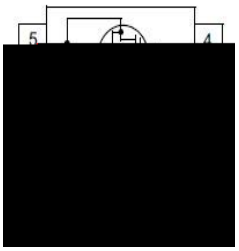
Product Summary

It combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$. Two N Channel MOSFET inside for dual DIE implication.

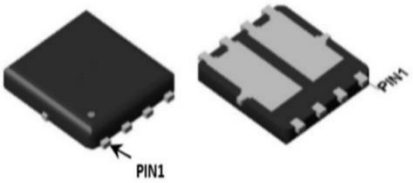


A , Trench technology

$_{DS(ON)}$ to minimize conductive loss

G , C , ,

Dual DIE in one package



Power Management in Notebook Computer

BLDC Motor driver

	ZMD68310N
	ZMD68310
	REEL TAPE
	3000

Absolute Maximum Ratings T_C =25

Parameter	**Symbol**	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D@T_C=25℃	30	A
	I_D@T_C=75℃	22.8	A
	I_D@T_C=100℃	19	A
Pulsed Drain Current ①	I_{DM}	90	A
Total Power Dissipation	P_D@T_C=25℃	78	W
Total Power Dissipation	P_D@T_A=25℃	3.0	W
Operating Junction Temperature	T_J	-55 to 150	℃
Storage Temperature	T_{STG}	-55 to 150	℃
Single Pulse Avalanche Energy	E_{AS}	65	mJ

Thermal resistance

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	R_{thJC}	-	-	1.6	° C/W
Thermal resistance, junction - ambient	R_{thJA}	-	-	37	° 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	30			V
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS} =V_{DS}, I_D =250uA	1.2		2.5	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=30V, 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		V_{GS}=10V, I_D=10A		10	14	mΩ
		V_{GS}=4.5V, I_D=8A		17	22	mΩ
Forward Transconductance	g_{FS}	V_{DS} =10V, I_D=5A		4		s
Source-drain voltage	V_{SD}	Is=10A			1.28	V

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	Ciss	f = 1MHz	-	560	-	pF
Output capacitance	Coss		-	81	-	
Reverse transfer capacitance	Crss		-	49	-	

Gate Charge characteristics(T_a = 25)

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Total gate charge	Qg	V_{DD} =4.5V I_D = 8A V_{GS} = 10V	-	9.2	10	nC
Gate - Source charge	Qgs		-	2.7	3.2	
Gate - Drain charge	Qgd		-	1.5	2.0	
Body Diode Reverse Recovery Time	trr	IF=20A, di/dt=100A/μs		5.5		nS
Body Diode Reverse Recovery Charge	Qrr	IF=20A, di/dt=100A/μs		4		nC

N Channel characteristics curve

Fig.1 Power Dissipation Derating Curve

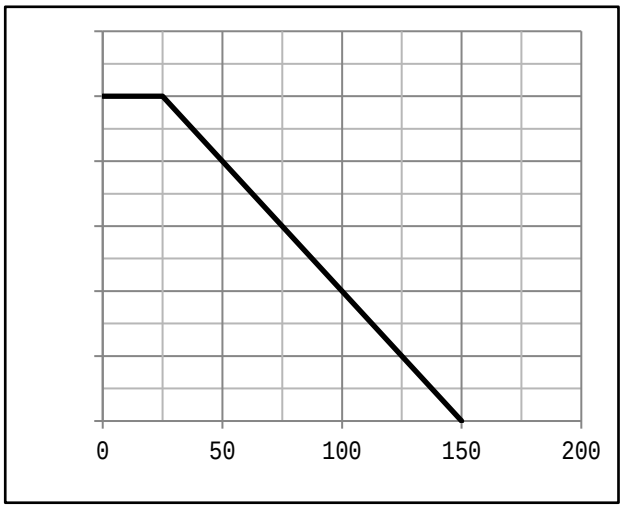


Fig.2 Typical output Characteristics

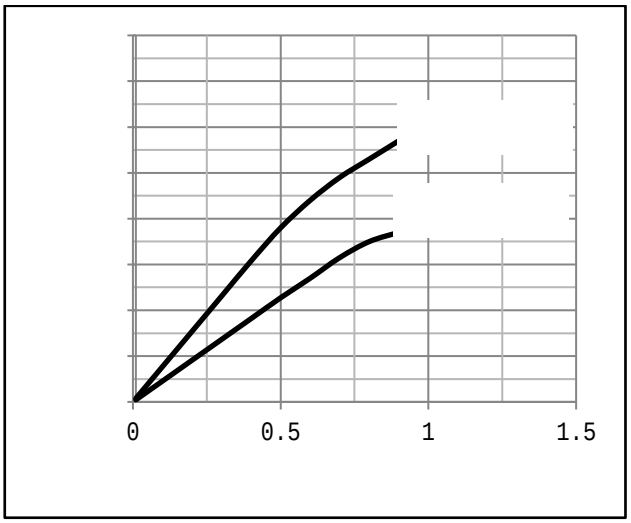


Fig.3 Threshold Voltage V.S Junction Temperature

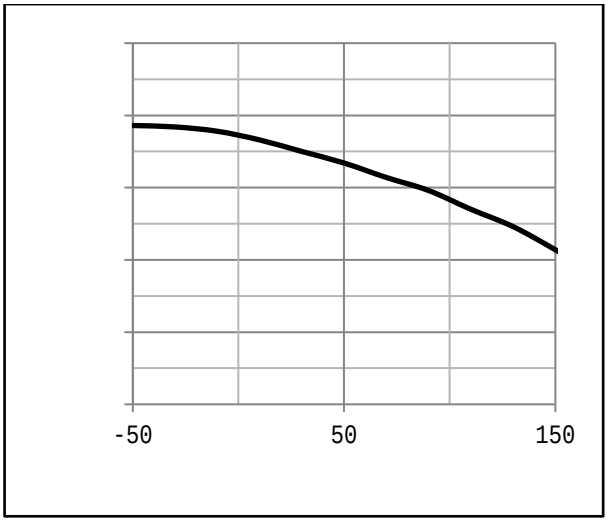
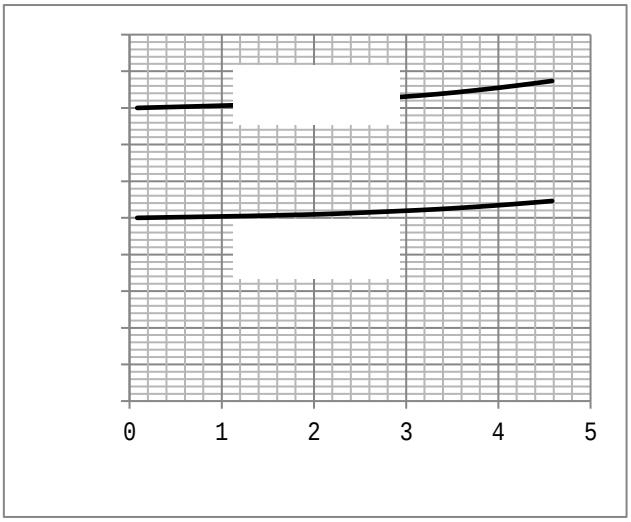
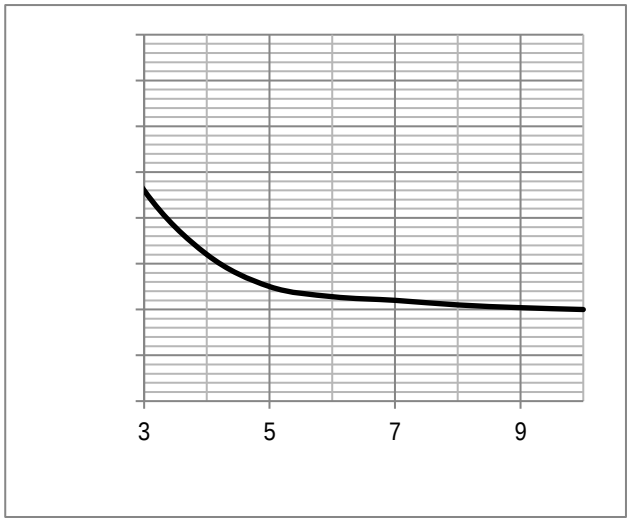
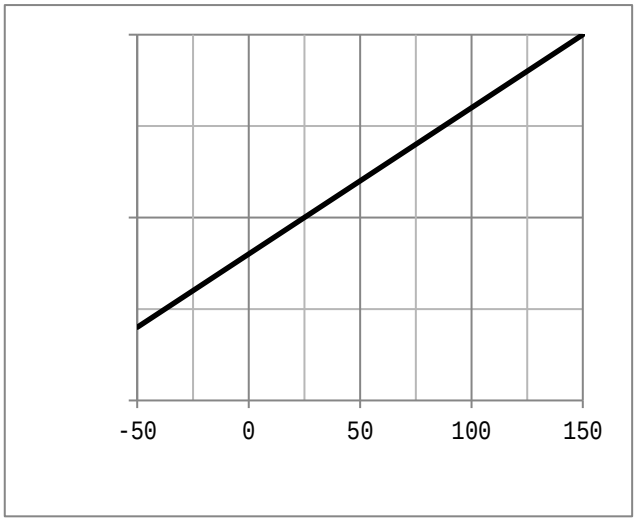


Fig.4 Resistance V.S Drain Current







Test Circuit

Fig.1 Switching Time Measurement Circuit

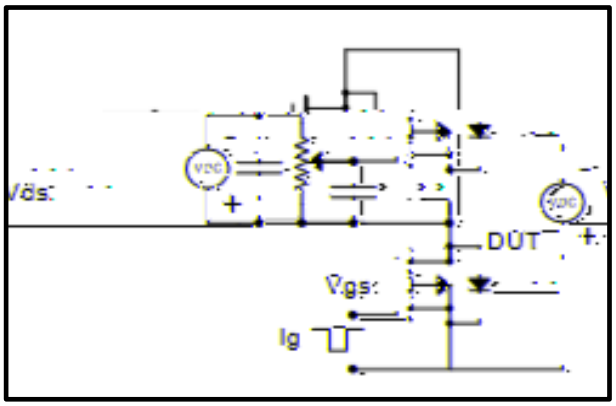


Fig.2 Gate Charge Waveform

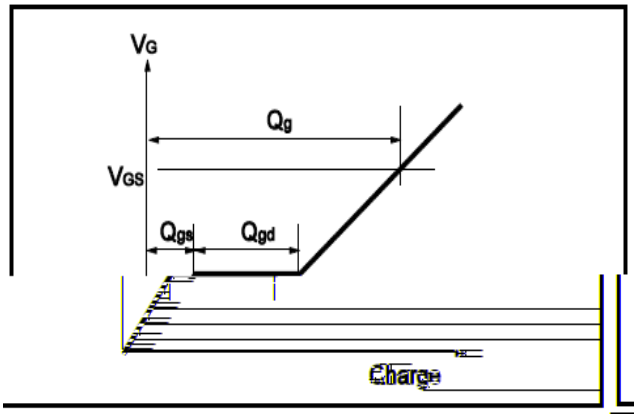


Fig.3 Switching Time Measurement Circuit

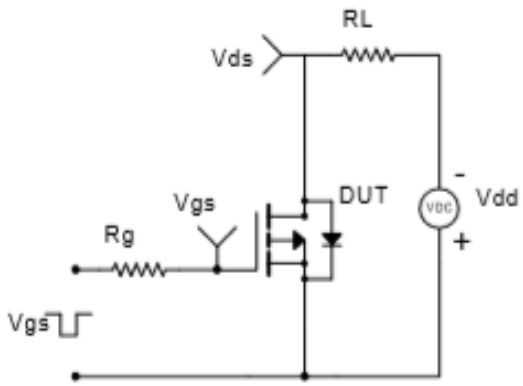


Fig.4 Gate Charge Waveform

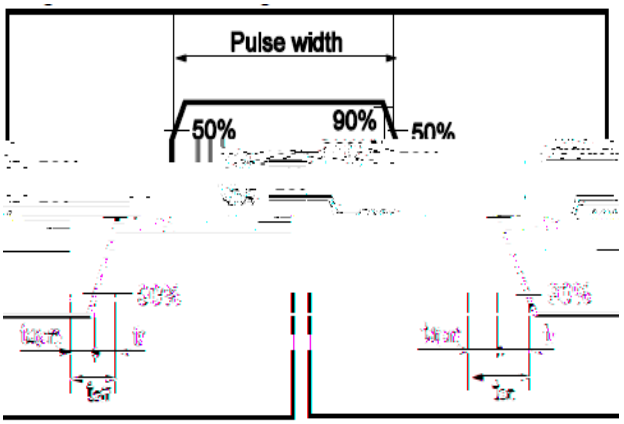


Fig.5 Avalanche Measurement Circuit

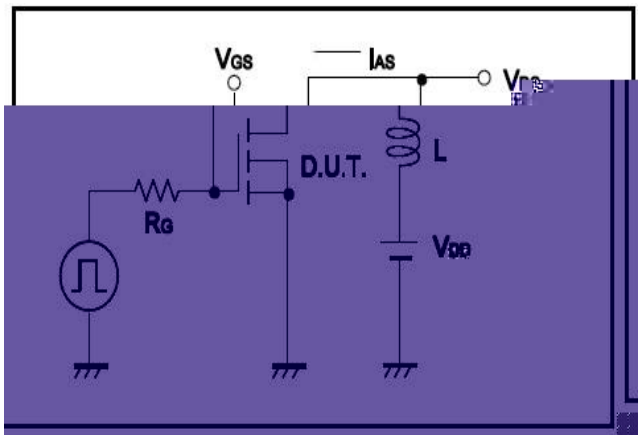
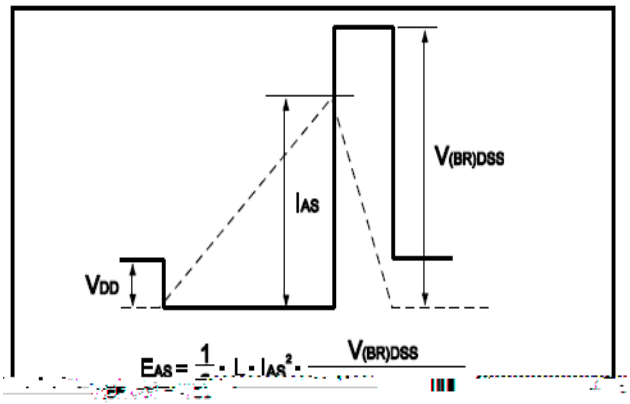


Fig.6 Avalanche Waveform



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