

■ PRODUCT CHARACTERISTICS

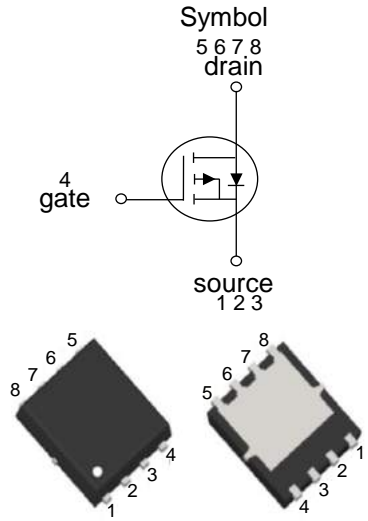
V _{DSS}	-30V
R _{DS(on)} Typ(@V _{GS} =-4.5V)	33mΩ
R _{DS(on)} Typ(@V _{GS} =-10V)	22mΩ
I _D	-9A

■ APPLICATIONS

- PWM applications
- Load switch
- Power management

■ FEATURES

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



PDFN3X3-8L

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-free	Halogen		
N/A	MOT3728J	PDFN3X3-8L	5000pieces/Reel

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

Parameter	Symbol	Value	Unit	
Drain-source voltage	V _{DSS}	-30	V	
Gate-source voltage	V _{GSS}	±20	V	
Drain current	I _D	T _A =25°C	-9	A
		T _A =100°C	-5.9	A
Pulsed drain current	I _{DM}	-36	A	
Single pulsed avalanche energy	E _{AS}	25	mJ	
Power dissipation	P _D	3.3	W	
Thermal resistance, junction to ambient	R _{θJA}	38	°C/W	
Junction temperature	T _J	+150	°C	
Storage temperature	T _{STG}	-55~ +150	°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} =-20V, 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	-1.0	-	-2.5	V
On-state characteristics	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-5A	-	33	44	mΩ
		V _{GS} =-10V, I _D =-5A	-	22	28	mΩ
Forward transconductance	g _{FS}	V _{DS} =-4.5V, I _D =-5A	10	-	-	S
Dynamic characteristics						
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-15V f=1MHz	-	1200	-	pF
Out capacitance	C _{oss}		-	155	-	pF
Reverse transfer capacitance	C _{rss}		-	139	-	pF
Switching characteristics						
Total gate charge	Q _g	V _{GS} =-10V, V _{DS} =-15V I _D =-8A	-	10	-	nC
Gate-source charge	Q _{gs}		-	2	-	nC
Gate-drain charge	Q _{gd}		-	2.7	-	nC
Turn-on delay time	t _{d(on)}	V _{DD} =-15V, I _D =-1A R _G =6 V _{GS} =-10V	-	13	-	nS
Turn-on rise time	t _r		-	15	-	nS
Turn-off delay time	t _{d(off)}		-	198	-	nS
Turn-off fall time	t _f		-	98	-	nS
Source-drain diode ratings and characteristics						
Continuous diode forward current	I _{SD}		-	-	-9	A
Diode forward current	V _{SD}	V _{GS} =0V, I _{SD} =-9A	-	-	-1.2	V

■ TYPICAL CHARACTERISTICS

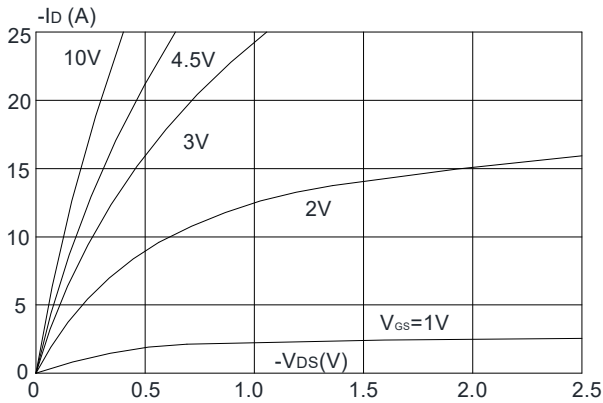


Figure 1: Output Characteristics

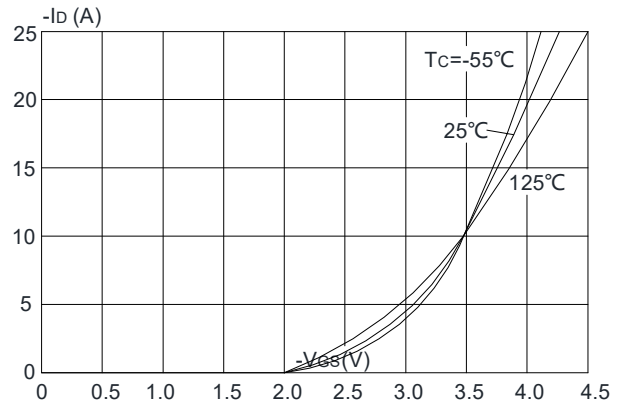


Figure 2: Typical Transfer Characteristics

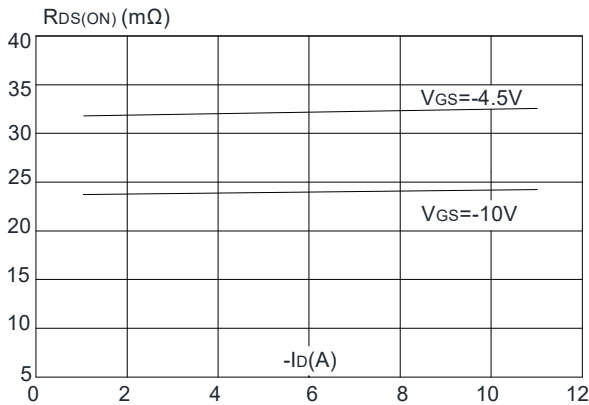


Figure 3: On-resistance vs. Drain Current

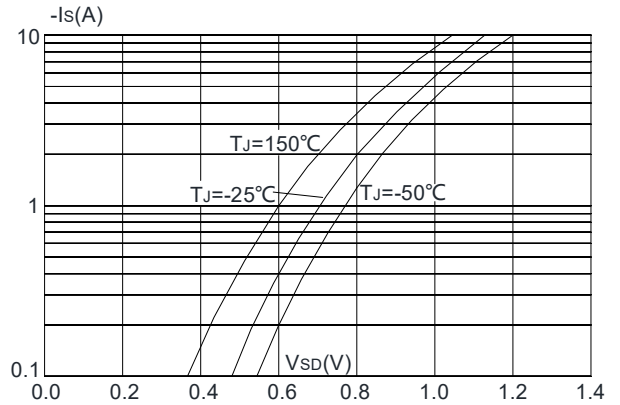


Figure 4: Body Diode Characteristics

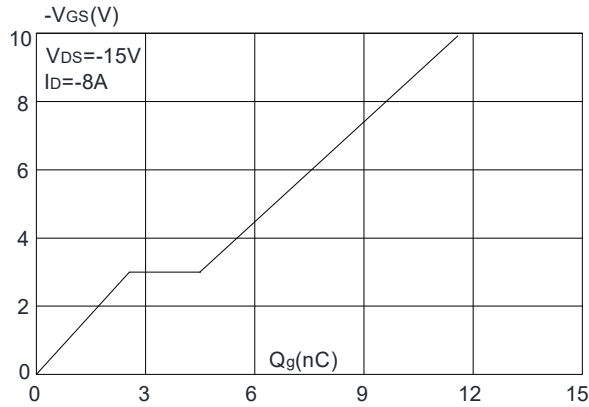


Figure 5: Gate Charge Characteristics

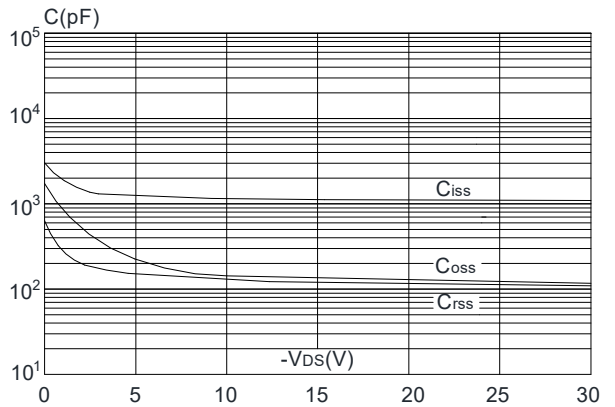


Figure 6: Capacitance Characteristics

■ TYPICAL CHARACTERISTICS(Cont.)

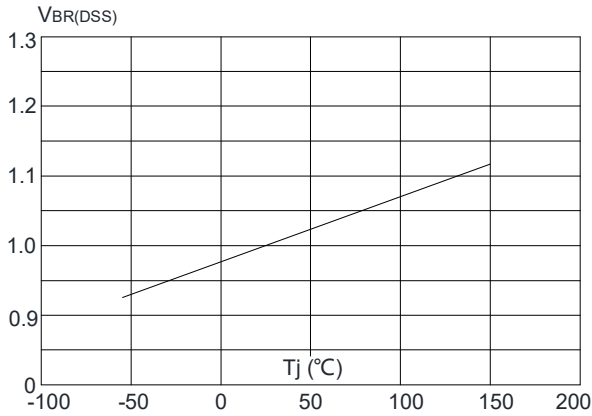


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

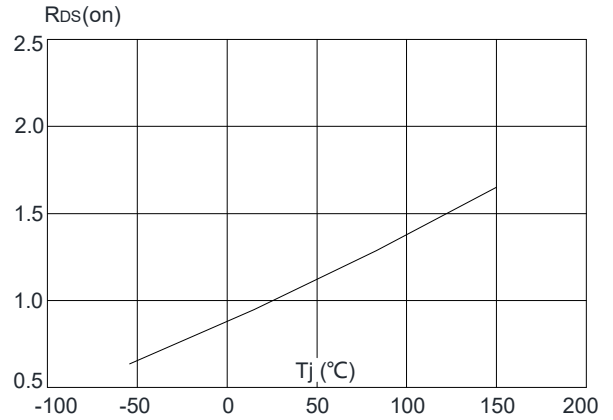


Figure 8: Normalized on Resistance vs. Junction Temperature

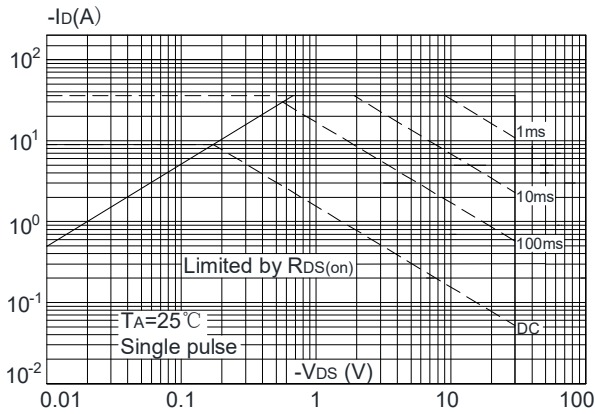


Figure 9: Maximum Safe Operating Area

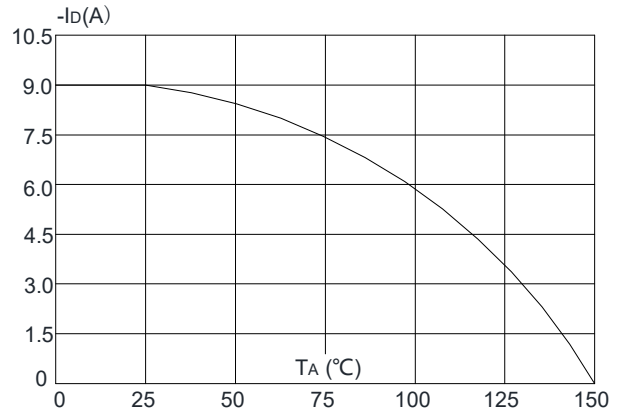


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

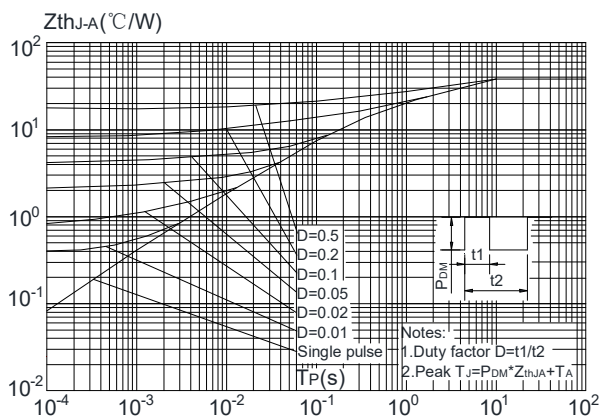
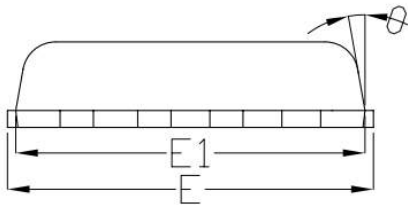
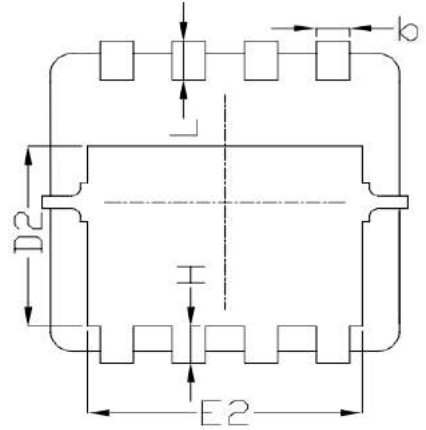
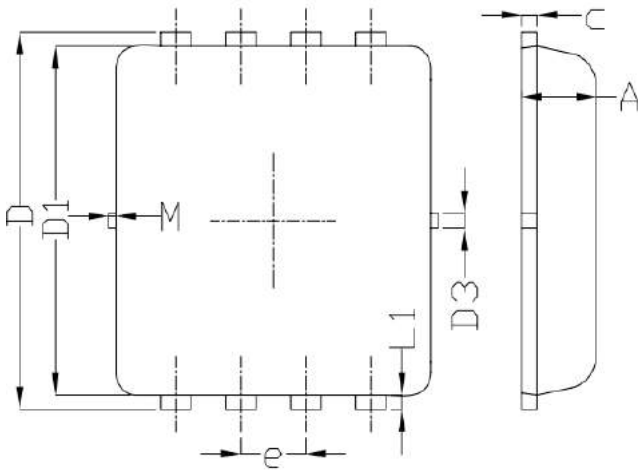
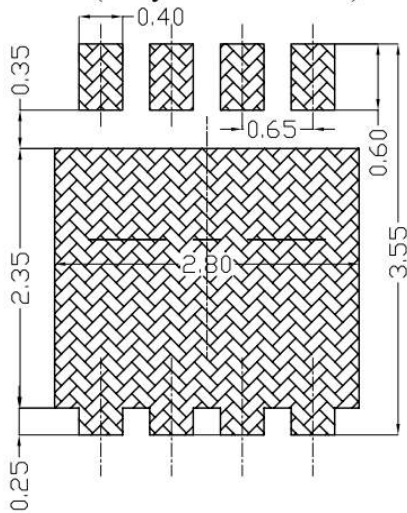


Figure 11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

■ 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			