

■ PRODUCT CHARACTERISTICS

V _{DSS}	-30V
R _{DS(on)} typ(@V _{GS} =-10 V)	16mΩ
R _{DS(on)} typ(@V _{GS} =-4.5 V)	22mΩ
I _D	-11A

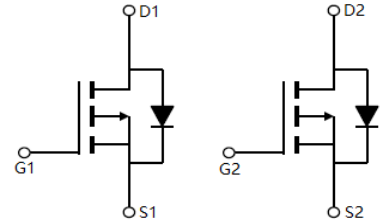
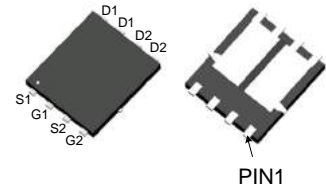
■ FEATURE

- Low R_{DS(ON)}
- Low gate charge
- Pb-free lead plating

■ APPLICATIONS

- Motor driving in power tool
- E-vehiche robotics

Pin description



P+P MOSFET

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-free	Halogen		
N/A	MOT3817J	PDFN3X3	5000Pieces/Reel

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

Parameter	Symbol	Value	units
Drain-Source Voltage	V _{DS}	-30	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current-Continuous	T _C =25°C	I _D	-11
	T _C =100°C	I _D	-7
Pulsed Drain Curren	I _{DM}	-44	A
Avalanche Energy	E _{AS}	68	mJ
Maximum Power Dissipation	T _C =25°C	P _D	3.6
Thermal Resistance,Junction-to-Ambient		R _{θJA}	34.7
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 To 150	°C

■ Electrical Characteristics ($T_C=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -250\mu\text{A}, V_{GS} = 0\text{V}$	-30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30\text{V}, V_{GS} = 0\text{V}$	-	-	1.0	μA
		$T_J = 55^\circ\text{C}$	-	-	5.0	
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$	-1.0	-	-2.5	V
Static Drain-Source ON-Resistance	$R_{DS(on)}$	$V_{GS} = -10\text{V}, I_D = -10\text{A}$	-	16	20	$\text{m}\Omega$
		$V_{GS} = -4.5\text{V}, I_D = -5\text{A}$	-	22	28	$\text{m}\Omega$
Diode Forward Voltage	V_{SD}	$I_S = -11\text{A}, V_{GS} = 0\text{V}$	-	-	-1.2	V
Diode Continuous Current	I_S	$T_C = 25^\circ\text{C}$	-	-	-11	A
Drain to Source Diode Forward Current	I_{SM}		-	-	-44	A
DYNAMIC PARAMETERS						
Input Capacitance	C_{iss}	$V_{GS} = 0\text{V}, V_{DS} = -15\text{V}, f = 1\text{MHz}$	-	2130	-	pF
Output Capacitance	C_{oss}		-	280	-	pF
Reverse Transfer Capacitance	C_{rss}		-	250	-	pF
SWITCHING PARAMETERS						
Total Gate Charge	Q_g	$V_{GS} = -10\text{V}$ $V_{DS} = -15\text{V}, I_D = -5\text{A}$	-	31.2	-	nC
Gate Source Charge	Q_{gs}		-	3.2	-	nC
Gate Drain Charge	Q_{gd}		-	9.2	-	nC
Turn-On DelayTime	$t_{D(on)}$	$V_{GS} = -10\text{V}, V_{DD} = -15\text{V}$ $I_D = -10\text{A}, R_{GEN} = 2.5\Omega$	-	9	-	nS
Turn-On Rise Time	t_r		-	13	-	nS
Turn-Off DelayTime	$t_{D(off)}$		-	48	-	nS
Turn-Off Fall Time	t_f		-	20	-	nS

■ TYPICAL CHARACTERISTICS

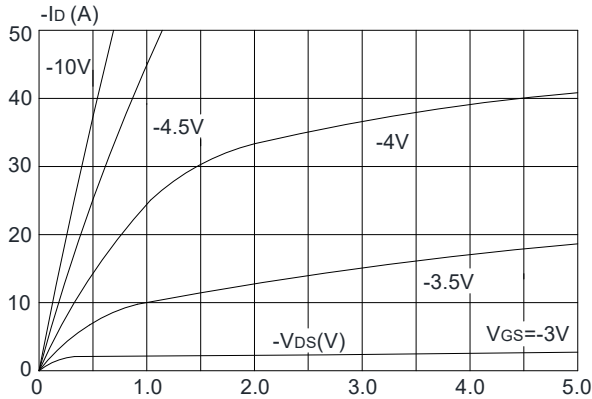


Figure 1: Output Characteristics

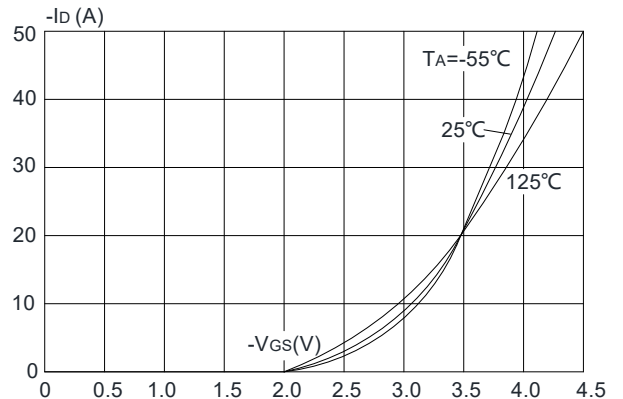


Figure 2: Typical Transfer Characteristics

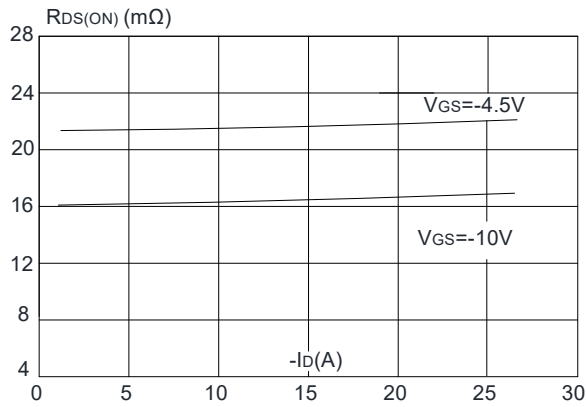


Figure 3: On-resistance vs. Drain Current

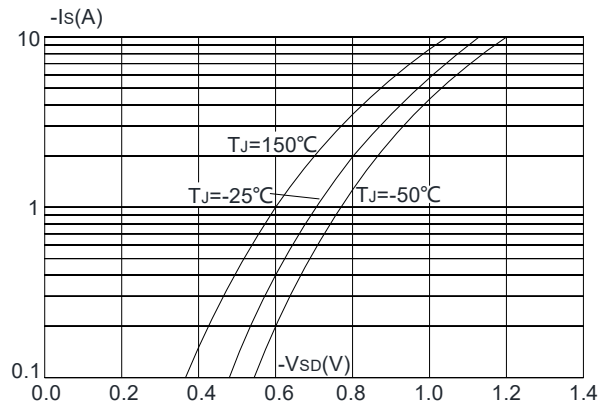


Figure 4: Body Diode Characteristics

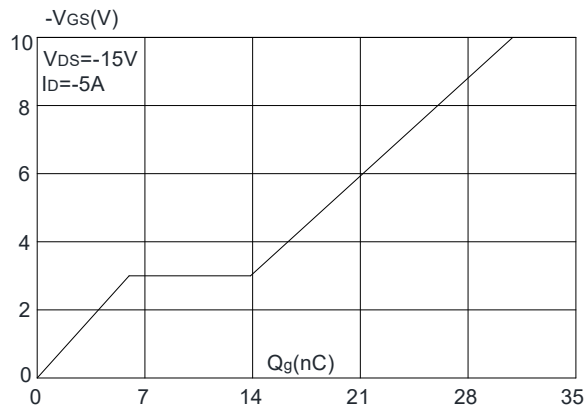


Figure 5: Gate Charge Characteristics

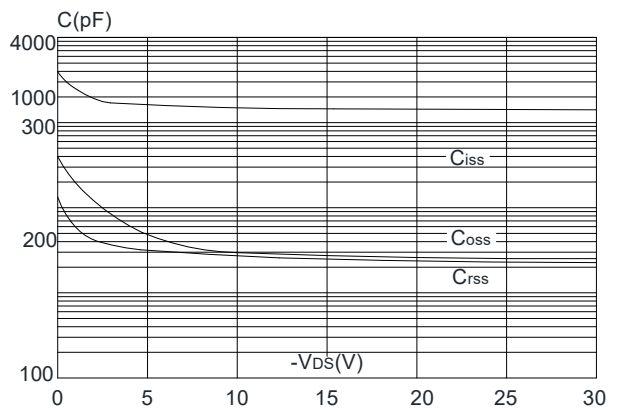


Figure 6: Capacitance Characteristics

■ TYPICAL CHARACTERISTICS(Cont.)

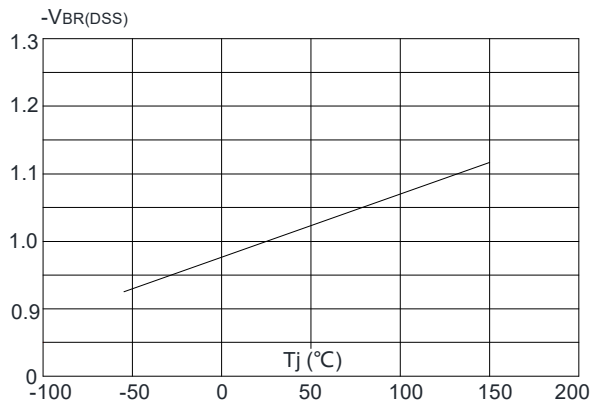


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

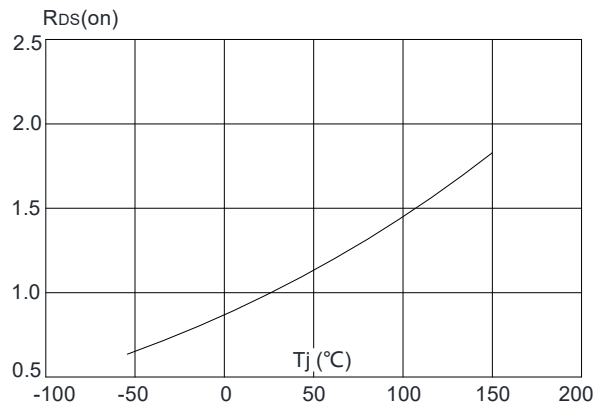


Figure 8: Normalized on Resistance vs. Junction Temperature

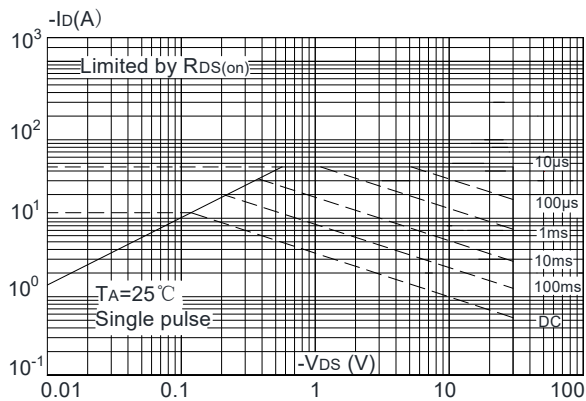


Figure 9: Maximum Safe Operating Area

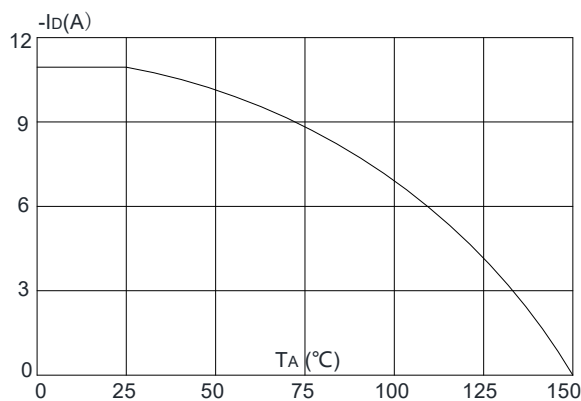


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

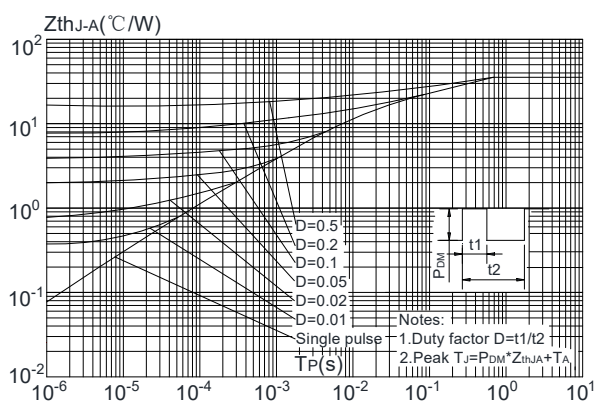
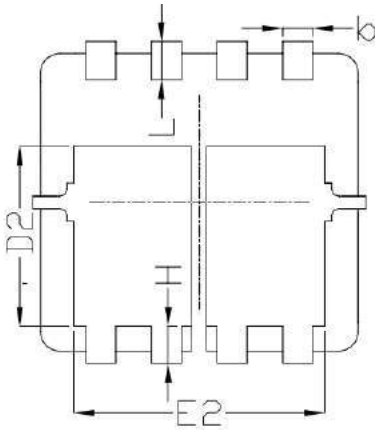
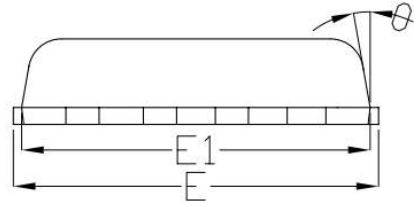
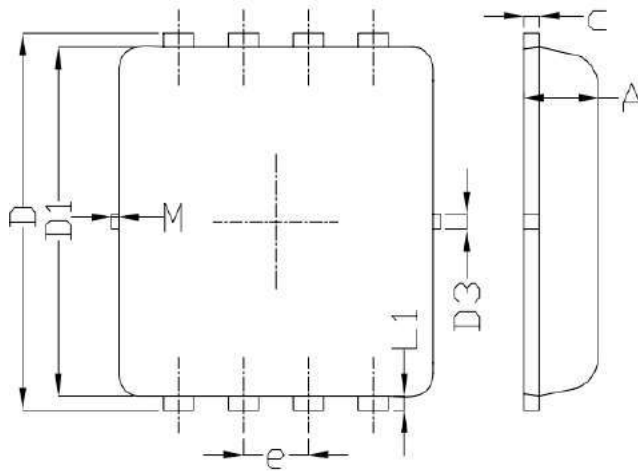


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

■PDFN3X3-8L PACKAGE MECHANICAL DATA



SYMBOL	DIMENSIONAL REOMTS		
	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			