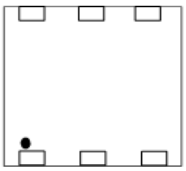
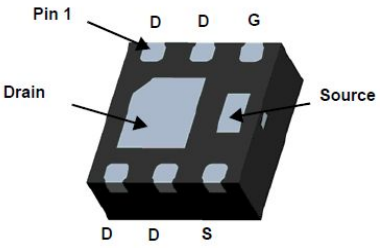
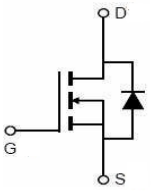
JCWT8CN2ES6

N-Channel Enhancement Mode Field Effect Transistor



Marking and pin assignment





DFN2*2-6L

Product Summary

- V_{DS} 20V
- I_D 20A
- $R_{DS(ON)}$(at V_{GS}=4.5V) ＜ 8 mohm
- $R_{DS(ON)}$(at V_{GS}=2.5V) ＜13mohm
- $R_{DS(ON)}$(at V_{GS}=1.8V) ＜20 mohm

General Description

- Trench Power LV MOSFET technology
- High Power and current handing capability

Applications

- PWM application
- Load switch

■ Ordering Information (Example)

PREFERED P/N	PACK	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
JCWT8CN2ES6	DFN2*2-6	T8CN	3000	45000	180000	7“ reel

■ Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	20	V
Gate-source Voltage		V_{GS}	±12	V
Drain Current	T_A=25℃ @ Steady State	I_D	20	A
	T_A=70℃ @ Steady State		12	
Pulsed Drain Current [A]		I_{DM}	30	A
Total Power Dissipation @ T_A=25℃		P_D	1.5	W
Thermal Resistance Junction-to-Ambient @ Steady State [B]		$R_{\theta JA}$	100	℃/ W
Junction and Storage Temperature Range		T_J ,T_{STG}	-55～+150	℃

■ Electrical Characteristics (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=250μA	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V,T_C=25℃			1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±10V, V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=250μA	0.45	0.62	1.2	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}= 4.5V, I_D=6.8A	6		8	mΩ
		V_{GS}= 2.5V, I_D=3.0A	9		13	
		V_{GS}= 1.8V, I_D=2.5A	15		20	
Diode Forward Voltage	V_{SD}	I_S=6A,V_{GS}=0V			1.2	V
Maximum Body-Diode Continuous Current	I_S				6	A
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{DS}=10V,V_{GS}=0V,f=1MHZ		1600		pF
Output Capacitance	C_{oss}			640		
Reverse Transfer Capacitance	C_{rss}			239		
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=4.5V,V_{DS}=10V,I_D=6A		9.2		nC
Gate Source Charge	Q_{gs}			1.7		
Gate Drain Charge	Q_{gd}			2.9		
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=4.5V,V_{DD}=10V, R_L=1.5Ω, R_{GEN}=3Ω		12		ns
Turn-on Rise Time	t_r			52		
Turn-off Delay Time	$t_{D(off)}$			17		
Turn-off Fall Time	t_f			10		

A. Pulse Test: Pulse Width≤300us,Duty cycle ≤2%.
B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

■ Typical Performance Characteristics

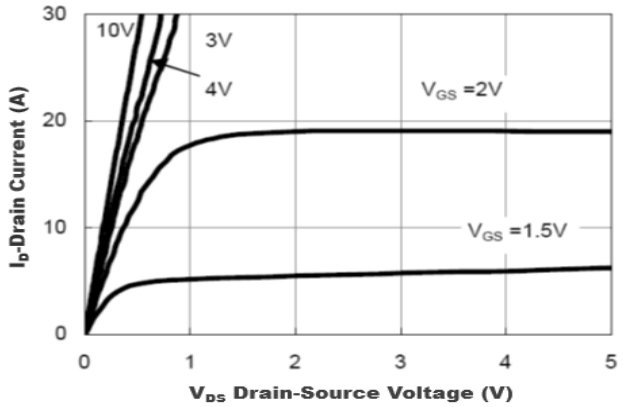


Figure1. Output Characteristics

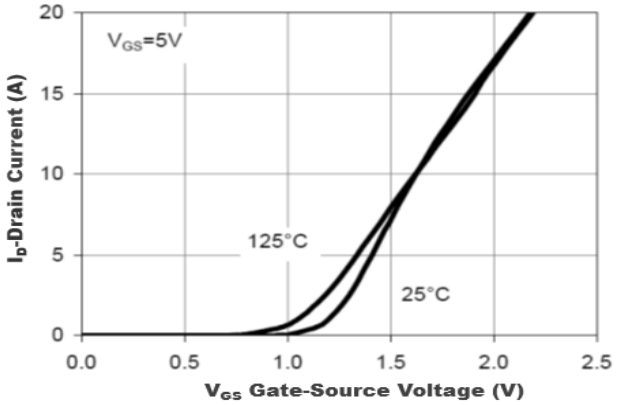


Figure2. Transfer Characteristics

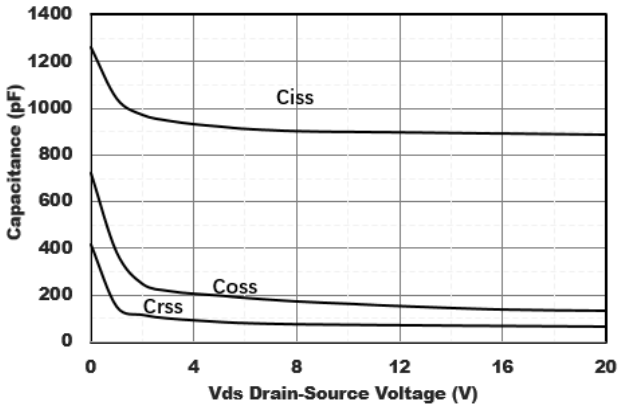


Figure3. Capacitance Characteristics

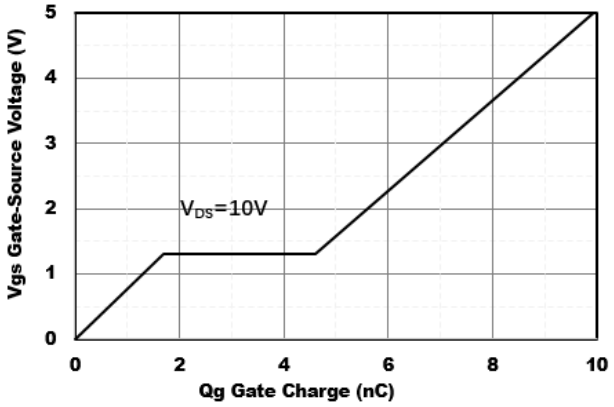


Figure4. Gate Charge

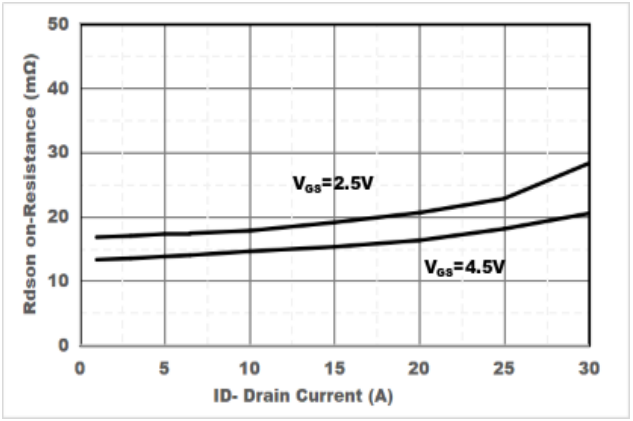


Figure5. Drain-Source on Resistance

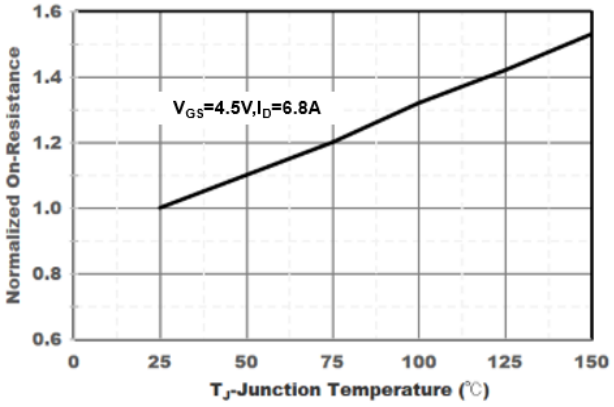


Figure6. Drain-Source on Resistance

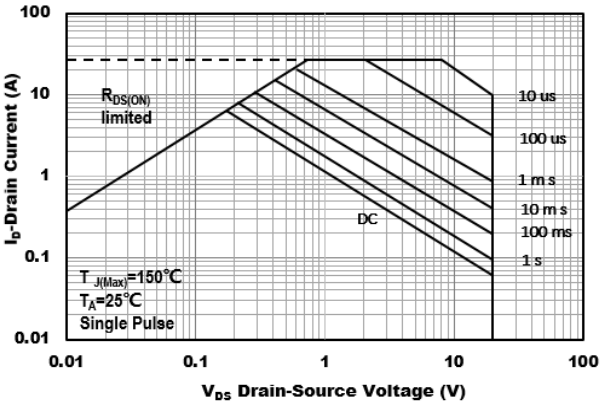


Figure7. Safe Operation Area

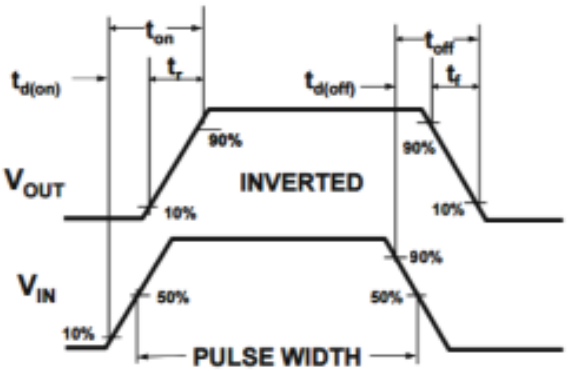
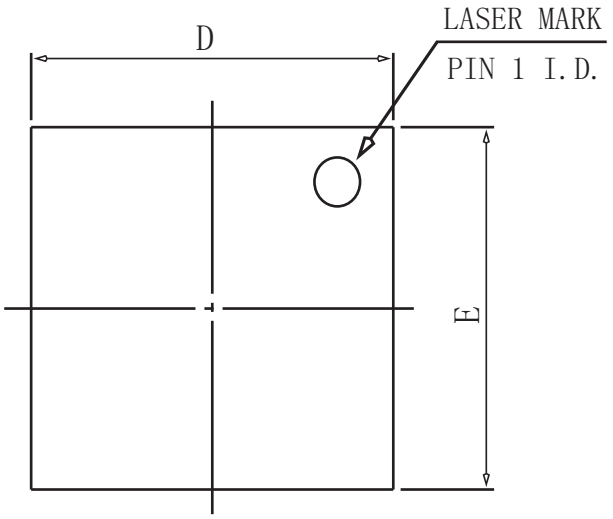
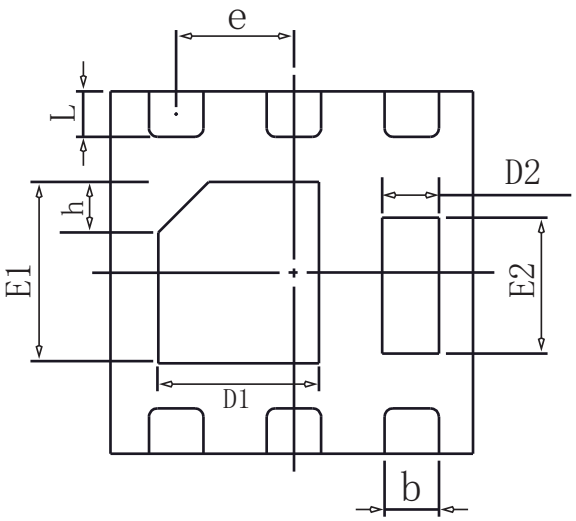


Figure8. Switching wave

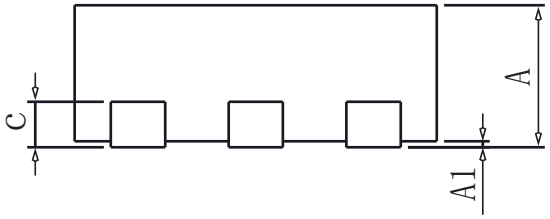
DFN2X2-6L Package information



TOP VIEW



BOTTOM VIEW



SIDE VIEW

COMMON DIMENSIONS

SYMBOL	mm		
	MIN	NOM	MAX
A	0.413	0.452	0.493
A1	NA	0.02	0.05
b	0.20	0.27	0.34
c	0.18	0.20	0.25
D	1.95	2.00	2.07
E	1.95	2.00	2.07
D1	0.80	0.90	1.00
E1	0.90	1.00	1.10
D2	0.20	0.30	0.40
E2	0.65	0.75	0.85
L	0.20	0.25	0.35
h	0.20	0.25	0.30
e	0.65BSC		