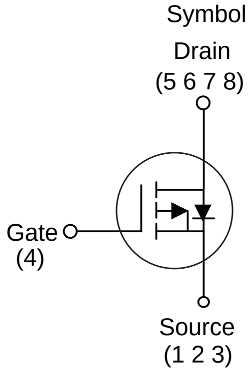
■ PRODUCT CHARACTERISTICS

V_{DSS}	-30V
$R_{DS(ON)}$ Typ(@V_{GS}=-10V)	12mΩ
$R_{DS(ON)}$ Typ(@V_{GS}=-4.5V)	21 mΩ
I_D	-35A



■ APPLICATIONS

* Electronic lamp ballasts based on half bridge

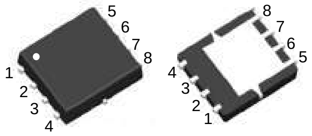
* Load Switching,Quick/Wirelss Charge.

* Motor Driving

■ FEATURE

* Low Gate Charge

* Pb-Free Lead Plating



PDFN3X3

■ ORDER INFORMATION

Order Codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT3718J	PDFN3X3	5000 pieces/Reel

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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	-30	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current Continuous(@V_{GS}=10V ,T_A=25°C)	I_D	-35	A
Drain Current Continuous(@V_{GS}=10V ,T_A=100°C)	I_D	-24	A
Drain Current Pulsed	I_{DM}	-140	A
Avalanche Energy *	E_{AS}	81	mJ
Power Dissipation	P_D	30	W
Junction Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-55~ +150	°C

■ THERMAL CHARACTERISTICS

Parameter	Symbol	Typ	Unit
Junction to Case	R_{thJC}	4.17	°C/W

Note: * EAS condition: T_J=25°C ,V_{DD}=20V ,V_G=10V ,L=0.5mH,R_g =25Ω

■ ELECTRICAL CHARACTERISTICS (T_C=25°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	-30	-	-	V
Drain to Source Leakage Current	I_{DSS}	V_{DS}=-30V,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=-10A	-	12	16	mΩ
		V_{GS}=-4.5V,I_D=-10A	-	21	25	mΩ
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS},I_D=-250μA	-1	-1.6	-2.5	V
Dynamic characteristics						
Gate capacitance	R_g	V_{GS}=0V,V_{DS}=0V ,f=1.0MHz	-	17	-	Ω
Forward Transconductance	g_{fs}	V_{DS}=-10V,I_D=-3A	-	8	-	S
Input Capacitance	C_{iss}	V_{DS}=-20V,V_{GS}=0V f=1.0MHz	-	898	-	pF
Output Capacitance	C_{oss}		-	175	-	pF
Reverse Transfer Capacitance	C_{rss}		-	132	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	$t_{d(ON)}$	V_{GS}=-10V,V_{DS}=-15V, I_D=-10A,R_G=2.5Ω	-	9	-	ns
Rise Time	t_r		-	10	-	ns
Turn-off Delay Time	$t_{d(OFF)}$		-	25	-	ns
Fall Time	t_f		-	10	-	ns
Total Gate Charge	Q_g	I_D=-10A, V_{DS}=-15V V_{GS}=-10V	-	31.2	-	nC
Gate to Source Charge	Q_{gs}		-	3.2	-	nC
Gate to Drain("Miller") Charge	Q_{gd}		-	9.2	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	I_S		-	-	-35	A
Maximum Pulsed Current(Body Diode)	I_{SM}		-	-	-140	A
Diode Forward Voltage	V_{SD}	I_{SD}=-1A, V_{GS}=0V	-	-0.73	-1.2	V
Reverse Recovery Time	t_{rr}	I_{SD}=-10A, T_J=25°C dI/dt=100A/μs	-	24	-	ns
Reverse Recovery Charge	Q_{rr}		-	16	-	nC

■ TYPICAL CHARACTERISTICS

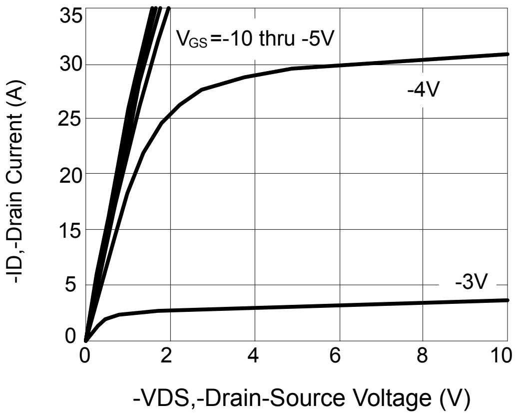


Figure 1 output characteristics

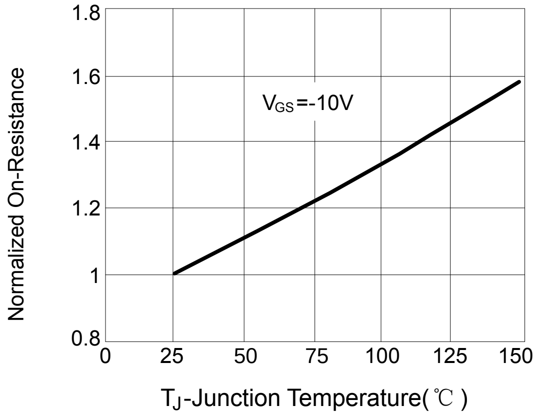


Figure 2 Rds(on)-junction temperature

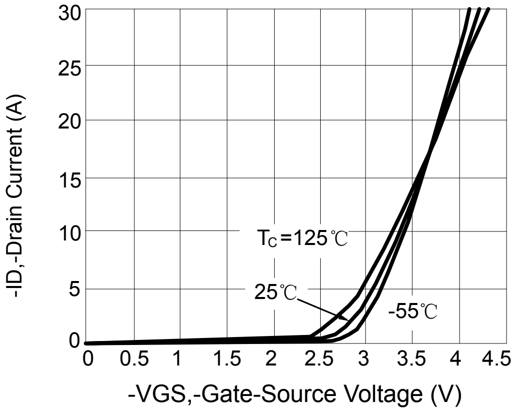


Figure 3 transfer characteristics

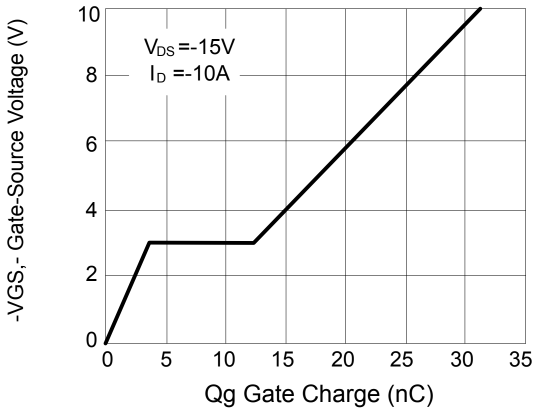


Figure 4 gate charge

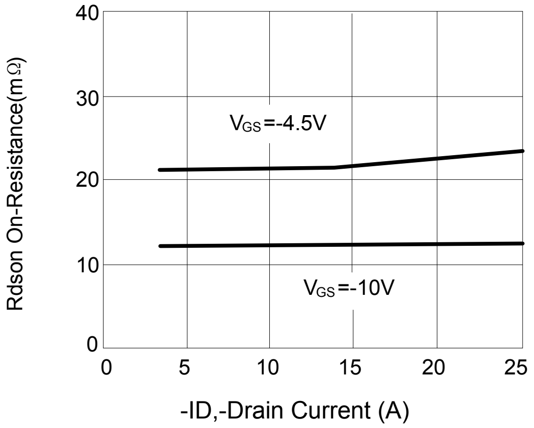


Figure 5 Rds(on)-drain current

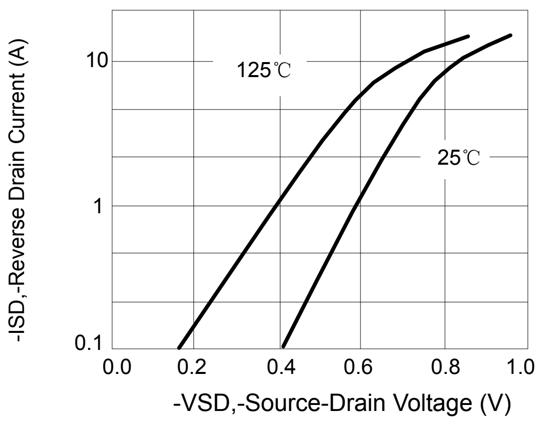


Figure 6 source-drain diode forward

■ TYPICAL CHARACTERISTICS(Cont.)

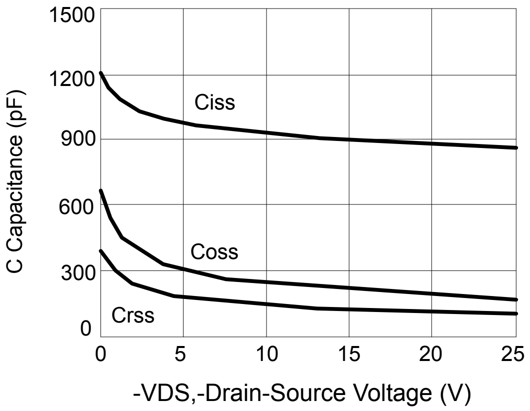


Figure 7 capacitance vs vds

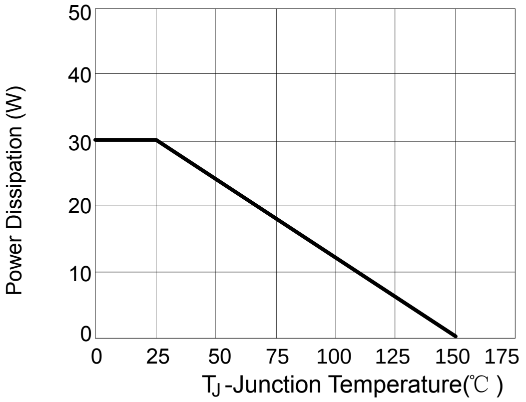


Figure 8 power de-rating

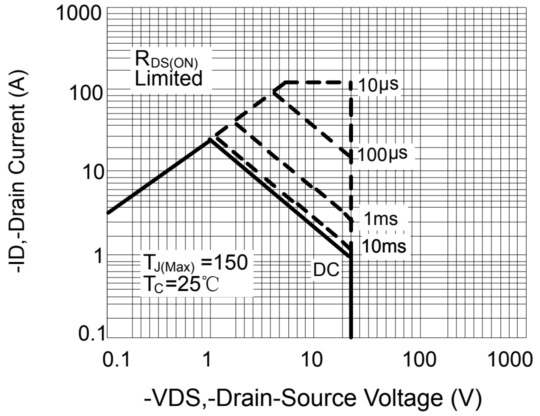


Figure 9 safe operation area

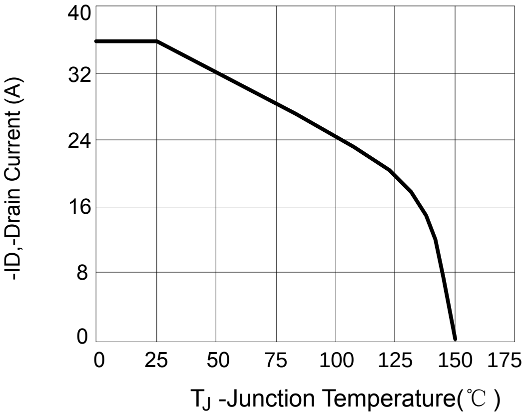
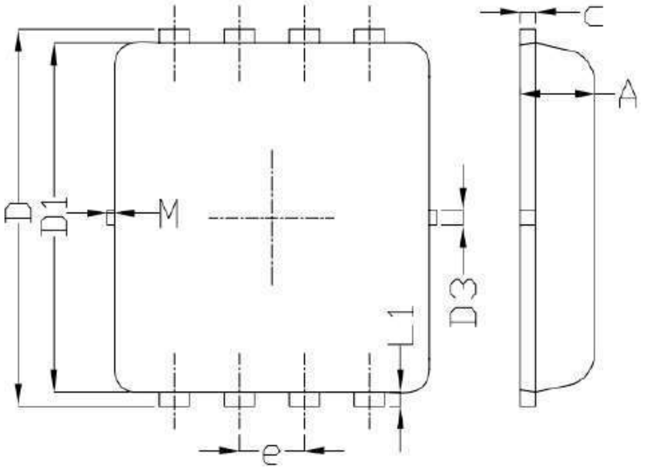
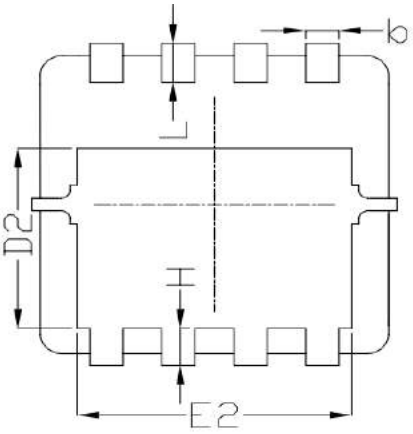
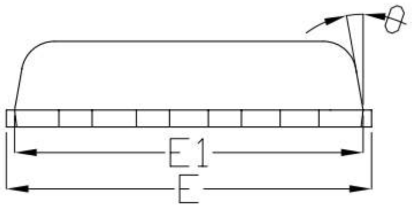


Figure 10 id current derating

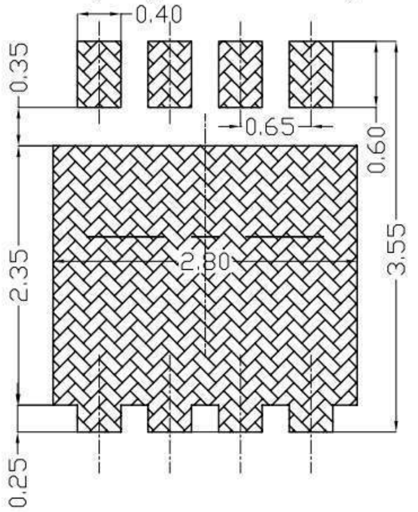
■ PDFN3X3 PACKAGE OUTLINE DIMENSIONS







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