

• General Description

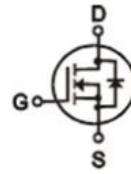
The ZM100N08HB combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$.

• 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


$V_{DS} = 80V$

$R_{DS(ON)} = 9m\Omega$

$I_D = 80A$


TO-263
• Ordering Information:

Part NO.	ZM100N08H
Marking	ZM100N08H
Packing Information	Bulk Tube
Basic ordering unit (pcs)	500

• Absolute Maximum Ratings ($T_C = 25^\circ C$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	80	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	$I_D @ TC=25^\circ C$	80	A
	$I_D @ TC=75^\circ C$	60	A
	$I_D @ TC=100^\circ C$	50	A
Pulsed Drain Current ①	I_{DM}	190	A
Total Power Dissipation($TC=25^\circ C$)	$P_D @ TC=25^\circ C$	120	W
Total Power Dissipation($TA=25^\circ C$)	$P_D @ TA=25^\circ C$	5	W
Operating Junction Temperature	T_J	-55 to 150	$^\circ C$
Storage Temperature	T_{STG}	-55 to 150	$^\circ C$

•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		9	11	mΩ
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	-	4400	-	pF
Output capacitance	C _{oss}		-	290	-	
Reverse transfer capacitance	C _{rss}		-	200	-	

•Gate Charge characteristics(T_a = 25°C)

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Total gate charge	Q _g	V _{DD} = 40V	-	58	-	nC
Gate - Source charge	Q _{gs}	I _D = 20A	-	13	-	
Gate - Drain charge	Q _{gd}	V _{GS} = 10V	-	15	-	

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

Fig.1 Gate-Charge Characteristics

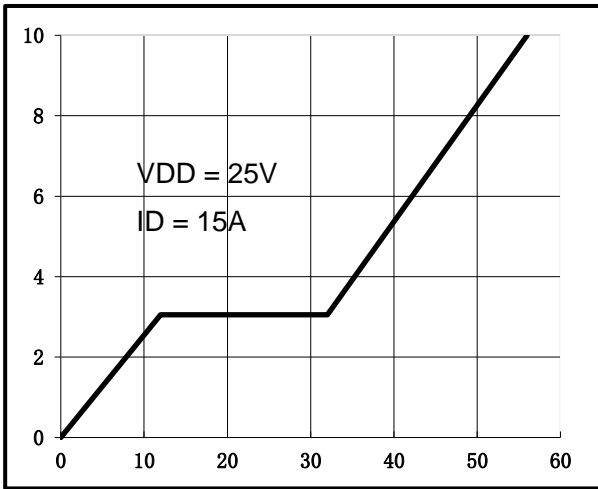


Fig.2 Capacitance Characteristics

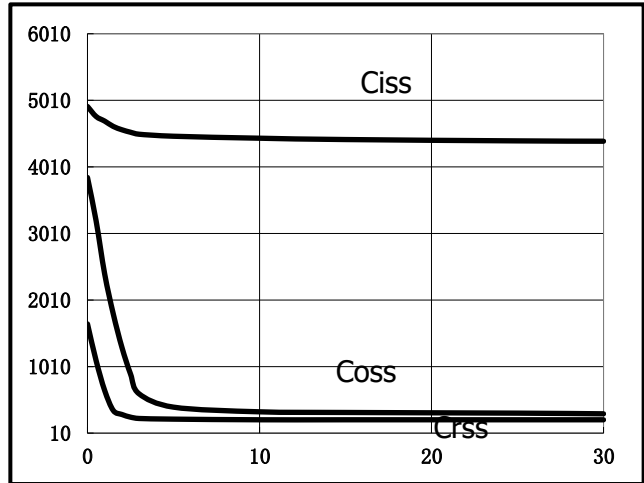


Fig.3 Power Dissipation

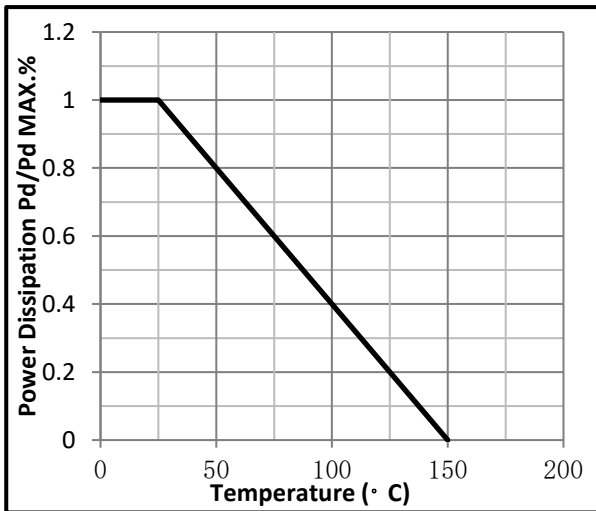


Fig.4 Typical output Characteristics

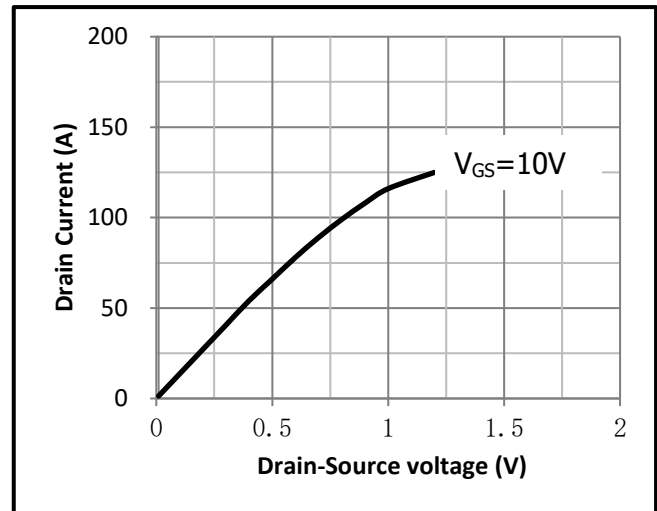


Fig.5 Threshold Voltage V.S Junction Temperature

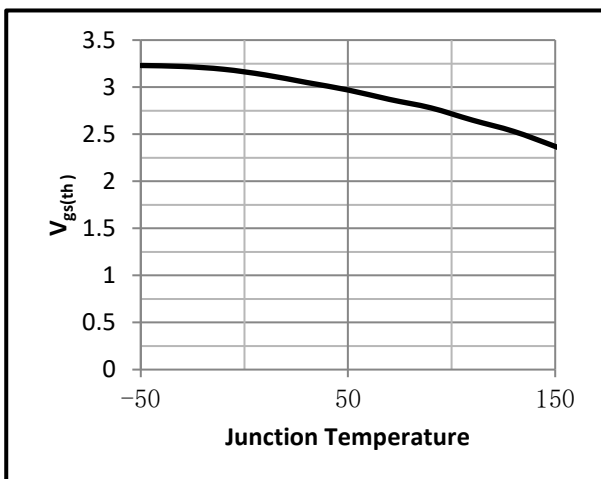


Fig.6 Resistance V.S Drain Current

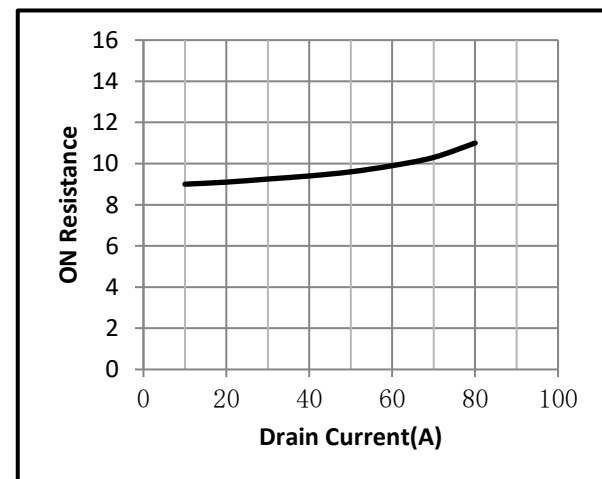


Fig.7 On-Resistance VS Gate Source Voltage

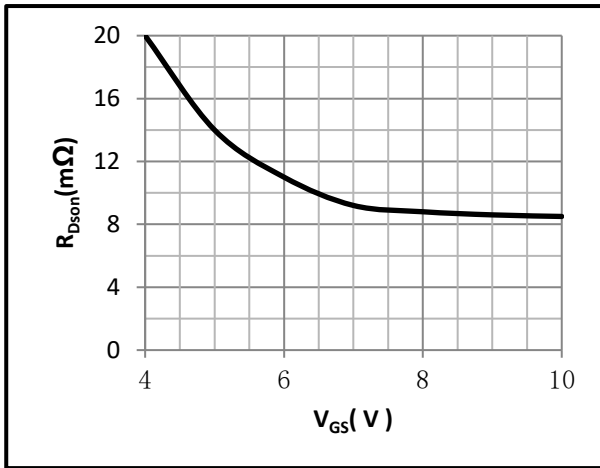


Fig.8 On-Resistance V.S Junction Temperature

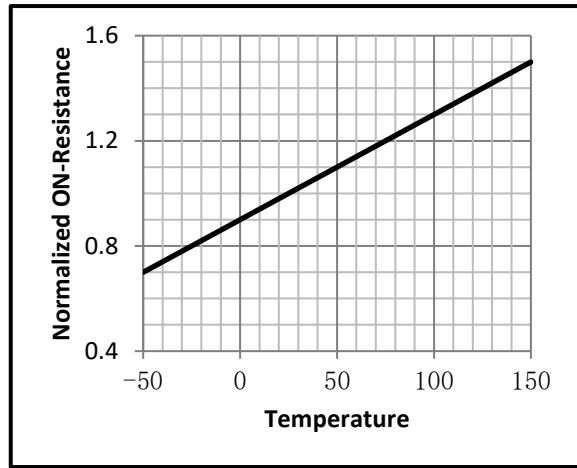


Fig.9 Switching Time Measurement Circuit

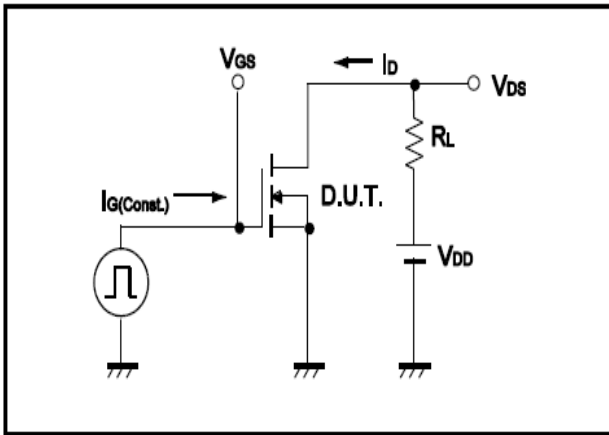


Fig.10 Gate Charge Waveform

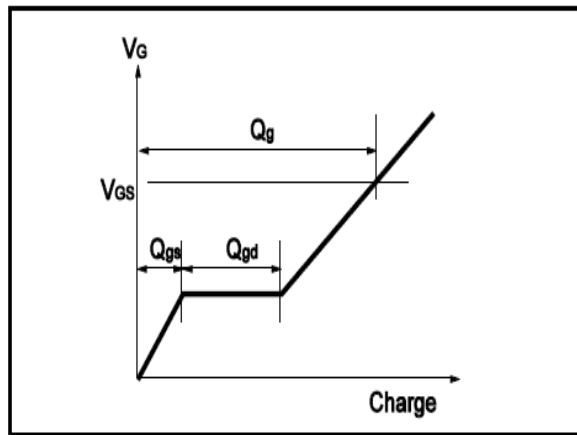


Fig.11 Switching Time Measurement Circuit

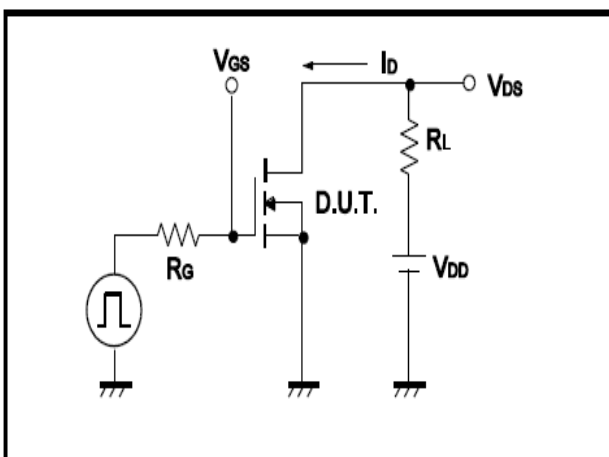
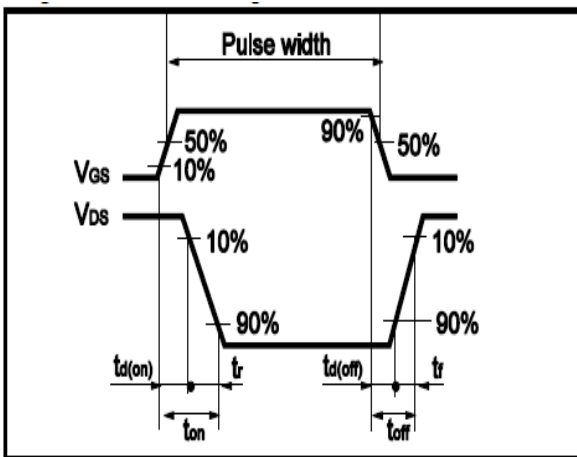


Fig.12 Gate Charge Waveform



• Dimensions (TO-263)

Unit: mm

SYMBOL	MIN	TYP	MAX	SYMBOL	MIN	TYP	MAX
A	4.42		4.72	E	8.99		9.29
B	1.22		1.32	e1	2.44		2.64
b	0.76		0.86	e2	4.98		5.18
b1	1.22		1.32	L1	15.19		15.79
b2	0.33		0.43	L2	2.29		2.79
C	1.22		1.32	L3	1.3		1.75
D	9.95		10.25				

