



The ZMS030N06HN combines advanced SGT MOSFET technology with a low resistance package to provide extremely low  $R_{DS(ON)}$ .

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

Synchronous Rectification for AC-DC/DC-DC converter

$T_C = 25$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_{D@TC=25}$	120	A
	$I_{D@TC=75}$	91	A
	$I_{D@TC=100}$	75	A
Pulsed Drain Current	$I_{DM}$	300	A
Total Power Dissipation( $TC=25$ )	$P_D@TC=25$	85	W
Total Power Dissipation( $TA=25$ )	$P_D@TA=25$	3.4	W
Operating Junction Temperature	$T_J$	-55 to 150	
Storage Temperature	$T_{STG}$	-55 to 150	
Single Pulse Avalanche Energy	$E_{AS}$	1200	mJ
Avalanche Current@ $L=0.1mH$	$I_{AS}$	50	A

**Thermal resistance**

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	$R_{thJC}$	-	-	1.5	$^{\circ}C/W$
Thermal resistance, junction - ambient	$R_{thJA}$	-	-	37	$^{\circ}C/W$
Soldering temperature, wave soldering for 10s	$T_{sold}$	-	-	265	$^{\circ}C$

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	2		4	V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$			1.0	$\mu A$
Gate- Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$			100	nA
Static Drain-source On Resistance		$V_{GS}=10V, I_D=30A$				
Forward Transconductance	$g_{FS}$	$V_{DS}=25V, I_D=10A$				
Source-drain voltage	$V_{SD}$	$I_S=30A$				

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	$C_{iss}$	$V_{GS}=0V, V_{DS}=30V$ $f = 1MHz$	-	2900	-	pF
Output capacitance	$C_{oss}$		-	880	-	
Reverse transfer capacitance	$C_{rss}$		-	105	-	

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

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Total gate charge	$Q_g$	$V_{DD} = 30V$ $I_D = 20A$ $V_{GS} = 10V$	-	35	-	nC
Gate - Source charge	$Q_{gs}$		-	10	-	
Gate - Drain charge	$Q_{gd}$		-	11	-	

Note:

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Fig.1 Gate-Charge Characteristics

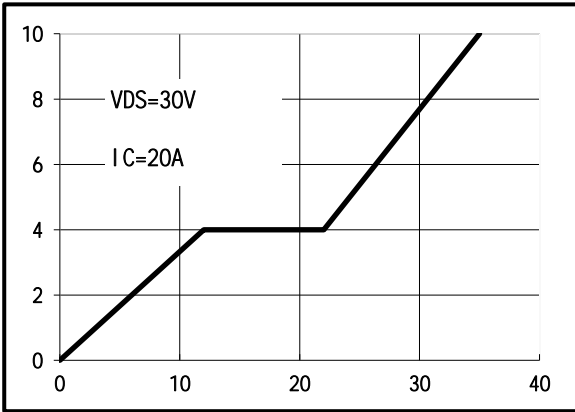


Fig.2 Capacitance Characteristics

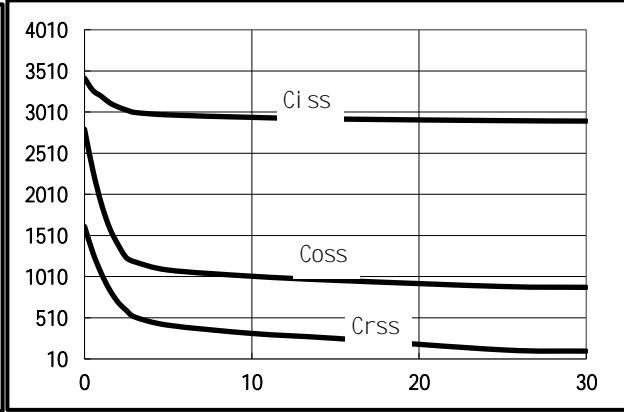


Fig.3 Power Dissipation

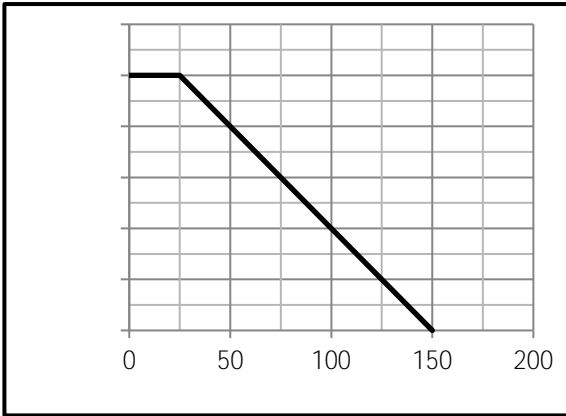


Fig.4 Typical output Characteristics

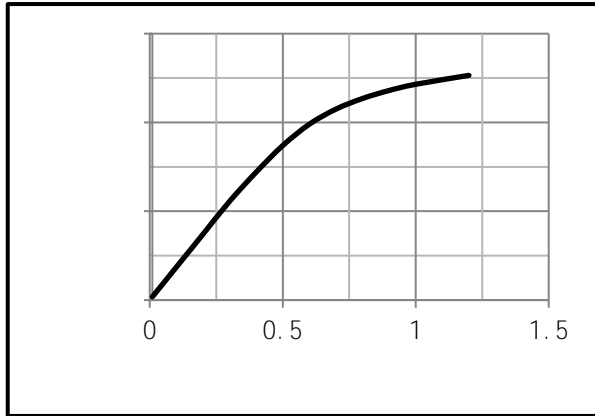


Fig.5 Threshold Voltage V.S Junction Temperature

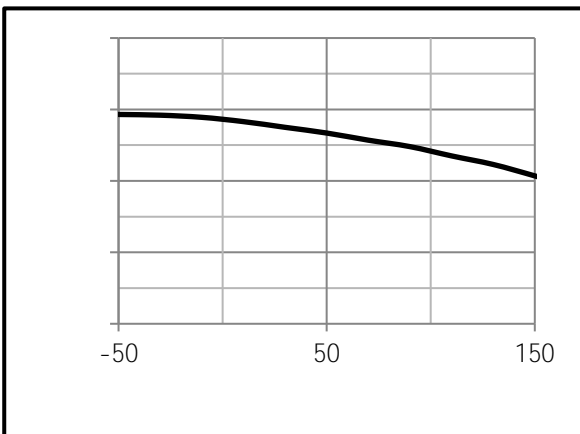
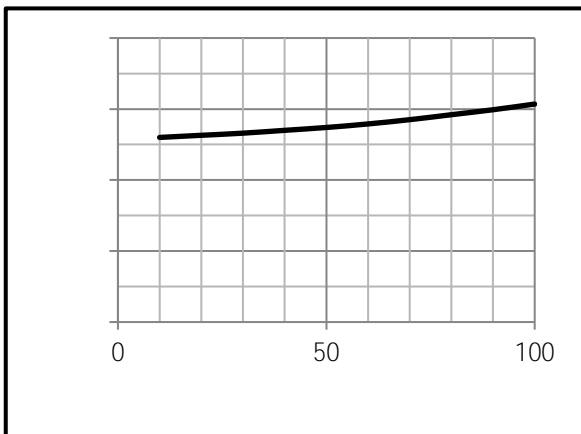


Fig.6 Resistance V.S Drain Current



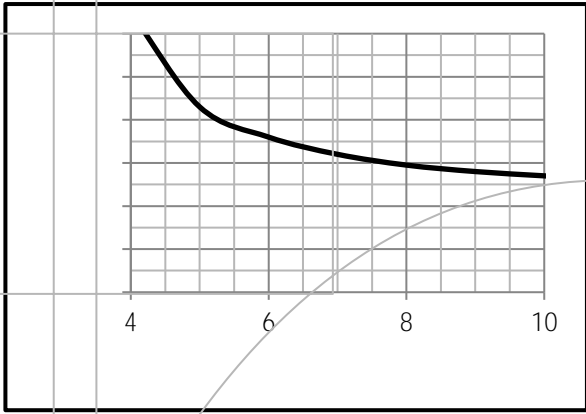


Fig.9 Switching Time Measurement Circuit

Fig.10 Gate Charge Waveform

Fig.11 Switching Time Measurement Circuit

Fig.12 Gate Charge Waveform



Fig.13 Avalanche Measurement Circuit

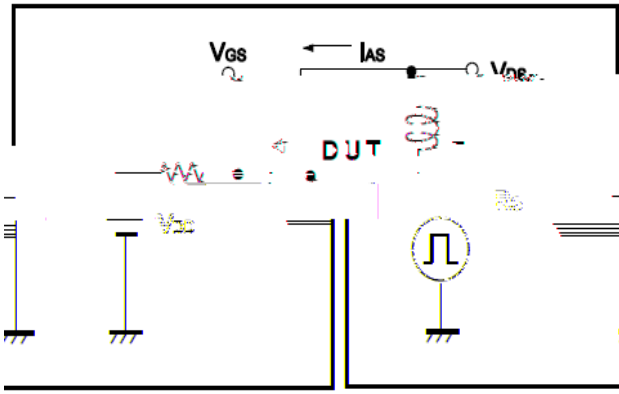
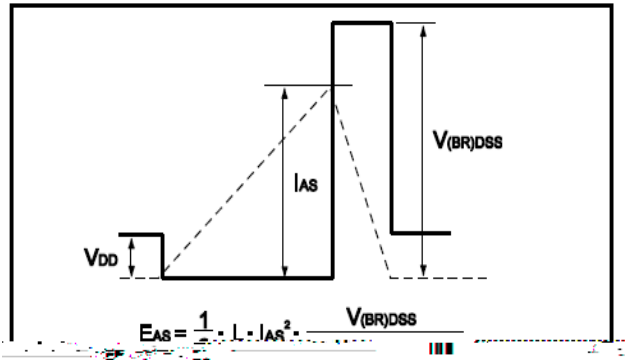


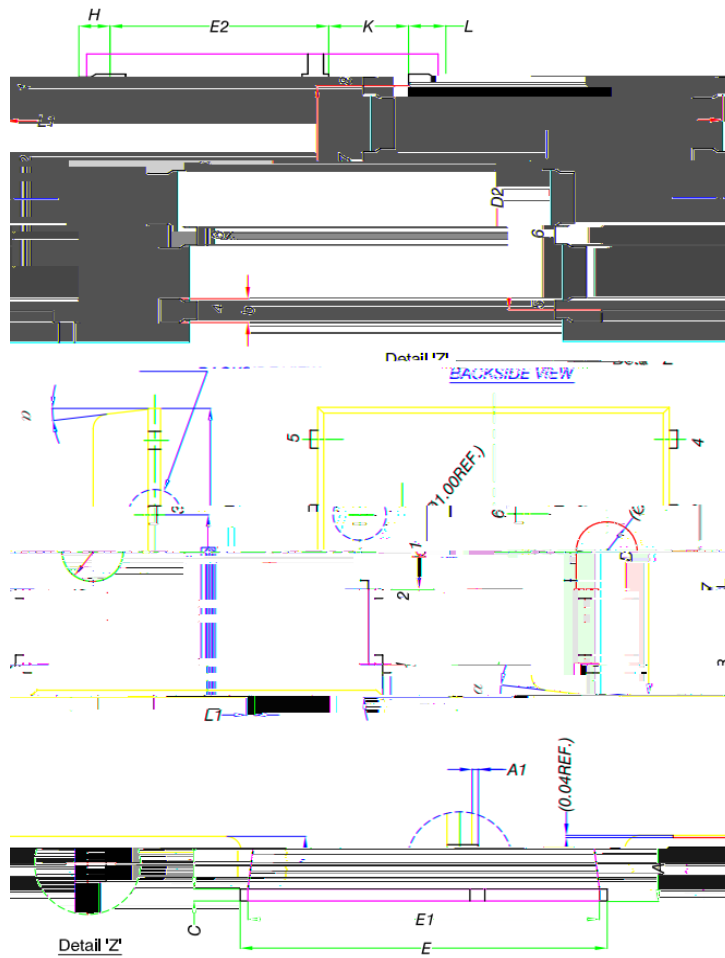
Fig.14 Avalanche Waveform





Dimensions (DFN5x6)

Unit mm



MILLIMETERS

D1	4.80	4.90	5.00
D2	3.67	3.81	3.96
	5.90	6.00	6.10
E1	5.70	5.78	5.88
e	1.27 BSC		
	0.41	0.51	0.61
	H		
	K		
	0.51	0.61	0.71
	0.51	0.61	0.71
	0.51	0.61	0.71
	12°		