

Dual N-Channel 30V(D-S) MOSFET

Product summary		
V_{DS}	30	V
$R_{DS(ON)}$ (at $V_{GS}=10V$) Typ.	21	m Ω
$R_{DS(ON)}$ (at $V_{GS}=4.5V$) Typ.	26	m Ω
$R_{DS(ON)}$ (at $V_{GS}=2.5V$) Typ.	32	m Ω
I_D ($T_C=25^\circ C$)	7.5	A

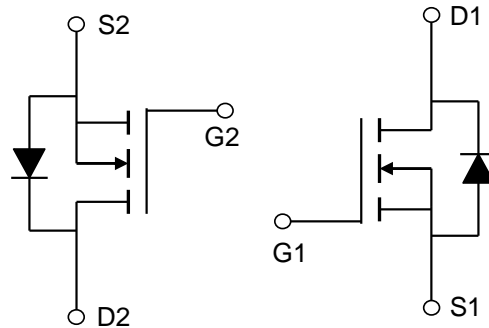
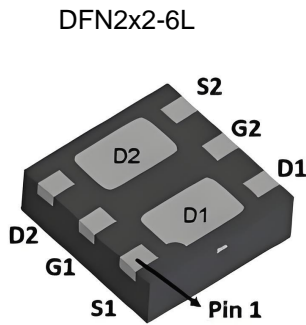
Features

- Fast switching speed
- Low gate charge
- RoHS and Halogen-Free compliant

Applications

- Load switch
- Power management

Pin Configuration



Packing Information

Device	Package	Reel Size	Tape Width	Quantity
EC4112	DFN2X2-6L	7'	8mm	3000pcs

Absolute Maximum Ratings (at $T_A=25^\circ C$ Unless Otherwise Noted)

Symbol	Parameter	Rating	Units	
V_{DS}	Drain-Source Voltage	30	V	
V_{GS}	Gate-Source Voltage	± 20	V	
I_D	Continuous Drain Current at $V_{GS}=10V$	$T_C=25^\circ C$	7.5	A
		$T_C=70^\circ C$	6.1	A
I_{DM}	Pulse Drain Current Tested	30	A	
P_D	Power Dissipation	$T_C=25^\circ C$	2.0	W
T_J, T_{STG}	Junction and Storage Temperature Range	-55 to 150	$^\circ C$	

Thermal Characteristics

Symbol	Parameter	Typical	Units
$R_{\theta JA}$	Thermal Resistance-Junction to ambient	56	$^\circ C/W$

Electrical Characteristics (at T_J =25°C Unless Otherwise Noted)

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
Static Parameters						
B _V DSS	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	30	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, V _{GS} =0V	--	--	1	uA
I _{GSS}	Gate-Body Leakage Current	V _{DS} =0V, V _{GS} =±12V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	1.0	1.5	2.2	V
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =7.5A	--	21	28	mΩ
		V _{GS} =4.5V, I _D =5A	--	26	33	mΩ
		V _{GS} =2.5V, I _D =3A	--	32	44	mΩ
V _{SD}	Forward Voltage	I _{SD} =7.5A, V _{GS} =0V	--	--	1.2	V
Dynamic Parameters						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =15V f=1MHZ	--	524	--	pF
C _{oss}	Output Capacitance		--	136	--	pF
C _{rss}	Reverse Transfer Capacitance		--	41	--	pF
Q _g	Total Gate Charge	V _{DS} =15V, I _D =7.5A V _{GS} =4.5V	--	4.7	--	nC
Q _{gs}	Gate-Source Charge		--	1.2	--	nC
Q _{gd}	Gate-Drain Charge		--	1.6	--	nC
Switching Parameters						
t _{D(on)}	Turn-on Delay Time	V _{DD} =15V, I _D =1A R _{GEN} =2.8Ω, V _{GS} =4.5V	--	12	--	nS
t _r	Turn-on Rise Time		--	54	--	nS
t _{D(off)}	Turn-off Delay Time		--	18	--	nS
t _f	Turn-off Fall Time		--	10	--	nS

Typical Characteristics

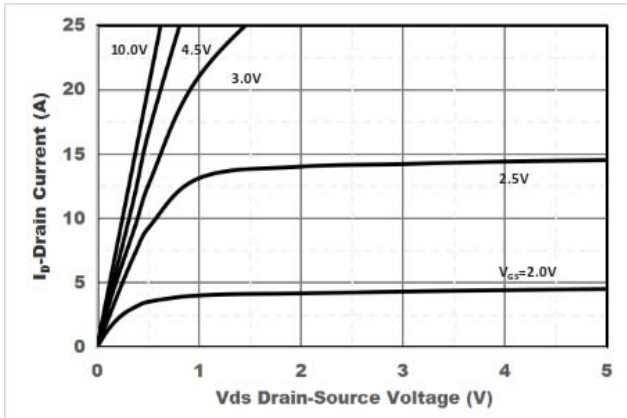


Figure1. Output Characteristics

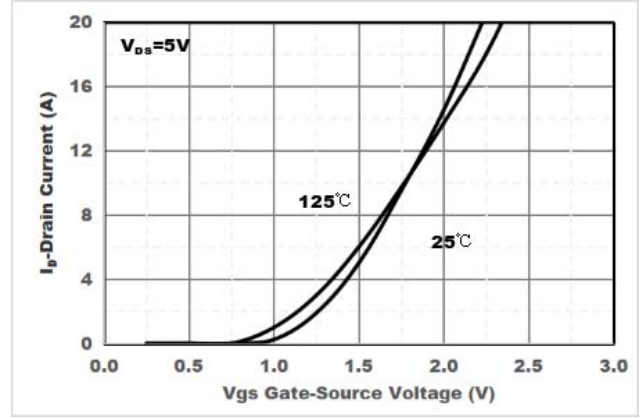


Figure2. Transfer Characteristics

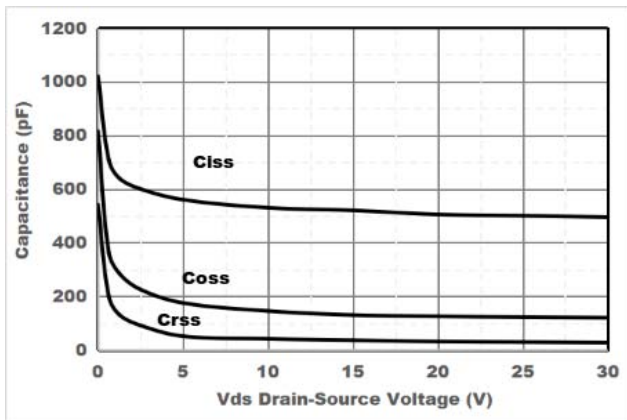


Figure3. Capacitance Characteristics

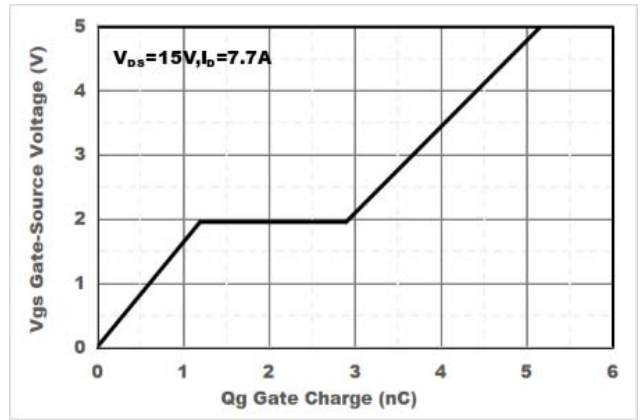


Figure4. Gate Charge

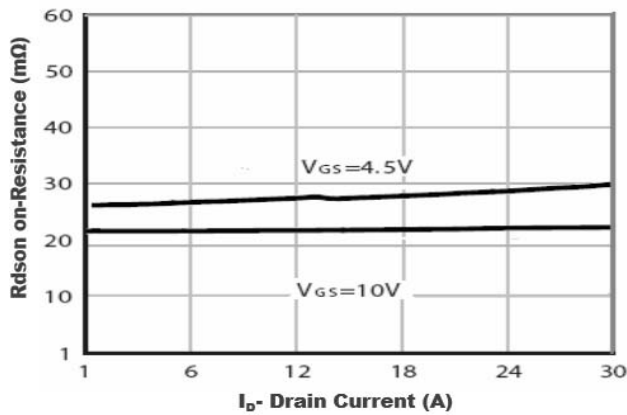


Figure5. Drain-Source on Resistance

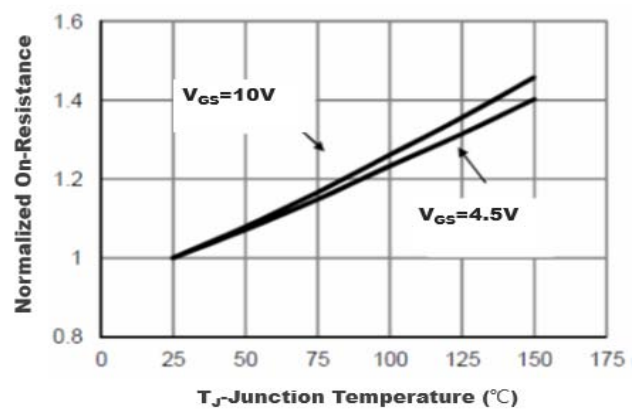


Figure6. Drain-Source on Resistance

Typical Characteristics

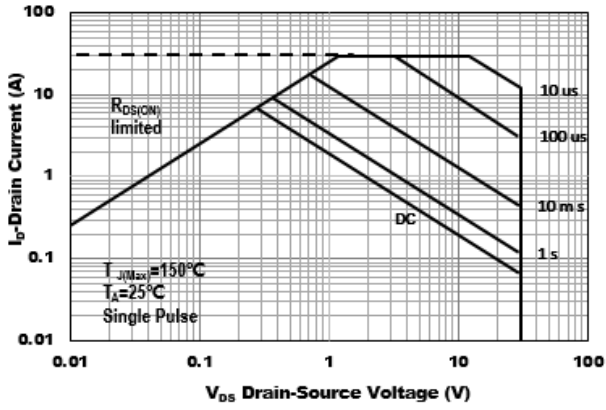


Figure7. Safe Operation Area

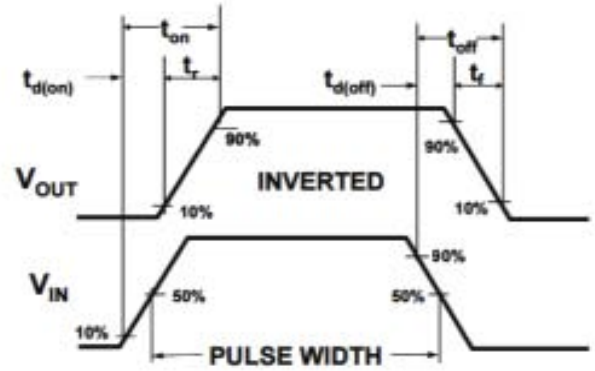
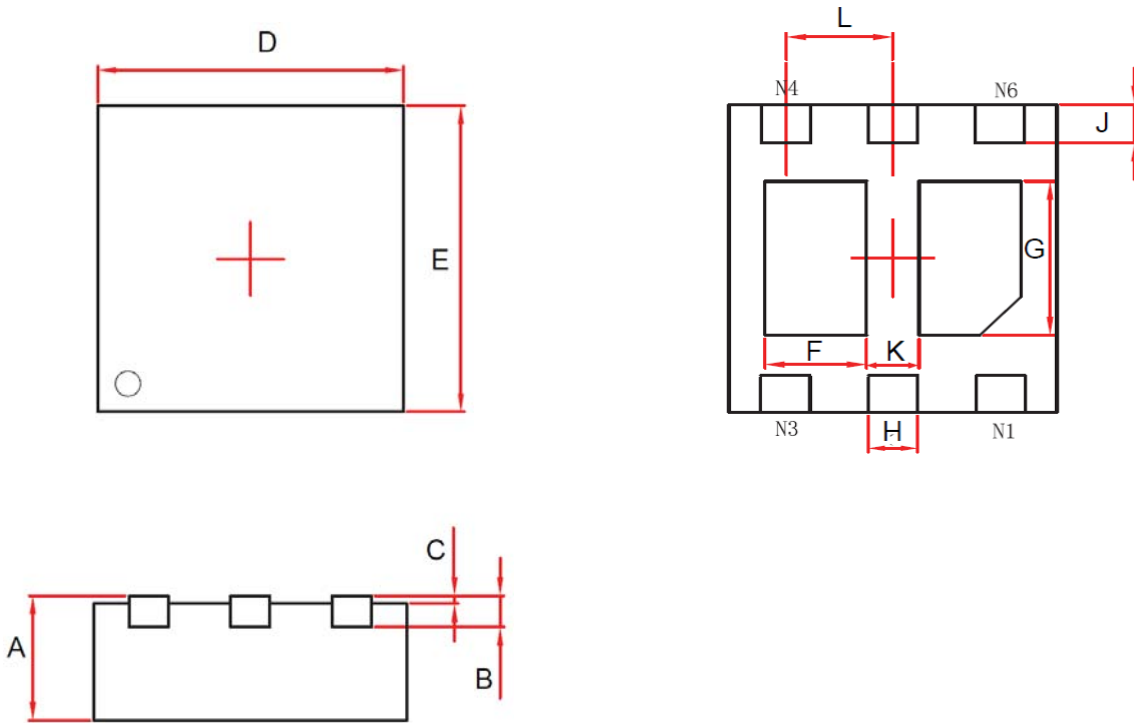


Figure8. Switching wave

DFN2X2-6L Package Information



Dimensions					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.030	.034	0.750	0.850	
B	0.008REF.		0.200REF.		
C	0.000	0.002	0.000	0.050	
D	0.077	0.081	1.950	2.050	
E	0.077	0.081	1.950	2.050	
F	0.017	0.027	0.440	0.690	
G	0.033	0.043	0.840	1.090	
H	0.010	0.014	0.250	0.350	
J	0.007	0.015	0.175	0.375	
K	0.010	0.014	0.250	0.350	
L	0.026TYP.		0.650TYP.		