● General Description

The ZM060N08HN combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$.

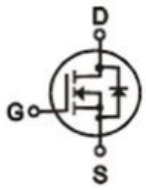
● Features

- ■ 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
- ■Switching application
- ■BLDC Motor driver

● Product Summary

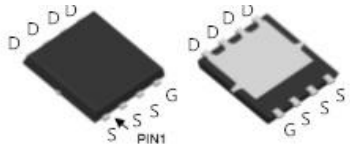


V_{DS} =80V

$R_{DS(ON)}$ =6.0mΩ

I_D =80A

RoHS



DFN5 x 6

●Ordering Information:

Part NO.	ZM060N08HN
Marking	ZM060N08H
Packing Information	REEL TAPE
Basic ordering unit (pcs)	3000

●Absolute Maximum Ratings (T_C =25℃)

Parameter	**Symbol**	Rating	Unit
Drain-Source Voltage	V_{DS}	80	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current(TC=25℃)	$I_{D@}$TC=25℃	80	A
	$I_{D@}$TC=75℃	60	A
	$I_{D@}$TC=100℃	50	A
Pulsed Drain Current ①	I_{DM}	190	A
Total Power Dissipation(TC=25℃)	P_D@TC=25℃	120	W
Total Power Dissipation(TA=25℃)	P_D@TA=25℃	5	W
Operating Junction Temperature	T_J	-55 to 150	℃
Storage Temperature	T_{STG}	-55 to 150	℃
Single Pulse Avalanche Energy@L=0.5mH	E_{AS}	320	mJ
Avalanche Current@L=0.5mH	I_{AS}	36	A

●Thermal resistance

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	R_{thJC}	-	-	1	°C/W
Thermal resistance, junction - ambient	R_{thJA}	-	-	25	°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	80			V
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS} =V_{DS}, I_D =250uA	2		4	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=80V, 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=16A		6	8	mΩ
Forward Transconductance	g_{FS}	V_{DS} =25V, I_D=8A		28		s
Source-drain voltage	V_{SD}	Is=20A			1.28	V

●Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	Ciss	f = 1MHz	-	5600	-	pF
Output capacitance	Coss		-	530	-	
Reverse transfer capacitance	Crss		-	420	-	

●Gate Charge characteristics(T_a = 25℃)

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Total gate charge	Qg	V_{DD} = 30V	-	108	-	nC
Gate - Source charge	Qgs	I_D = 25A	-	24	-	
Gate - Drain charge	Qgd	V_{GS} = 10V	-	22	-	

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

Fig.1 Gate-Charge Characteristics

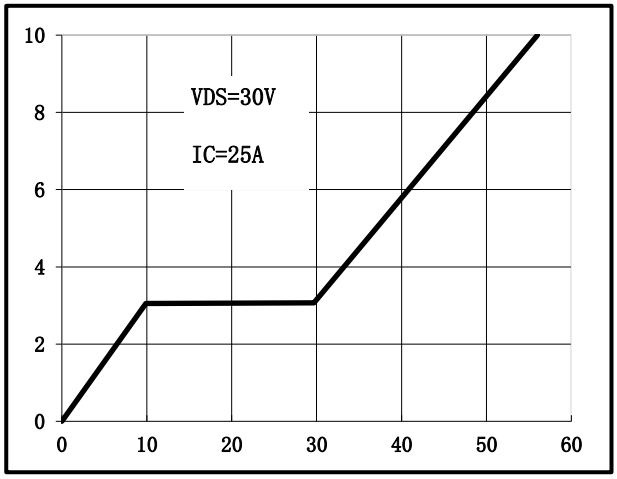


Fig.2 Capacitance Characteristics

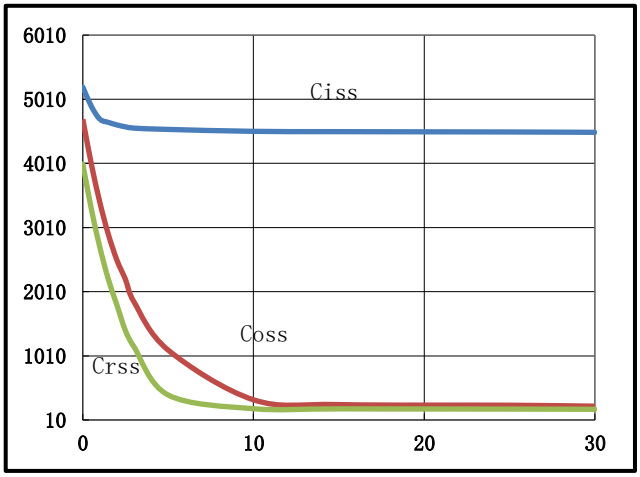


Fig.3 Power Dissipation

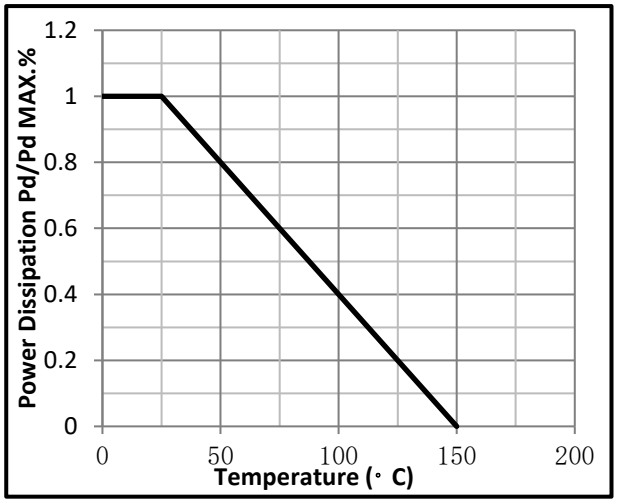


Fig.4 Typical output Characteristics

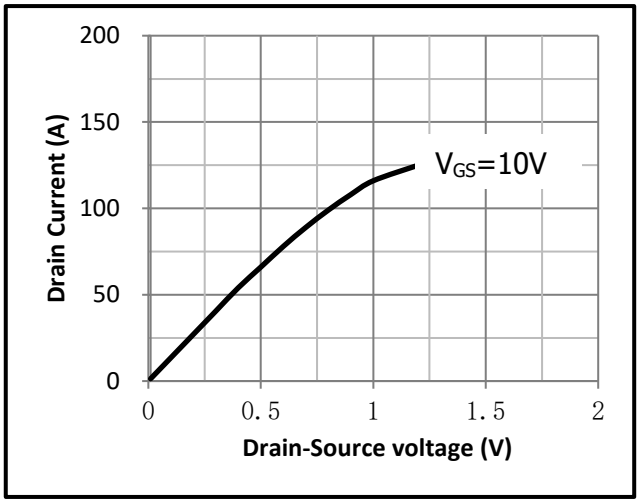


Fig.5 Threshold Voltage V.S Junction Temperature

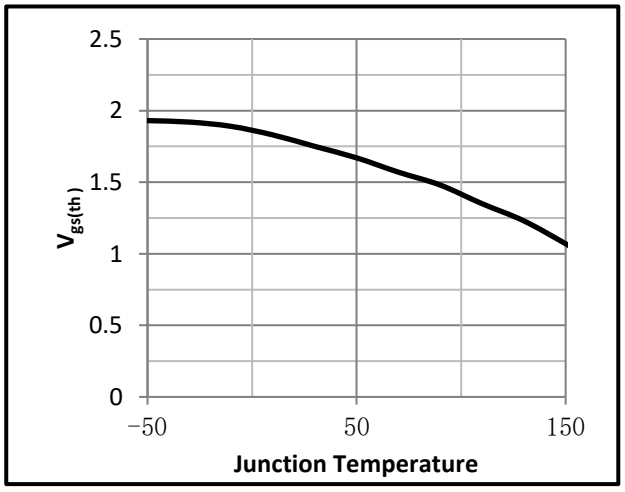


Fig.6 Resistance V.S Drain Current

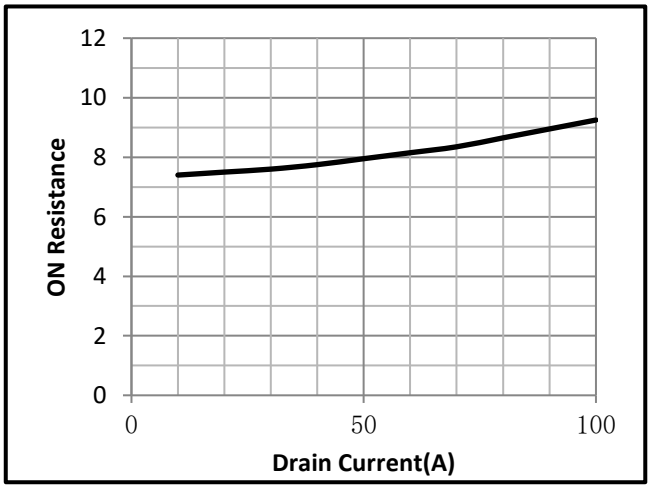


Fig.7 On-Resistance VS Gate Source Voltage

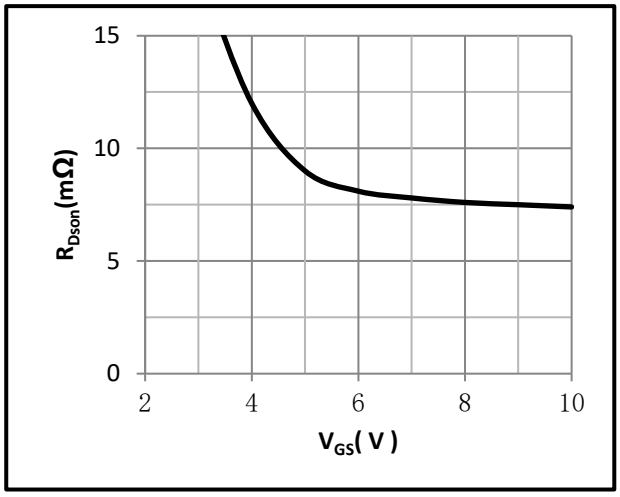


Fig.8 On-Resistance V.S Junction Temperature

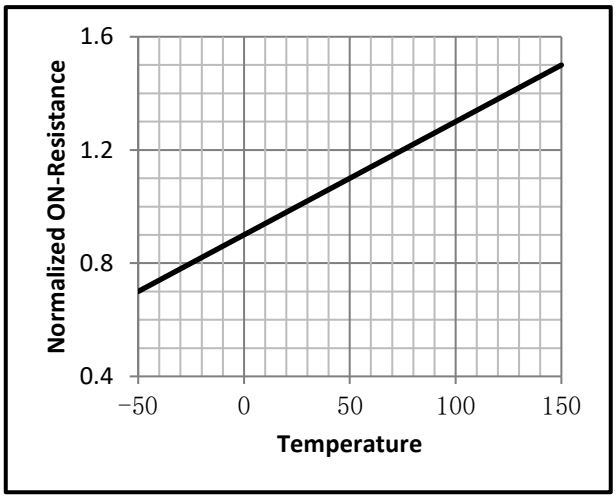


Fig.9 Switching Time Measurement Circuit

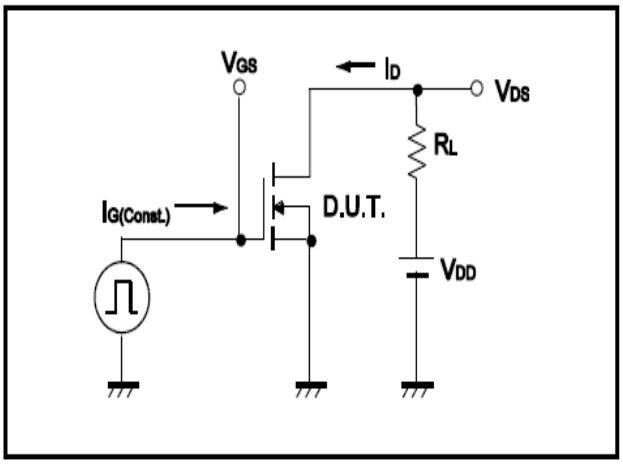


Fig.10 Gate Charge Waveform

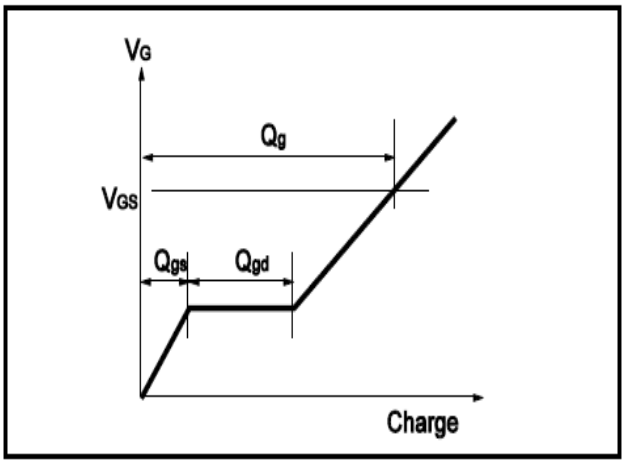


Fig.11 Switching Time Measurement Circuit

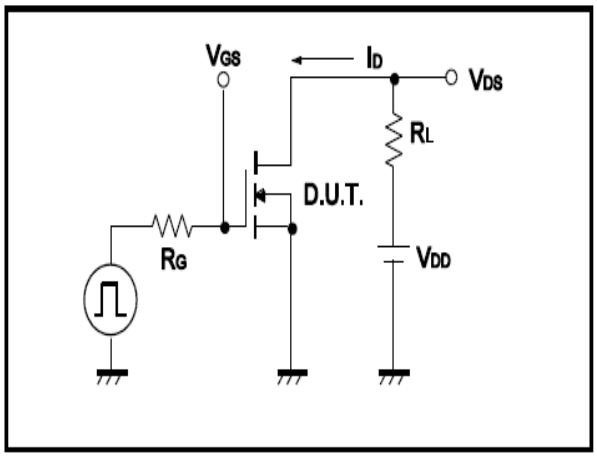
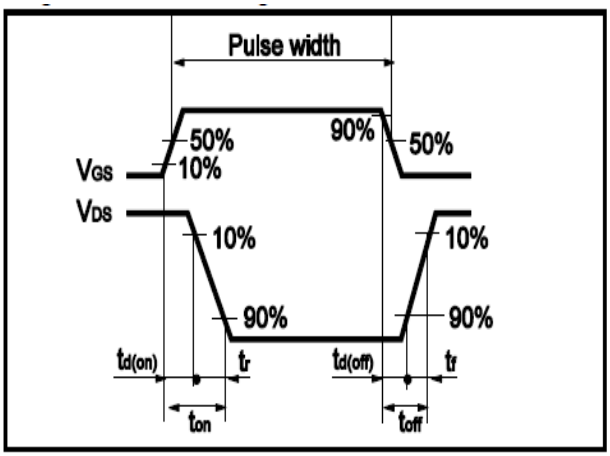
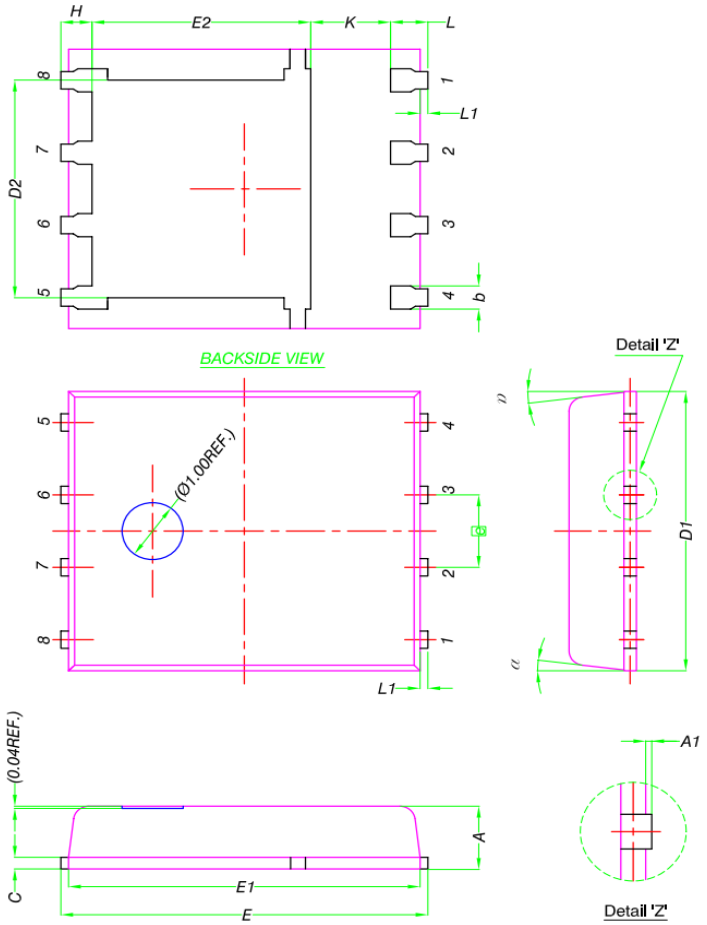


Fig.12 Gate Charge Waveform



●Dimensions (DFN5×6)

Unit：mm



DIM.	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.90	1.00	1.10
A1	0	-	0.05
b	0.33	0.41	0.51
C	0.20	0.25	0.30
D1	4.80	4.90	5.00
D2	3.61	3.81	3.96
E	5.90	6.00	6.10
E1	5.70	5.75	5.80
E2	3.38	3.58	3.78
e	1.27 BSC		
H	0.41	0.51	0.61
K	1.10	-	-
L	0.51	0.61	0.71
L1	0.06	0.13	0.20
α	0°	-	12°