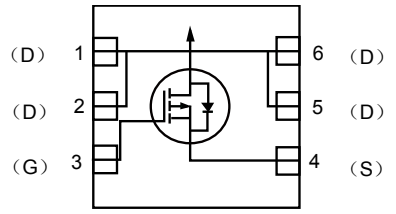
Description

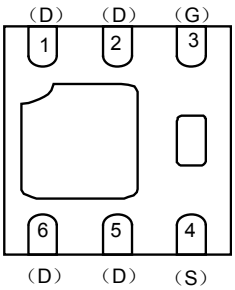
The enhancement mode MOS is extremely high density cell and low on-resistance.

MOSFET Product Summary		
V_{DS}(V)	$R_{DS(on)}$(mΩ)	I_D(A)
-20	14 @ V_{GS}=-4.5V	-10

Internal structure



Bottom View



Absolute maximum rating@25℃

Rating		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±12	V
Drain Current	Continuous T_A=25℃	I_D	-10	A
	Pulsed T_A=70℃	I_D	-40	A
Total Power Dissipation	T_A=25℃	P_D	2.4	W
	T_A=125℃	P_D	0.9	W
Operating and Storage Junction Temperature Range		T_J,T_{STG}	-55 to +150	℃

Thermal Characteristics

Parameter		Symbol	Max.	Units
Thermal Resistance, Junction to Ambient	(Note 1a)	$R_{\theta JA}$	52	℃/W
Thermal Resistance, Junction to Ambient	(Note 1b)	$R_{\theta JA}$	145	
Thermal Resistance, Junction to Case		$R_{\theta JC}$	6.9	

Electrical characteristics per line@25℃(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	I_D =-250μA,V_{GS}=0V	-20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-16V,V_{GS}=0V	-	-	-1.0	μA
Gate-to-Source Forward Leakage	I_{GSS}	V_{GS}=±10V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.5	-0.9	-1.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D =-10A	-	14	17	mΩ
		V_{GS}=-2.5V, I_D =-8A,	-	18	25	mΩ
		V_{GS}=-1.8V, I_D =-3A,	-	26	50	mΩ
Forward Trans conductance	g_{FS}	V_{DS}=-5V, I_D =-10A	-	45	-	S
Total Gate Charge	Qg	I_D =-10A, V_{DD} =-6V, V_{GS} =-4.5V	-	37	45	nC
Gate-to-Source Charge	Qgs		-	6.5		
Gate-to-Drain(Miller) Charge	Qgd		-	2.5		
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS} =-15V, f=1MHz	-	4540		pF
Output Capacitance	C_{DSS}		-	1100		pF
Reverse Transfer Capacitance	C_{RSS}		-	810		pF
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-6.0V, I_D =-10A, V_{GS}=-4.5V , R_{GEN}=6Ω,	-	40	60	ns
Rise Time	t_r		-	40	60	
Turn-Off Delay Time	$t_{d(off)}$		-	170	270	
Fall Time	t_f		-	90	150	
Source to Drain Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=-2A		-0.6	-1.2	V
		V_{GS}=0V,I_S=-10A		-0.8	-1.2	

Typical Characteristics

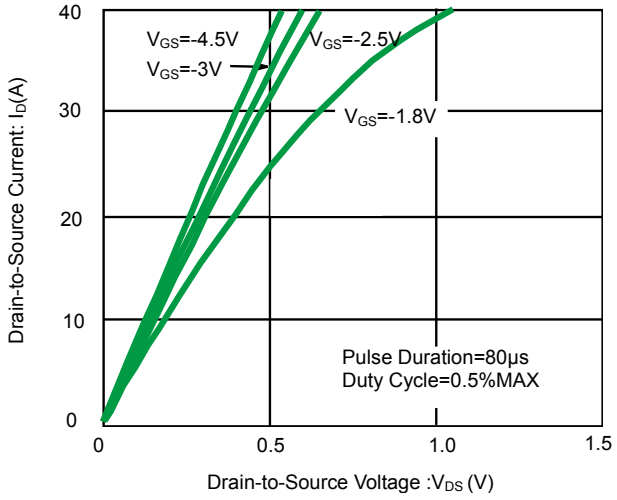


Fig 1. On-Region Characteristics

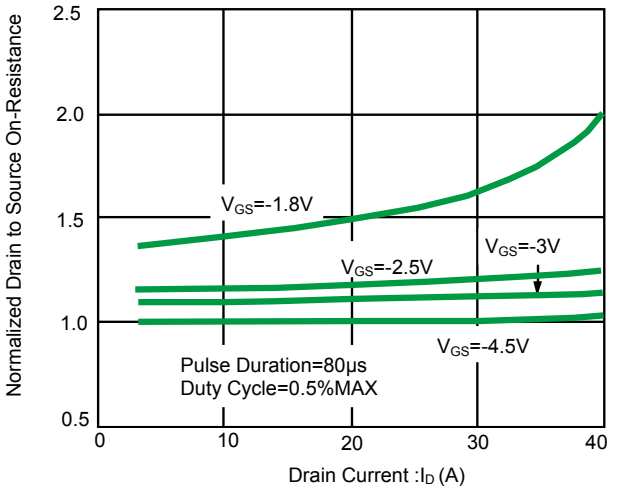


Fig 2. Normalized On-Resistance vs. Drain Current and Gate Voltage

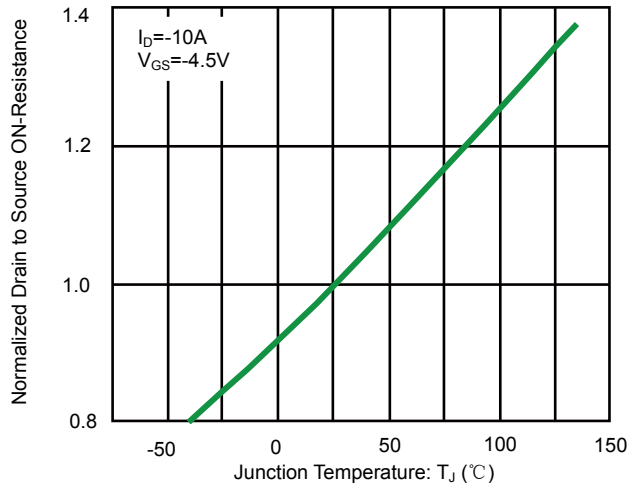


Fig 3. Normalized On-Resistance vs. Junction Temperature

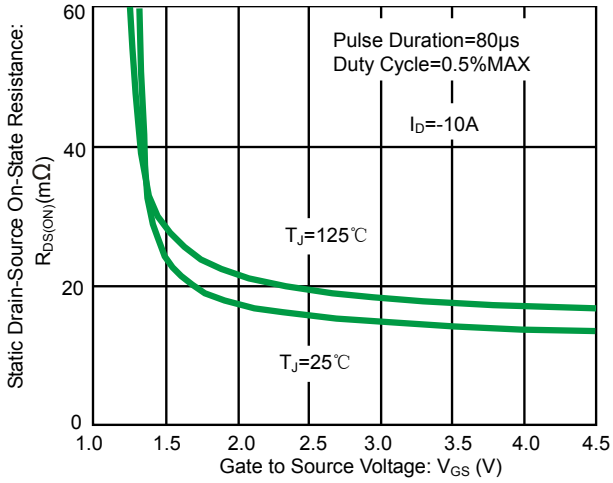


Fig 4. On-Resistance vs. Gate to Source Voltage

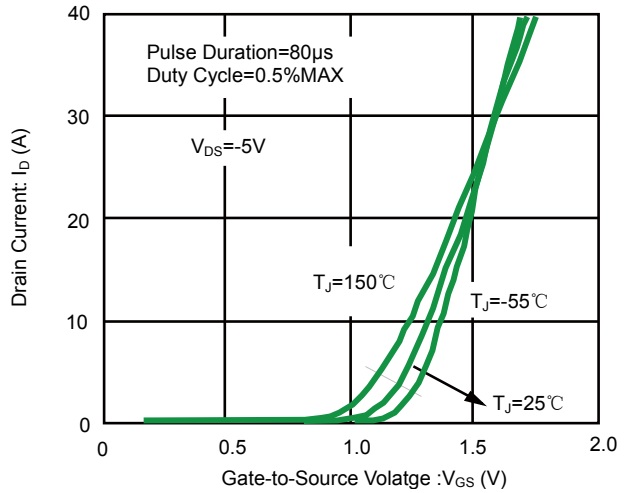


Fig 5. Transfer Characteristics

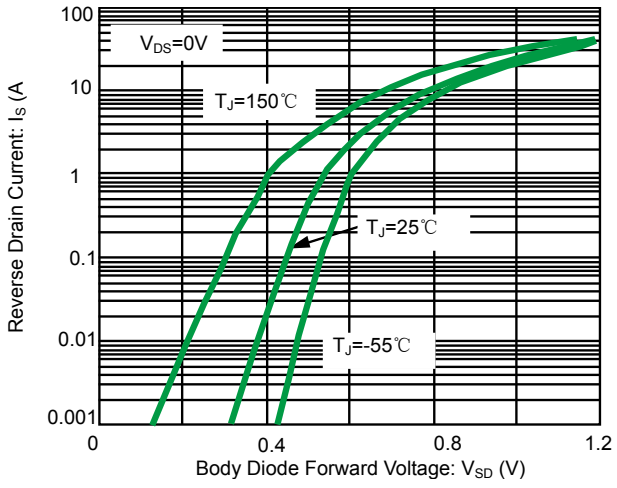


Fig 6. Source to Drain Diode Forward Voltage vs. Source Current

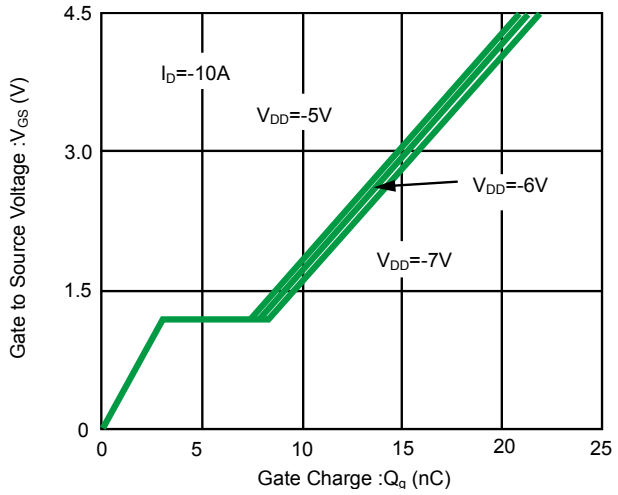


Fig 7. Gate Charge Characteristics

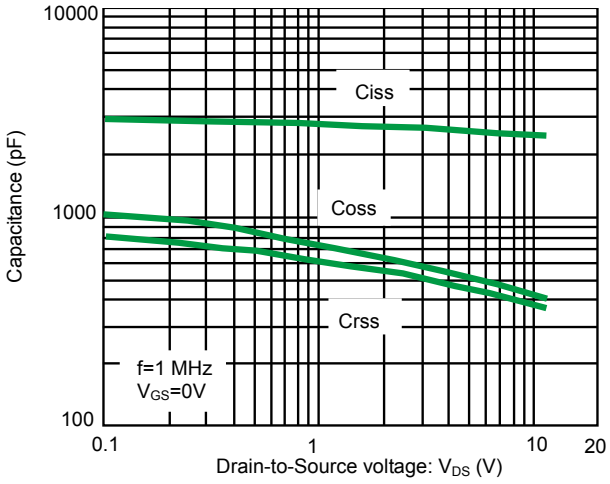


Fig 8. Capacitance vs. Drain to Source Voltage

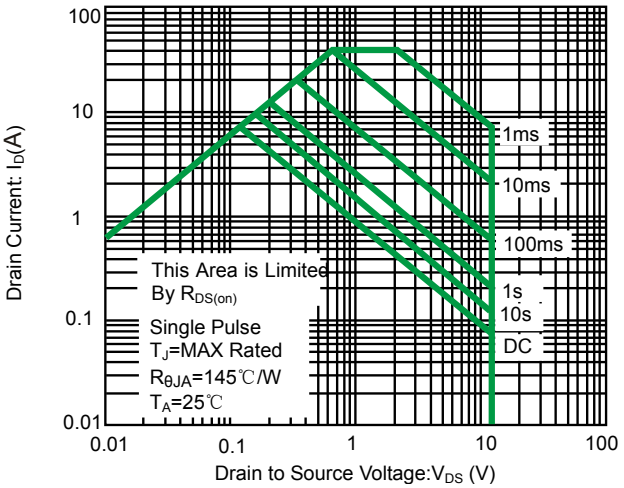


Fig 9. Forward Bias Safe Operating Area

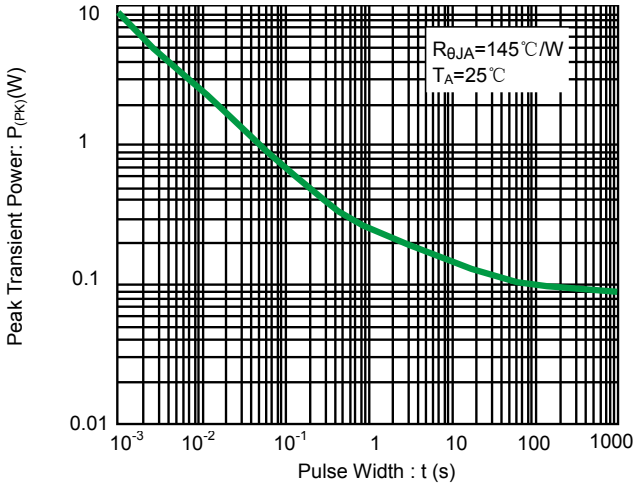


Fig 10. Single Pluse Maximum Power Dissipation

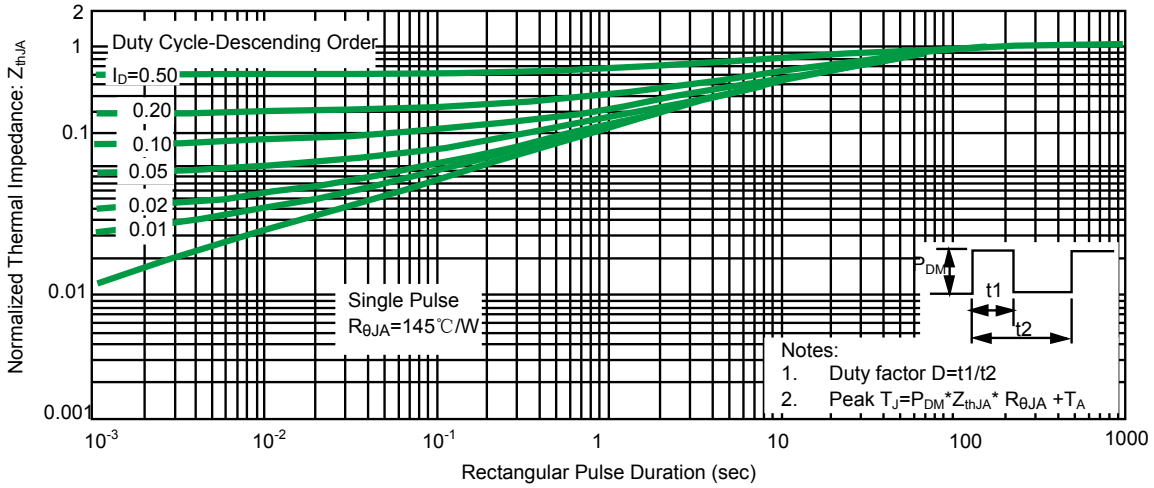
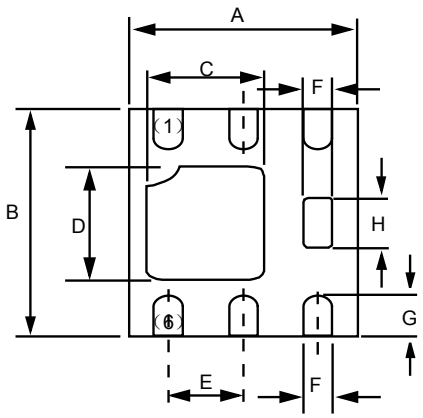


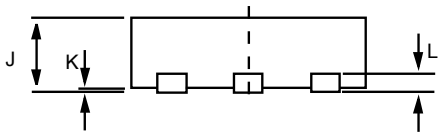
Fig 11. Transient Thermal Response Curve, Junction-to-Ambient

Product dimension (DFN2*2-6L)

DFN2*2-6L



Bottom View



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	1.95	2.05	0.077	0.081
B	1.95	2.05	0.077	0.081
C	0.85	0.95	0.033	0.037
D	0.75	0.85	0.029	0.033
E	0.65 BSC.		0.026 BSC.	
F	0.25	0.35	0.009	0.014
G	0.30	0.40	0.012	0.016
H	0.51	0.61	0.020	0.024
J	0.70	0.80	0.027	0.031
K	0.00	0.05	0.000	0.002
L	0.203 Ref.		0.008 Ref.	

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