P-Channel 15V(D-S) MOSFET

Product summary		
V_{DS}	-15	V
$R_{DS(ON)}$(at V_{GS}=-4.5V) Typ.	12	mΩ
$R_{DS(ON)}$(at V_{GS}=-2.5V) Typ.	17	mΩ
I_D(T_C=25℃)	-16	A

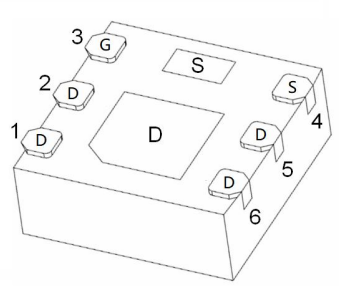
Features

- Trench Power LV MOSFET technology
- High density cell design for Low $R_{DS(ON)}$
- High Speed switching

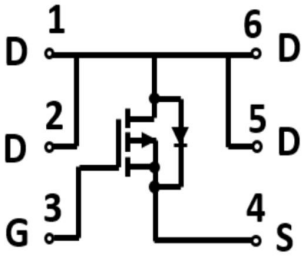
Applications

- Load switch
- Power management

Pin Configuration



DFN2X2-6L



Packing Information

Device	Package	Reel Size	Quantity(Min. Package)
ECAF1216A	DFN2X2-6L	7″	3000pcs

Absolute Maximum Ratings (at T_A=25℃ Unless Otherwise Noted)

Symbol	Parameter		Rating	Units
V_{DS}	Drain-Source Voltage		-15	V
V_{GS}	Gate-Source Voltage		±10	V
I_D	Continuous Drain Current	T_C=25℃	-16	A
		T_C=70℃	-12.8	A
I_{DM}	Pulse Drain Current Tested [A]		-60	A
P_D	Power Dissipation	T_C=25℃	6	W
T_J,T_{STG}	Junciton and Storage Temperature Range		-55 to +150	℃

Thermal Characteristics

Symbol	Parameter	Typical	Units
$R_{\theta JC}$	Thermal Resistance-Junction to Case	21	℃/W

Electrical Characteristics (at T_J =25℃ Unless Otherwise Noted)

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
Static Parameters						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=-250uA	-15	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-15V,V_{GS}=0V	--	--	-1	uA
I_{GSS}	Gate-Body Leakage Current	V_{DS}=0V,V_{GS}=±10V	--	--	±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=-250uA	-0.4	-0.65	-1.0	V
$R_{DS(ON)}$	Drain-Source On-State Resistance [B]	V_{GS}=-4.5V,I_D=-7A	--	12	15	mΩ
		V_{GS}=-2.5V,I_D=-5A	--	17	22	mΩ
V_{SD}	Forward Voltage	I_S=-13A,V_{GS}=0V	--	--	-1.2	V
I_S	Maximum Body-Diode Continuous Current		--	--	-13	A
Dynamic Parameters [C]						
C_{iss}	Input Capacitance	V_{GS}=0V,V_{DS}=-10V f=1MHZ	--	1320	--	pF
C_{oss}	Output Capacitance		--	230	--	pF
C_{rss}	Reverse Transfer Capacitance		--	212	--	pF
Q_g	Total Gate Charge	V_{DS}=-10V,I_D=-3A V_{GS}=0 to -4.5V	--	15.5	--	nC
Q_{gs}	Gate-Source Charge		--	2.1	--	nC
Q_{gd}	Gate-Drain Charge		--	4.4	--	nC
$t_{D(on)}$	Turn-on Delay Time	V_{DD}=-10V I_D=-7A,R_{GEN}=2.5Ω, V_{GS}=-4.5V	--	11	--	nS
t_r	Turn-on Rise Time		--	31	--	nS
$t_{D(off)}$	Turn-off Delay Time		--	28	--	nS
t_f	Turn-off Fall Time		--	8	--	nS

A. Repetitive Rating: Pulse width limited by maximum junction temperature.

B. Pulse Test: Pulse Width≤300us,Duty cycle ≤2%.

C. Guaranteed by design, not subject to production testing.

Typical Characteristics

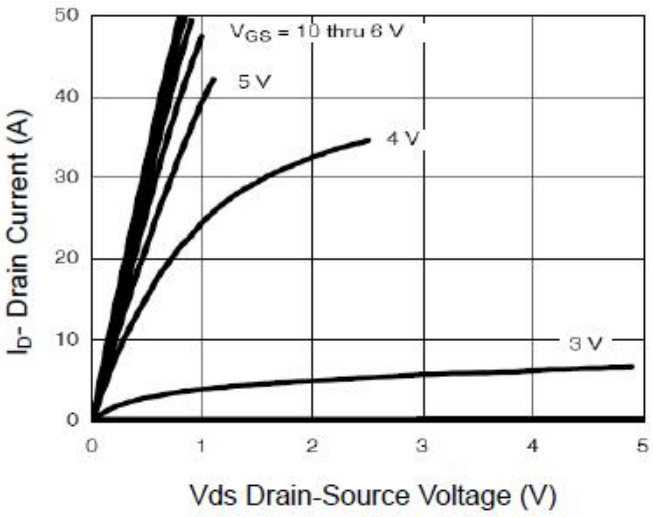


Figure1. Output Characteristics

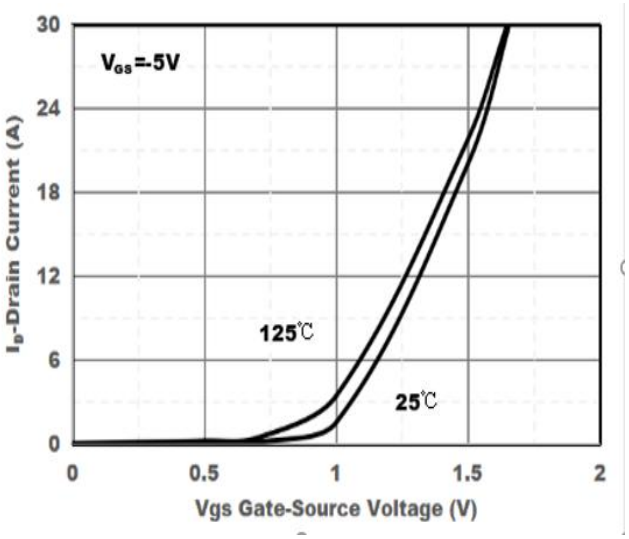


Figure2. Transfer Characteristics

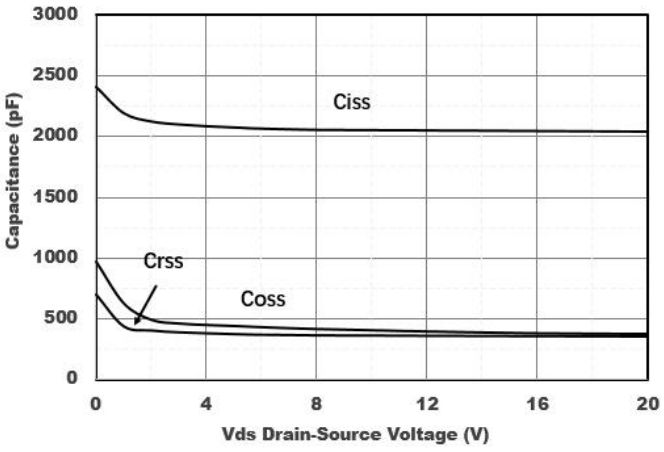


Figure3. Capacitance Characteristics

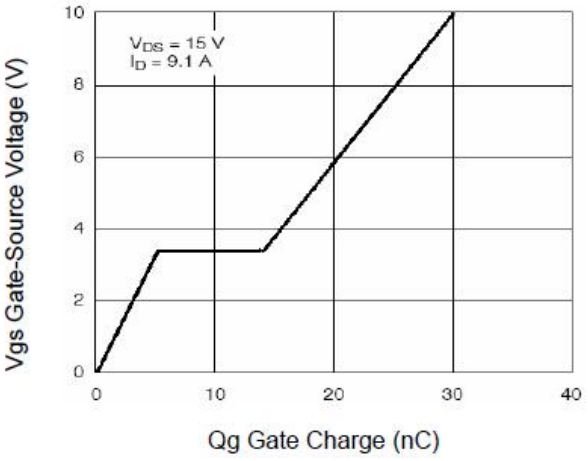


Figure4. Gate Charge

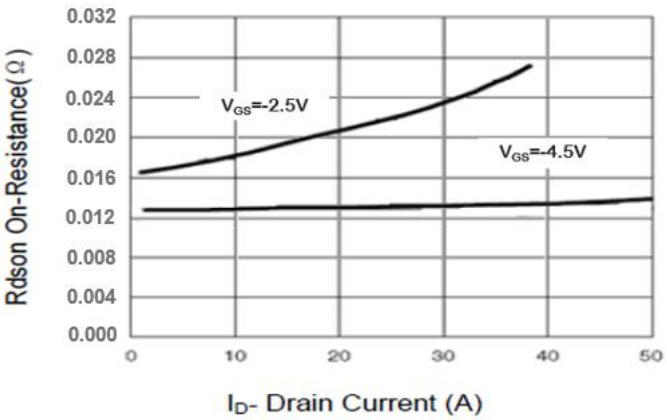


Figure5. Drain-Source on Resistance

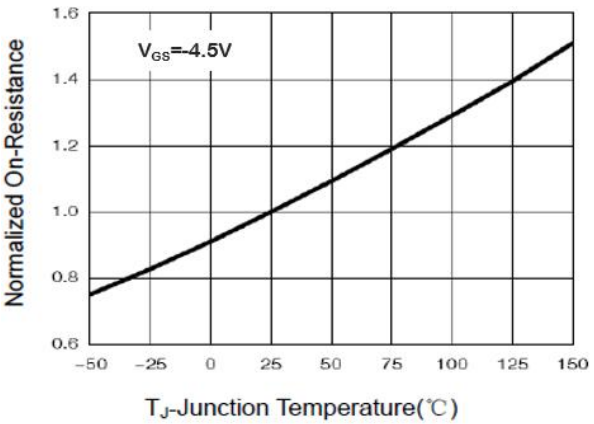


Figure6. Drain-Source on Resistance

Typical Characteristics

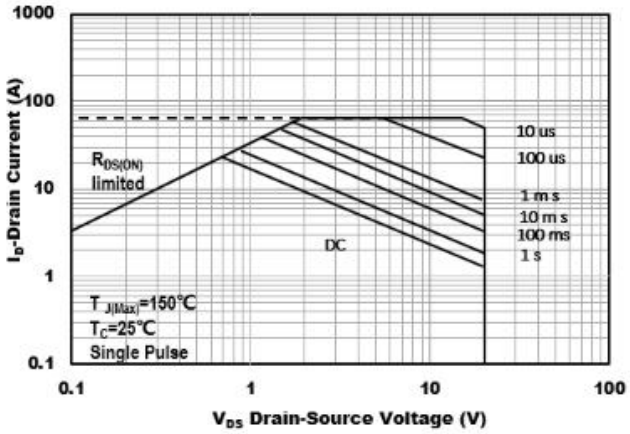


Figure7. Safe Operation Area

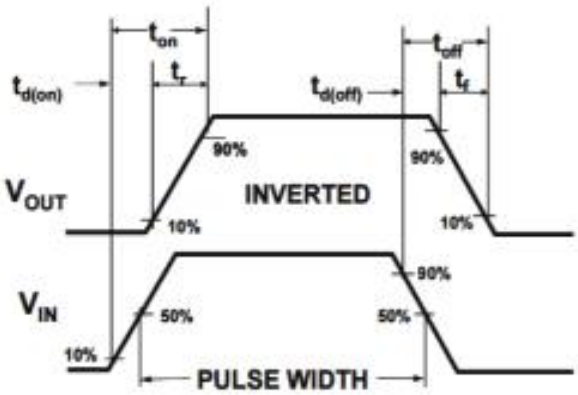
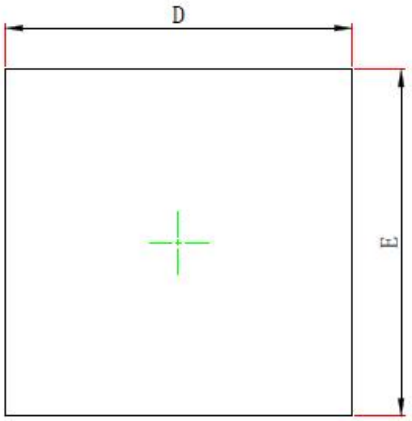
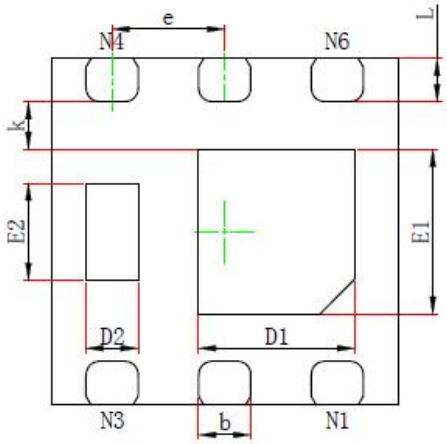


Figure8. Switching wave

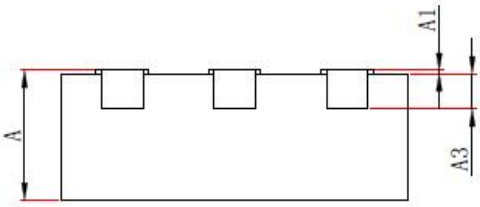
DFN2X2-6L Package Information



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
D1	0.800	1.000	0.031	0.039
E1	0.850	1.050	0.033	0.041
D2	0.200	0.400	0.008	0.016
E2	0.460	0.660	0.018	0.026
k	0.200MIN.		0.008MIN.	
b	0.250	0.350	0.010	0.014
e	0.650TYP.		0.026TYP.	
L	0.174	0.326	0.007	0.013