

PRODUCT CHARACTERISTICS

V _{DSS}	750V
R _{DS(ON)} Typ(@V _{GS} =15V)	300mΩ
Q _g @typ	9nC
I _D	10A

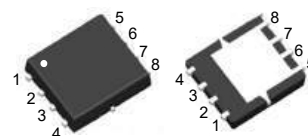
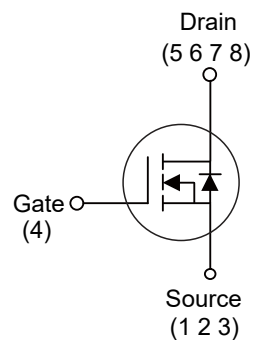
APPLICATIONS

- *Switch Mode Power Supplies
- *High Voltage DC/DC Converters
- *Battery Chargers
- *Motor Drivers

FEATURE

- *Low On-Resistance With High Blocking Voltage
- *Low Capacitances With High -Speed Switching
- *Low Reverse Recovery(Q_{rr})
- *Easy to Parallel and Simple to Drive

Symbol



PDFN5X6



ORDER INFORMATION

Order Codes		Package	Packing
Halogen-Free	Halogen		
MOT75CL300G	N/A	PDFN5X6	5000 pieces/Reel

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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V _{DSS}	750	V
Gate-Source Voltage	V _{GSS}	-10/+22	V
Recommended Operation Voltage Of Gate to Source	V _{GSOP}	0/+18	V
Drain Current Continuous(@V _{GS} =15V, T _c =25°C)	I _D	10	A
Drain Current Continuous(@V _{GS} =15V, T _c =100 °C)	I _D	7	A
Drain Current Pulsed(@V _{GS} =15V, T _c =25°C)	I _{DM}	18	A
Power Dissipation	P _D	57	W
Junction Temperature	T _J	+175	°C
Storage Temperature	T _{STG}	-55~ +175	°C

THERMAL CHARACTERISTICS

Parameter	Symbol	Typ	Unit
Junction to Case	R _{thJC}	2.6	°CW

■ ELECTRICAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$, 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 =500μA	750	-	-	V
Drain to Source Leakage Current	I _{DSS}	V _{DS} =750V, V _{GS} =0V	-	-	10	μA
Gate to Source Forward Leakage	I _{GSS}	V _{DS} =0V, V _{GS} =18V	-	-	250	nA
On characteristics						
Drain to Source On-Resistance	R _{DS(ON)}	V _{GS} =15V, I _D =4A	-	300	400	mΩ
		V _{GS} =15V, I _D =4A, T _J =175°C	-	280	-	mΩ
		V _{GS} =18V, I _D =4A	-	240	-	mΩ
		V _{GS} =18V, I _D =4A, T _J =175°C	-	250	-	mΩ
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250uA	2	2.7	4	V
Dynamic characteristics						
Gate Resistance	R _g	V _{AC} =25mV ,f=1.0MHz	-	24	-	Ω
Input Capacitance	C _{iss}	V _{DS} =40V, V _{GS} =0V f=1.0MHz	-	223	-	pF
Output Capacitance	C _{oss}		-	70	-	pF
Reverse Transfer Capacitance	C _{rss}		-	4	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	t _{d(ON)}	I _D =4 A, V _{DS} =400V R _G =4.3Ω ,V _{GS} =0/15V	-	6.3	-	ns
Rise Time	t _r		-	17.4	-	ns
Turn-off Delay Time	t _{d(OFF)}		-	14.3	-	ns
Fall Time	t _f		-	14.8	-	ns
Total Gate Charge	Q _g	I _D =4 A, V _{DS} =400V V _{GS} =0/15V	-	9.0	-	nC
Gate to Source Charge	Q _{gs}		-	3.6	-	nC
Gate to Drain("Miller") Charge	Q _{gd}		-	1.2	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	I _S		-	-	10	A
Diode Forward Voltage	V _{SD}	I _{SD} =1A, V _{GS} =0V	-	3.5	-	V
Reverse Recovery Time	t _{rr}	I _{SD} =4A, T _J =25 °C	-	25	-	ns
Reverse Recovery Charge	Q _{rr}		dI /dt=1200A/ μs	-	9.2	-

■ TYPICAL CHARACTERISTICS

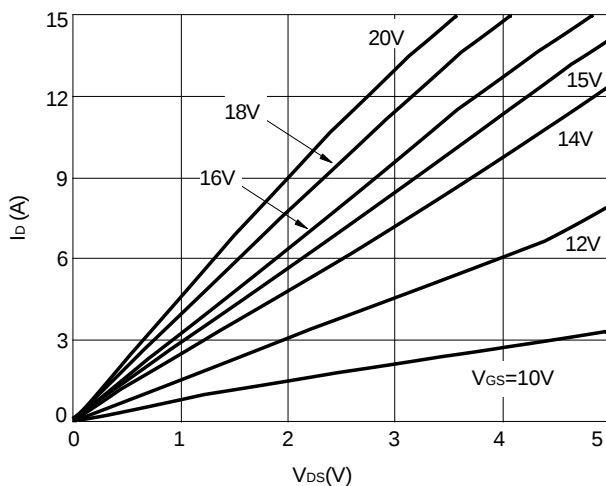


Figure 1: Output Characteristics($T_J=25^\circ\text{C}$)

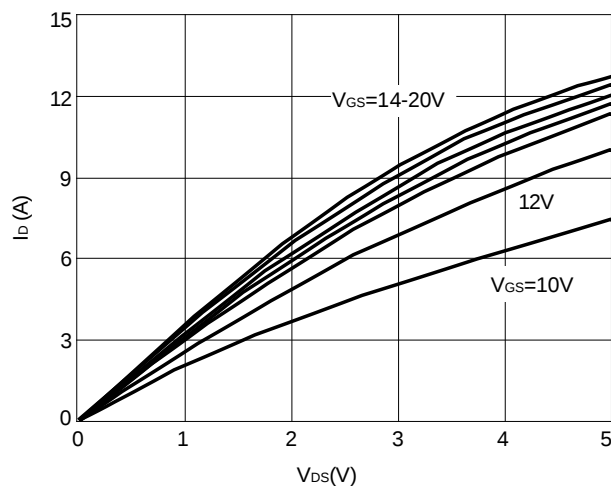


Figure 2: Output Characteristics($T_J=175^\circ\text{C}$)

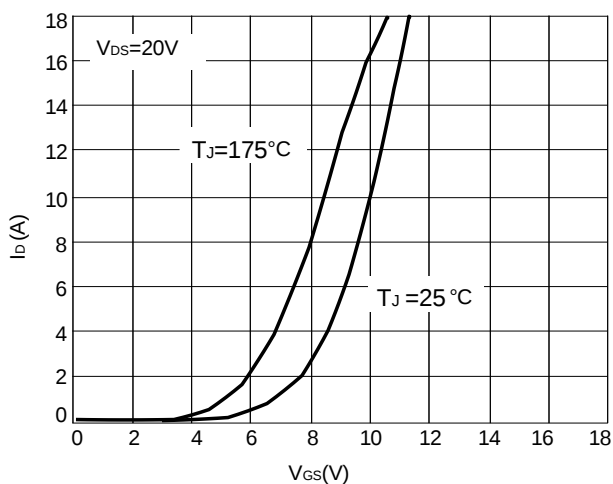


Figure 3: Typical Transfer Characteristics

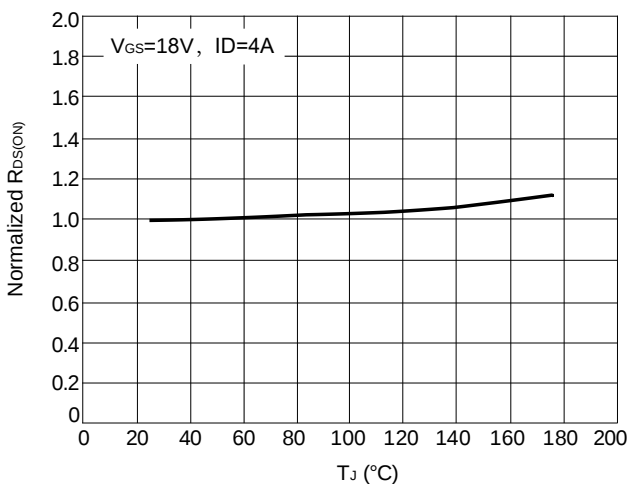


Figure 4: Normalized On-Resistance vs Temperature

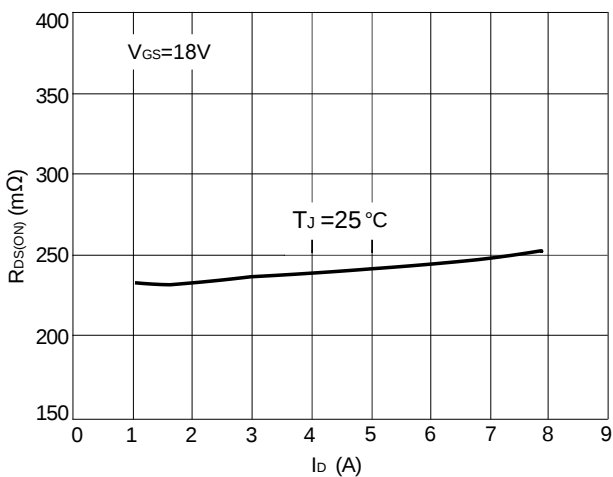


Figure 5: On-Resistance vs. Drain Current For Various Temperature

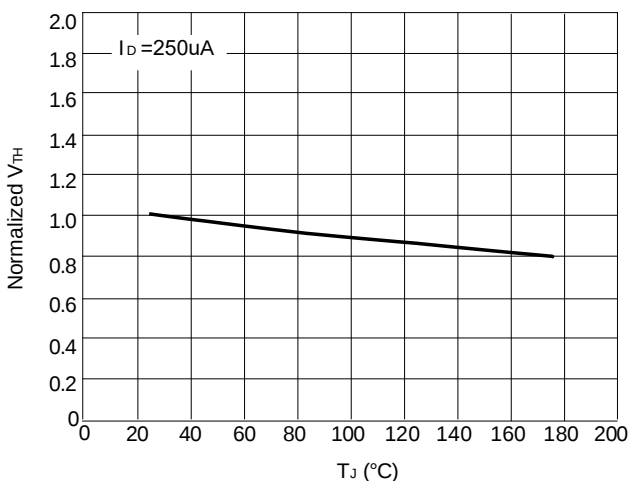


Figure 6: Normalized Threshold Voltage vs. Temperature

■ TYPICAL CHARACTERISTICS(Cont.)

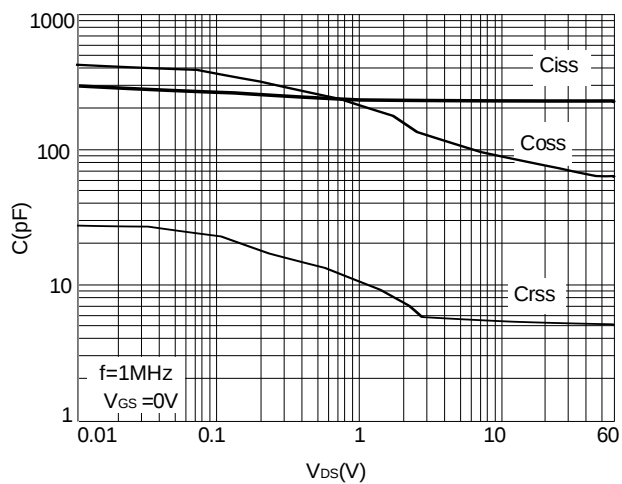


Figure 7: Capacitance vs. Drain-Source Voltage

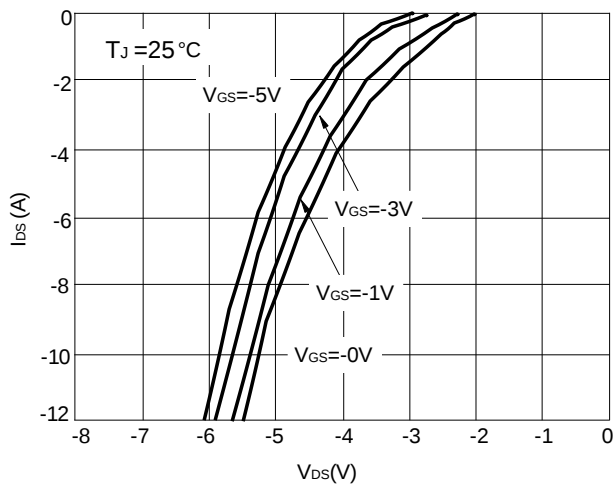
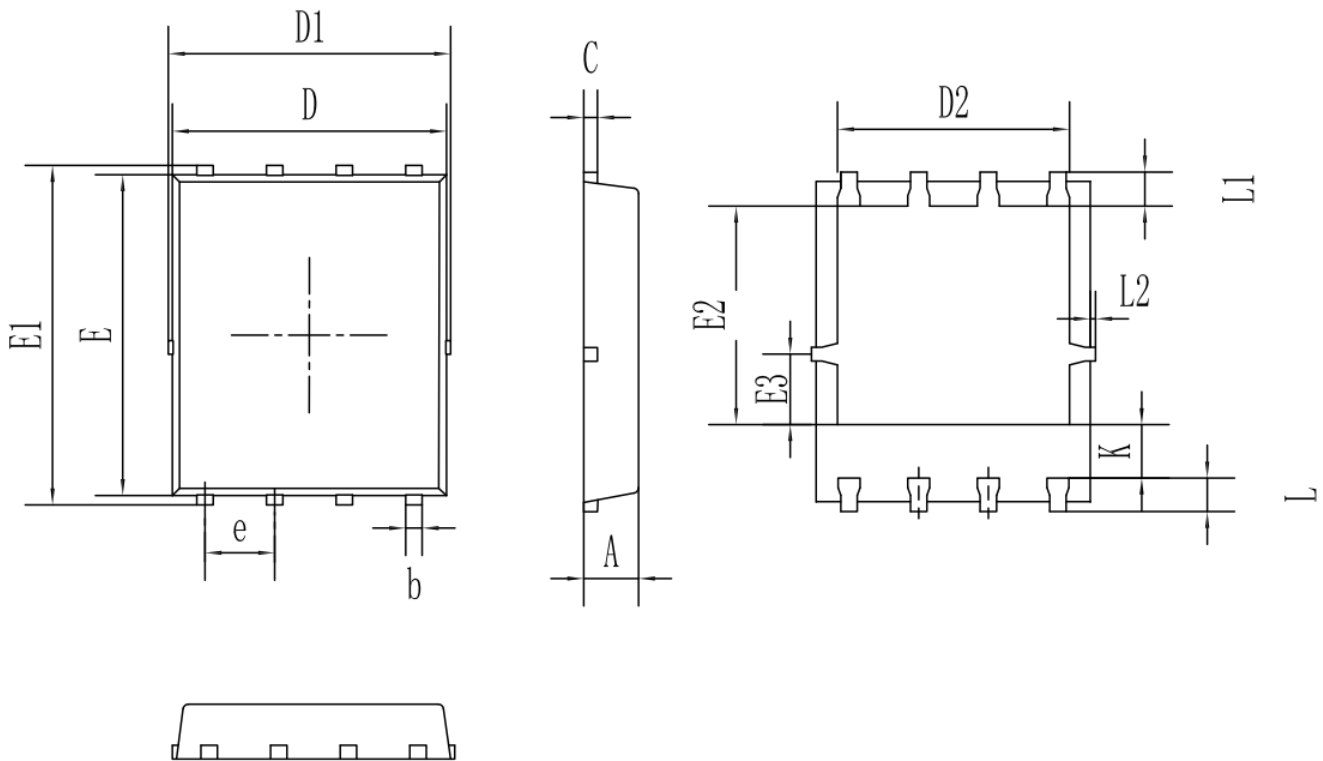
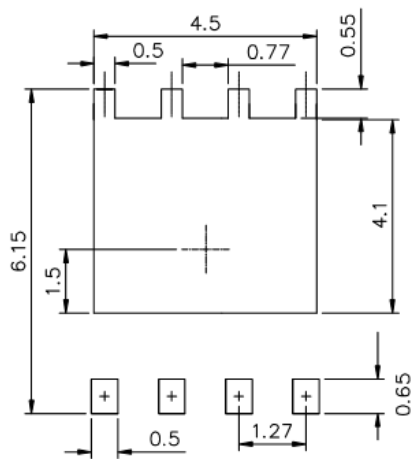


Figure 8: Body Diode Characteristics

■ PDFN5X6 PACKAGE OUTLINE DIMENSIONS



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	5.20
D1	4.90	5.10	5.30
D2	3.92	4.02	4.20
E	5.65	5.75	5.85
E1	5.95	6.10	6.25
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

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