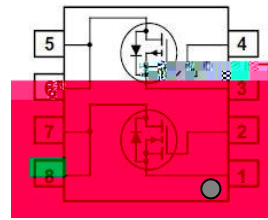


Product Summary

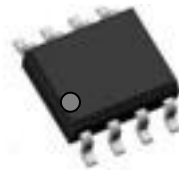
The ZMC88302S combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$. It combines one N Channel MOSFET and one P channel MOSFET.


2

Trench technology

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

Dual DIE in one package



Power Management in Notebook Computer
 BLDC Motor driver

Part NO.	ZMC88302S
Marking	ZMC88302
Packing Information	REEL TAPE
Basic ordering unit (pcs)	4000

Thermal resistance

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	R_{thJC}	-	-	34	$^{\circ}C/W$
Thermal resistance, junction - ambient	R_{thJA}	-	-	180	$^{\circ}C/W$
Soldering temperature, wavesoldering for 10s	T_{sold}	-	-	265	$^{\circ}C$

N Channel 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	$I_D @ T_C = 25$	9	A
	$I_D @ T_C = 75$	6.8	A
	$I_D @ T_C = 100$	5.7	A



Dynamic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	Ciss	f = 1MHz V _{DS} =25V	-	560	-	pF
Output capacitance	Coss		-	81	-	
Reverse transfer capacitance	Crss		-	49	-	
Total gate charge	Qg	V _{DD} = 25V	-	10	-	nC
Gate - Source charge	Qgs	I _D = 5A	-	1.6	-	
Gate - Drain charge	Qgd	V _{GS} = 10V	-	2.8	-	

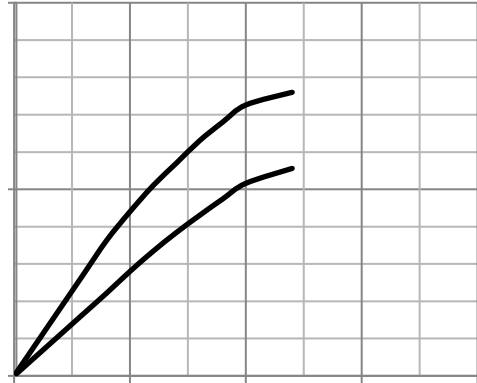
P Channel Electronic Characteristics

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 = -6A				
		V _{GS} = -4.5V, I _D = -4A				
Forward Transconductance	g _{FS}	V _{DS} = -10V, I _D = -5A				
Source-drain voltage	V _{SD}	I _S = -6A				

Dynamic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	Ciss	f = 1MHz V _{DS} =25V	-	1490	-	pF
Output capacitance	Coss		-	141	-	
Reverse transfer capacitance	Crss		-	105	-	
Total gate charge	Qg	V _{DD} = 25V	-	25	-	nC
Gate - Source charge	Qgs	I _D = 6A	-	3.9	-	
Gate - Drain charge	Qgd	V _{GS} = 10V	-	5.5	-	





Test Circuit CHANNEL-N

Fig.1 Switching Time Measurement Circuit

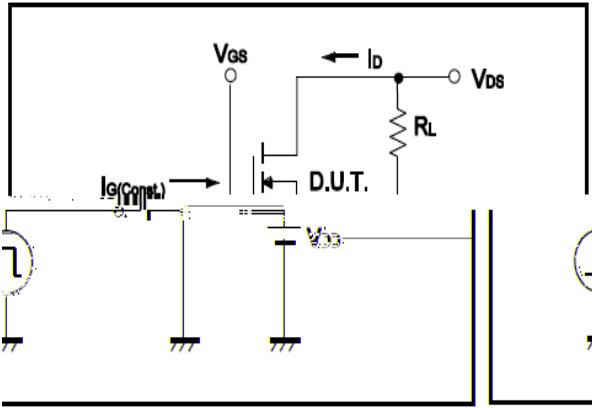


Fig.2 Gate Charge Waveform

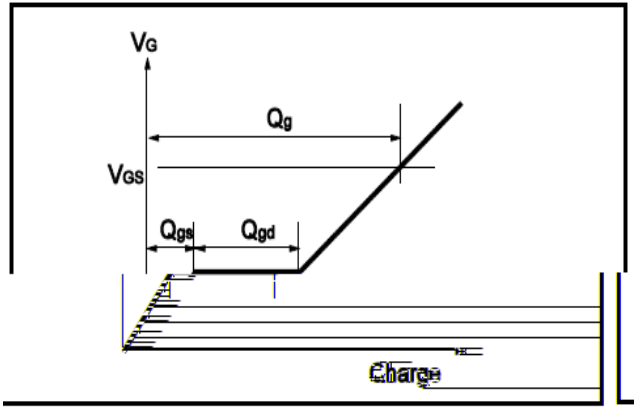


Fig.3 Switching Time Measurement Circuit

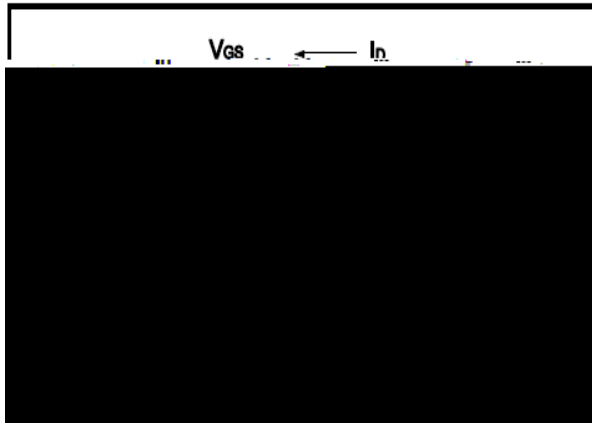


Fig.4 Gate Charge Waveform

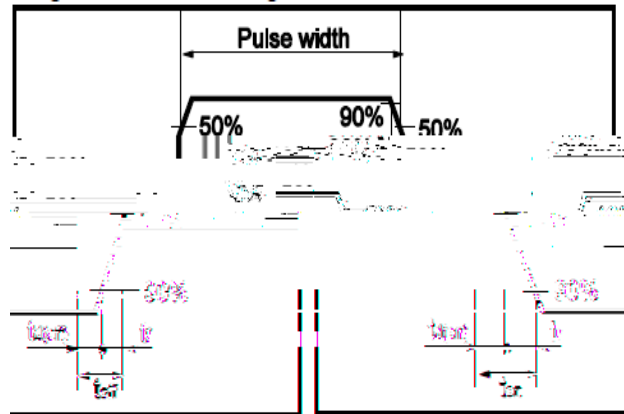


Fig.5 Avalanche Measurement Circuit

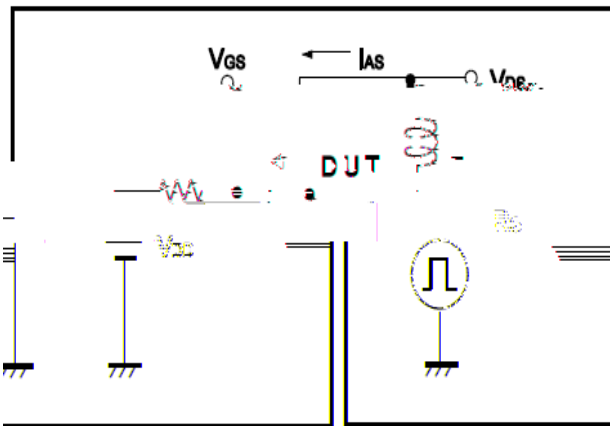
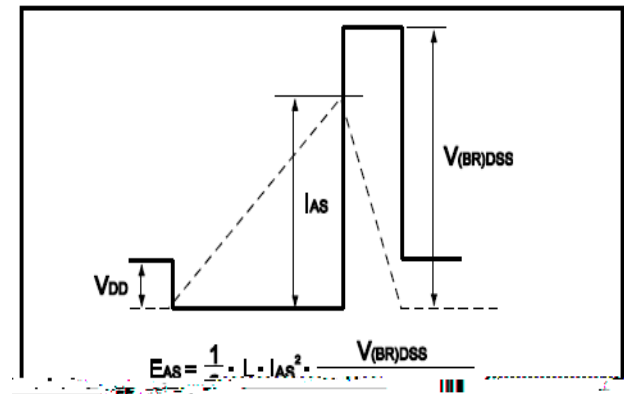


Fig.6 Avalanche Waveform



Test Circuit CHANNEL-P

Fig.7 Switching Time Measurement Circuit

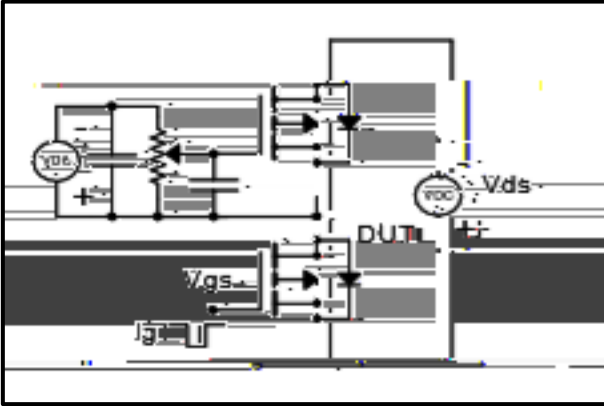


Fig.8 Gate Charge Waveform

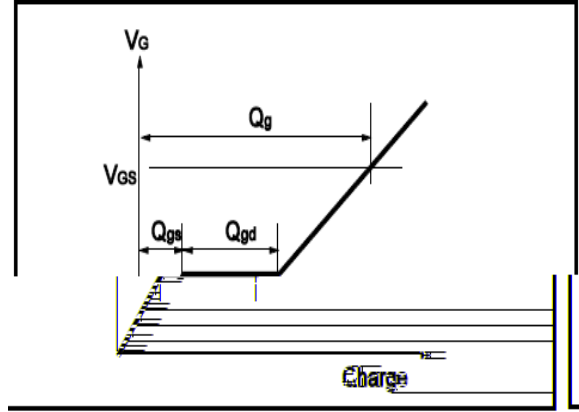


Fig.9 Switching Time Measurement Circuit

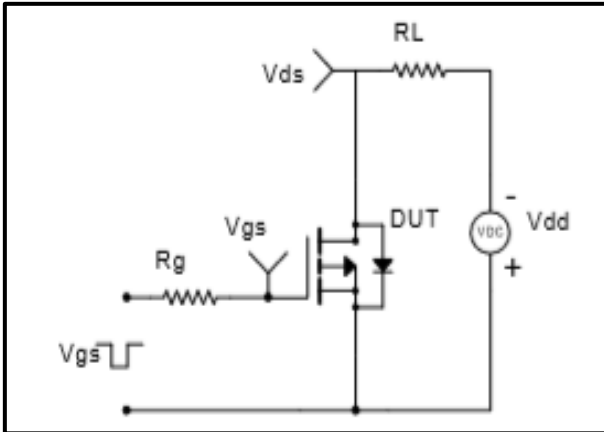


Fig.10 Gate Charge Waveform

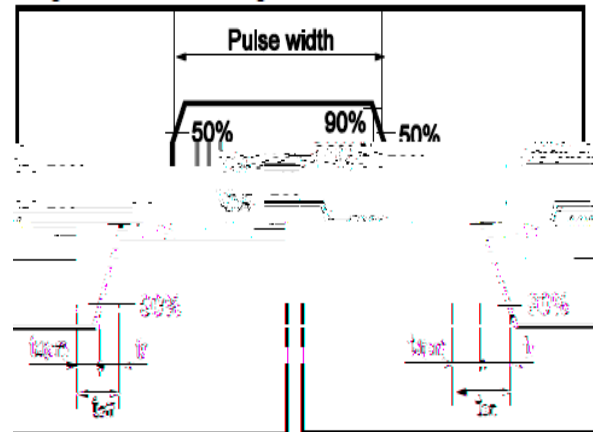


Fig.11 Avalanche Measurement Circuit

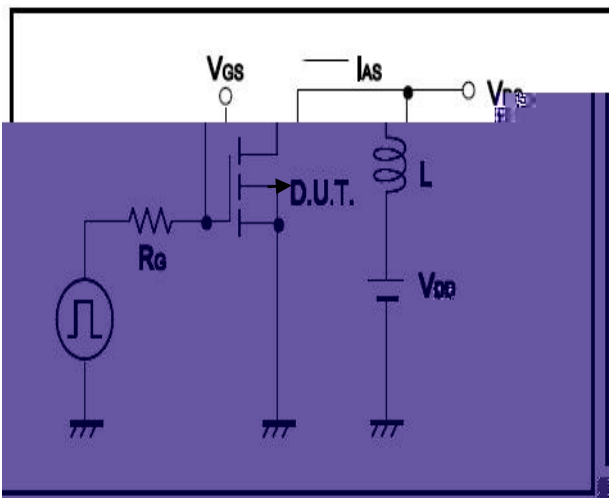
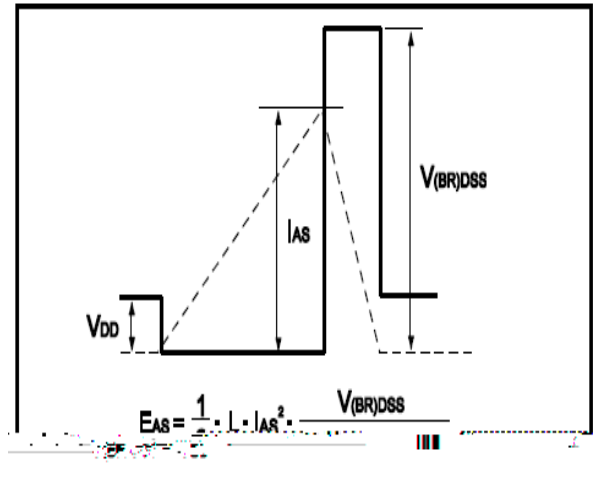


Fig.12 Avalanche Waveform





Dimensions (SOP8)

Unit: mm

SYMBOL	min	TYP	max	SYMBOL	min	max
A	4.80		5.25	C	1.30	1.75
A1	0.37		0.49	C1	0.55	0.75
A2		1.27		C2	0.55	0.65
A3		0.41		C3	0.05	0.20
B	5.80		6.20	C4	0.712	