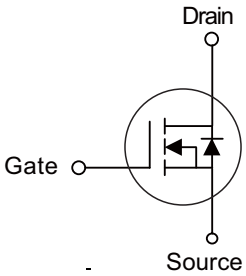
■ PRODUCT CHARACTERISTICS

VDSS	60V
R_{DS}(on)typ(@V_{GS} =10 V)	15mΩ
R_{DS} (on)typ(@V_{GS}=4.5 V)	18mΩ
ID	50A

Symbol



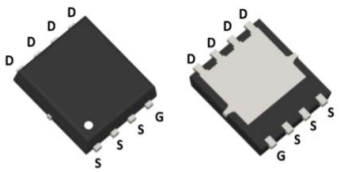
■ APPLICATIONS

- Portable Equipment and Battery Powered systems.
- Power Management in Notebook Computer

■ FEATURES

- Lower $R_{DS(ON)}$ to Minimize Conduction Losses
- Reliable and Rugged
- ROHS Compliant & Halogen-Free
- 100% UIS and Rg Tested

PDFN3X3-8L



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT6515J	PDFN3X3	5000 pieces /Reel

■ ABSOLUTE MAXIMUM RATINGS (T_J=25°C Unless Otherwise Noted)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	60	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	Continuous	I_D	50	A
	Pulsed	I_{DM}	100	A
Avalanche Energy	Single Pulsed	E_{AS}	66	mJ
Peak Diode Recovery dv/dt		dv/dt	6.4	V/ns
Power Dissipation		P_D	28	W
Junction to Ambient		θ_{JA}	65	°C/W
Junction to Case		θ_{JC}	4.46	°C/W
Junction Temperature		T_J	+150	°C
Storage Temperature Range		T_{STG}	-55 ~ +150	°C

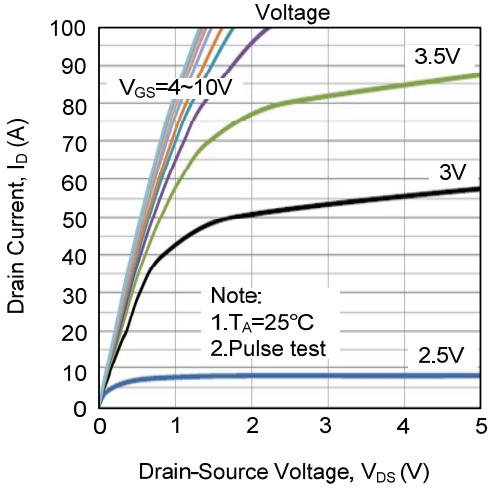
■ ELECTRICAL CHARACTERISTICS (T_C=25℃ unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off characteristics							
Drain-Source Breakdown Voltage		BV_{DSS}	I_D=250μA, V_{GS}=0V	60	-	-	V
Drain-Source Leakage Current		I_{DSS}	V_{DS}=60V, V_{GS}=0V	-	-	1.0	μA
Gate-Source Leakage Current	Forward	I_{GSS}	V_{GS}=+20V, V_{DS}=0V	-	-	+100	nA
	Reverse		V_{GS}=-20V, V_{DS}=0V	-	-	-100	nA
On characteristics							
Gate Threshold Voltage		$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=250μA	1.0	-	3.0	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	V_{GS}=10V, I_D=25A	-	15	18	mΩ
			V_{GS}=4.5V, I_D=20A	-	18	22	mΩ
Dynamic characteristics							
Input Capacitance		C_{ISS}	V_{GS}=0V, V_{DS}=25V, f=1.0MHz	-	1820	-	pF
Output Capacitance		C_{OSS}		-	220	-	pF
Reverse Transfer Capacitance		C_{RSS}		-	180	-	pF
Switching characteristics							
Total Gate Charge (Note 1)		Q_G	V_{DS}=48V, V_{GS}=10V, I_D=50A, I_G=100μA (Note 1, 2)	-	62	-	nC
Gate to Source Charge		Q_{GS}		-	7	-	nC
Gate to Drain Charge		Q_{GD}		-	18	-	nC
Turn-on Delay Time (Note 1)		$t_{D(ON)}$	V_{DS}=30V, V_{GS}=10V, I_D=50A, R_G=3Ω (Note 1, 2)	-	8	-	ns
Rise Time		t_R		-	18	-	ns
Turn-off Delay Time		$t_{D(OFF)}$		-	44	-	ns
Fall-Time		t_F		-	22	-	ns
Source-drain diode ratings characteristics							
Maximum Body-Diode Continuous Current		I_S		-	-	50	A
Maximum Body-Diode Pulsed Current		I_{SM}		-	-	100	A
Drain-Source Diode Forward Voltage (Note 1)		V_{SD}	I_S=50A, V_{GS}=0V	-	-	1.3	V
Reverse Recovery Time (Note 1)		t_{rr}	I_S=30A, V_{GS}=0V, dI_F/dt =100A/μs	-	102	-	nS
Reverse Recovery Charge		Q_{rr}		-	140	-	nC

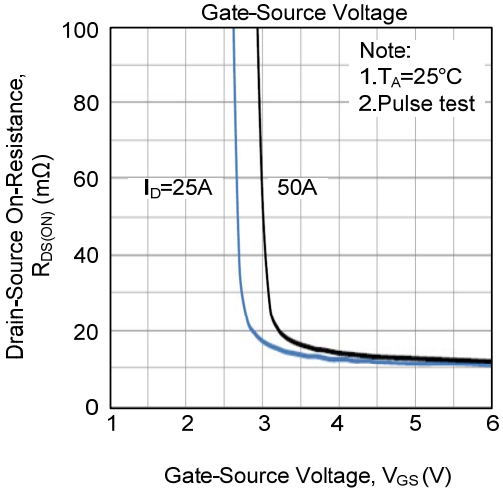
Notes: 1. Pulse Test : Pulse width ≤ 300μs, Duty cycle ≤ 2%.
2. Essentially independent of operating ambient temperature.

■ TYPICAL CHARACTERISTICS

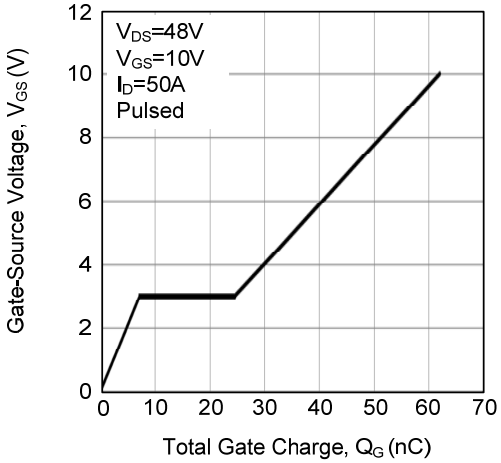
Drain Current vs. Drain-Source Voltage



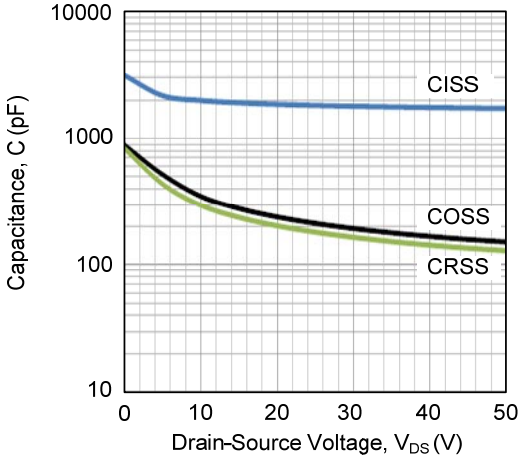
Drain-Source On-Resistance vs. Gate-Source Voltage



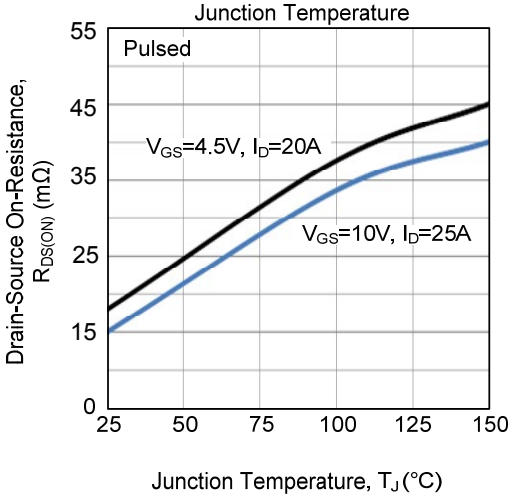
Gate Charge Characteristics



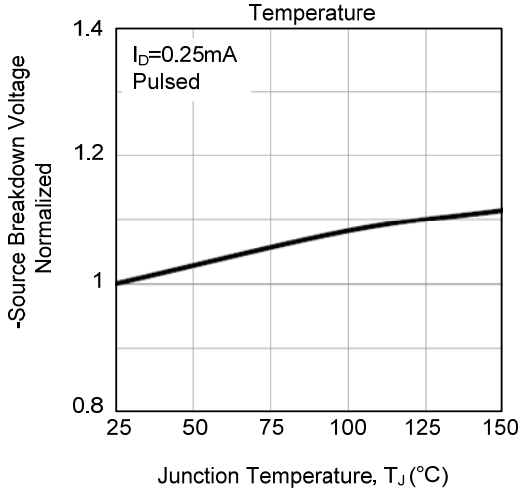
Capacitance Characteristics



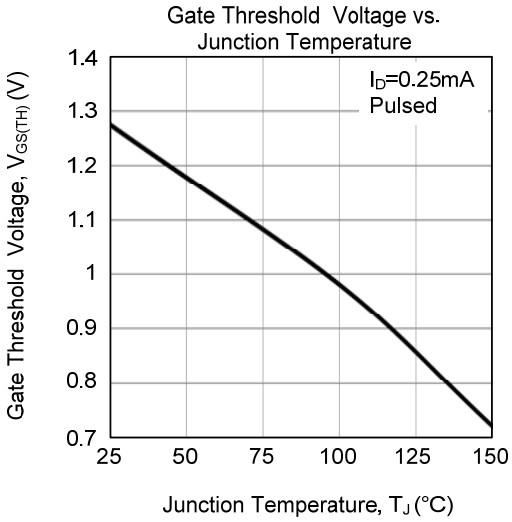
Drain-Source On-Resistance vs. Junction Temperature

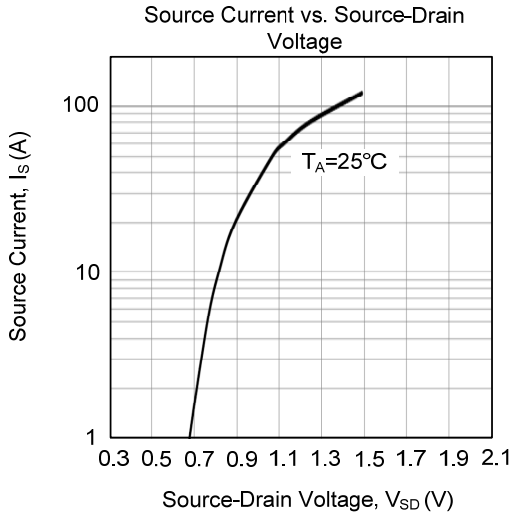


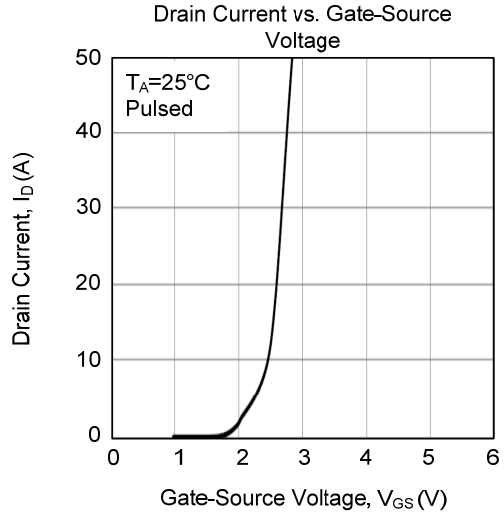
Breakdown Voltage vs. Junction Temperature

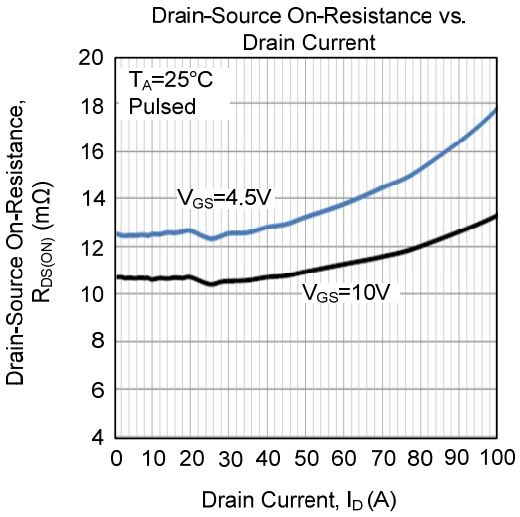


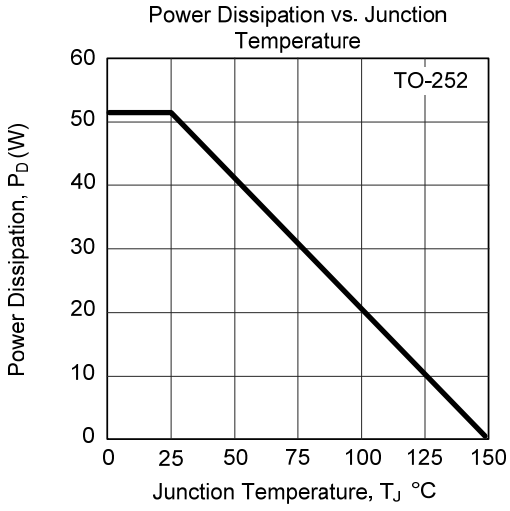
■ TYPICAL CHARACTERISTICS(Cont.)

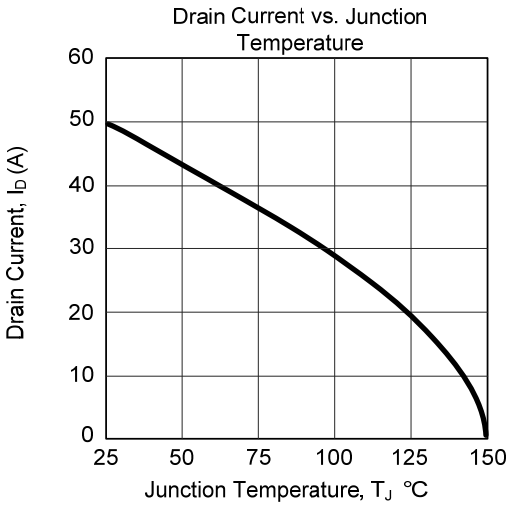




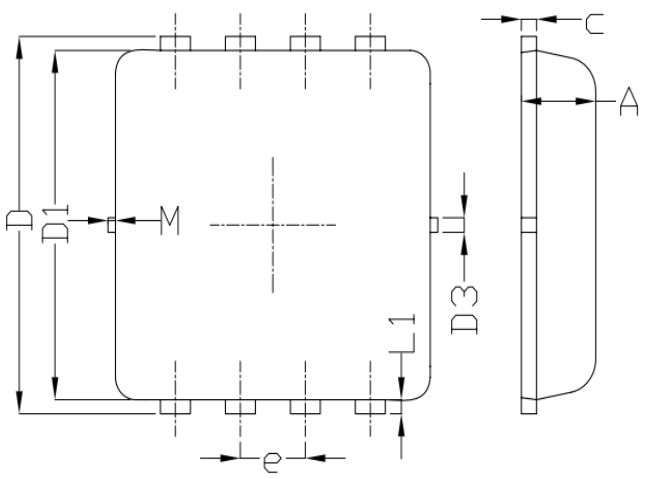


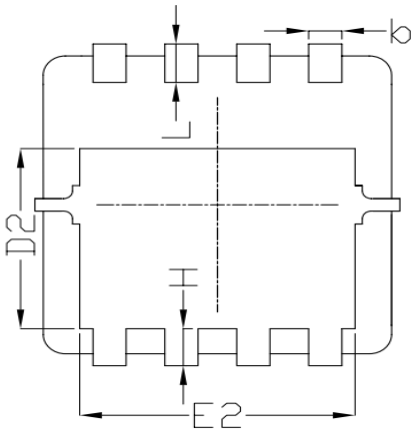


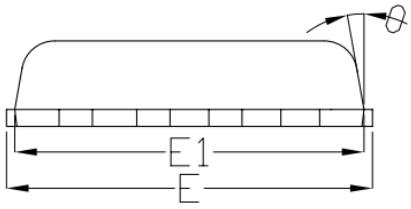




■ PDFN3X3-8L Package Mechanical Data







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			

Land Pattern
(Only for Reference)