

PRODUCT CHARACTERISTICS

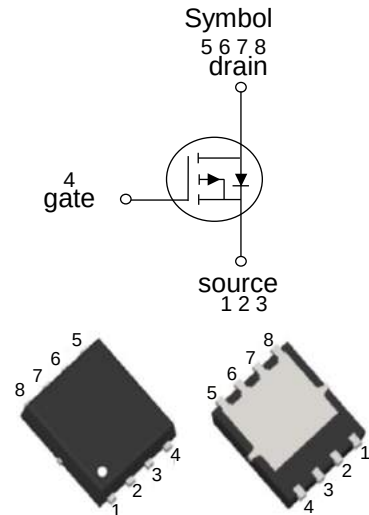
V_{DS}	-60V
$R_{DS(on)typ}(V_{GS} = -10V)$	25mΩ
$R_{DS(on)typ}(V_{GS} = -4.5V)$	30mΩ
I_D	-46A

FEATURE

- High power and current handing capability
- Lead free product is acquirde
- Surface nount package

APPLICATION

- Power management
- Load switch



ORDER INFORMATION

Order codes		Package	Packing
Halogen-free	Halogen		
N/A	MOT6727J	PDFN3X3-8L	5000pieces/Reel

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

Parameter	Symbol	Value	units
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	-46	A
Pulsed Drain Curren	I_{DM}	-110	A
Maximum Power Dissipation	P_D	60	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 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 _D = -250μA	-60	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -60V,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	-1.2	-	-2.5	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} = -10V, I _D =-15A	-	25	30	mΩ
		V _{GS} = -4.5V, I _D =-15A	-	30	40	mΩ
Forward Transconductance	g _{FS}	V _{DS} = -10V,I _D =-15A	10	-	-	S
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =-25 V,V _{GS} =0V, F=1.0MHz	-	3700	-	PF
Output Capacitance	C _{oss}		-	190	-	PF
Reverse Transfer Capacitance	C _{rss}		-	160	-	PF
Switching characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DS} =-20V, V _{GS} = -10 V R _L =1.5Ω , R _G =3Ω	-	6.9	-	nS
Turn-on Rise Time	t _r		-	2.3	-	nS
Turn-Off Delay Time	t _{d(off)}		-	32	-	nS
Turn-Off Fall Time	t _f	V _{DS} =-30 V,I _D =-20A, V _{GS} = 0 to -10V	-	5.5	-	nS
Total Gate Charge	Q _g		-	12.1	-	nC
Gate-Source Charge	Q _{gs}		-	6.4	-	nC
Gate-Drain Charge	Q _{gd}		-	3.1	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V,I _S =-1A	-	-	-1	V
Diode Forward Current	I _S		-	-	-46	A

■ TYPICAL CHARACTERISTICS

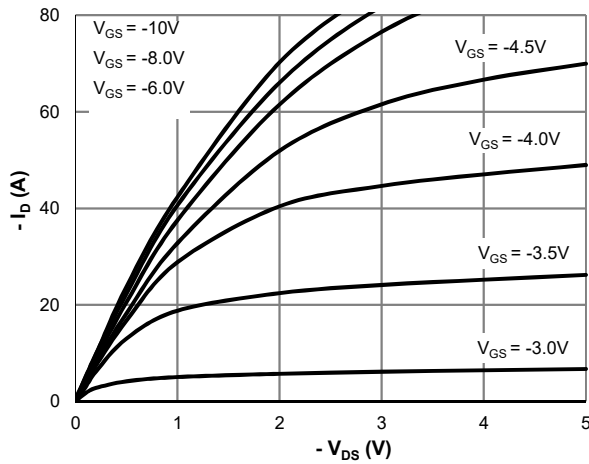


Figure 1: Saturation Characteristics

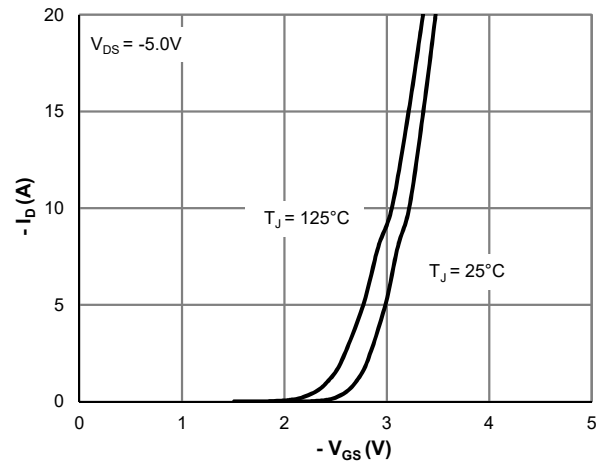


Figure 2: Transfer Characteristics

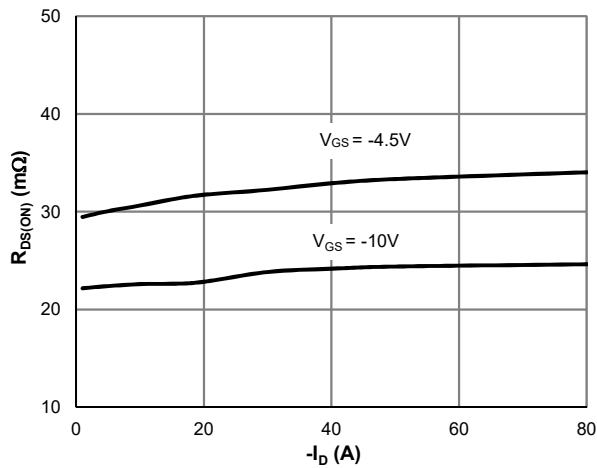


Figure 3: $R_{DS(ON)}$ vs. Drain Current

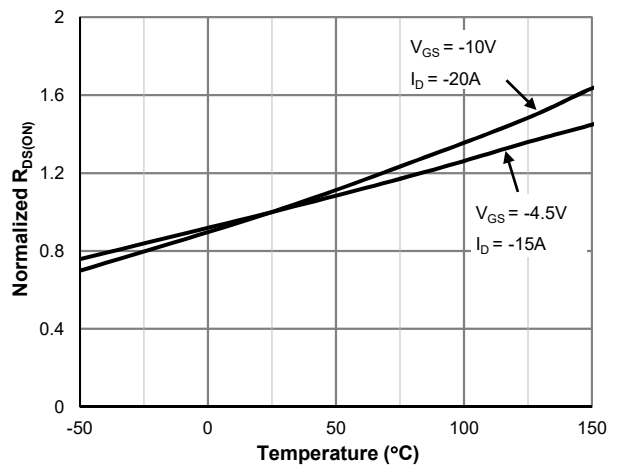


Figure 4: $R_{DS(ON)}$ vs. Junction Temperature

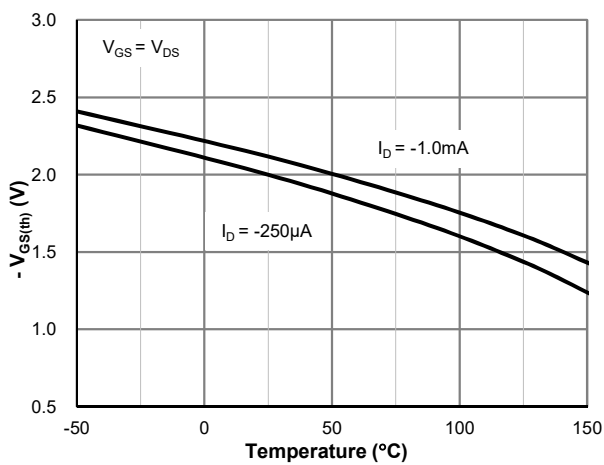


Figure 5: $V_{GS(th)}$ vs. Junction Temperature

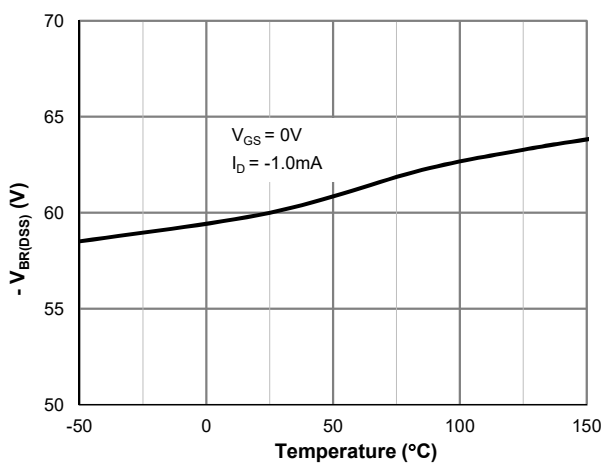


Figure 6: $V_{BR(DSS)}$ vs. Junction Temperature

■ TYPICAL CHARACTERISTICS(Cont.)

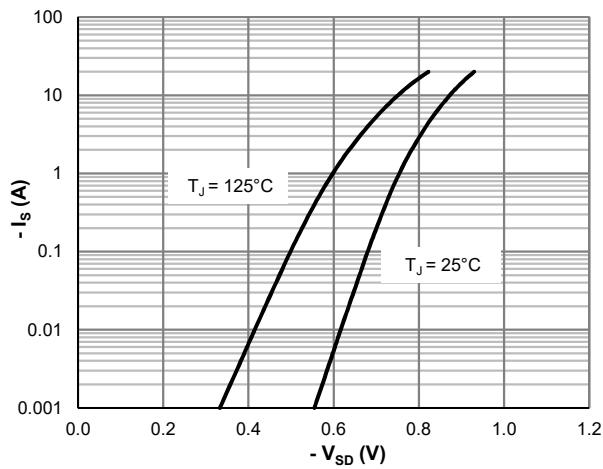


Figure 7: Body-Diode Characteristics

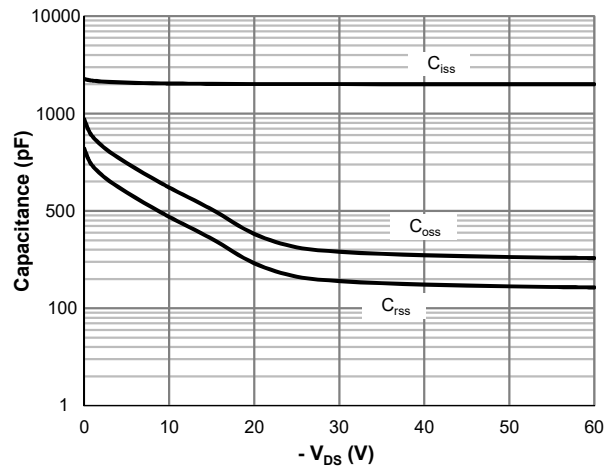


Figure 8: Capacitance Characteristics

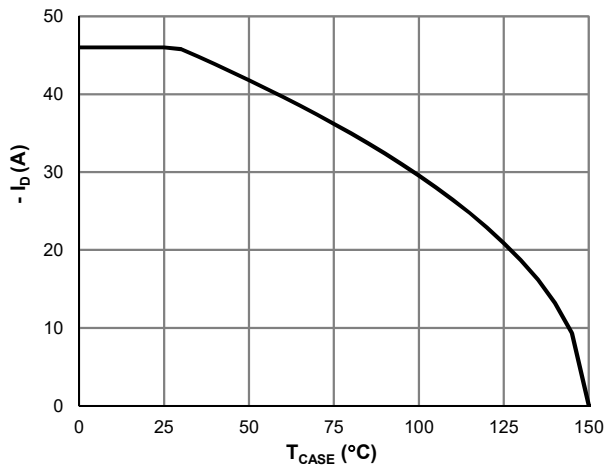


Figure 9: Current De-rating

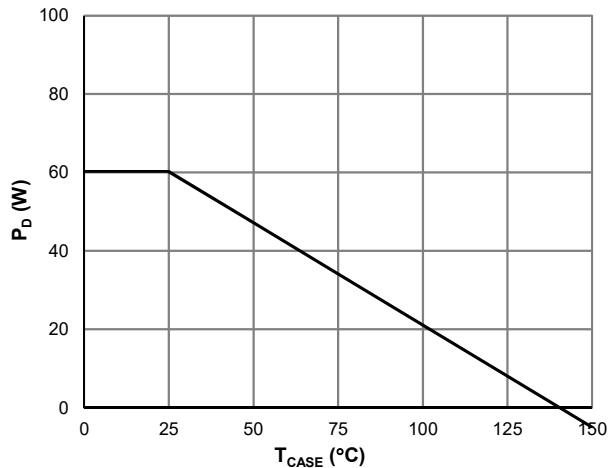


Figure 10: Power De-rating

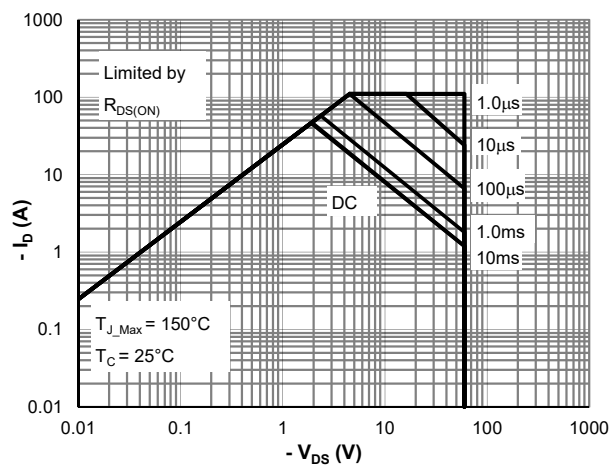
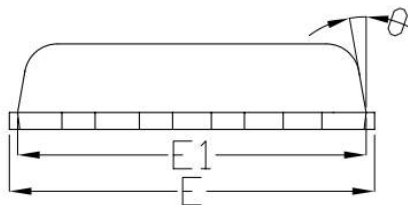
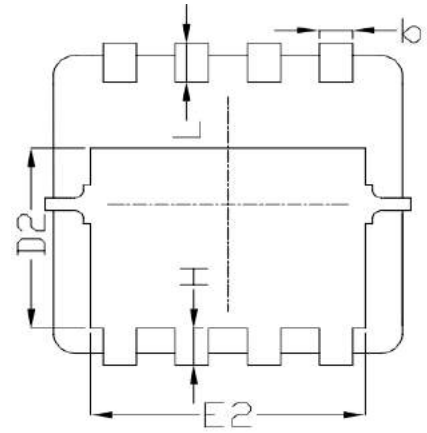
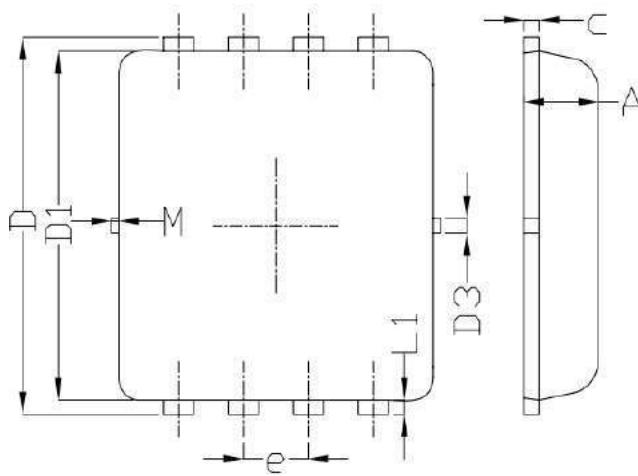
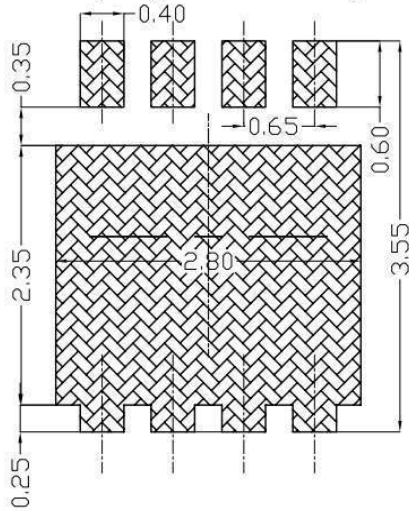


Figure 11: Maximum Safe Operating Area

■ 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			