

PRODUCT CHARACTERISTICS

VDSS	-100V
$R_{DS(on)}$ typ(@ $V_{GS}=-4.5V$)	95m Ω
$R_{DS(on)}$ typ(@ $V_{GS}=-10V$)	85m Ω
ID	-18A

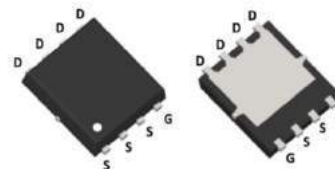
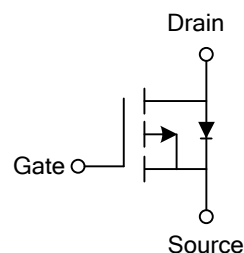
APPLICATIONS

- DC/DC Converter

FEATURES

- Very low on-resistance $R_{DS(on)}$
- Pb-free lead plating

Symbol



PDFN5X6-8L

ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT1793G	PDFN5X6	5000 pieces /Reel

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous (Silicon Limited)	I_D	-18	A
Drain Current-Continuous($T_C=100^{\circ}C$)	$I_D(100^{\circ}C)$	-12	A
Pulsed Drain Current (Package Limited)	I_{DM}	-72	A
Maximum Power Dissipation	P_D	70	W
Thermal Resistance,Junction-to-Case	$R_{\theta JC}$	1.79	$^{\circ}C/W$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	$^{\circ}C$

■ 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 _D =-250μA	100	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-100V,V _{GS} =0V	-	-	1	μA
Gate-Body 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 _D =-250μA	-1	-1.7	-3	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-16A	-	85	93	mΩ
		V _{GS} =-10V, I _D =-16A	-	95	105	mΩ
Forward Transconductance	g _{FS}	V _{DS} =-50V,I _D =-10A	5	-	-	S
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =-25V,V _{GS} =0V, F=1.0MHz	-	3810	-	PF
Output Capacitance	C _{oss}		-	99	-	PF
Reverse Transfer Capacitance	C _{rss}		-	94	-	PF
Switching characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-50V,I _D =-16A V _{GS} =-10V,R _{GEN} =9.1Ω	-	16	-	nS
Turn-on Rise Time	t _r		-	73	-	nS
Turn-Off Delay Time	t _{d(off)}		-	34	-	nS
Turn-Off Fall Time	t _f		-	57	-	nS
Total Gate Charge	Q _g	V _{DS} =-80V,I _D =-16A, V _{GS} =-10V	-	61	-	nC
Gate-Source Charge	Q _{gs}		-	14	-	nC
Gate-Drain Charge	Q _{gd}		-	29	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V,I _S =-10A	-	-	-1.2	V
Diode Forward Current	I _S		-	-	-18	A
Reverse Recovery Time	t _{rr}	T _J = 25°C, I _F = -16A di/dt = 100A/μs	-	88.3	-	nS
Reverse Recovery Charge	Q _{rr}		-	65.9	-	nC
Forward Turn-On Time	t _{on}	Intrinsic turn-on time is negligible (turn-on is dominated by LS+LD)				

■ TYPICAL CHARACTERISTICS

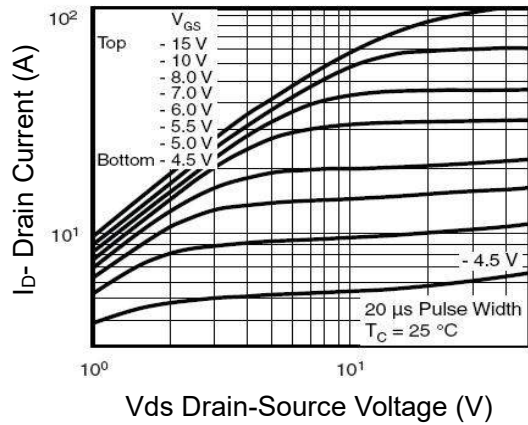


Figure 1 Output characteristics

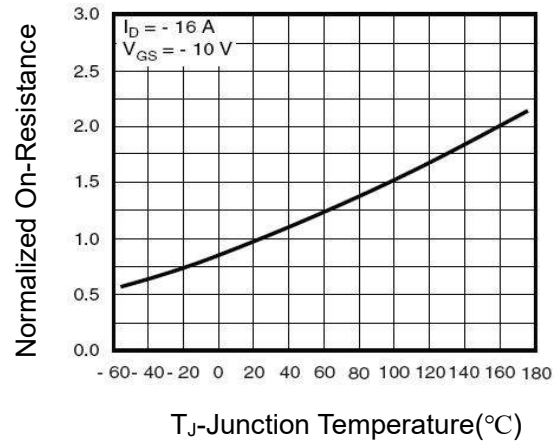


Figure 2 $R_{DS(on)}$ -junction temperature

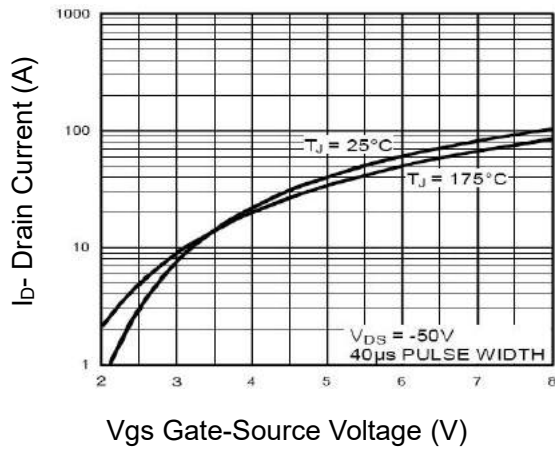


Figure 3 Transfert characteristics

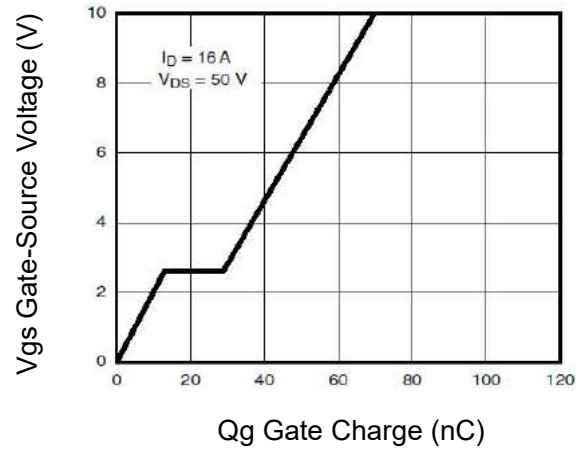


Figure 4 Gate charge

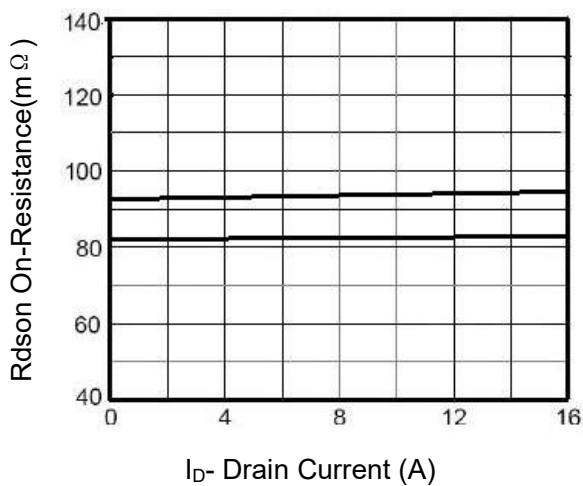


Figure 5 $R_{DS(on)}$ -drain current

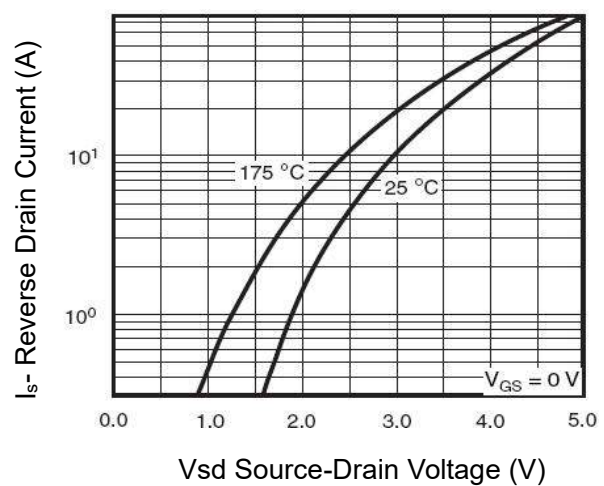
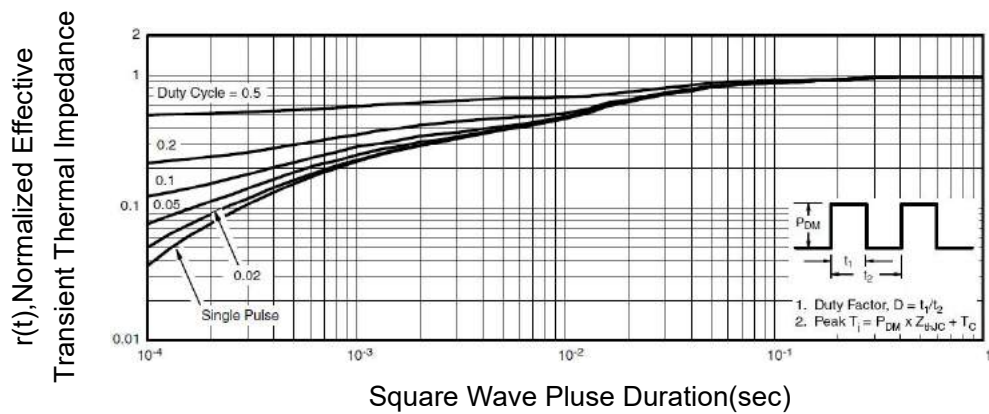
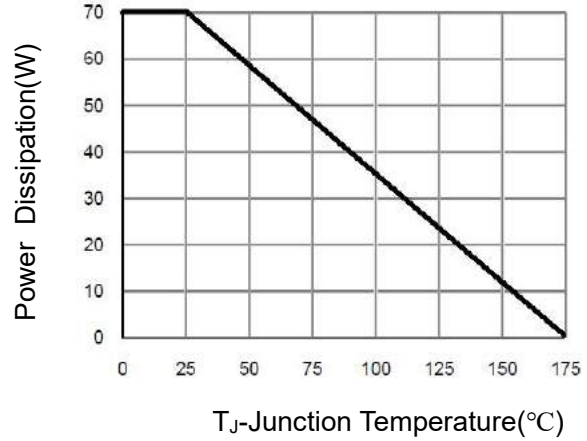
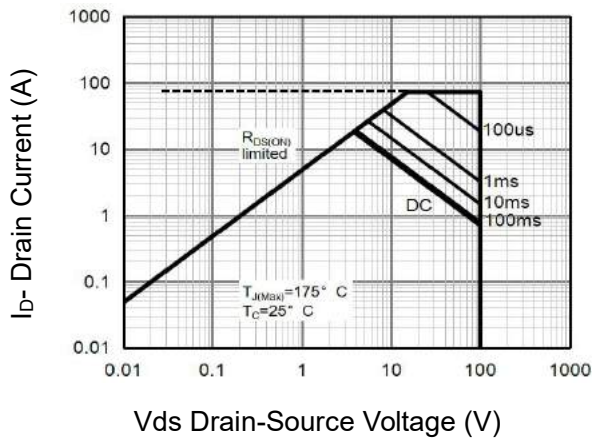
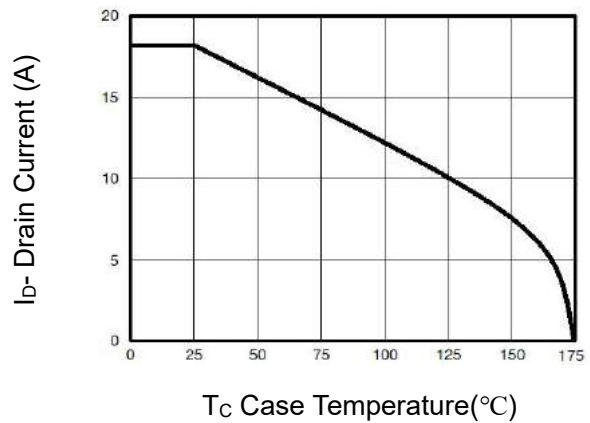
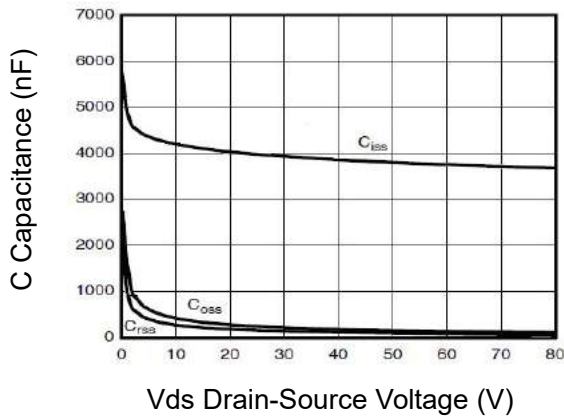
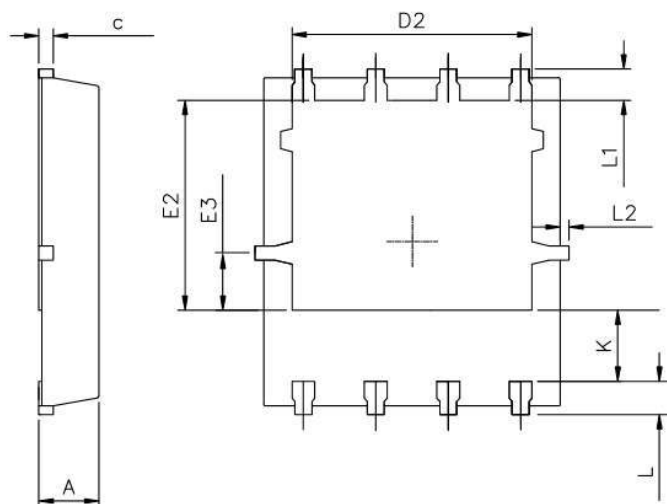
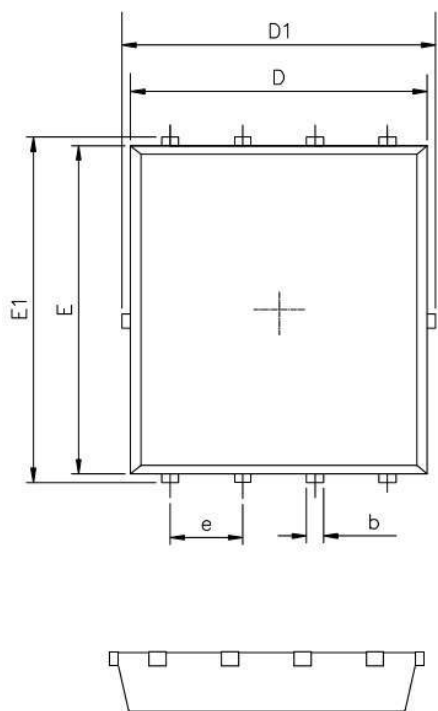


Figure 6 Source-drain diode forward

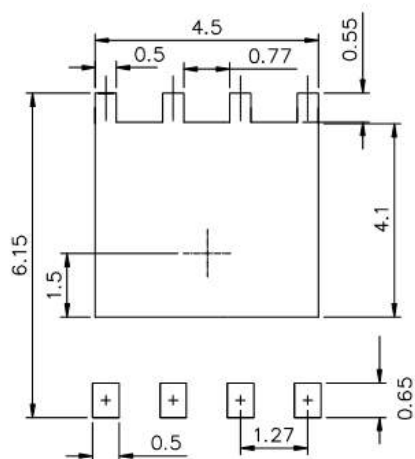
■ TYPICAL CHARACTERISTICS(Cont.)



■ PDFN5X6-8L Package Mechanical Data



RECOMMENDED LAND PATTERN



UNIT:mm

	MIN	NOM	MAX
A	0.90	1.00	1.10
b	0.25	0.35	0.50
c	0.10	0.20	0.30
D	4.80	5.00	5.30
D1	4.90	5.10	5.50
D2	3.92	4.02	4.20
E	5.65	5.75	5.85
E1	5.90	6.05	6.20
E2	3.325	3.525	3.775
E3	0.80	0.90	1.00
e		1.27	
L	0.40	0.55	0.70
L1		0.65	
L2	0.00		0.15
K	1.00	1.30	1.50