■ PRODUCT CHARACTERISTICS

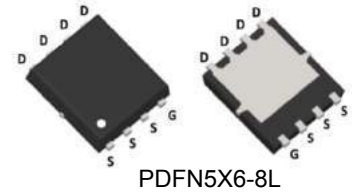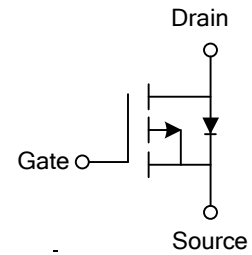| VDSS	-40V
R_{DS}(on)typ(@V_{GS}=-10V)	14mΩ
R_{DS}(on)typ(@V_{GS}=-4.5V)	17mΩ
ID	-30A

■ FEATURES

Advanced Trench Technology

Excellent $R_{DS(ON)}$ and Low Gate Charge

Lead free product is acquired

■ APPLICATION

PWM Applications

Load Switch

Power Management

Symbol

PDFN5X6-8L

■ ORDER INFORMATION

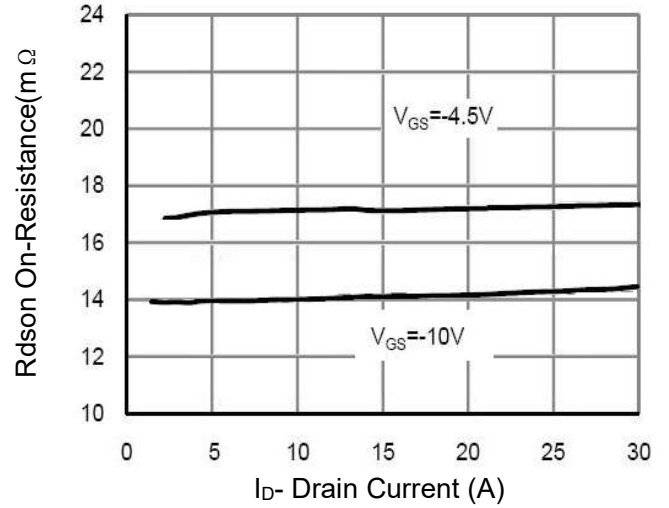| Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT4719G	PDFN5X6-8L	5000 pieces /Reel

■ ABSOLUTE MAXIMUM RATINGS   (T$_C$=25℃ unless otherwise specified)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DSS}	-40	V
Gate-Source Voltage		V_{GSS}	±20	V
Continuous Drain Current	T$_C$ = 25℃	I_D	-30	A
	T$_C$ = 100℃		-20	A
Pulsed Drain Current		I_{DM}	-120	A
Single Pulsed Avalanche Energy		E_{AS}	110	mJ
Power Dissipation		P_D	20	W
Thermal Resistance, Junction to Case		$R_{\theta JC}$	6.3	℃/W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	℃

■ ELECTRICAL CHARACTERISTICS（T_J=25℃ unless otherwise specified）

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=-250µA	-40	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-40V,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	-1.2	-1.4	-2.4	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-20A	-	14	19	mΩ
	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-20A	-	17	23	mΩ
Forward Transconductance	g_{FS}	V_{DS}=-10V,I_D=-20A	-	25	-	S
Dynamic characteristics						
Input Capacitance	C_{Iss}	V_{DS}=-20V,V_{GS}=0V, F=1.0MHz	-	2960	-	PF
Output Capacitance	C_{oss}		-	370	-	PF
Reverse Transfer Capacitance	C_{rss}		-	310	-	PF
Switching characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=-20V, ID=-20A, V_{GS}=-10V,R_{GEN}=3Ω	-	10	-	nS
Turn-on Rise Time	t_r		-	18	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	38	-	nS
Turn-Off Fall Time	t_f		-	24	-	nS
Total Gate Charge	Q_g	V_{DS}=-20V,I_D=-20A, V_{GS}=-10V	-	42.2	-	nC
Gate-Source Charge	Q_{gs}		-	6.9	-	nC
Gate-Drain Charge	Q_{gd}		-	9.7	-	nC
Drain-sourcer diode characteristics						
Diode Forward Voltage	V_{SD}	V,I_S=-20A	-	-	-1.2	V

■ TYPICAL CHARACTERISTICS

Figure 1 Power dissipation

Figure 2 Gate charge

Figure 3 Output characteristics

Figure 4 Drain-source on-resistance

Figure 5 Transfer characteristics

Figure 6 Drain-source on-resistance
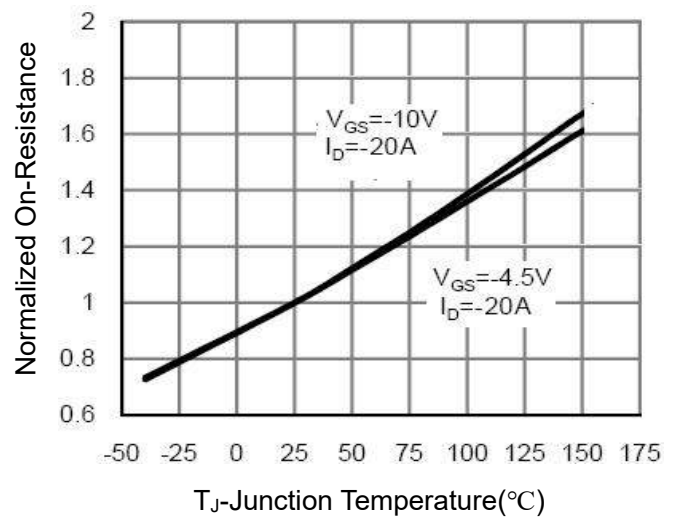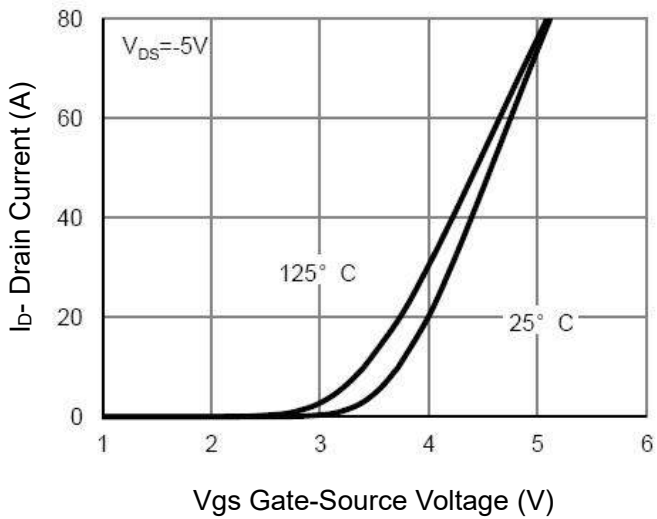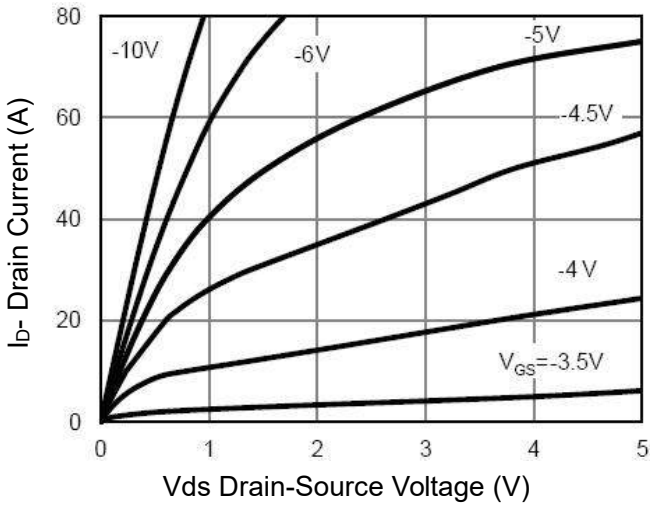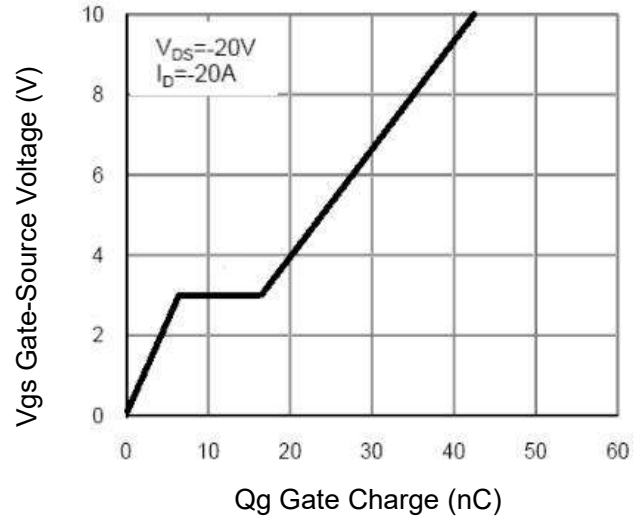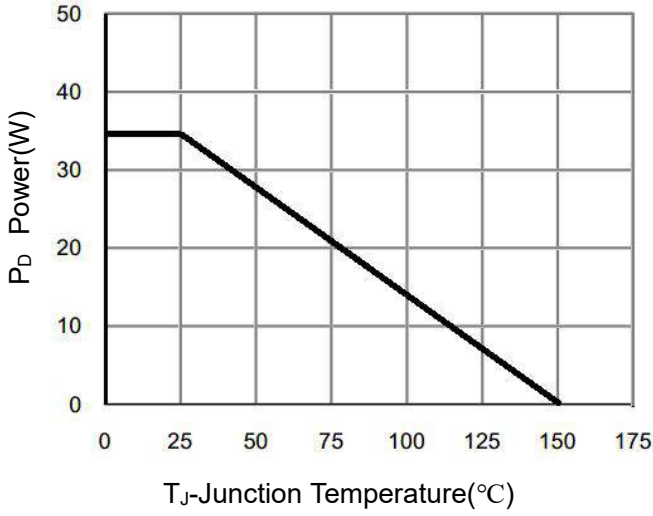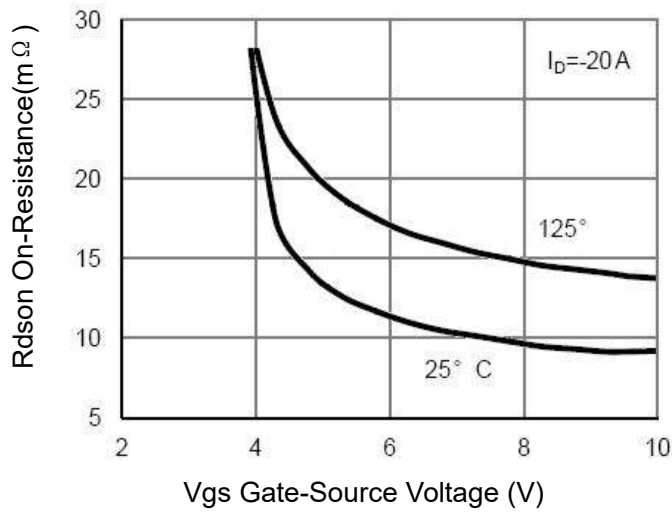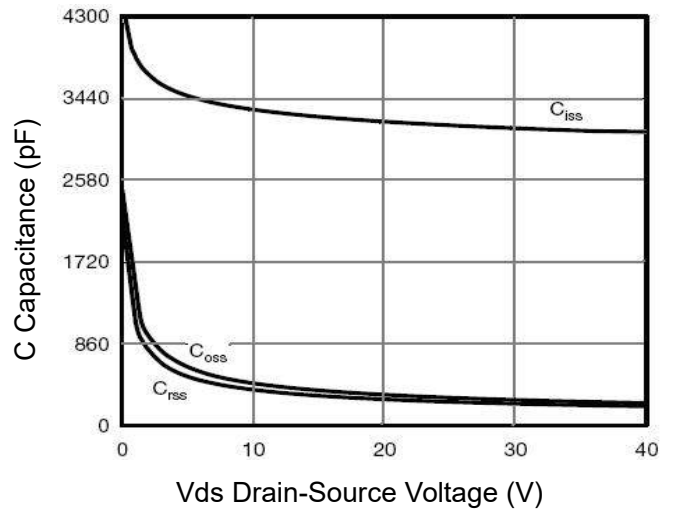
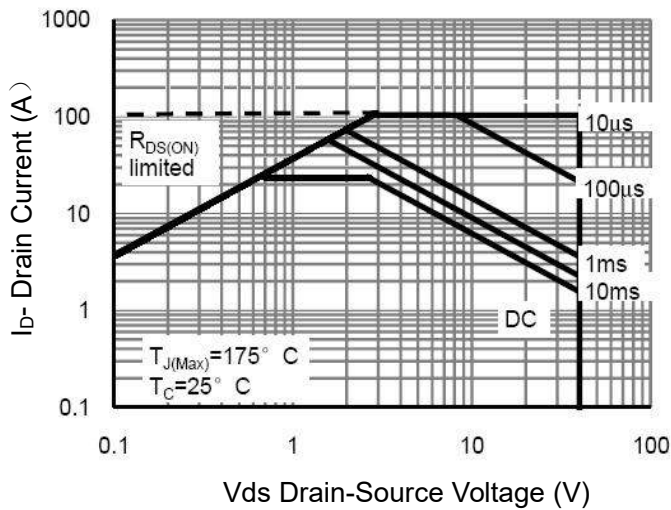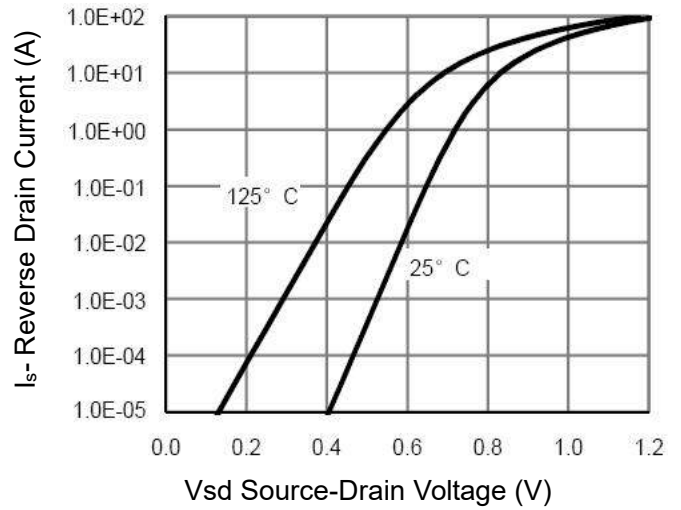■ TYPICAL CHARACTERISTICS(Cont.)

Figure 7 Rdson vs vgs

Figure 8 Capacitance vs vgs

Figure 9 Safe operation area
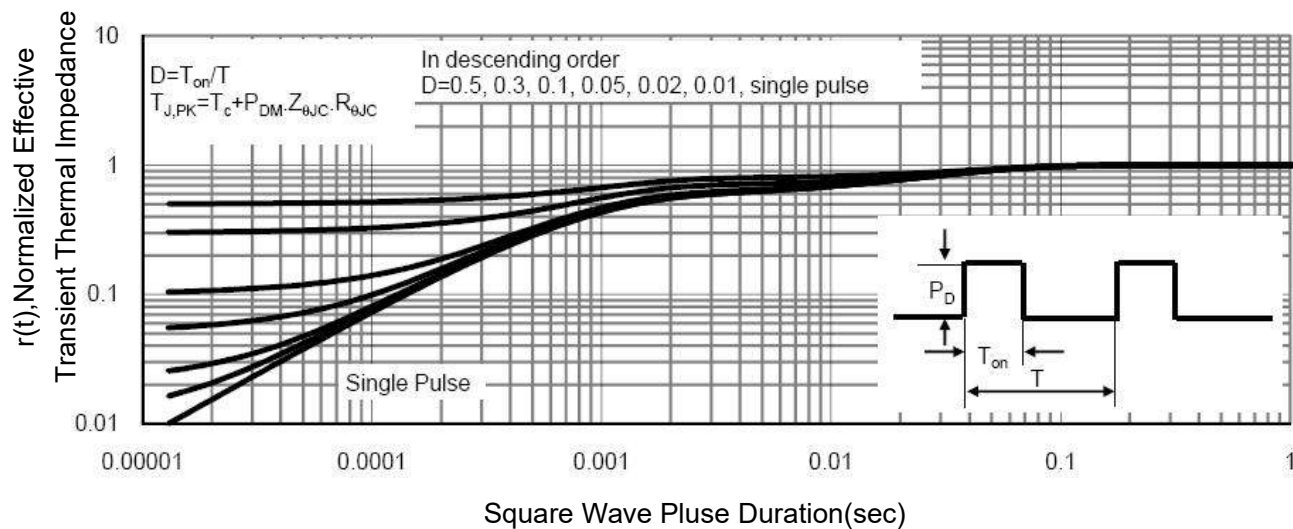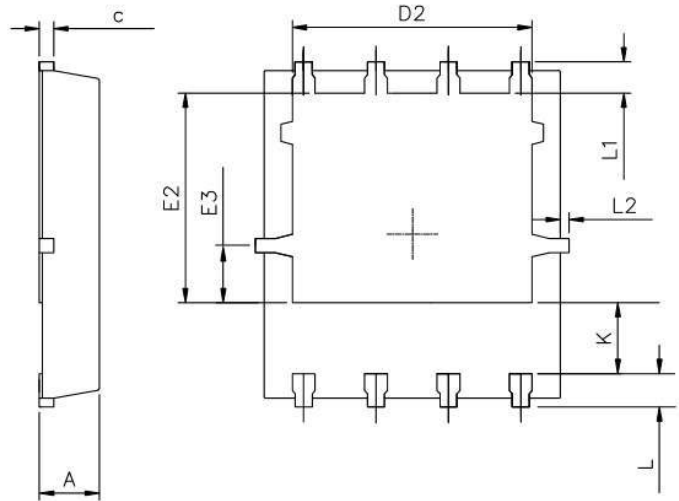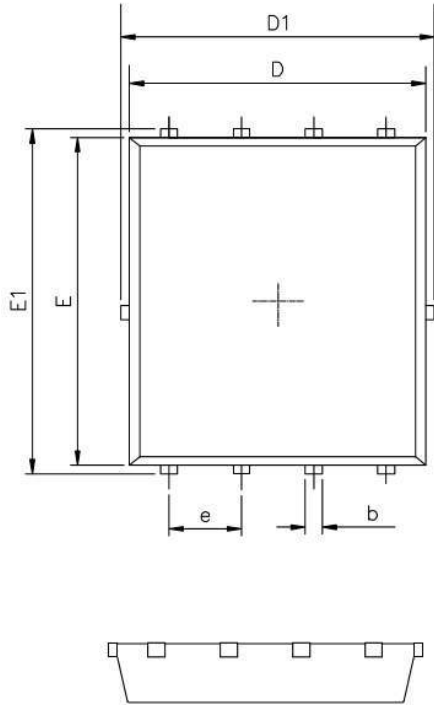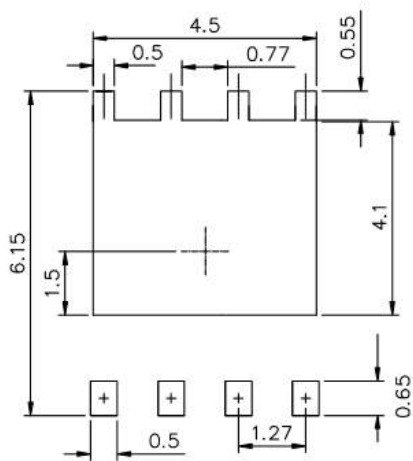
Figure 10 Sorce-drain diode forward

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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