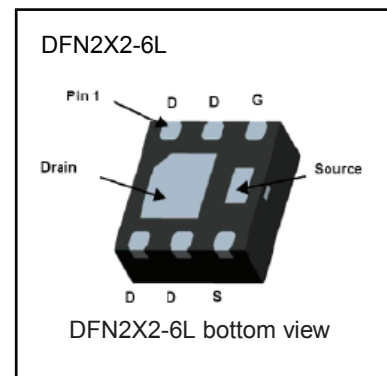
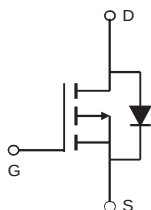


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■ Features

- V_{DS} -30 V
- I_D -30 A
- $R_{DS(ON)}$ (at $V_{GS} = -10V$) $\leq 18\text{ m}\Omega$
- $R_{DS(ON)}$ (at $V_{GS} = -4.5V$) $\leq 30\text{ m}\Omega$



■ Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current – Continuous ($T_C=25^\circ\text{C}$)	-30	A
	Drain Current – Continuous ($T_C=100^\circ\text{C}$)	-19	A
I_{DM}	Drain Current – Pulsed ¹	-120	A
P_D	Power Dissipation ($T_C=25^\circ\text{C}$)	27	W
	Power Dissipation – Derate above 25°C	0.22	W/ $^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

■ Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction to ambient	---	62	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction to Case	---	4.6	$^\circ\text{C}/\text{W}$

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■ Electrical Characteristics (T_J=25°C, unless otherwise noted)

Off Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-30	---	---	V
ΔBV _{DSS} /ΔT _J	BV _{DSS} Temperature Coefficient	Reference to 25°C, I _D =-1mA	---	-0.03	---	V/°C
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-27V, V _{GS} =0V, T _J =25°C	---	---	-1	uA
		V _{DS} =-24V, V _{GS} =0V, T _J =125°C	---	---	-10	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA

On Characteristics

R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =-10V, I _D =-8A	---	16	18	mΩ
		V _{GS} =-4.5V, I _D =-6A	---	22	30	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =-250uA	-1.2	-1.6	-2.5	V
ΔV _{GS(th)}	V _{GS(th)} Temperature Coefficient		---	4	---	mV/°C
g _{fs}	Forward Transconductance	V _{DS} =-10V, I _D =-8A	---	6.8	---	S

Dynamic and switching Characteristics

Q _g	Total Gate Charge ^{2, 3}	V _{DS} =-15V, V _{GS} =-4.5V, I _D =-5A	---	11	17	nC
Q _{gs}	Gate-Source Charge ^{2, 3}		---	3.4	6	
Q _{gd}	Gate-Drain Charge ^{2, 3}		---	4.2	8	
T _{d(on)}	Turn-On Delay Time ^{2, 3}	V _{DD} =-15V, V _{GS} =-10V, R _G =6Ω I _D =-1A	---	5.8	11	ns
T _r	Rise Time ^{2, 3}		---	18.8	36	
T _{d(off)}	Turn-Off Delay Time ^{2, 3}		---	46.9	90	
T _f	Fall Time ^{2, 3}		---	12.3	23	
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, F=1MHz	---	1250	2500	pF
C _{oss}	Output Capacitance		---	160	320	
C _{rss}	Reverse Transfer Capacitance		---	90	180	

Drain-Source Diode Characteristics and Maximum Ratings

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V, Force Current	---	---	-30	A
I _{SM}	Pulsed Source Current		---	---	-60	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =-1A, T _J =25°C	---	---	-1	V

Note :

1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%.
3. Essentially independent of operating temperature.

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■ Typical Characteristics

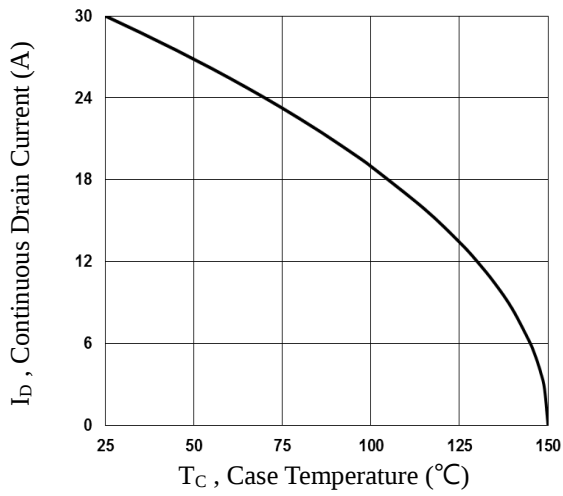


Fig.1 Continuous Drain Current vs. T_C

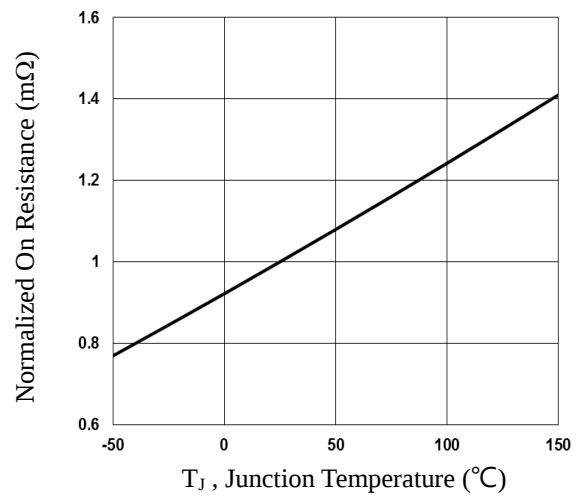


Fig.2 Normalized $R_{DS(on)}$ vs. T_J

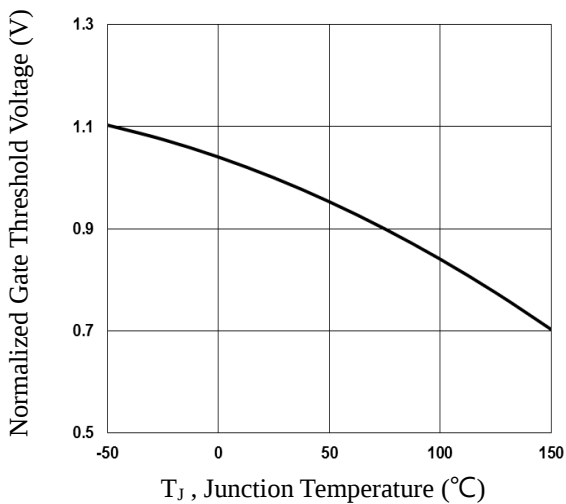


Fig.3 Normalized V_{th} vs. T_J

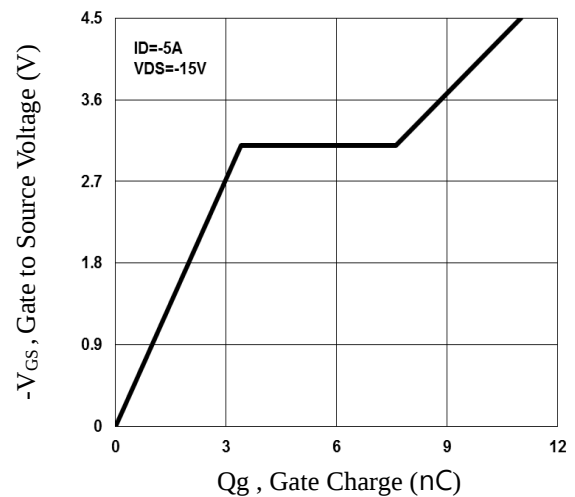


Fig.4 Gate Charge Waveform

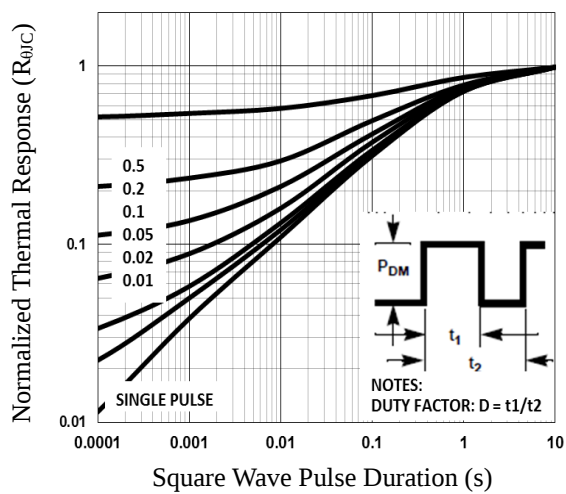


Fig.5 Normalized Transient Impedance

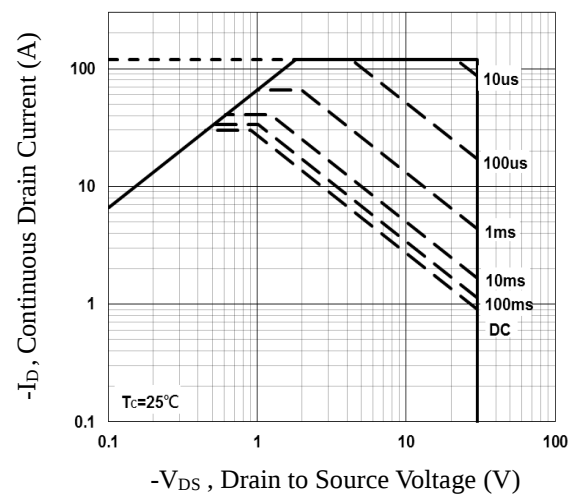


Fig.6 Maximum Safe Operation Area

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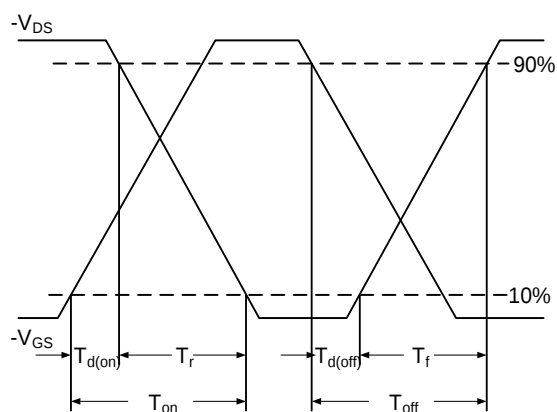


Fig.7 Switching Time Waveform

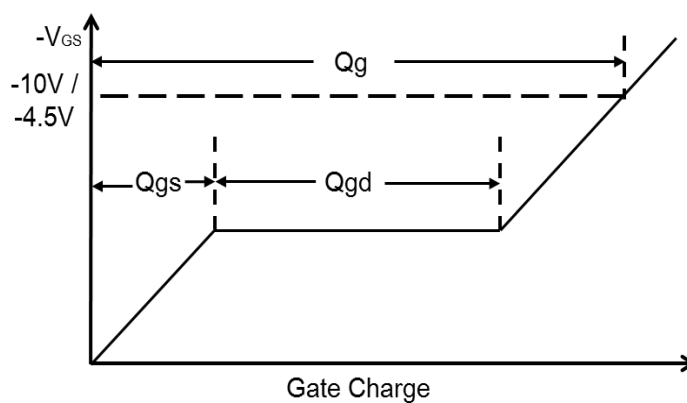
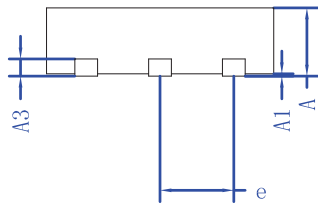
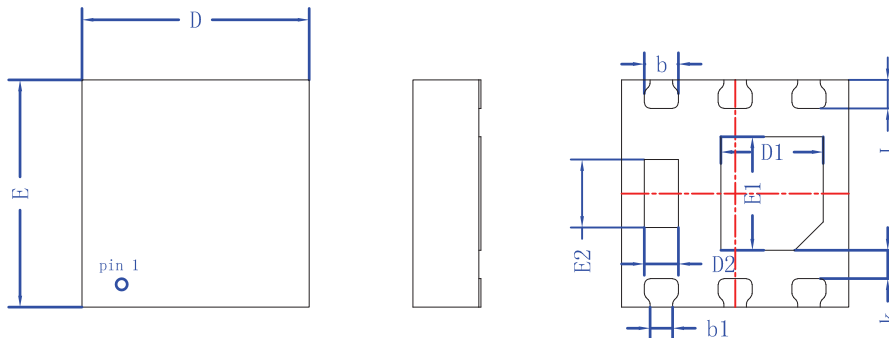


Fig.8 Gate Charge Waveform

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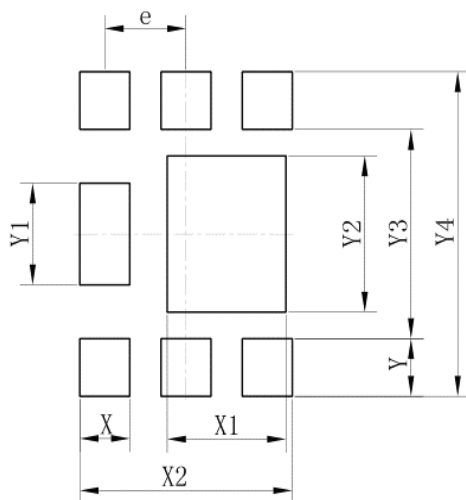
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DFN2X2-6 Package Outline Dimensions



Symbol	Dimensions In Millimeters			Dimensions In Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.50	0.55	0.65	0.022	0.024	0.026
A1	0.00	0.02	0.05	0.000	0.001	0.002
A3	0.152 REF.			0.006REF.		
D	1.90	2.00	2.10	0.075	0.079	0.083
D1	0.80	0.90	1.00	0.031	0.035	0.039
D2	0.20	0.30	0.40	0.008	0.012	0.016
E	1.90	2.00	2.10	0.075	0.079	0.083
E1	0.90	1.00	1.10	0.035	0.039	0.043
E2	0.50	0.60	0.70	0.020	0.024	0.028
b	0.25	0.30	0.35	0.010	0.012	0.014
b1	0.15	0.20	0.25	0.006	0.008	0.010
e	0.65TYP.			0.026TYP.		
k	0.20MIN.			0.006MIN.		
L	0.20	0.25	0.30	0.008	0.010	0.012

DFN2x2-6 Suggested Pad Layout



Dim	(mm)
X	0.40
X1	0.95
X2	1.70
e	0.65
Y	0.43
Y1	0.75
Y2	1.15
Y3	1.54
Y4	2.39