

**L I**
**Product Summary**

The ZMP68301S combines advanced trench MOSFET technology with a low resistance package to provide extremely low  $R_{DS(ON)}$ . Two P Channel MOSFET inside for dual DIE implication.

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

Dual DIE in one package

**F**

Power Management in Notebook Computer  
 BLDC Motor driver

**T**

Part NO.	ZMP68301
Marking	ZMP68301
Packing Information	REEL TAP
Basic ordering unit (pcs)	

**P Channel Absolute Maximum Ratings  $T_c = 25$** 

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_{D@TC=25}$	-10	A
	$I_{D@TC=75}$	-7.6	A
	$I_{D@TC=100}$	-6.3	A
Pulsed Drain Current	$I_{DM}$	-24	A
Total Power Dissipation	$P_D@TC=25$	3.6	W
Total Power Dissipation	$P_D@TA=25$	0.69	W
Operating Junction Temperature	$T_J$	-55 to 150	
Storage Temperature	$T_{STG}$	-55 to 150	
Single Pulse Avalanche Energy	$E_{AS}$	75	mJ

**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	$^{\circ}C$

**Electronic Characteristics**

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS}=V_{DS}, I_D=-250\mu A$	-1.2		-2.5	V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS}=-30V, V_{GS}=0V$			-1.0	$\mu A$
Gate- Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$			100	nA
Static Drain-source On Resistance		$V_{GS}=-20V, I_D=-20A$				
		$V_{GS}=-10V, I_D=-20A$				
		$V_{GS}=-4.5V, I_D=-10A$				
Forward Transconductance	$g_{FS}$	$V_{DS}=-10V, I_D=-5A$				
Source-drain voltage	$V_{SD}$	$I_S=-20A$				

**H**

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	$C_{iss}$	$f = 1MHz$	-	1650	1980	pF
Output capacitance	$C_{oss}$		-	330	396	
Reverse transfer capacitance	$C_{rss}$		-	213	255	

**Gate Charge characteristics( $T_a = 25$  )**

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Total gate charge	$Q_g$	$V_{DD}=25V$	-	18	-	nC
Gate - Source charge	$Q_{gs}$	$I_D = 8A$	-	6	-	
Gate - Drain charge	$Q_{gd}$	$V_{GS} = 10V$	-	9	-	

**P Channel characteristics curve**

Fig.1 Power Dissipation Derating Curve

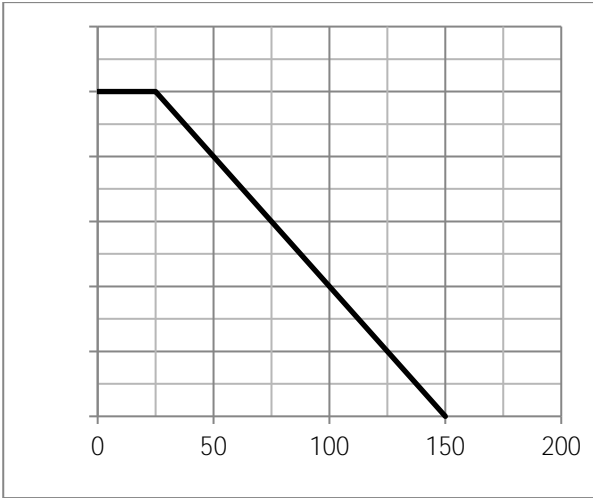


Fig.2 Typical output Characteristics

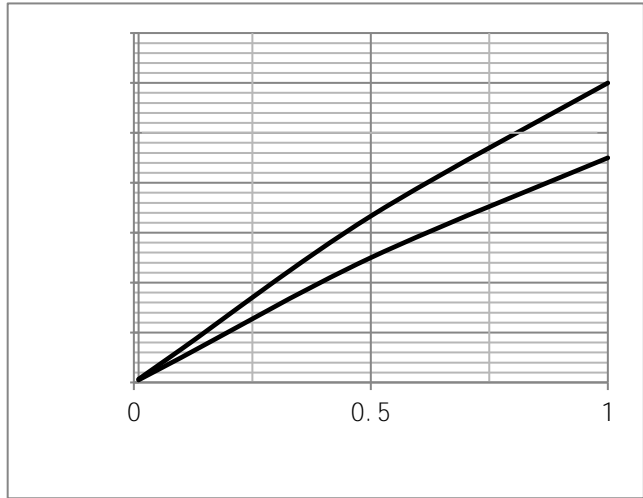


Fig.3 Threshold Voltage V.S Junction Temperature

Fig.4 Resistance V.S Drain Current

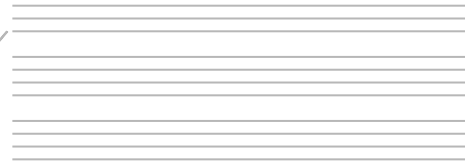
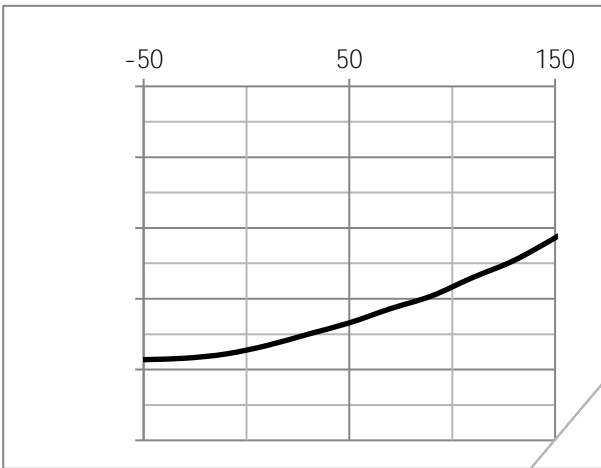




Fig.13 Switching Time Measurement Circuit

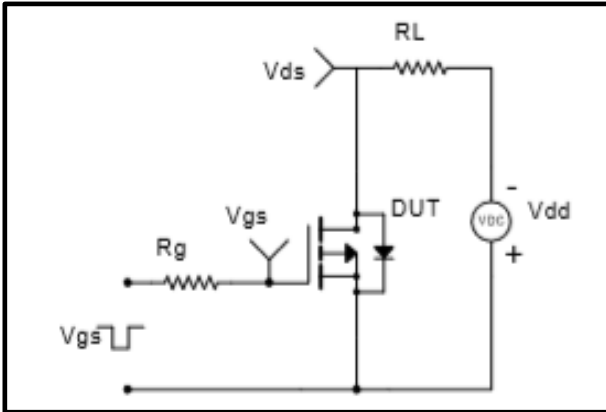


Fig.14 Gate Charge Waveform

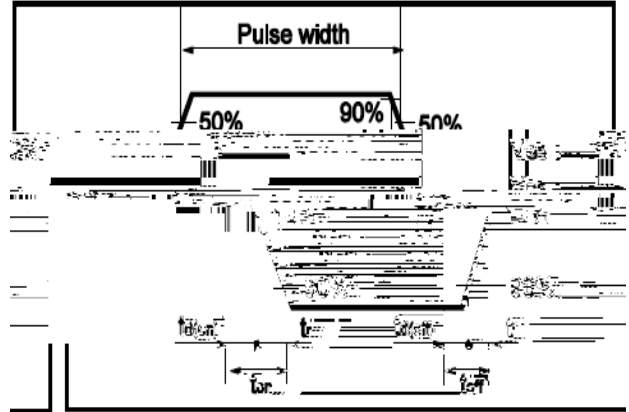


Fig.15 Avalanche Measurement Circuit

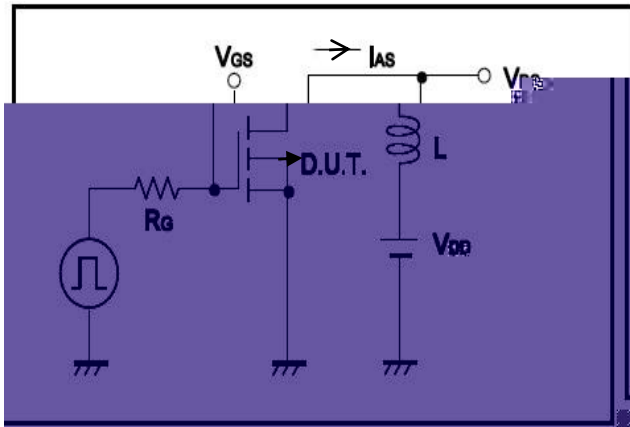


Fig.16 Avalanche Waveform

