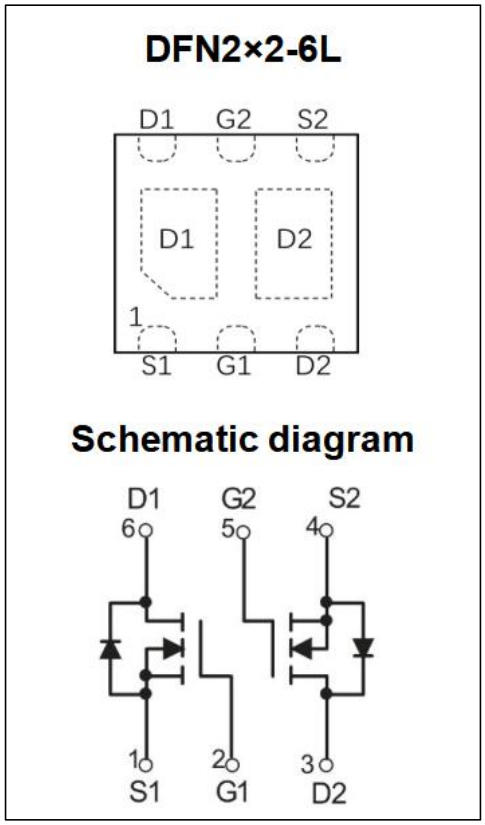
CHONGQING CLOUDCHILD TECHNOLOGY CO.,LTD

DFN2×2-6L Plastic-Encapsulate MOSFETS

CCMND306 N-Channel Power MOSFET

V_{DSS}	$R_{DS(ON)}$(Typ.)	I_D
30 V	18mΩ@10V 24mΩ@4.5V	6A



DESCRIPTION

The CCMND306 provides excellent $R_{DS(ON)}$ with low gate charge.

It can be used in a wide variety of applications.

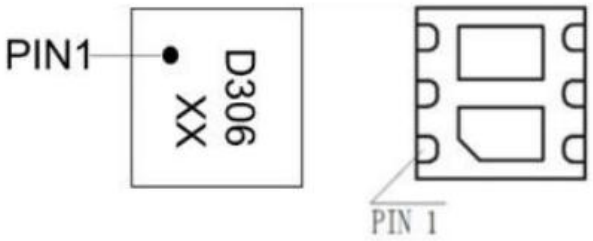
FEATURES

- Trench Technology Power MOSFET
- Low $R_{DS(on)}$
- Low Gate Charge
- AEC-Q101 Qualified

APPLICATIONS

- Load Switch
- DC/DC Converter

MARKING



ABSOLUTE MAXIMUM RATINGS(T_A=25℃unless otherwise specified)

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	30	V
Gate - Source Voltage		V_{GS}	±20	V
Continuous Drain Current[1,5]	T_A = 25℃	I_D	6	A
Pulsed Drain Current[2]		I_{DM}	24	A
Power Dissipation[4,5]	T_A = 25℃	P_D	2	W
Thermal Resistance from Junction to Ambient[5]		$R_{\theta JA}$	62	℃/W
Junction Temperature		T_J	150	℃
Storage Temperature		T_{STG}	-55~ +150	℃

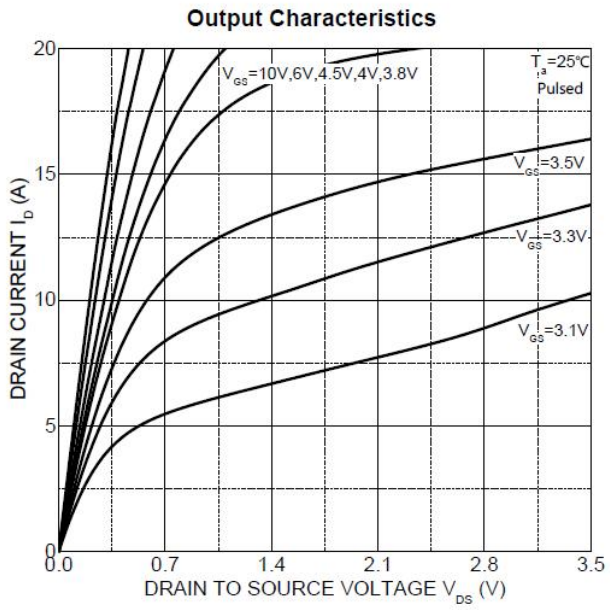
MOSFET ELECTRICAL CHARACTERISTICS(TJ=25℃ unless otherwise noted)

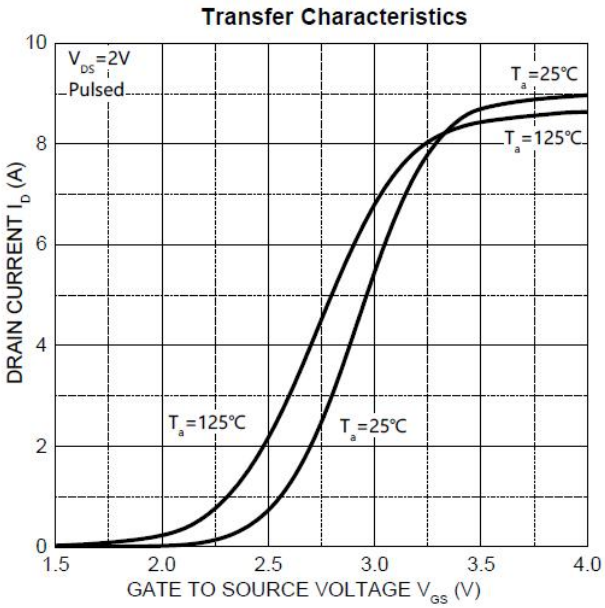
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 30V, V_{GS} = 0V			1	μA
Gate - Body Leakage Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±100	nA
On Characteristics[3]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1	1.7	3	V
Drain-source On-resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 4.0A		18	30	mΩ
		V_{GS} = 4.5V, I_D = 4.0A		24	42	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = 15V, V_{GS} = 0V, f = 1MHz		551		pF
Output Capacitance	C_{oss}			66		
Reverse Transfer Capacitance	C_{rss}			52		
Gate Resistance	R_g	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz		2		Ω
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS} = 15V, V_{GS} = 10V, I_D = 5.0A		15		nC
Gate-source Charge	Q_{gs}			2.1		
Gate-drain Charge	Q_{gd}			3		
Turn-on Delay Time	$t_{d(on)}$	V_{DD} = 15V, V_{GS} = 10V, R_L = 3Ω, R_G = 3Ω		2.7		ns
Turn-on Rise Time	t_r			2.9		
Turn-off Delay Ttime	$t_{d(off)}$			9		
Turn-off Fall Time	t_f			2.4		
Source - Drain Diode Characteristics						
Diode Forward Voltage[3]	V_{SD}	V_{GS} = 0V, I_S = 1.0A			1.2	V

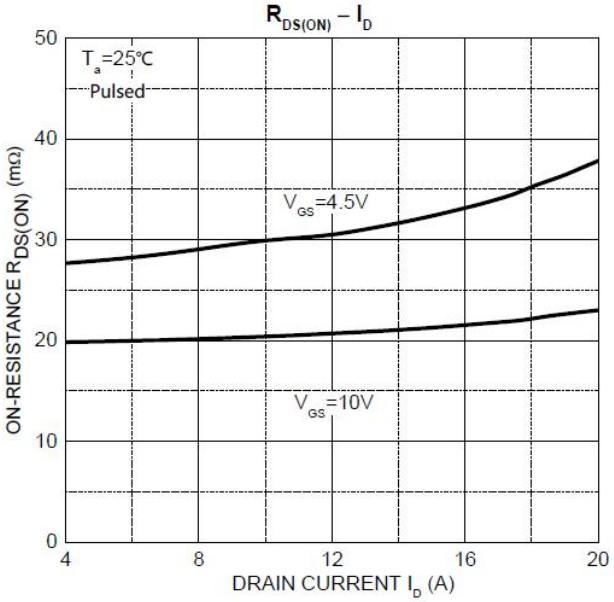
Note :

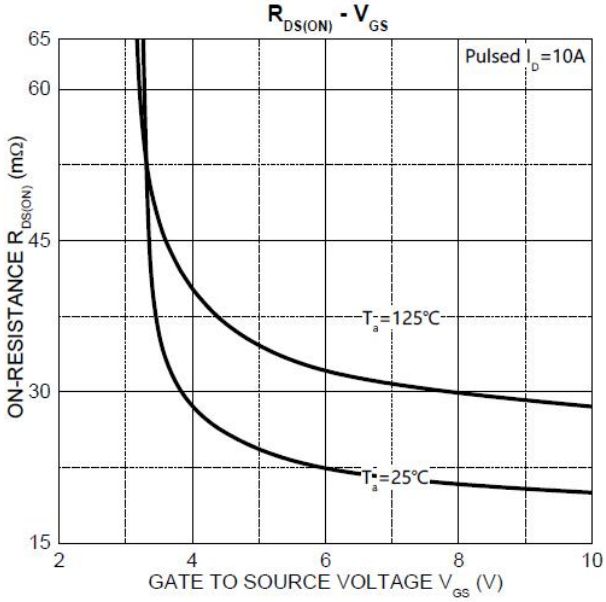
1. The maximum current rating is limited by package.
2. Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
3. Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
4. The power dissipation PD is limited by TJ(MAX) = 150°C.
5. Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with TA=25°C.

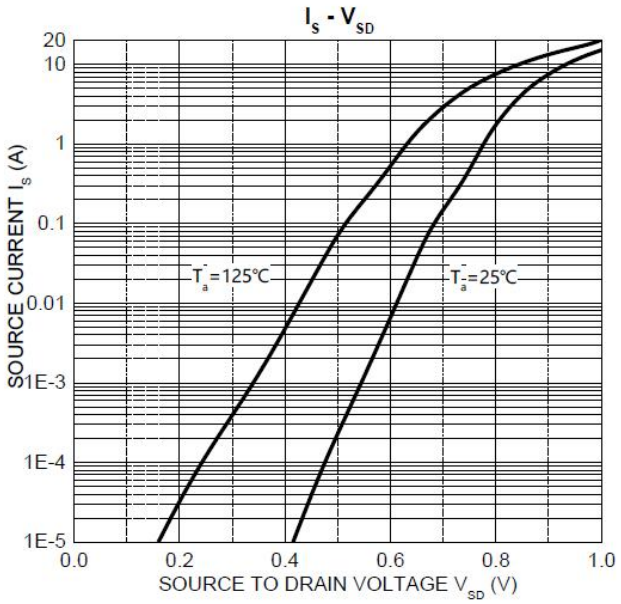
Characteristics Curve：

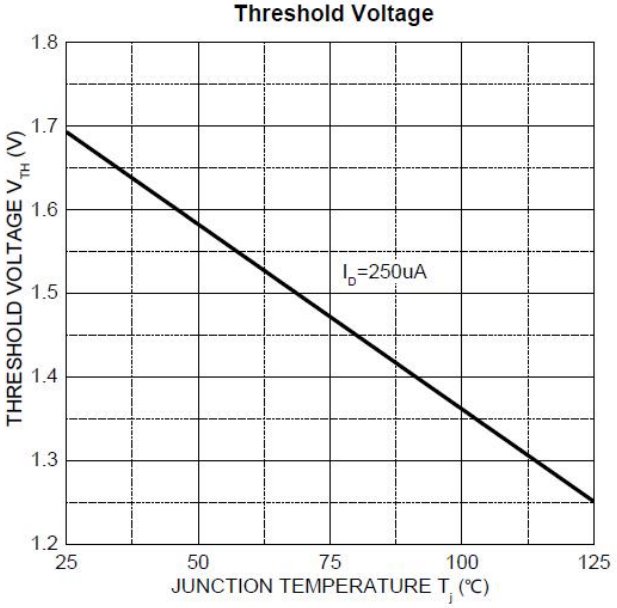




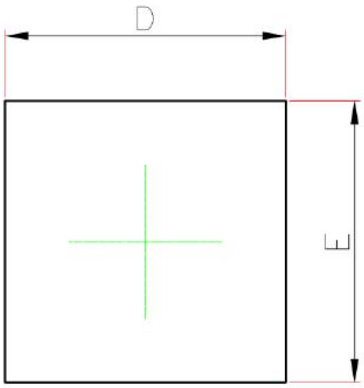




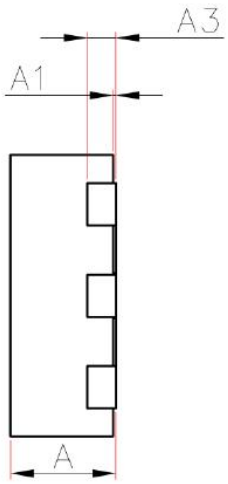




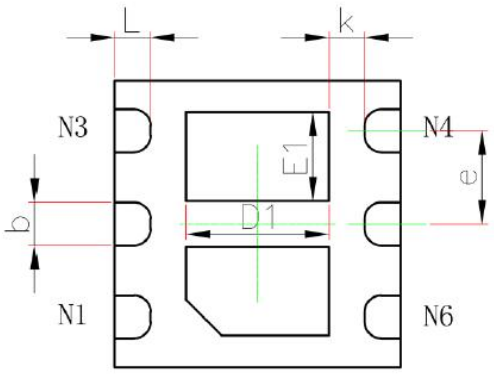
DFN2×2-6L Package Outline Dimensions



TOP VIEW



SIDE VIEW



BOTTOM VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0	0.050	0	0.002
A3	2.03REF		0.008REF	
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
D1	0.900	1.100	0.035	0.043
E1	0.520	0.720	0.020	0.028
k	0.200MIN		0.008MIN	
b	0.250	0.350	0.010	0.014
e	0.65BSC		0.026TYP	
L	0.174	0.326	0.007	0.013

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Date of change	Rev #	revise content
2023/6/29	A/0	/