



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}	± 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	μA
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

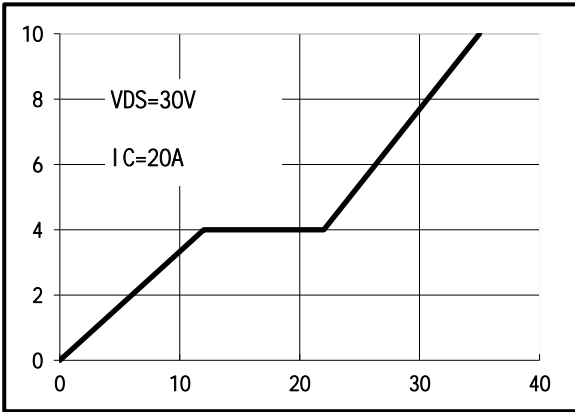


Fig.2 Capacitance Characteristics

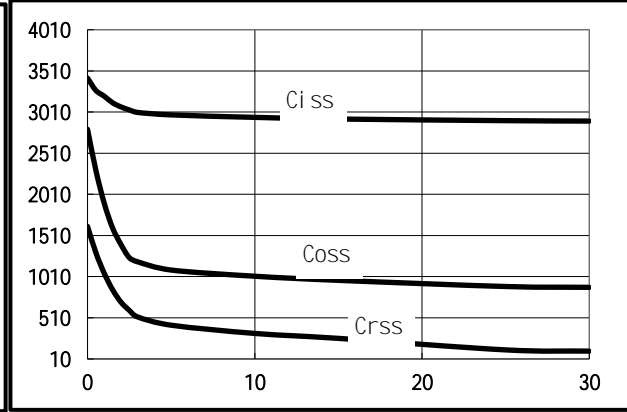


Fig.3 Power Dissipation

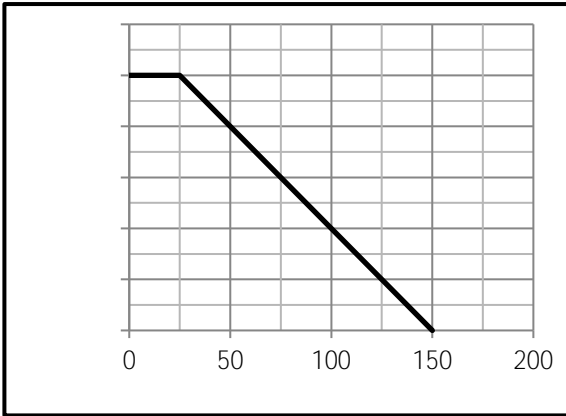


Fig.4 Typical output Characteristics

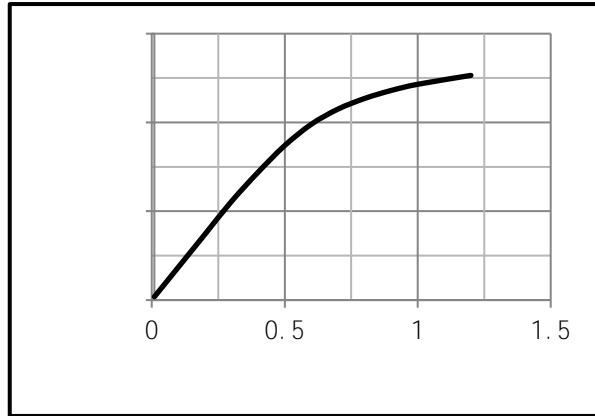


Fig.5 Threshold Voltage V.S Junction Temperature

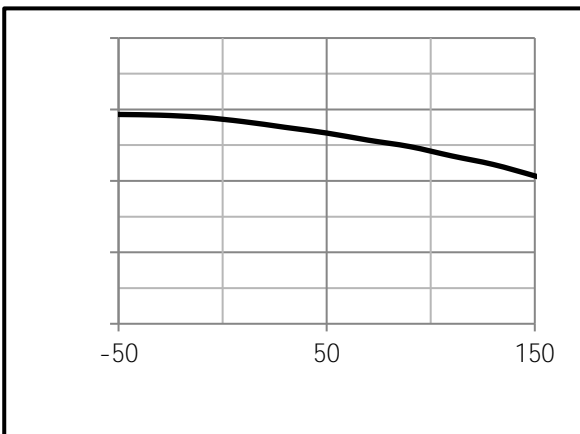
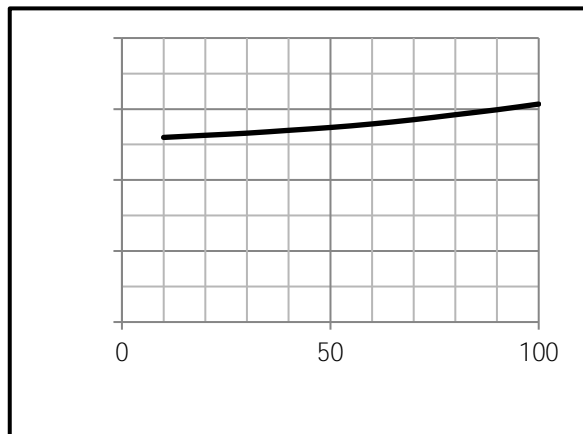


Fig.6 Resistance V.S Drain Current



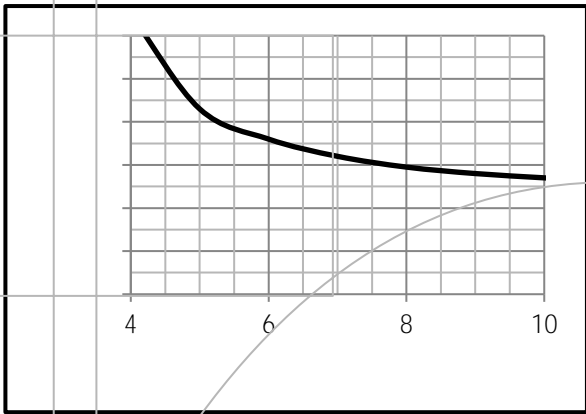


Fig.9 Switching Time Measurement Circuit

Fig.10 Gate Charge Waveform

Fig.11 Switching Time Measurement Circuit

Fig.12 Gate Charge Waveform



Fig.13 Avalanche Measurement Circuit

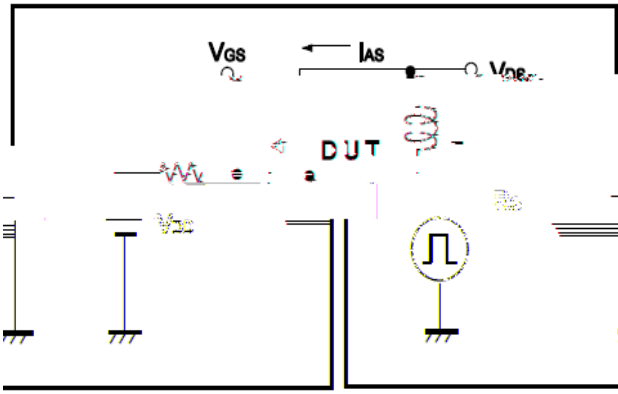
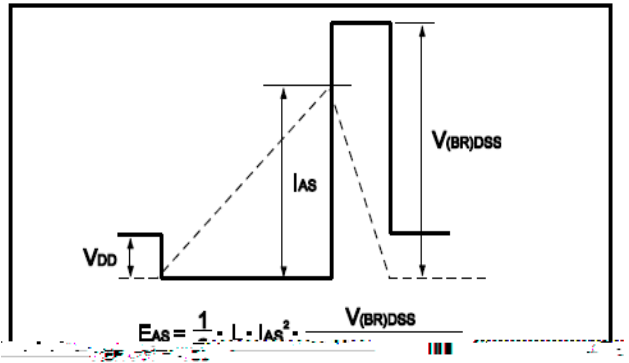


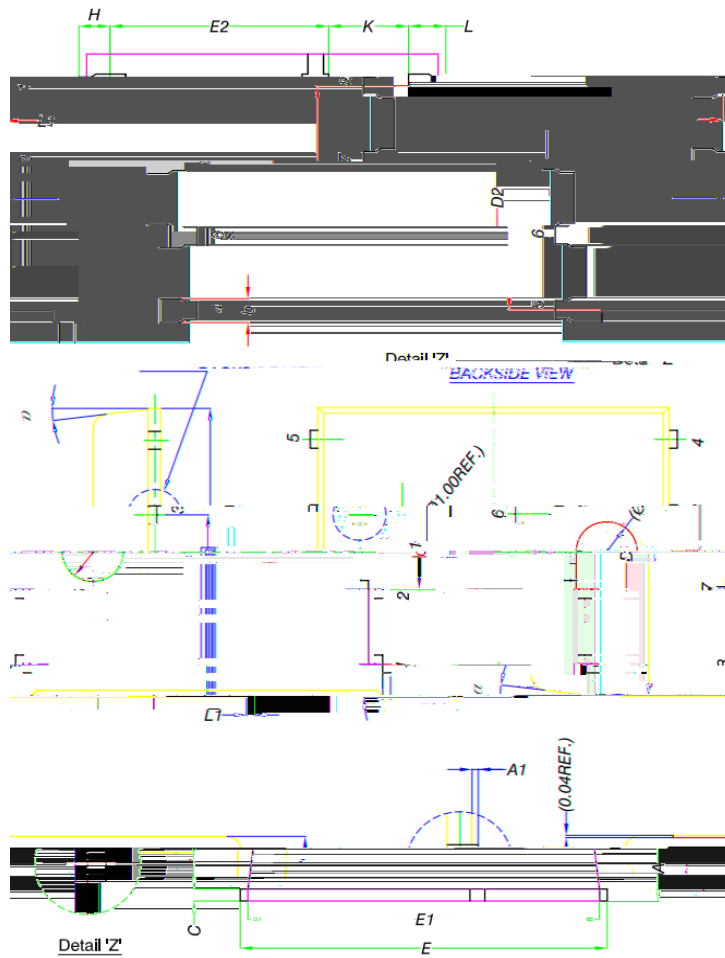
Fig.14 Avalanche Waveform





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
	1.10		
		0.51	0.61
		0.51	0.61
		0.51	0.61
		12°	