

■ PRODUCT CHARACTERISTICS

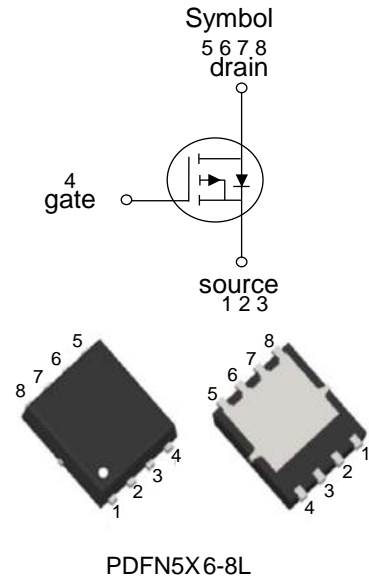
$V_{DSS}$	-30V
$R_{DS(on)typ}@V_{GS}=-10V$	7mΩ
$R_{DS(on)typ}@V_{GS}=-4.5V$	11mΩ
$I_D$	-25A

■ FEATRES

- High power and current handing 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 ( $T_C = 25^{\circ}C$ , 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	°C

■ THERMAL CHARACTERISTICS

Parameter	Symbol	Value	units
Thermal Resistance,Junction-to-Ambient	$R_{\theta JA}$	36	°C/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	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	$\pm 100$	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 $\Omega$
		$V_{GS}=-4.5V, I_D=-15A$	-	11	14	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS}=-10V, I_D=-15A$	20	-	-	S
Dynamic characteristics						
Input Capacitance	$C_{iss}$	$V_{DS}=-15V, V_{GS}=0V,$ $F=1.0\text{MHz}$	-	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

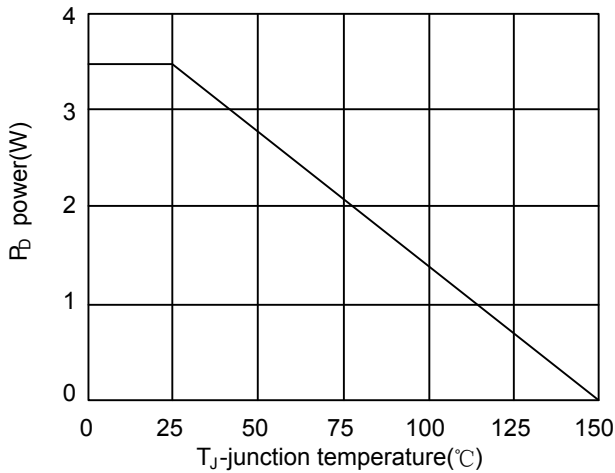


Figure 1 Power dissipation

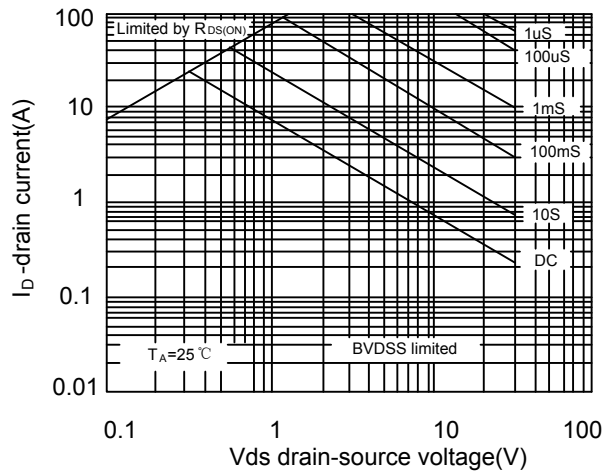


Figure 2 Safe operation area

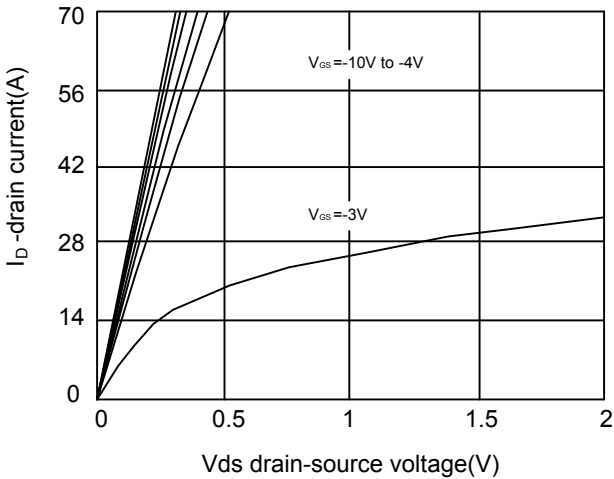


Figure 3 Output characteristics

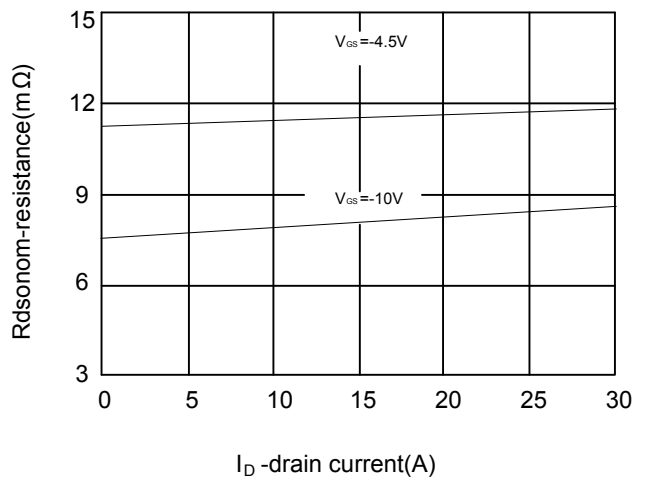


Figure 4 Drain-source on-resistance

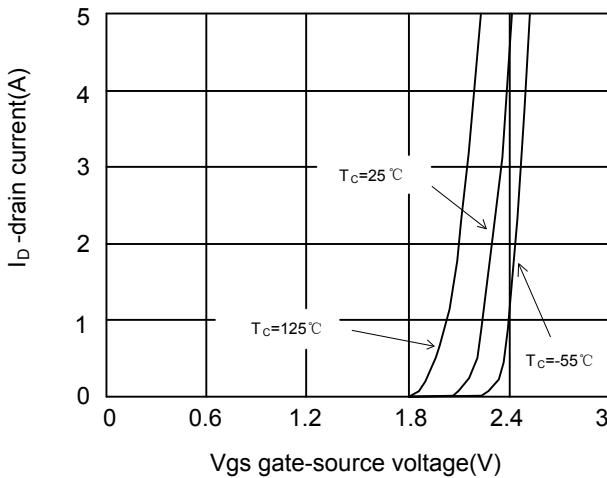


Figure 5 Transfer characteristics

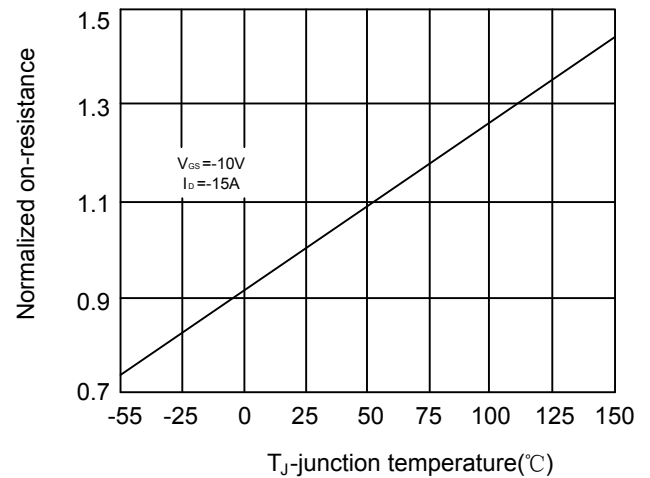


Figure 6 Power dissipation

■ TYPICAL CHARACTERISTICS(Cont.)

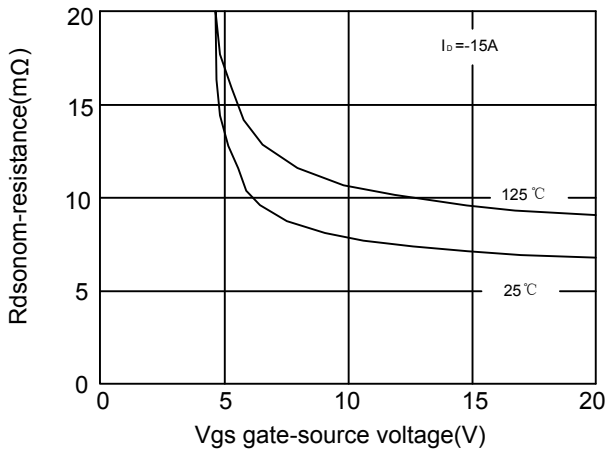


Figure 7 Rdson vs vgs

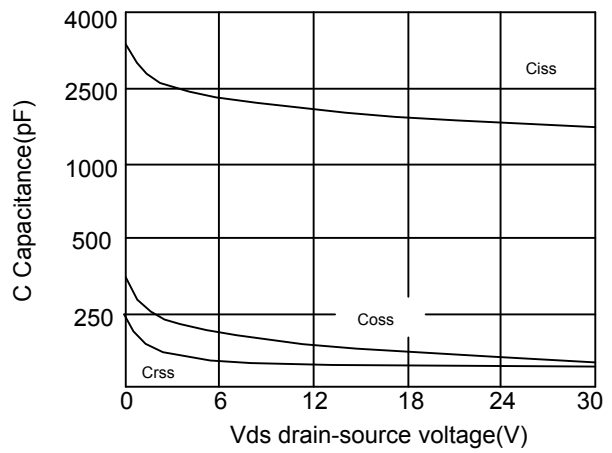


Figure 8 Capacitance vs vds

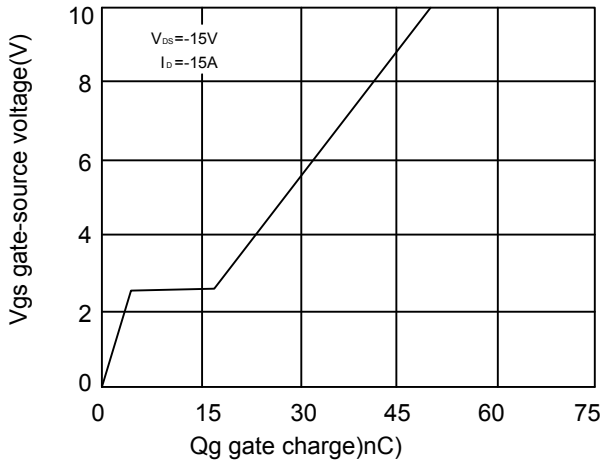


Figure 9 Gate charge

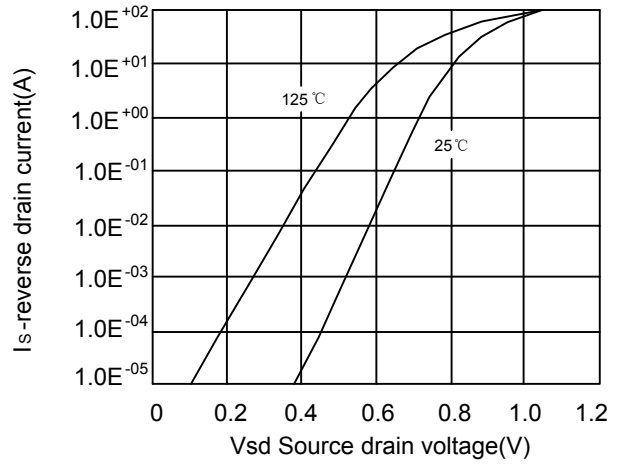


Figure 10 Source-drain diode forward

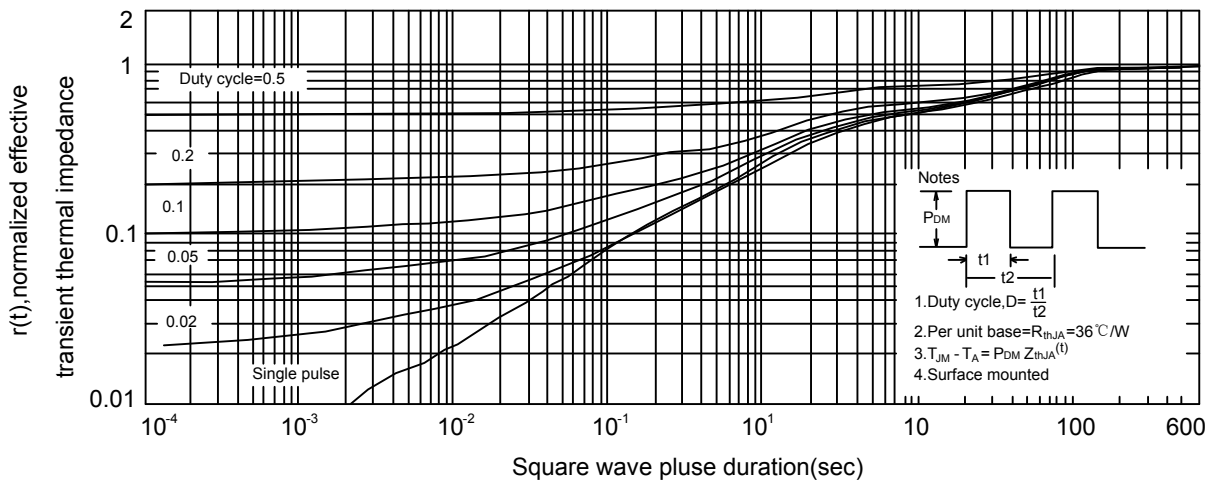
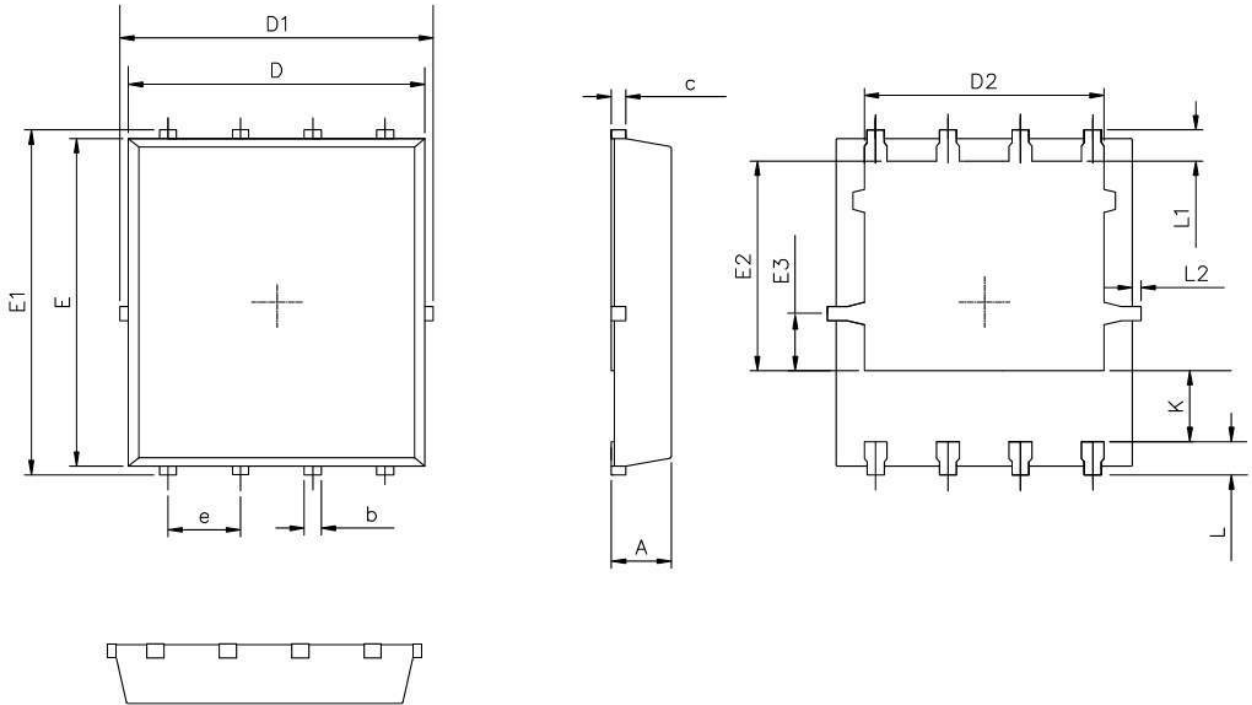
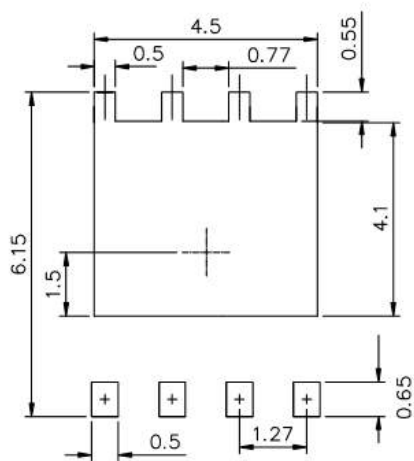


Figure 11 Normalized maximum transient thermal impedance

■ 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

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