

● General Description

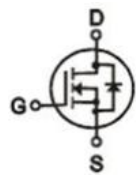

The ZM060N06BH combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$.

● 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

	$V_{DS} = 68V$ $R_{DS(ON)} = 6m\Omega$ $I_D = 80A$
	<ul style="list-style-type: none"> ■ RoHS COMPLIANT

TO-263

● Ordering Information:

Marking	ZM060N06
Packing	Bulk Tube
Basic ordering unit (pcs)	800
Normal Package Material Ordering Code	ZM060N06BH-TAP
Halogen Free Ordering Code	ZM060N06BH-TAP-HF

● Absolute Maximum Ratings (T_C =25°C)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	68	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current(TC=25°C)	I_D	80	A
Pulsed Drain Current ^①	I_{DM}	190	A
Total Power Dissipation(TC=25°C)	$P_D@TC=25^\circ C$	120	W
Total Power Dissipation(TA=25°C)	$P_D@TA=25^\circ C$	5	W
Operating Junction Temperature	T_J	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

●Thermal resistance

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	R_{thJC}	-	-	1	$^{\circ}C/W$
Thermal resistance, junction - ambient	R_{thJA}	-	-	25	$^{\circ}C/W$
Soldering temperature, wavesoldering for 10s	T_{sold}	-	-	265	$^{\circ}C$

●Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	68			V
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS} = V_{DS}, I_D = 250\mu A$	2		4	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 68V, V_{GS} = 0V$			1.0	μA
Gate- Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Static Drain-source On Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 16A$		6	8	m Ω
Forward Transconductance	g_{FS}	$V_{DS} = 25V, I_D = 8A$		28		s

●Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	C_{iss}	f = 1MHz	-	4500	-	pF
Output capacitance	C_{oss}		-	300	-	
Reverse transfer capacitance	C_{rss}		-	210	-	

●Gate Charge characteristics($T_a = 25^{\circ}C$)

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Total gate charge	Q_g	$V_{DD} = 25V$	-	56	-	nC
Gate - Source charge	Q_{gs}	$I_D = 15A$	-	12	-	
Gate - Drain charge	Q_{gd}	$V_{GS} = 10V$	-	14	-	

Note: ① Pulse Test : Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$;

Fig.1 Gate-Charge Characteristics

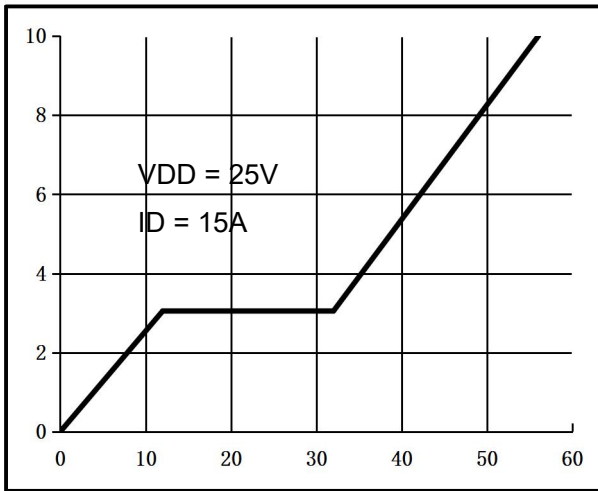


Fig.2 Capacitance Characteristics

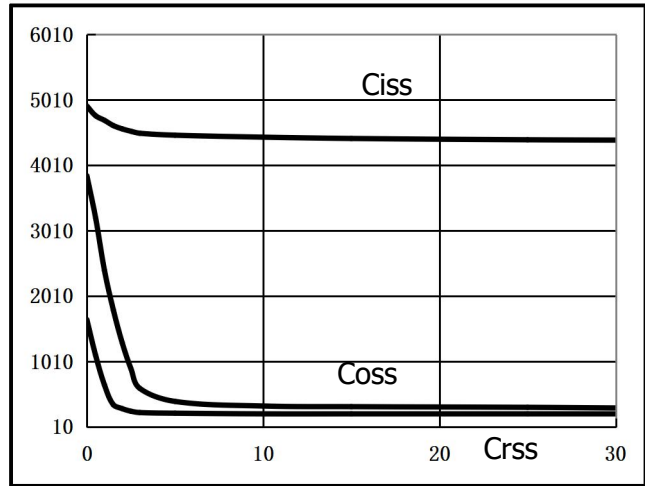


Fig.3 Power Dissipation

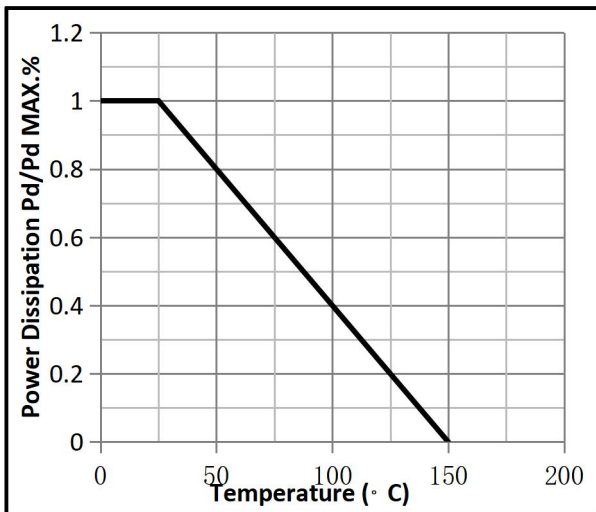


Fig.4 Typical output Characteristics

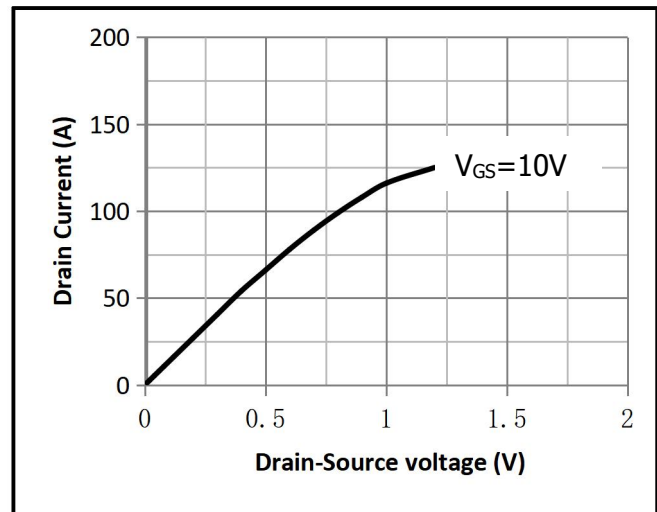


Fig.5 Threshold Voltage V.S Junction Temperature

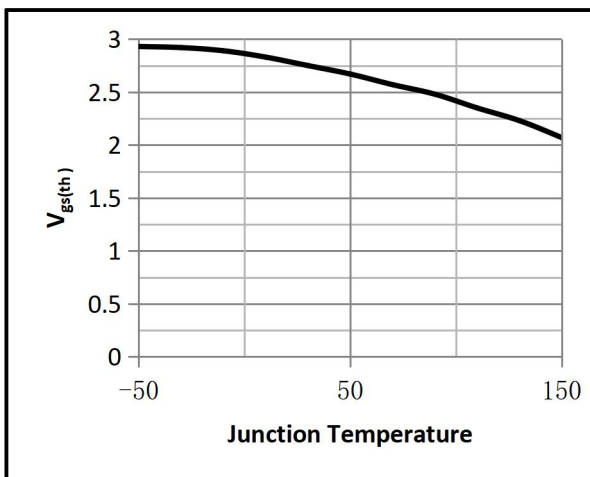


Fig.6 Resistance V.S Drain Current

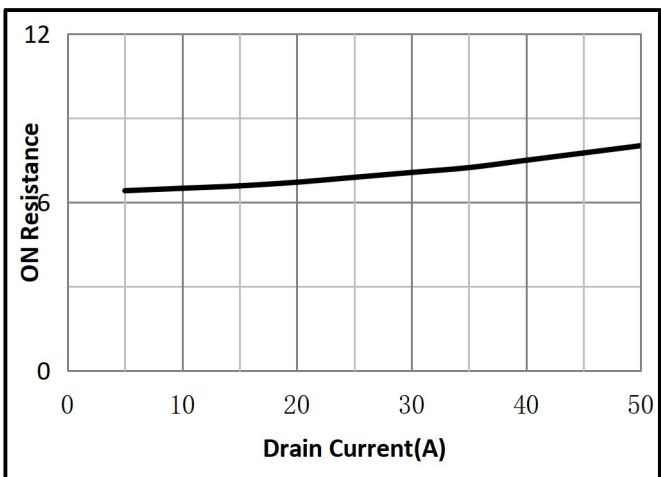


Fig.7 On-Resistance VS Gate Source Voltage

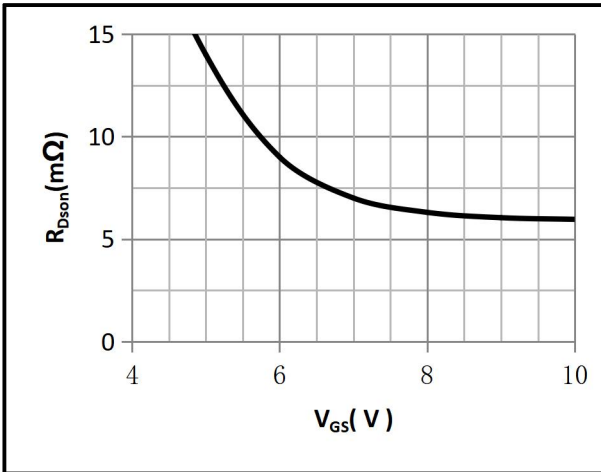


Fig.8 On-Resistance V.S Junction Temperature

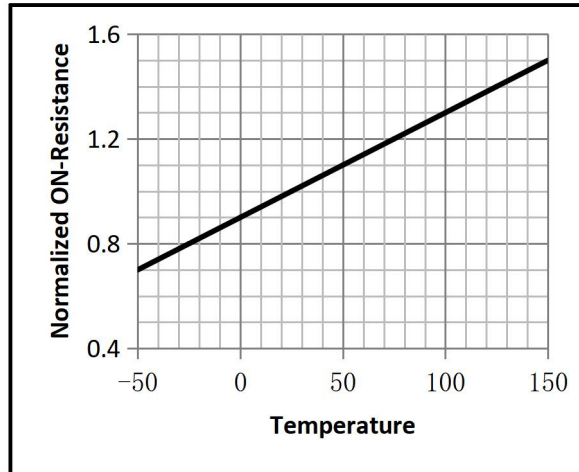


Fig.9 Switching Time Measurement Circuit

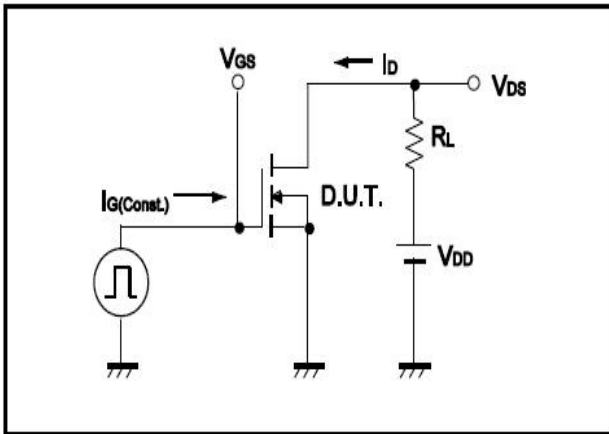


Fig.10 Gate Charge Waveform

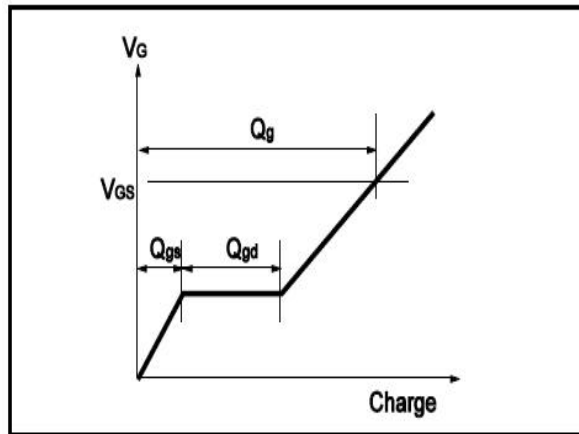


Fig.11 Switching Time Measurement Circuit

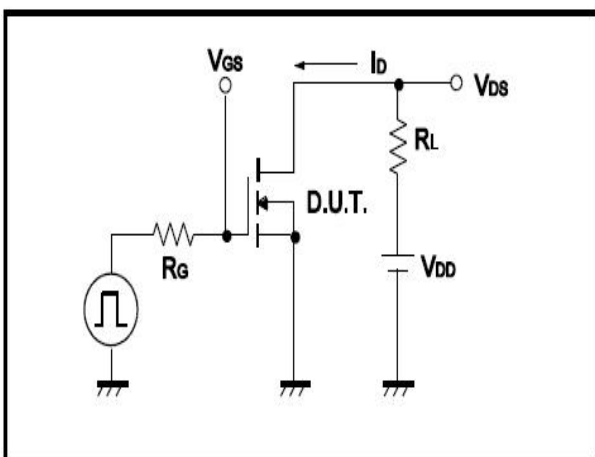
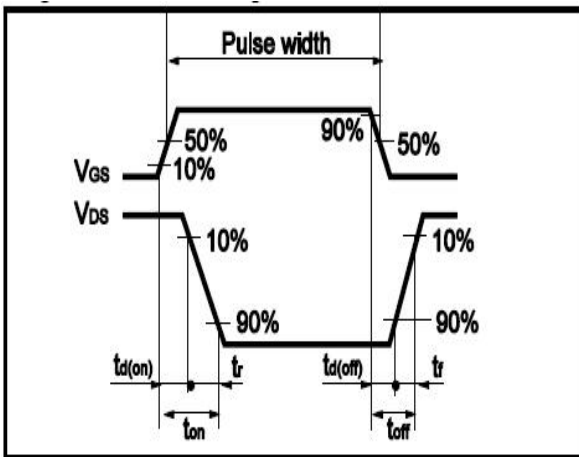


Fig.12 Gate Charge Waveform



●Dimensions

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			

