● General Description

The CH100N06D combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$.

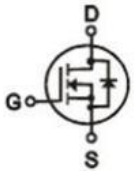
● Features

- ■ Advance high cell density Trench technology
- ■Low $R_{DS(ON)}$ to minimize conductive loss
- ■Low Gate Charge for fast switching
- ■Low Thermal resistance

●Application

- ■SMPS 2nd Synchronous Rectifier
- ■BLDC Motor driver

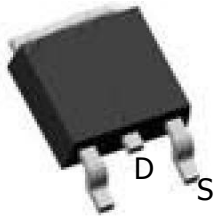
● Product Summary



V_{DS} =60V

$R_{DS(ON)}$ =6.5mΩ

I_D =100A



TO-252

RoHS

●Ordering Information:

Part NO.	CH100N06D
Marking	CH100N06D
Packing Information	Bulk Tube
Basic ordering unit (pcs)	2500

●Absolute Maximum Ratings (T_C =25℃)

Parameter	**Symbol**	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	$I_{D@}$TC=25℃	100	A
	$I_{D@}$TC=75℃	70	A
	I_{D} @TC=100℃	56.6	A
Pulsed Drain Current ①	I_{DM}	270	A
Total Power Dissipation	P_D@TC=25℃	110	W
Total Power Dissipation	P_D@TA=25℃	2.0	W
Operating Junction Temperature	T_J	-55 to 150	℃
Storage Temperature	T_{STG}	-55 to 150	℃

●Thermal resistance

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	R_{thJC}	-	-	1.36	° C/W
Thermal resistance, junction - ambient	R_{thJA}	-	-	62.5	° C/W
Soldering temperature, wavesoldering for 10s	T_{sold}	-	-	265	° C

●Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} =0V, I_D =250uA	60			V
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS} =V_{DS}, I_D =250uA	0.8	1.3	1.8	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=60V, V_{GS} =0V			1.0	uA
Gate- Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS} =0V			±100	nA
Static Drain-source On Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=20A		6.5	8.0	mΩ
		V_{GS}=4.5V, I_D=20A		7.5	9.5	mΩ
Forward Transconductance	g_{FS}	V_{DS} =25V, I_D=5A		20		s
Source-drain voltage	VSD	Is=20A		0.8	1.2	V

●Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	Ciss	f = 1MHz	-	5800	-	pF
Output capacitance	Coss		-	350	-	
Reverse transfer capacitance	Crss		-	290	-	

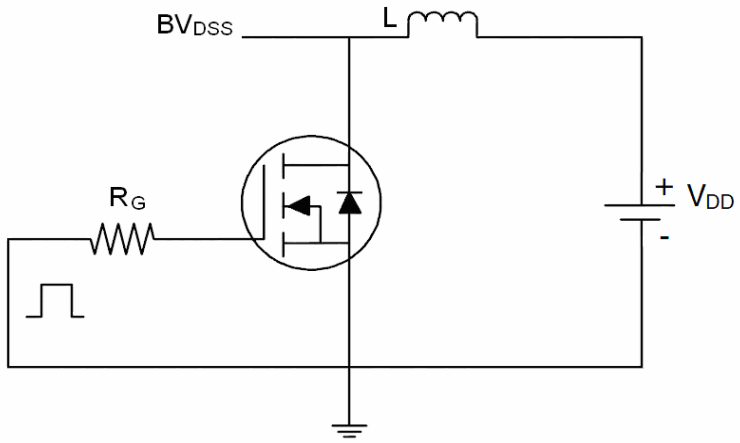
●Gate Charge characteristics(T_a = 25℃)

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Total gate charge	Qg	VDD = 30V	-	90	-	nC
Gate - Source charge	Qgs	ID = 20A	-	9	-	
Gate - Drain charge	Qgd	VGS = 10V	-	18	-	

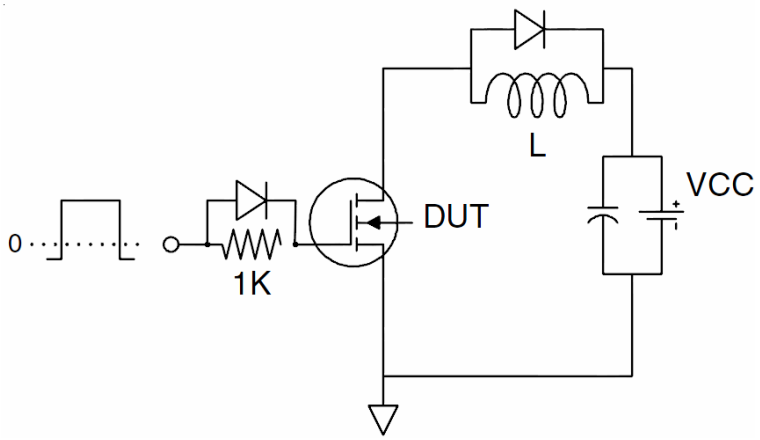
Note: ① Pulse Test : Pulse width ≤ 300μs, Duty cycle ≤ 2% ;

Test circuit

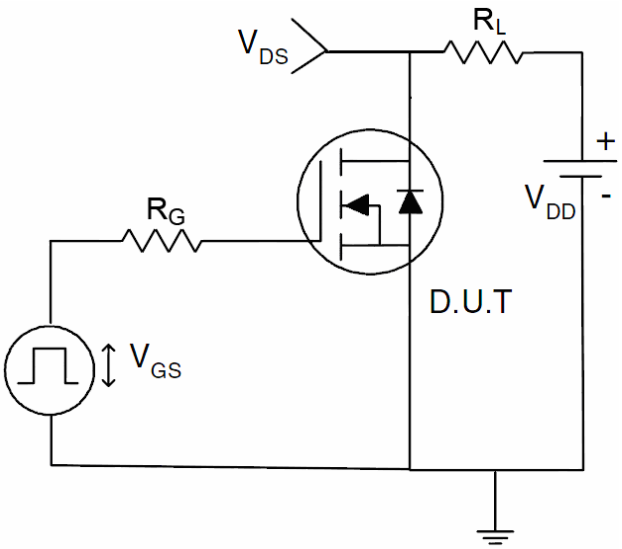
1) E_{AS} Test Circuit



2) Gate Charge Test Circuit



3) Switch Time Test Circuit



Typical Electrical and Thermal Characteristics (Curves)

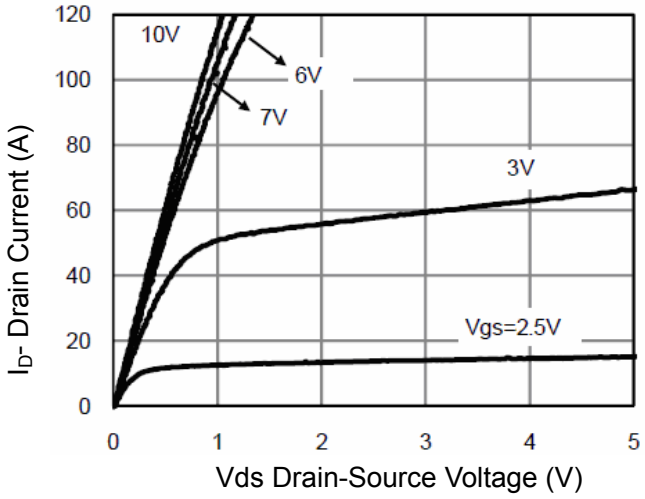


Figure 1 Output Characteristics

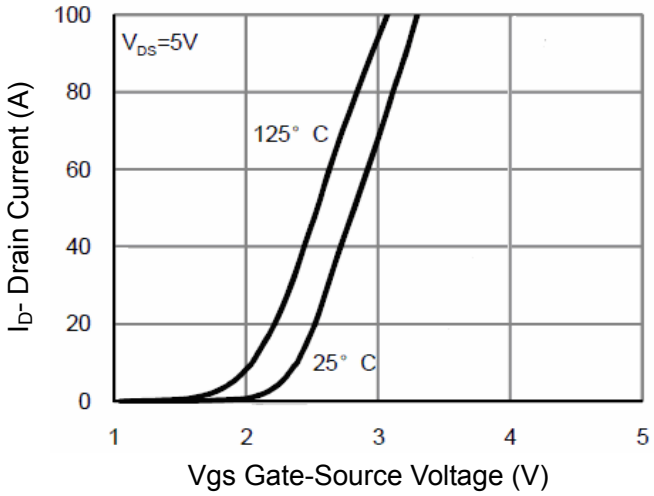


Figure 2 Transfer Characteristics

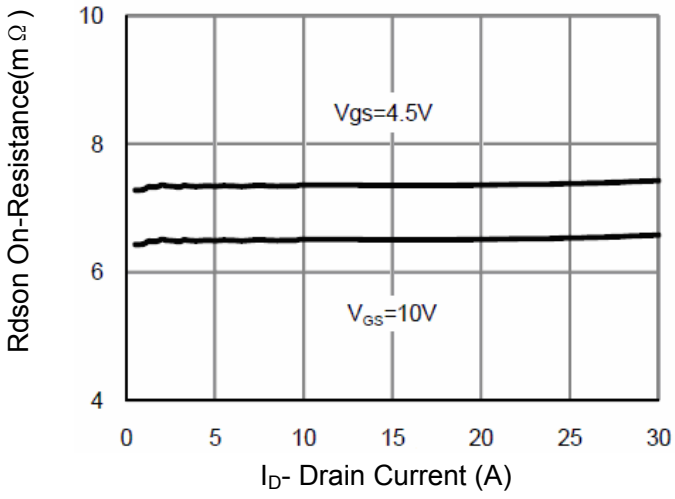


Figure 3 Rdson- Drain Current

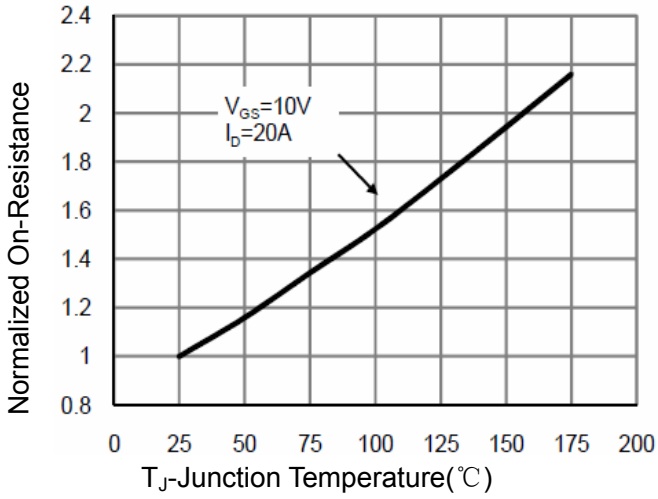


Figure 4 Rdson-JunctionTemperature

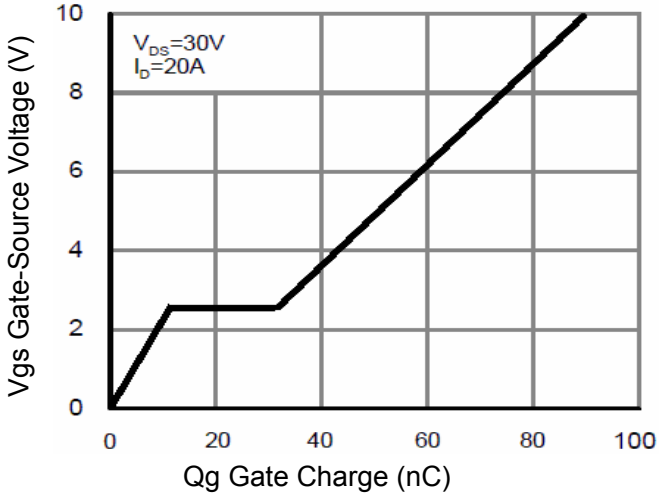


Figure 5 Gate Charge

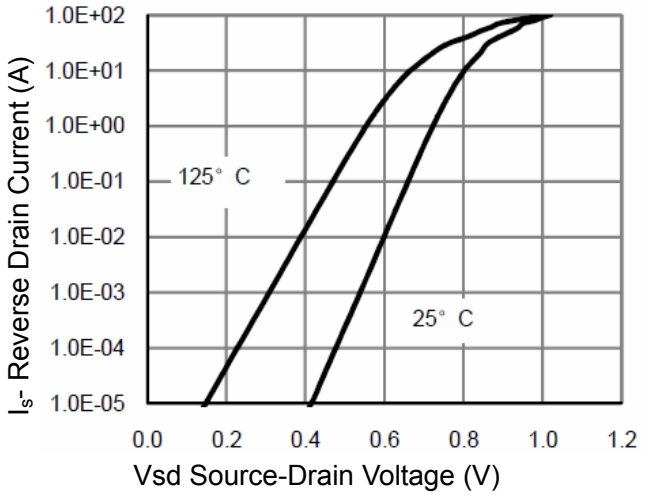


Figure 6 Source- Drain Diode Forward

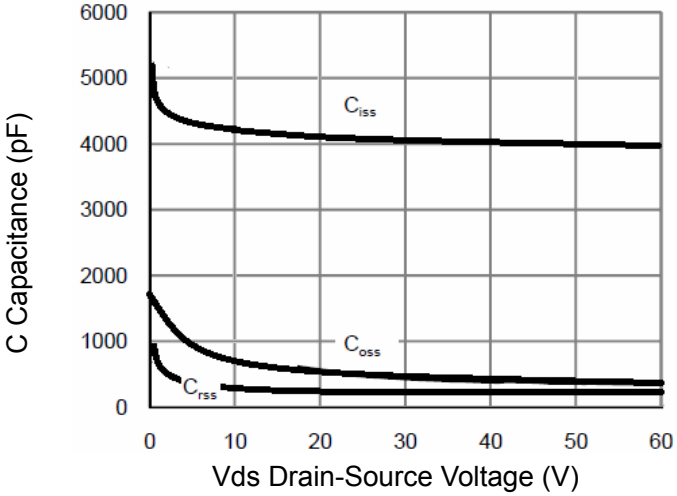


Figure 7 Capacitance vs Vds

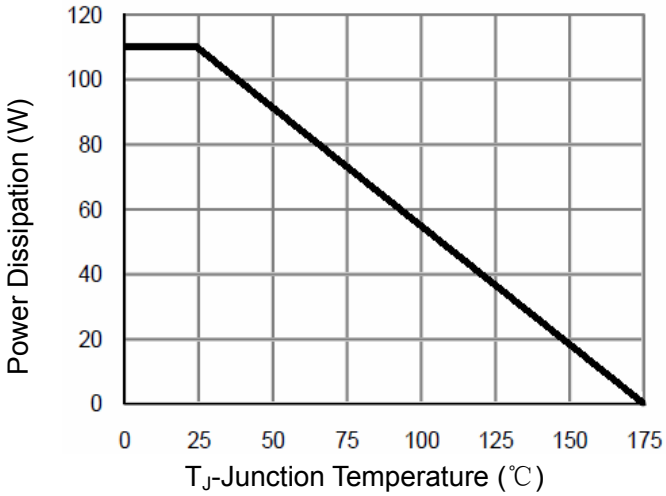


Figure 9 Power De-rating

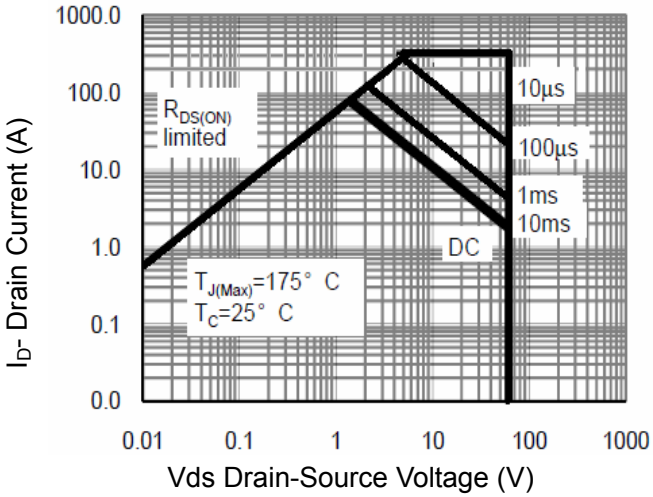


Figure 8 Safe Operation Area

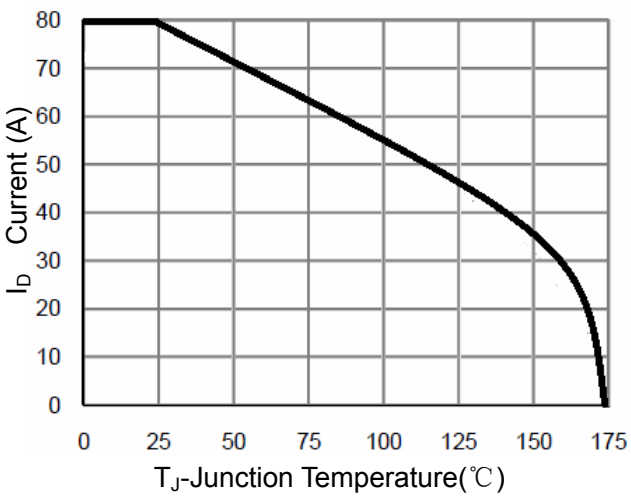


Figure 10ID Current- Junction Temperature

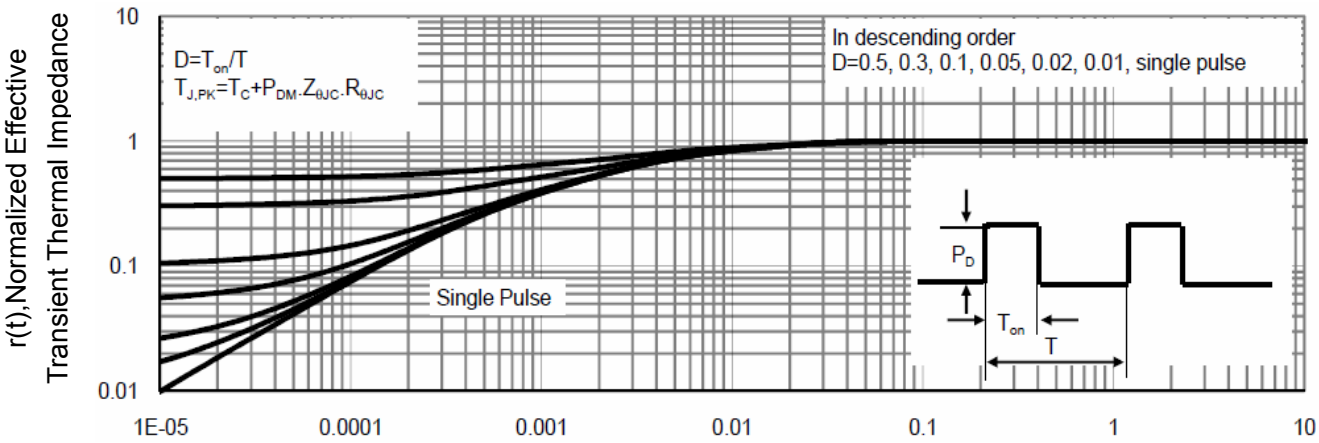


Figure 11 Normalized Maximum Transient Thermal Impedance

• Dimensions (TO-252)

Unit：mm

SYMBOL	min	max	SYMBOL	min	max
A	2.10	2.50	B	0.85	1.25
b	0.50	0.80	b1	0.50	0.90
b2	0.45	0.70	C	0.45	0.70
D	6.30	6.75	D1	5.10	5.50
E	5.30	6.30	e1	2.25	2.35
L1	9.20	10.60	e2	4.45	4.75
L2	0.90	1.75	L3	0.60	1.10
K	0.00	0.23