

■ PRODUCT CHARACTERISTICS

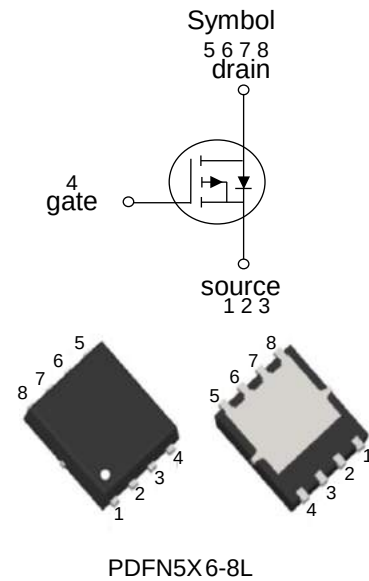
V_{DS}	-30V
$R_{DS(on)typ}@V_{GS}=-10V$	7m Ω
$R_{DS(on)typ}@V_{GS}=-4.5V$	11m Ω
I_D	-25A

■ FEATRES

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

■ APPLICATIONS

- Power management
- Load switch



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-free	Halogen		
N/A	MOT3710G	PDFN5X6-8L	5000pieces/Reel

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

Parameter	Symbol	Value	units
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	-25	A
Pulsed Drain Curren	I_{DM}	-100	A
Maximum Power Dissipation	P_D	3.5	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	$^{\circ}\text{C}$

■ THERMAL CHARACTERISTICS

Parameter	Symbol	Value	units
Thermal Resistance,Junction-to-Ambient	$R_{\theta JA}$	36	$^{\circ}\text{C}/\text{W}$

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0V$	-	-	-1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.2	-	-2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-15A$	-	7.5	10	m Ω
		$V_{GS}=-4.5V, I_D=-15A$	-	11	14	m Ω
Forward Transconductance	g_{FS}	$V_{DS}=-10V, I_D=-15A$	20	-	-	S
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V,$ $F=1.0MHz$	-	3000	-	PF
Output Capacitance	C_{oss}		-	287	-	PF
Reverse Transfer Capacitance	C_{rss}		-	256	-	PF
Switching characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=-15V, I_D=-15A$ $V_{GS}=-10V, R_G=3\Omega$	-	50	-	nS
Turn-on Rise Time	t_r		-	60	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	60	-	nS
Turn-Off Fall Time	t_f		-	21	-	nS
Total Gate Charge	Q_g	$V_{DS}=-15V, I_D=-15A,$ $V_{GS}=-10V$	-	45.6	-	nC
Gate-Source Charge	Q_{gs}		-	4.6	-	nC
Gate-Drain Charge	Q_{gd}		-	11	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-20A$	-	-	-1.2	V
Diode Forward Current	I_S		-	-	-25	A

■ TYPICAL CHARACTERISTICS

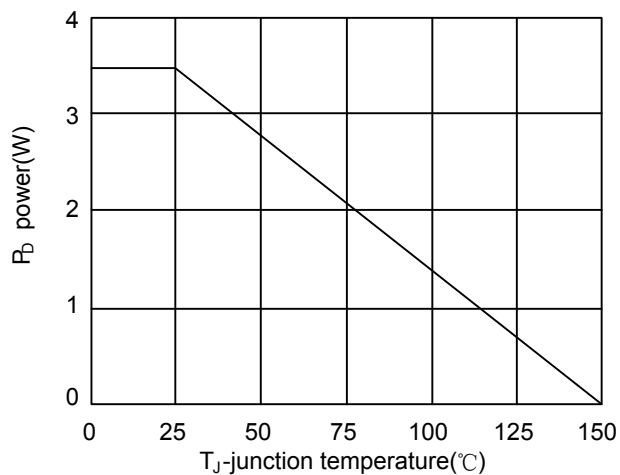


Figure 1 Power dissipation

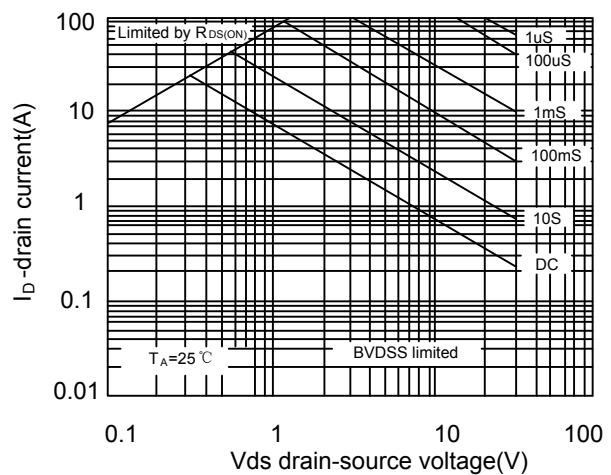


Figure 2 Safe operation area

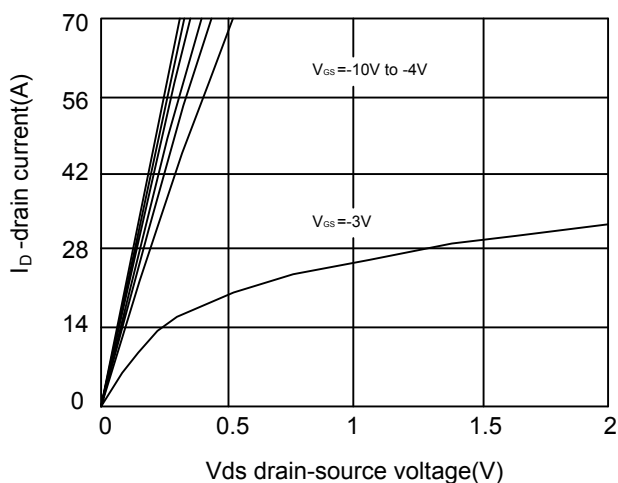


Figure 3 Output characteristics

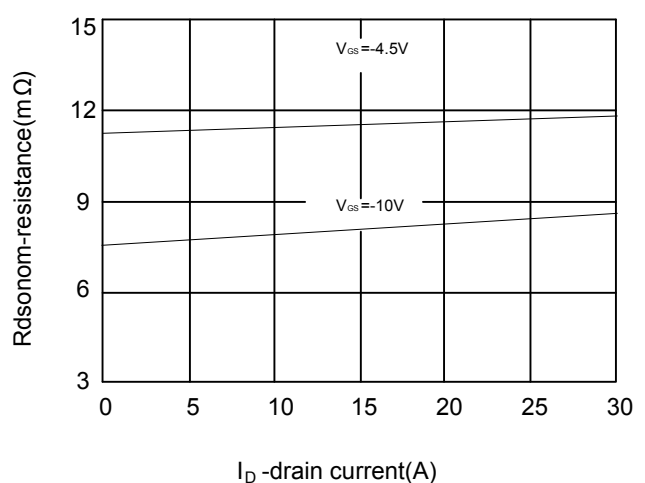


Figure 4 Drain-source on-resistance

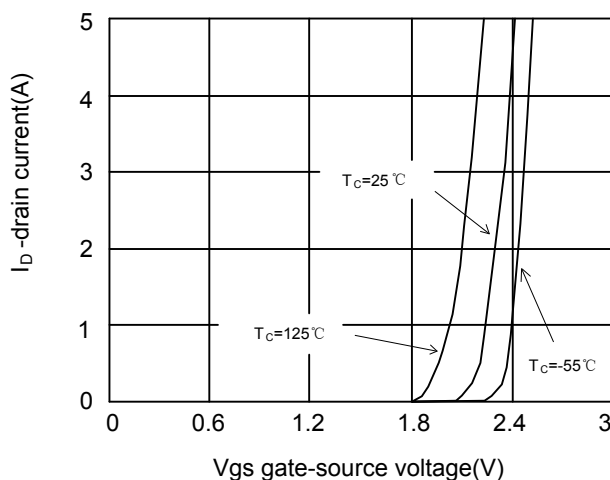


Figure 5 Transfer characteristics

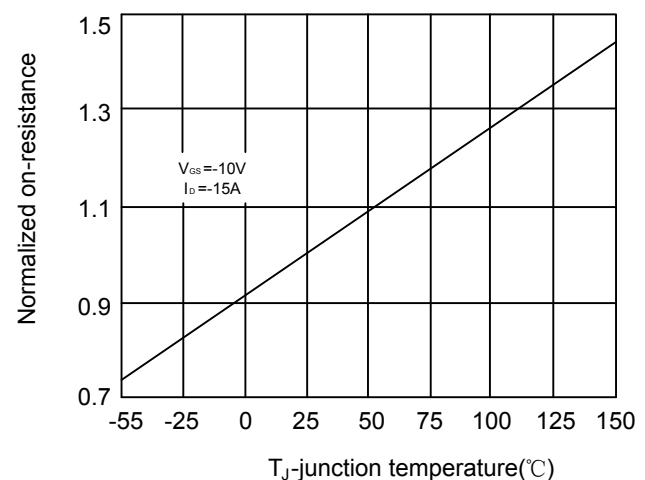


Figure 6 Power dissipation

■ TYPICAL CHARACTERISTICS(Cont.)

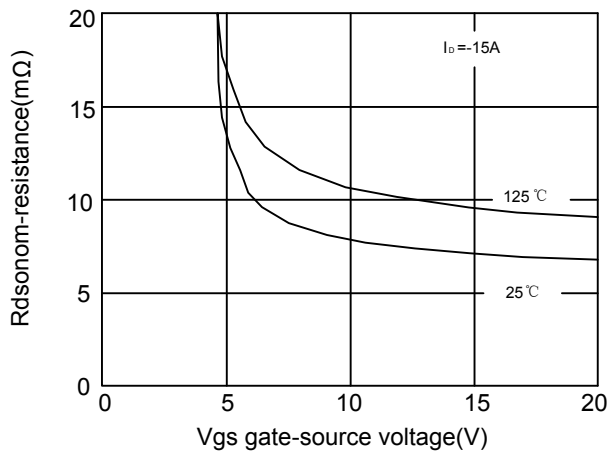


Figure 7 Rdson vs vgs

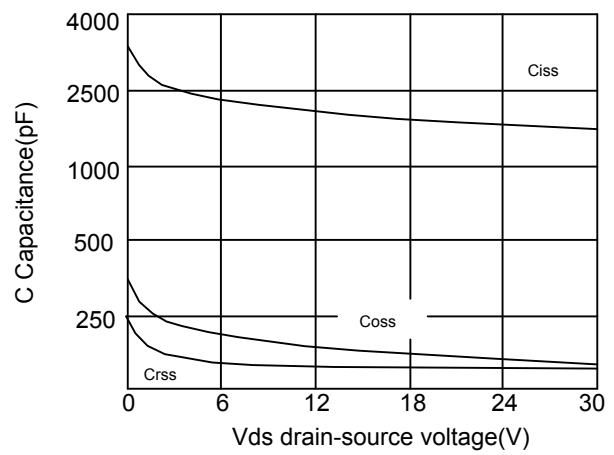


Figure 8 Capacitance vs vds

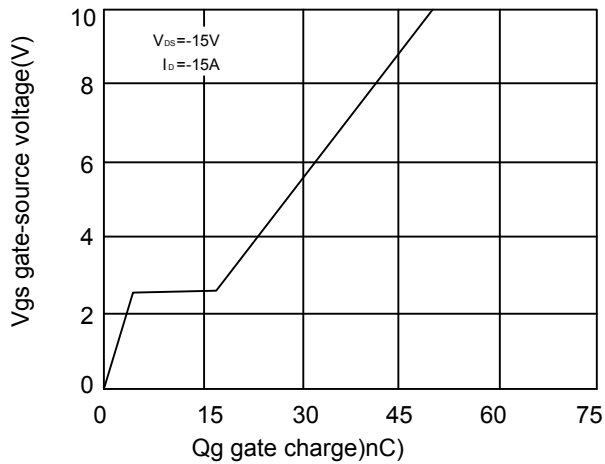


Figure 9 Gate charge

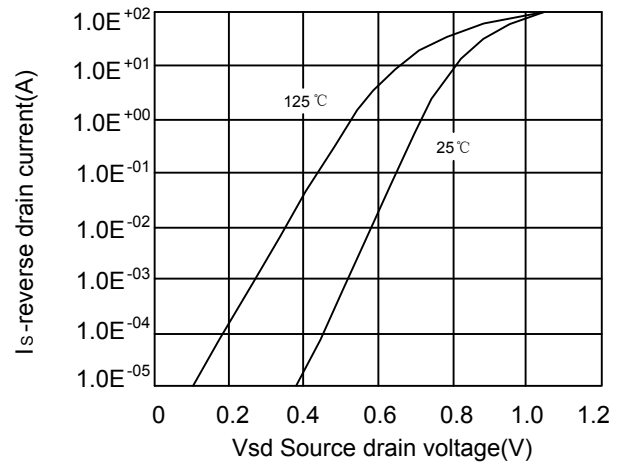


Figure 10 Source-drain diode forward

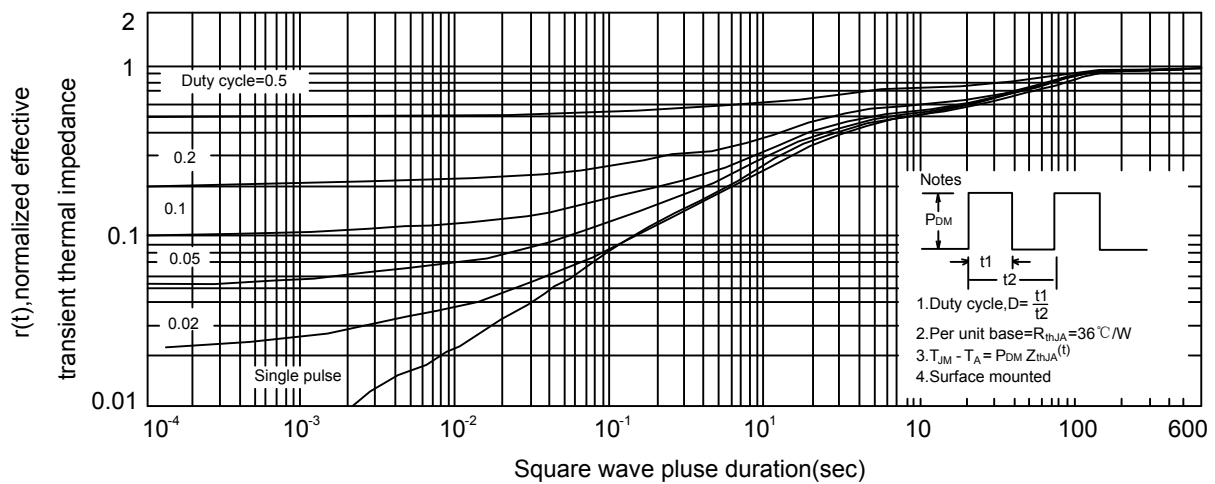
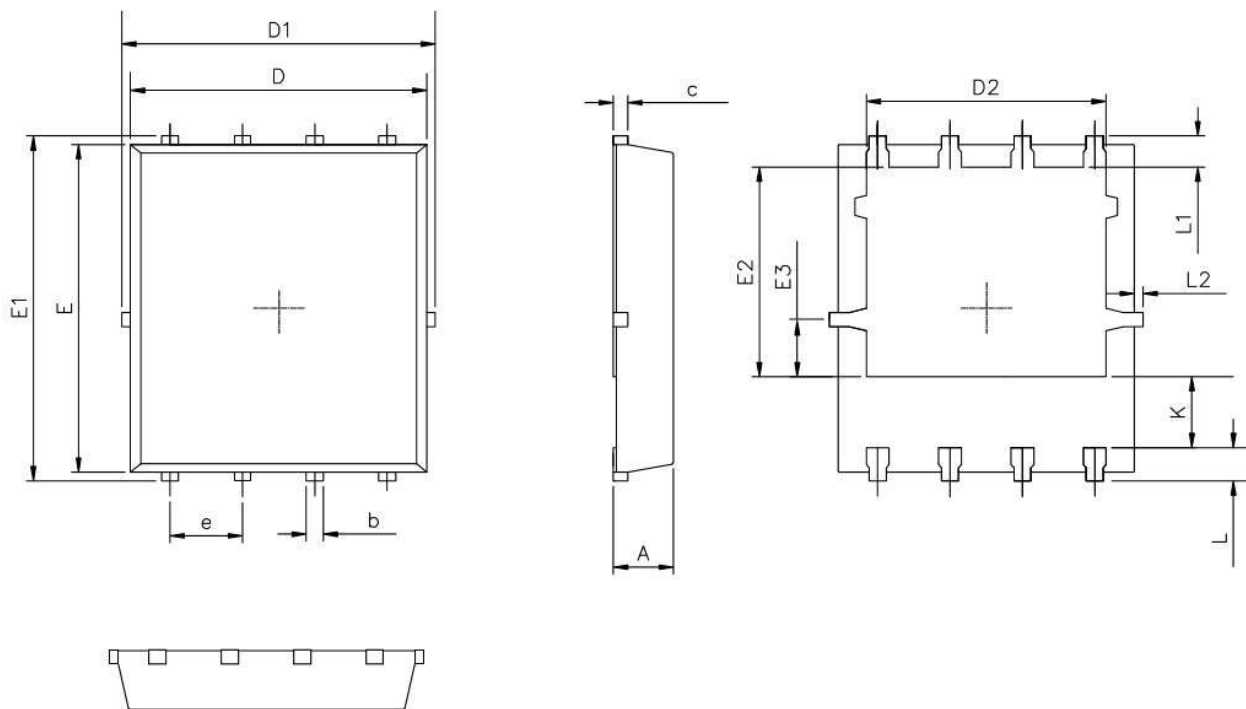
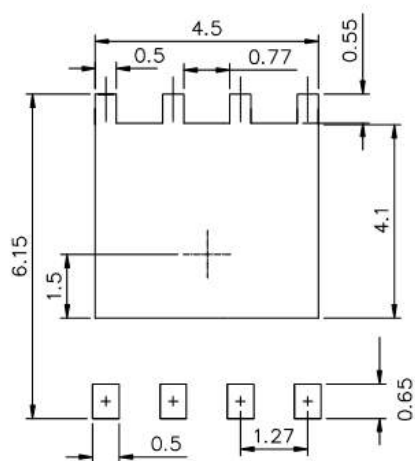


Figure 11 Normalized maximum transient thermal impedance

■ 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