■ PRODUCT CHARACTERISTICS

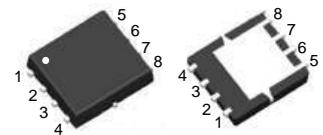| V_{DSS}	-100V
$R_{DS(ON)}$Typ(@V_{GS}=-10V)	85mΩ
$R_{DS(ON)}$Typ(@V_{GS}=-4.5V)	95mΩ
I_D	-18A

Symbol
Drain
(5 6 7 8)

Gate
(4)

Source
(1 2 3)
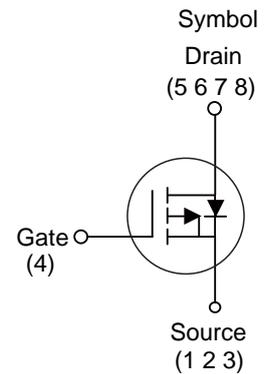
■ APPLICATIONS

* 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	MOT1793J	PDFN3X3	5000 pieces/Reel

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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	-100	V
Gate-Source Voltage	V_{GSS}	±20	V
Drain Current Continuous(@V_{GS}=10V,T_A=25°C)	I_D	-18	A
Drain Current Pulsed	I_{DM}	-72	A
Avalanche Energy	E_{AS}	144	mJ
Power Dissipation	P_D	70	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}	1.79	°C/W

■ 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	-100	-	-	V
Drain to Source Leakage Current	I$_{DSS}$	V$_{DS}$=-100V,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$_D$=-9 A	-	85	95	mΩ
		V$_{GS}$=-4.5V,I$_D$=-9 A	-	95	110	mΩ
Gate Threshold Voltage	V$_{GS(TH)}$	V$_{DS}$=V$_{GS}$,I$_D$=-250μA	-1	-1.7	-2.5	V
Dynamic characteristics						
Gate capacitance	R$_g$	V$_{GS}$=0V,V$_{DS}$=0V ,f=1.0MHz	-	5.4	-	Ω
Forward Transconductance	g$_{fs}$	V$_{DS}$=-5V,I$_D$=-3A	-	14	-	S
Input Capacitance	C$_{iss}$	V$_{DS}$=-25V,V$_{GS}$=0V f=1.0MHz	-	3810	-	pF
Output Capacitance	C$_{oss}$		-	108	-	pF
Reverse Transfer Capacitance	C$_{rss}$		-	192	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	t$_{d(ON)}$	V$_{GS}$=-10V, V$_{DS}$=-50V, I$_D$=-16 A ,R$_G$=9.1Ω	-	16	-	ns
Rise Time	t$_r$		-	73	-	ns
Turn-off Delay Time	t$_{d(OFF)}$		-	34	-	ns
Fall Time	t$_f$		-	57	-	ns
Total Gate Charge	Q$_g$	I$_D$=-16 A, V$_{DS}$=-50V V$_{GS}$=-10V	-	61	-	nC
Gate to Source Charge	Q$_{gs}$		-	14	-	nC
Gate to Drain("Miller") Charge	Q$_{gd}$		-	29	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	I$_S$		-	-	-18	A
Maximum Pulsed Current(Body Diode)	I$_{SM}$		-	-	-72	A
Diode Forward Voltage	V$_{SD}$	I$_{SD}$=-1A, V$_{GS}$=0V	-	-0.8	-1.2	V
Reverse Recovery Time	t$_{rr}$	I$_{SD}$=-16 A, T$_J$=25°C dI/dt=100A/μs	-	88.3	-	ns
Reverse Recovery Charge	Q$_{rr}$		-	65.9	-	nC

TYPICAL CHARACTERISTICS
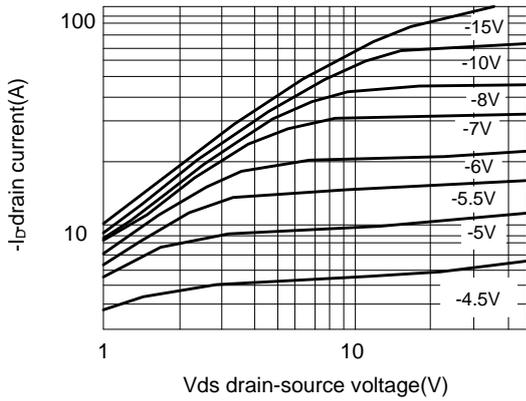
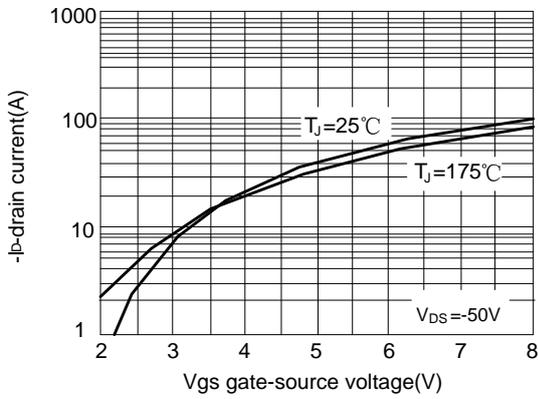Figure 1: Output characteristics
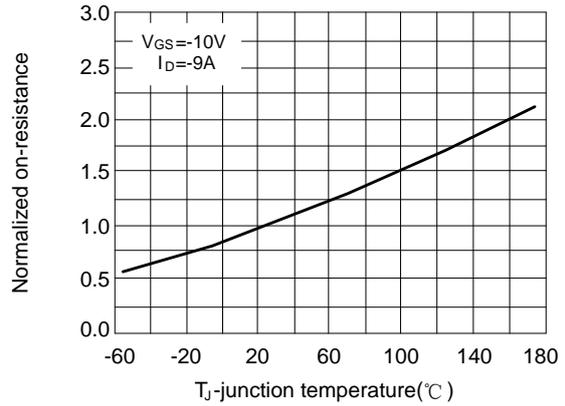
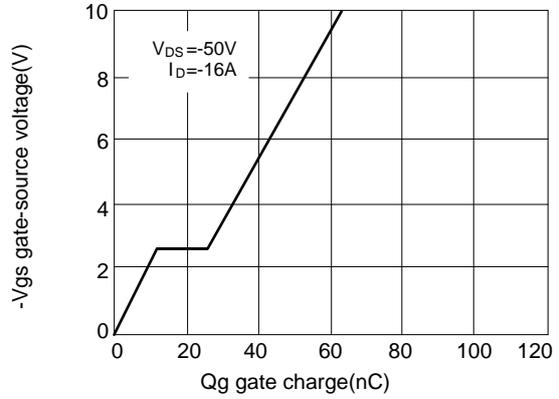Figure 2: Rdson-junction temperature
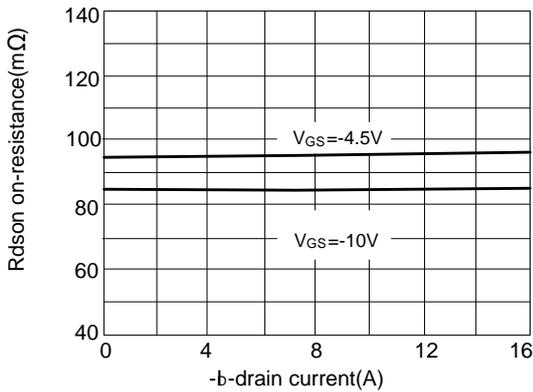
Figure 3: Transfer characteristics

Figure 4: Gate charge
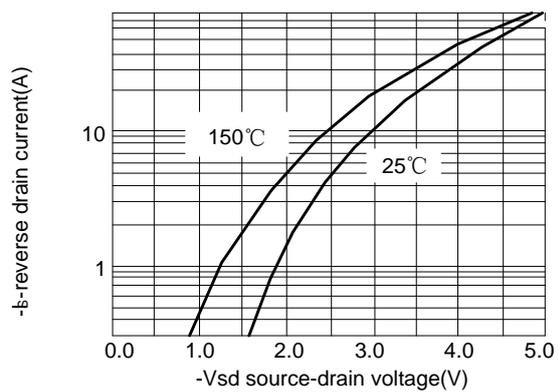
Figure 5: Rdson-drain current

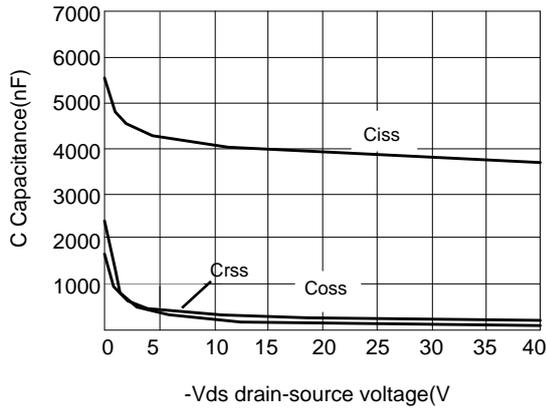Figure 6: Source-drain diode forward

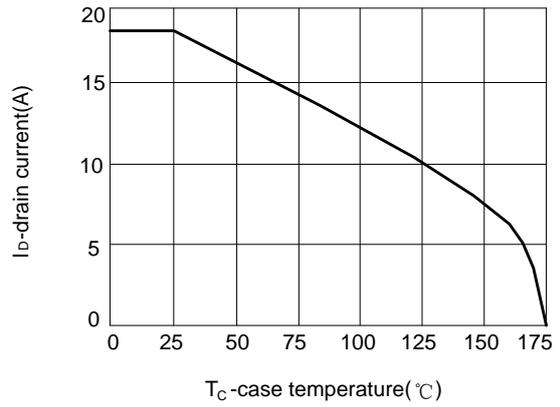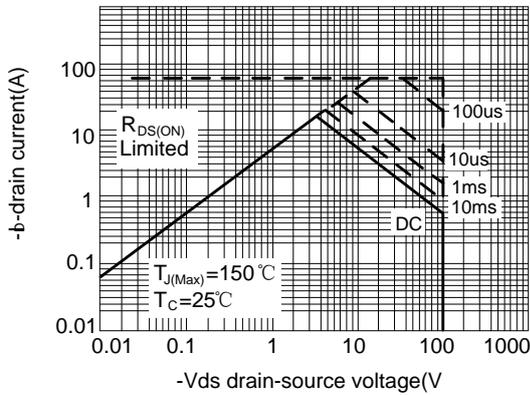■ TYPICAL CHARACTERISTICS(Cont.)

Figure 7: Capacitance vs vds

Figure 8: Drain current vs case temperature

Figure 9: Safe operation area
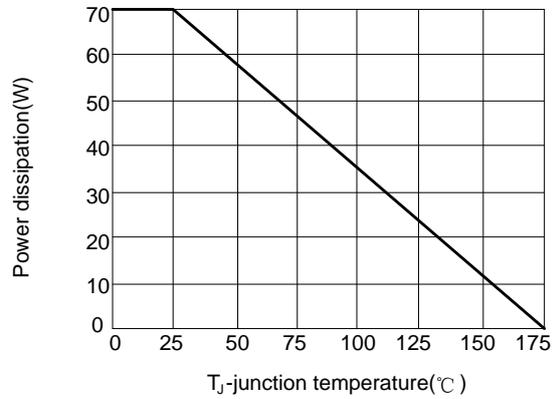
Figure 10: Powerde-rating

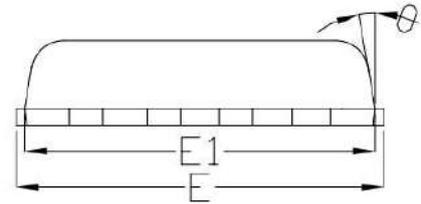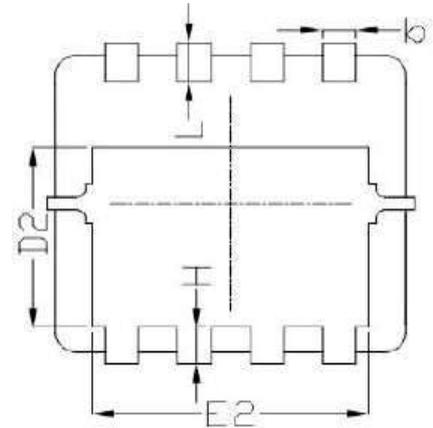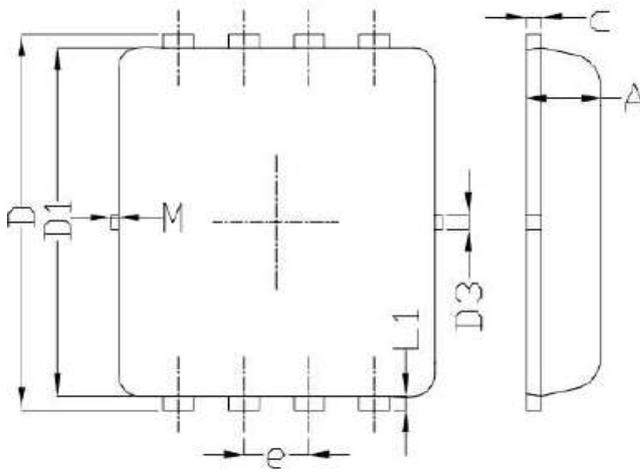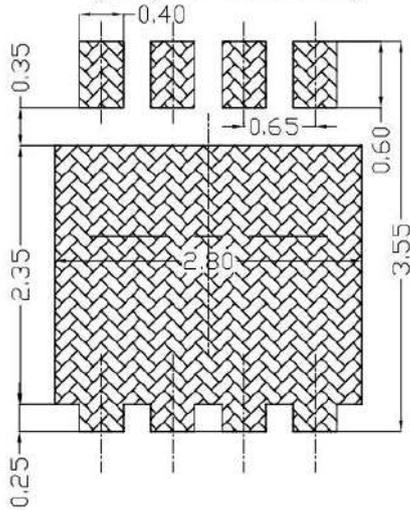■ PDFN3X3 Package Mechanical Data

**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			