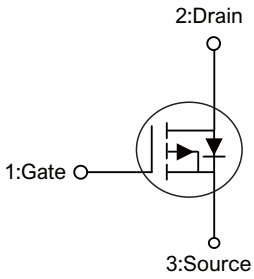
■ PRODUCT CHARACTERISTICS

V_{DSS}	-40V
$R_{DS(ON)}$Typ(@V_{GS} =-4.5V)	9.2mΩ
$R_{DS(ON)}$Typ(@V_{GS} =-10V)	7.2mΩ
ID	-70A

Symbol

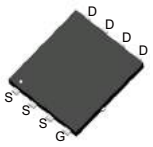


■ APPLICATIONS

Power switch
Load switch in higa current applications
DC/DC converters

■ FEATURES

*High density cell design for ultra low Rdson
*Fully characterized avalanche voltage and current
*Good stability and uniformity with high Eas
*Excellent package for good heat dissipation



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT4710G	PDFN5X6	5000 pieces /Reel

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

Parameter		Symbol	Ratings	Unit
Drain-to-source voltage		V_{DSS}	-40	V
Gate-to-source voltage		V_{GSS}	±20	V
Continuous drain	T_C=25°C	I_D	-70	A
	T_C=100°C	I_D	-49.5	A
Pulsed drain current		I_{DM}	-200	A
Avalanche energy		E_{AS}	1012	mJ
Power dissipation		P_D	130	W
Junction & storage temperature range		T_J,T_{STG}	~55 to +150	°C

■ THERMAL PERFORMANCE

Parameter	Symbol	Ratings	Unit
Thermal resistance, Junction-to-case	$R_{\theta JC}$	0.96	°C/W

■ ELECTRICAL CHARACTERISTICS(T_C = 25°C, unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250uA	-40	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=-40V,V_{GS}=0V	-	-	1	uA
		T_J =55°C	-	-	5	uA
Gate-body leakage current	I_{GSS}	V_{GS}= ±20V,V_{DS}=0V	-	-	±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS} ,I_D=-250uA	-1.2	-	-2.5	V
Static drain-source on-resistance	$R_{DS(ON)}$	V_{GS}=-10V ,I_D=-20A	-	7.2	10	mΩ
		V_{GS}=-4.5V,I_D=-15A	-	9.2	13	mΩ
Forward transconductance	g_{FS}	V_{DS}=-10V,I_D=-20A	-	-	50	S
Diode forward voltage	V_{SD}	I_S=-1A, V_{GS}=0V	-	-0.75	-1	V
Diode continuous current	I_S	T_C=25°C	-	-	-70	A
DYNAMIC PARAMETERS						
Input capacitance	C_{ISS}	V_{GS}=0V, V_{DS}= -20V,f=1MHz	-	5380	-	pF
Ouput capacitance	C_{OSS}		-	570	-	pF
Reverse transfer capacitance	C_{rss}		-	500	-	pF
SWITCHING PARAMETERS						
Total charge	Q_g	V_{GS}=-10V V_{DS}=-20V,I_D=-20A	-	106	-	nC
Gate source charge	Q_{gs}		-	22	-	nC
Gate drain charge	Q_{gd}		-	27	-	nC
Turn-on delay time	$t_{D(on)}$	V_{GS}=-10V, V_{DD}=-20V R_L=2Ω ,R_{GEN} =1Ω	-	15	-	nS
Turn-on rise time	t_r		-	12	-	nS
Turn-off delay time	$t_{D(off)}$		-	70	-	nS
Turn-off fall time	t_f		-	18	-	nS
Body-diode reverse recovery time	t_{rr}	I_F=70A, dI_F/dt =100A/us	-	53	-	nS
Body-diode reverse recovery charge	Q_{rr}	I_F=70A, dI_F/dt =100A/us	-	50	-	nC

■ TYPICAL CHARACTERISTICS

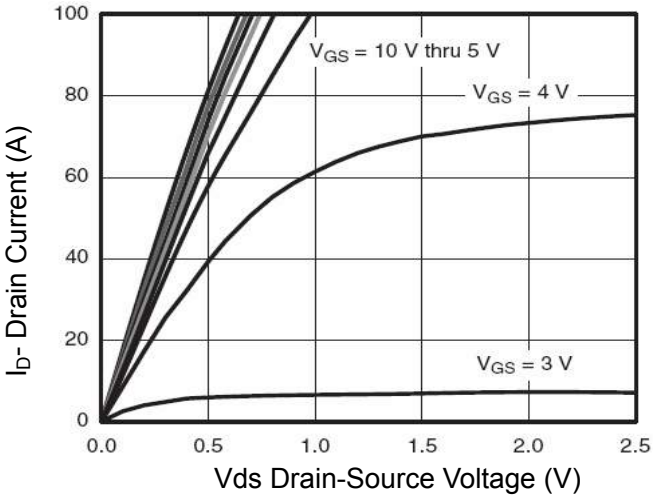


Figure 1 Output Characteristics

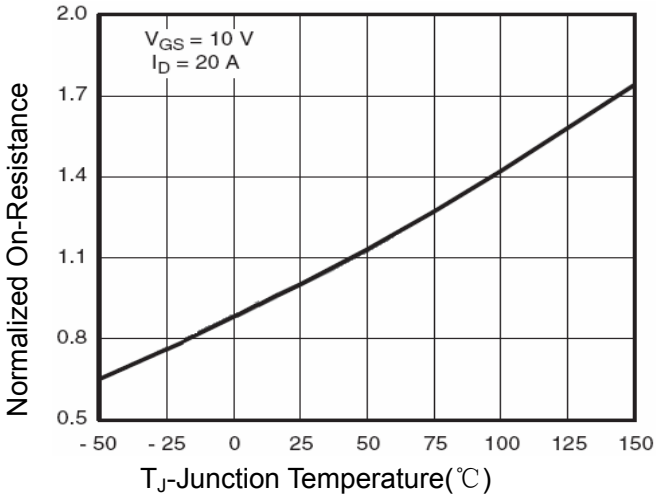


Figure 2 Rdson-Junction Temperature

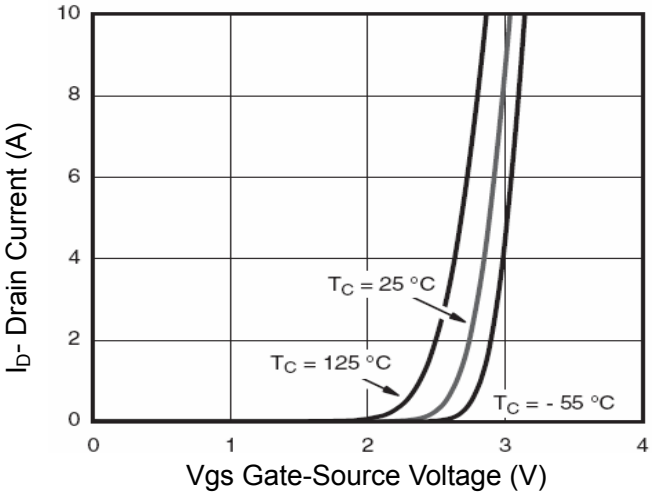


Figure 3 Transfer Characteristics

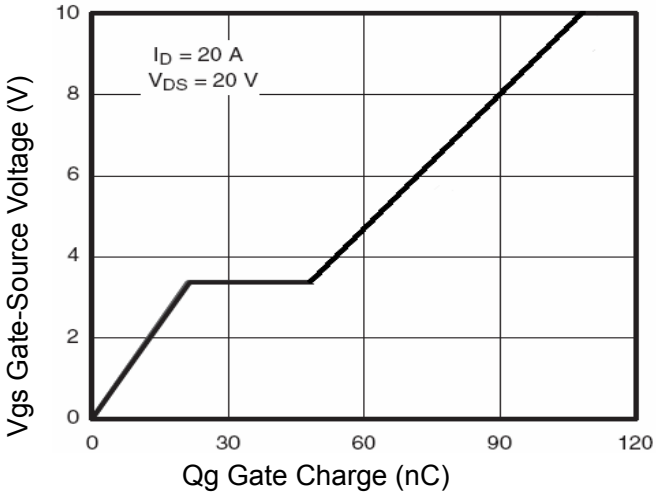


Figure 4 Gate Charge

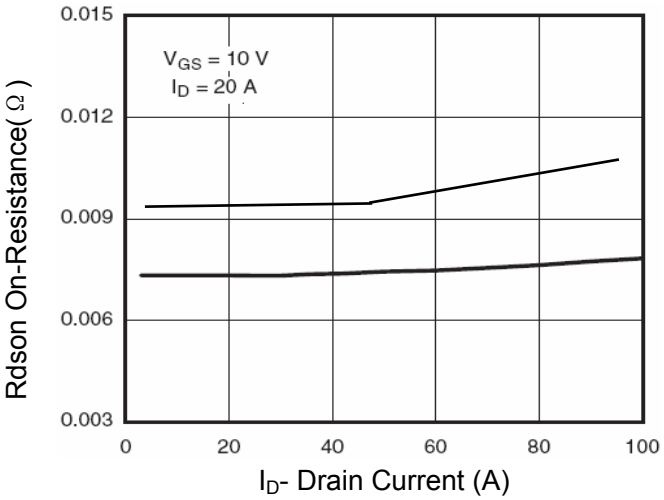


Figure 5 Rdson- Drain Current

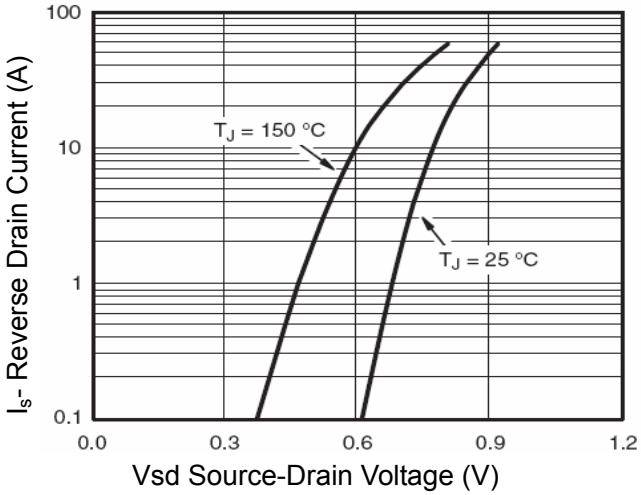


Figure 6 Source- Drain Diode Forward

■ TYPICAL CHARACTERISTICS(Cont.)

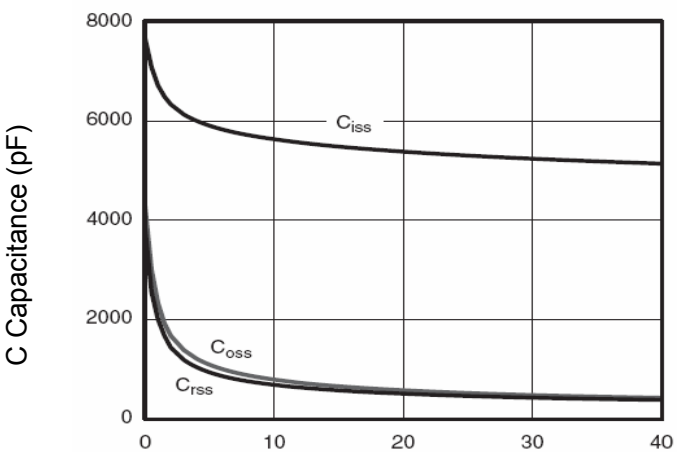


Figure 7 Capacitance vs Vds

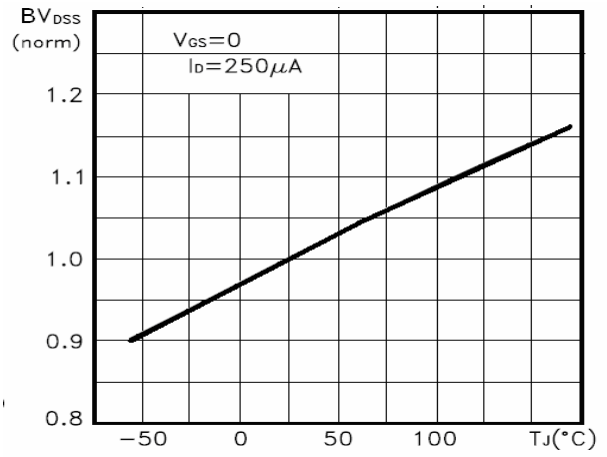


Figure 8 BV_{DSS} vs Junction Temperature

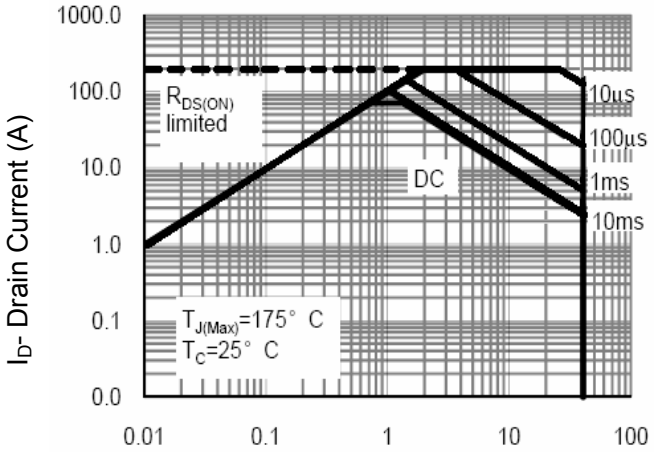


Figure 9 Safe Operation Area

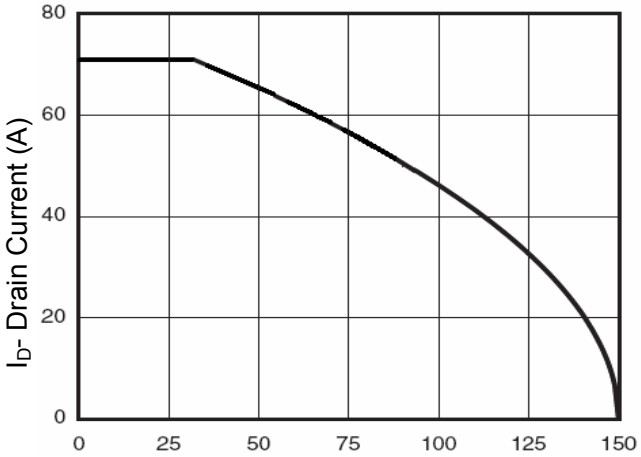


Figure 10 ID Current Derating vs Junction Temperature

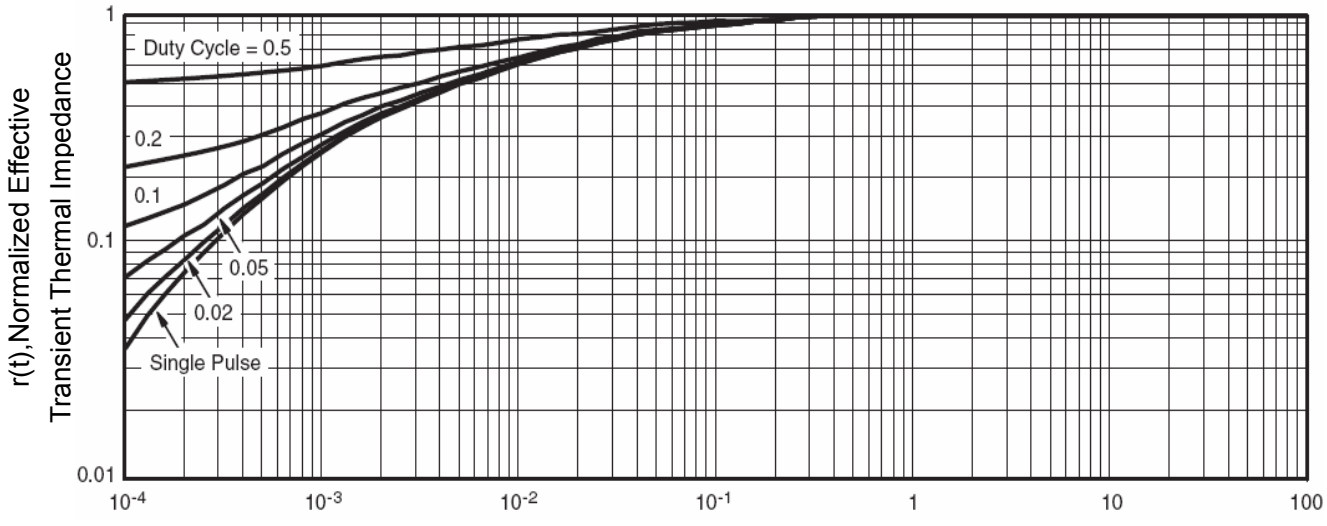
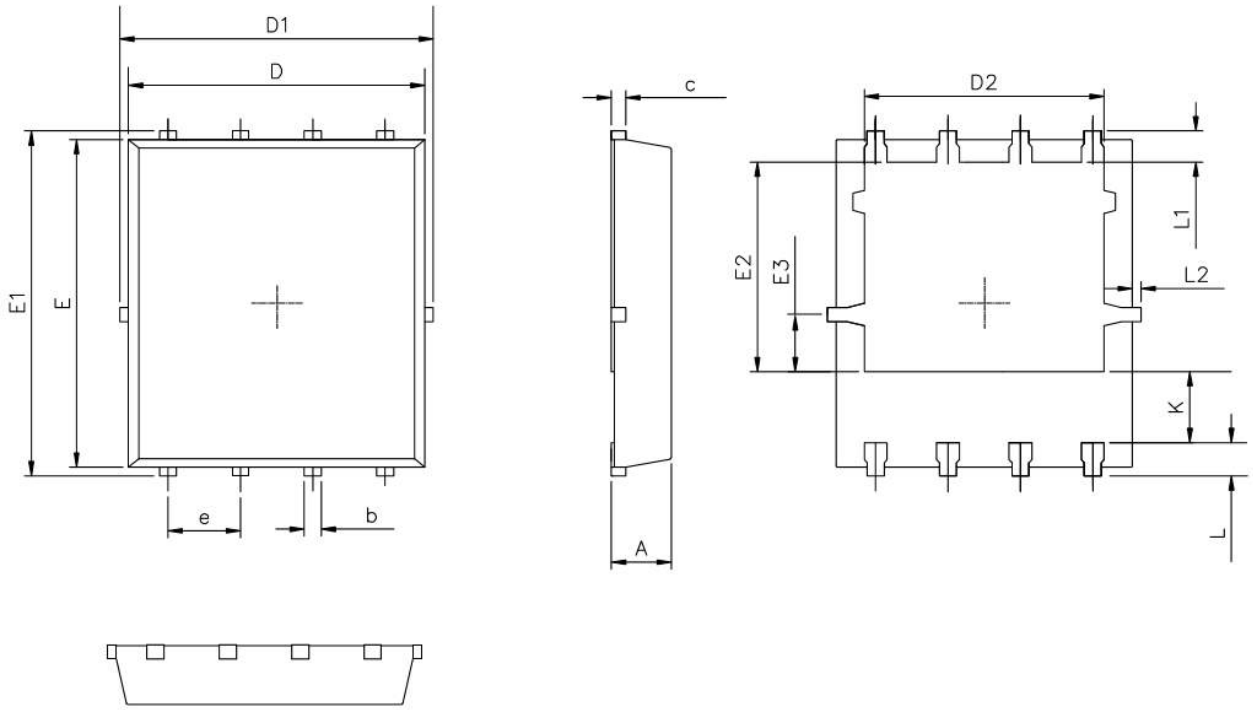


Figure 11 Normalized Maximum Transient Thermal Impedance

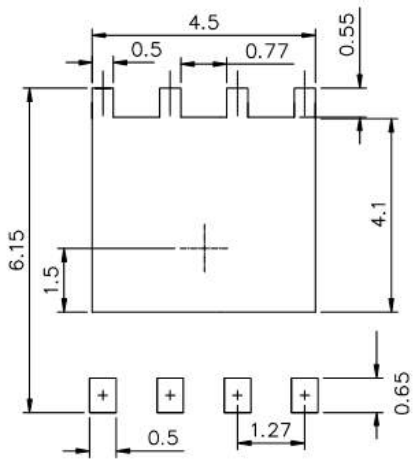
■ PDFN5X6-8L Package Mechanical Data



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

RECOMMENDED LAND PATTERN



■ TO-252 PACKAGE OUTLINE DIMENSIONS