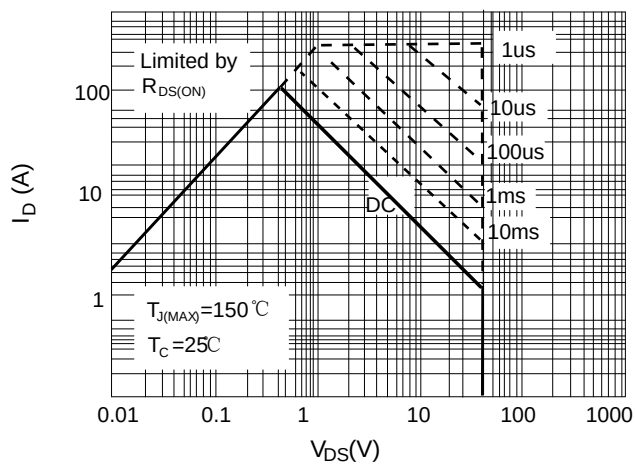
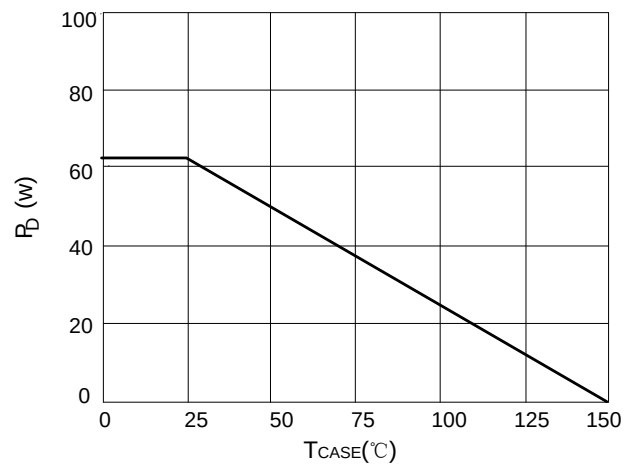
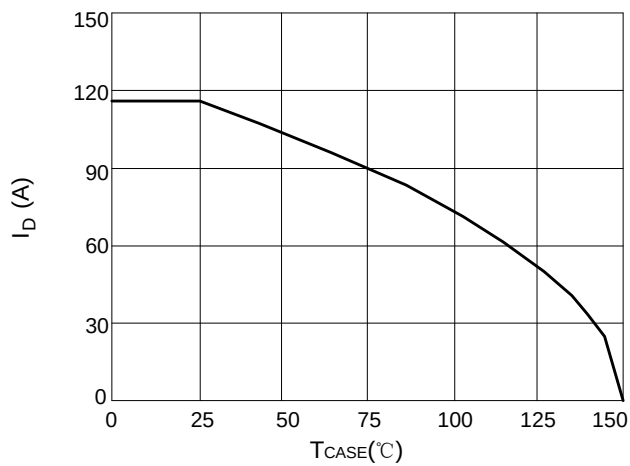
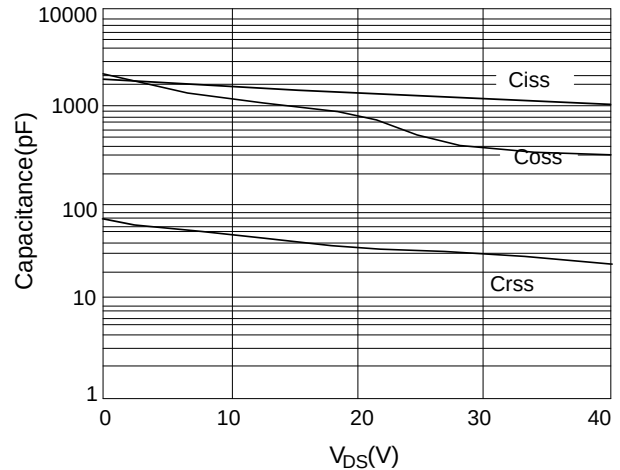
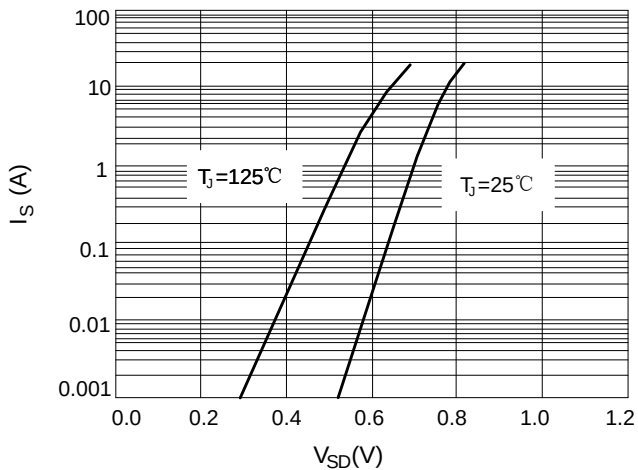
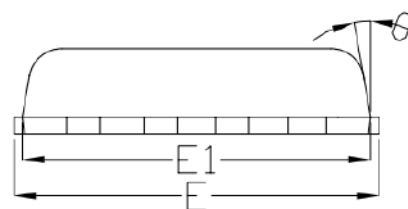
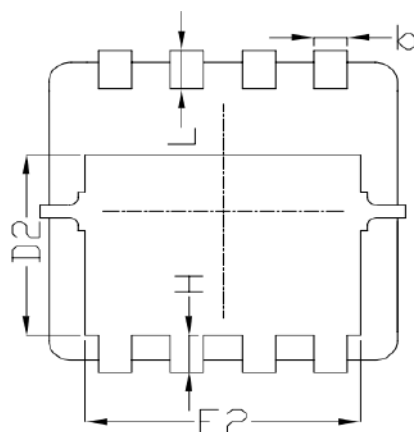
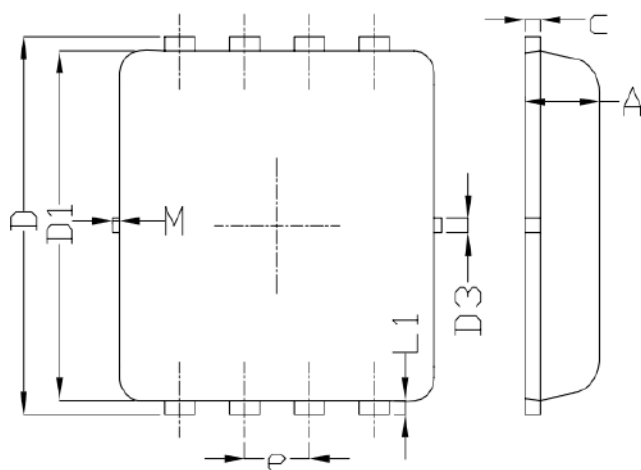


Fig.6 $V_{BR(DSS)}$ vs. junction temperature

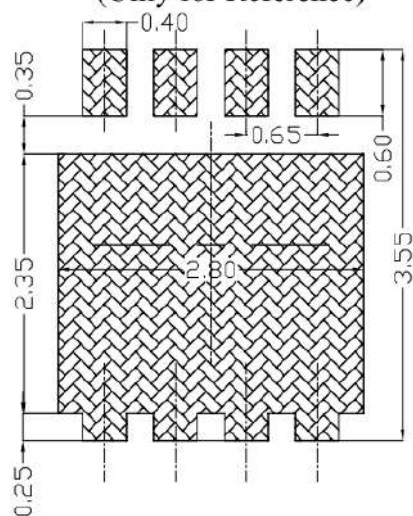
■ TYPICAL CHARACTERISTICS(Cont.)



■ PDFN3X3 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			