

■ PRODUCT CHARACTERISTICS

VDSS	-30V
$R_{DS(on)typ}(V_{GS} = -10V)$	3.0mΩ
$R_{DS(on)typ}(V_{GS} = -4.5V)$	4.7mΩ
ID	-60A

■ APPLICATIONS

- * Battery and loading switching
- * Ideal for high-frequency switching and synchronous rectification

■ FEATURES

- * High density cell design for ultra low Rdson
- * Low gate charge
- * Pb-free lead plating

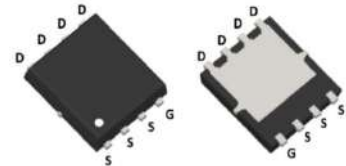
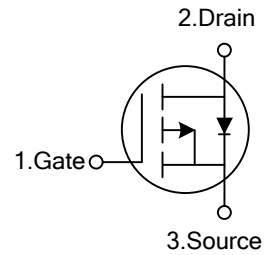
■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT3337G	PDFN5X6	5000 pieces /Reel

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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V _{DS}	-30	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current-Continuous	I _D	-60	A
Drain Current-Pulsed	I _{DM}	-240	A
Single pulse avalanche energy	E _{AS}	812	mJ
Maximum Power Dissipation	P _D	100	W
Junction to Case	R _{θJC}	1.25	°C/W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 To 150	°C

Symbol



■ 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	-30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, 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	-1.6	-2.1	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-20A	-	3.0	3.7	mΩ
		V _{GS} =-4.5V, I _D =-20A	-	4.7	5.8	mΩ
Forward Transconductance	g _{FS}	V _{DS} =-10 V, I _D =-3 A	-	19	-	S
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =-20V, V _{GS} =0V, F=1.0MHz	-	6500	-	pF
Output Capacitance	C _{oss}		-	790	-	pF
Reverse Transfer Capacitance	C _{rss}		-	760	-	pF
Switching characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-15V, I _D =-30A V _{GS} =-10V, R _{GEN} =6Ω	-	20	-	nS
Turn-on Rise Time	t _r		-	18	-	nS
Turn-Off Delay Time	t _{d(off)}		-	95	-	nS
Turn-Off Fall Time	t _f		-	30	-	nS
Total Gate Charge	Q _g	V _{DS} =-15V, I _D =-30A, V _{GS} =-10V	-	118.7	-	nC
Gate-Source Charge	Q _{gs}		-	16.1	-	nC
Gate-Drain Charge	Q _{gd}		-	30.7	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-30A	-	-0.85	-1.2	V
Diode Forward Current	I _S		-	-	-60	A
Reverse Recovery Time	t _{rr}	T _J = 25°C, I _F = -30A di/dt = 100A/μs	-	47	-	nS
Reverse Recovery Charge	Q _{rr}		-	78	-	nC

■ TYPICAL CHARACTERISTICS

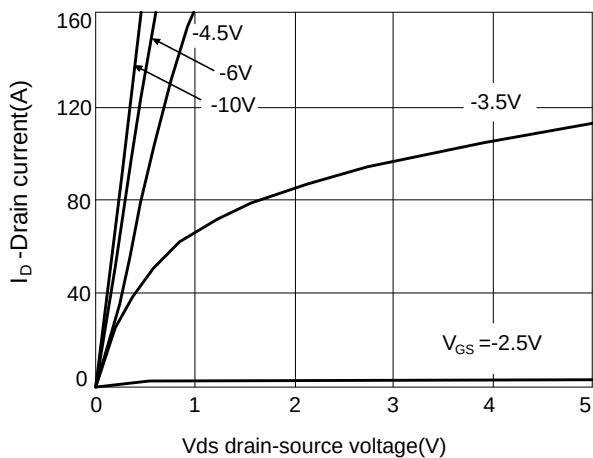


Figure 3: Output characteristics

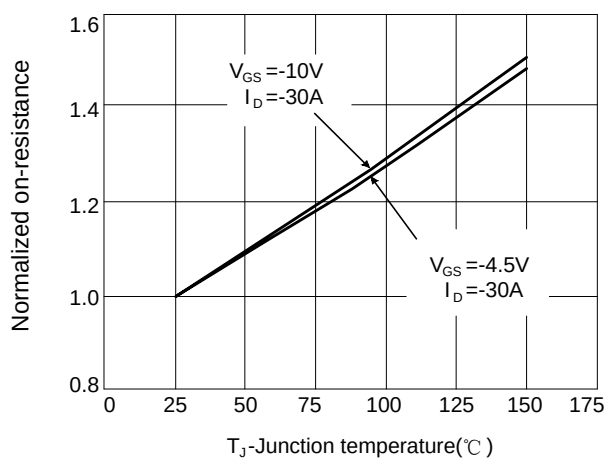


Figure 2: Drain-source on-resistance

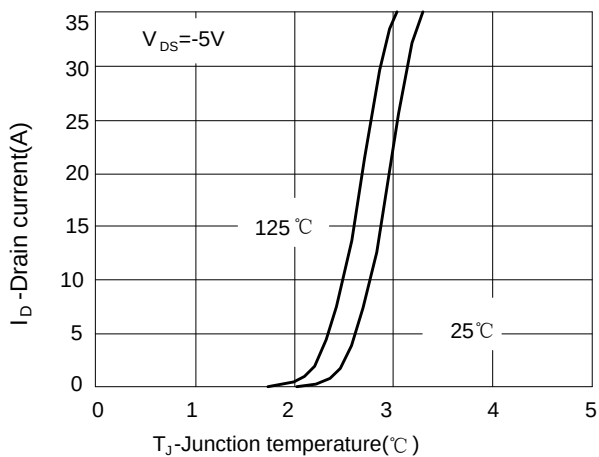


Figure 3: Transfer characteristics

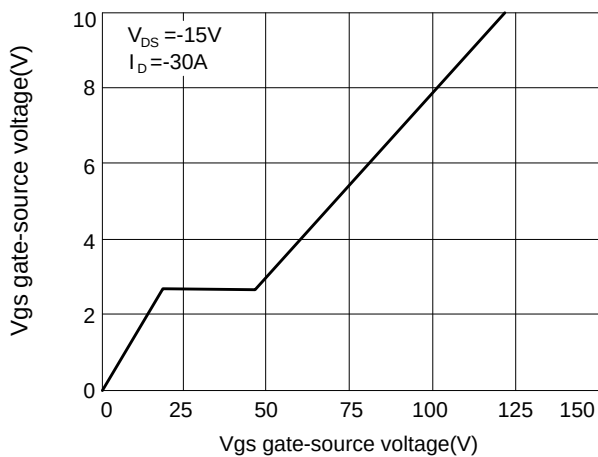


Figure 4: Gate charge

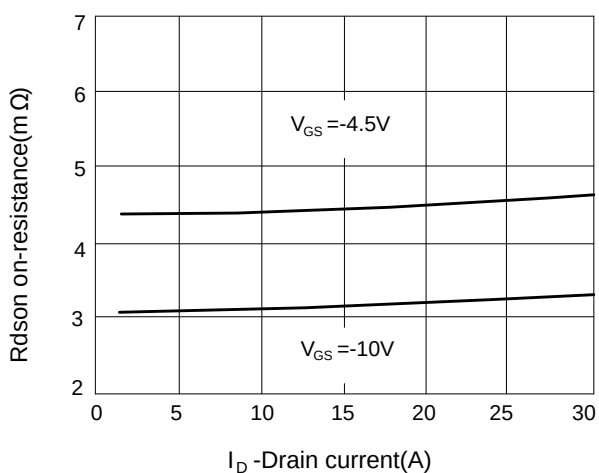


Figure 4: Rdson-drain current

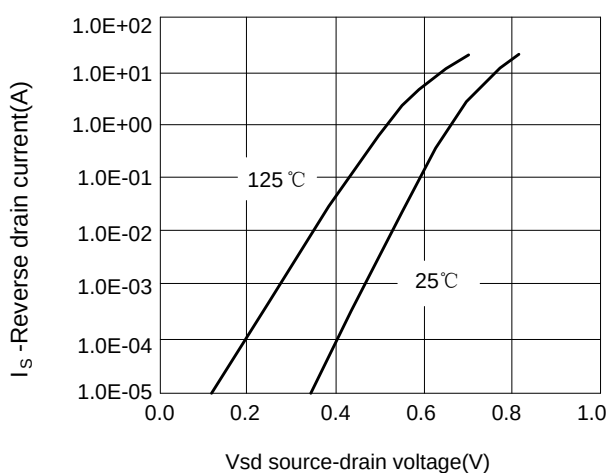


Figure 6: Source-drain diode forward

■ TYPICAL CHARACTERISTICS(Cont.)

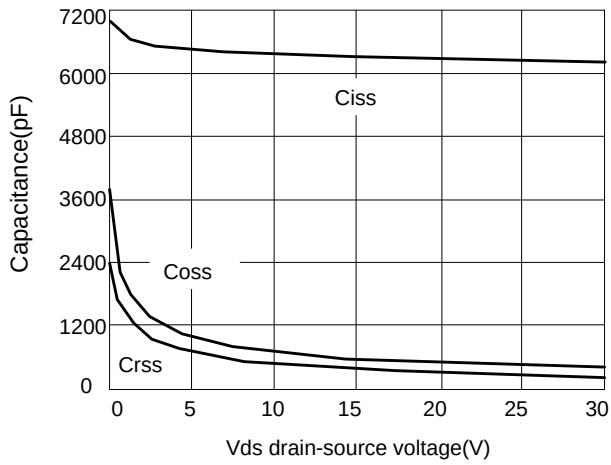


Figure 7: Capacitance vs vds

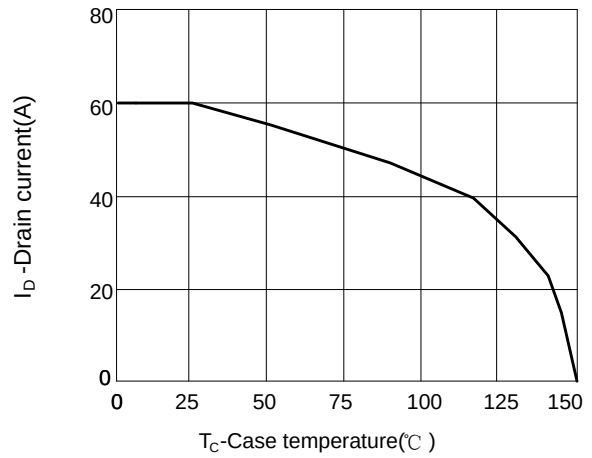


Figure 8: ID current derating vs junction temperature

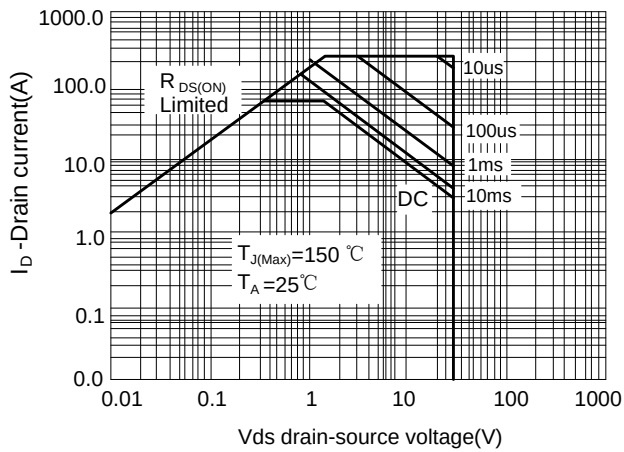
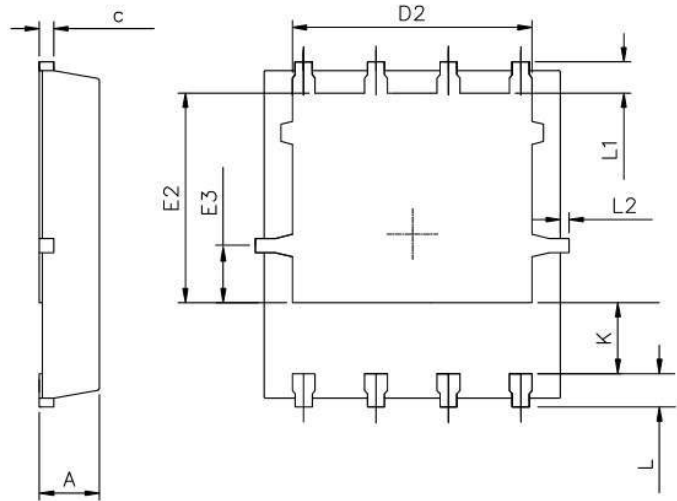
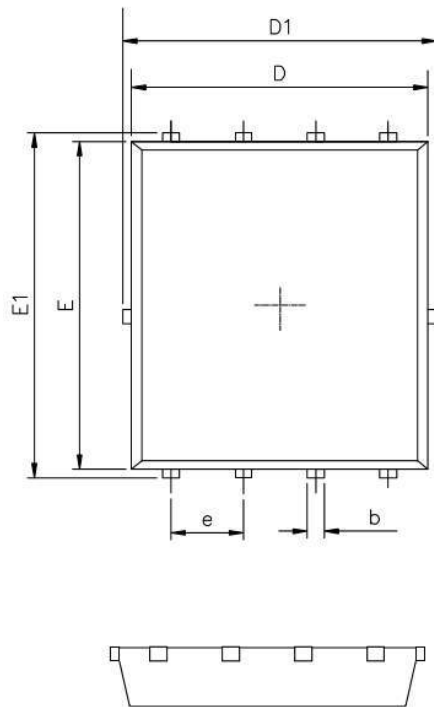
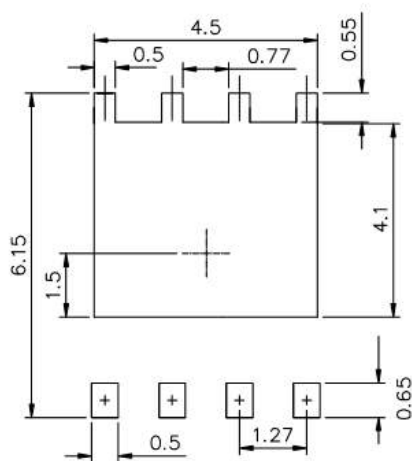


Figure 9 Safe operation area

■ 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