



**General Description**

The ZM140N10HN combines advanced trench MOSFET technology with a low resistance package to provide extremely low  $R_{DS(ON)}$ .

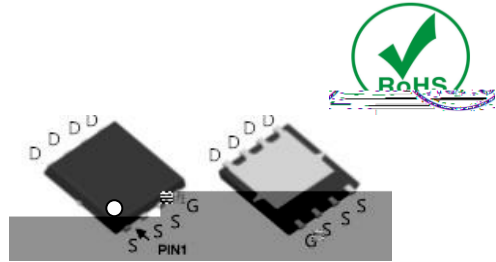
**Features**

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

**Application**

Synchronous Rectification for AC-DC/DC-DC converter  
 Oring switches

**Product Summary**



**Ordering Information:**

	REEL TAPE
	3000

**Absolute Maximum Ratings**  $T_C = 25$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current( $T_C=25$ )	$I_{D@TC=25}$	40	A
	$I_{D@TC=75}$	30	A
	$I_{D@TC=100}$	25	A
Pulsed Drain Current	$I_{DM}$	105	A
Total Power Dissipation( $T_C=25$ )	$P_D@TC=25$	85	W
Total Power Dissipation( $T_A=25$ )	$P_D@TA=25$	3.4	W
Operating Junction Temperature	$T_J$	-55 to 150	
Storage Temperature	$T_{STG}$	-55 to 150	
Single Pulse Avalanche Energy@ $L=0.1mH$	$E_{AS}$	80	mJ

**Thermal resistance**

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

**Electronic Characteristics**

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	100			V
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	2		4	V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$			1.0	$\mu A$
Gate- Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 100$	nA
Static Drain-source On Resistance		$V_{GS}=10V, I_D=20A$		14	17	m
		$V_{GS}=4.5V, I_D=12A$		17	20	m



Fig.1 Gate-Charge Characteristics

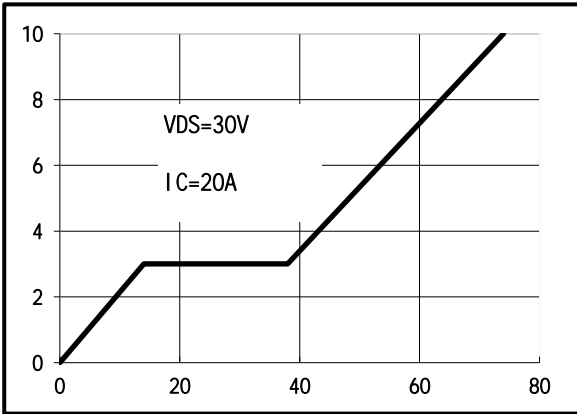


Fig.2 Capacitance Characteristics

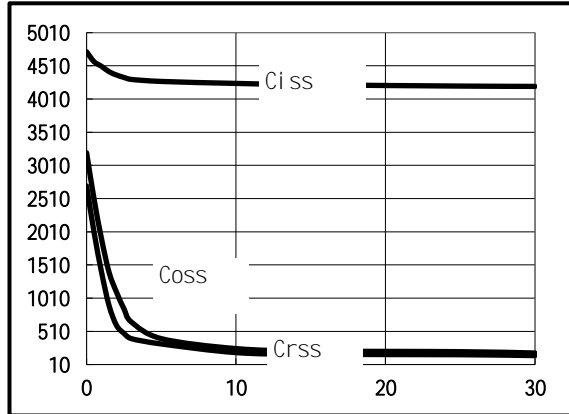


Fig.3 Power Dissipation

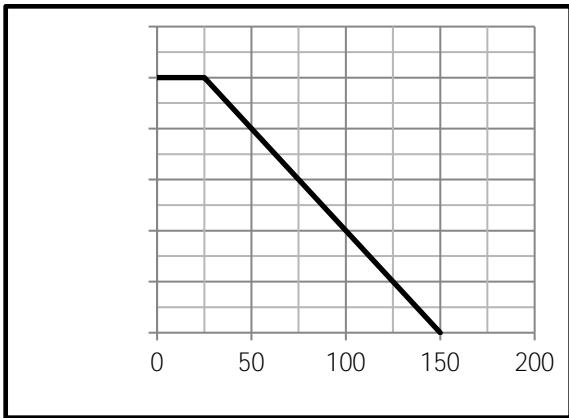


Fig.4 Typical output Characteristics

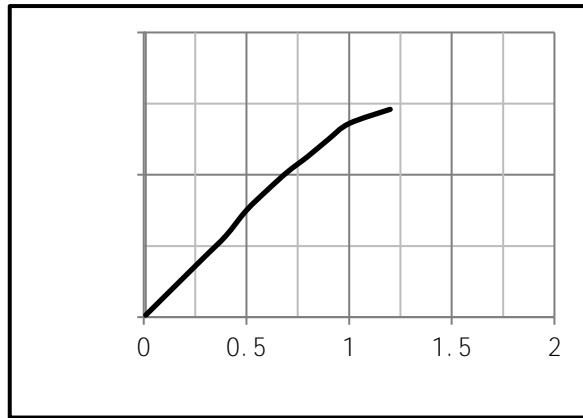


Fig.5 Threshold Voltage V.S Junction Temperature

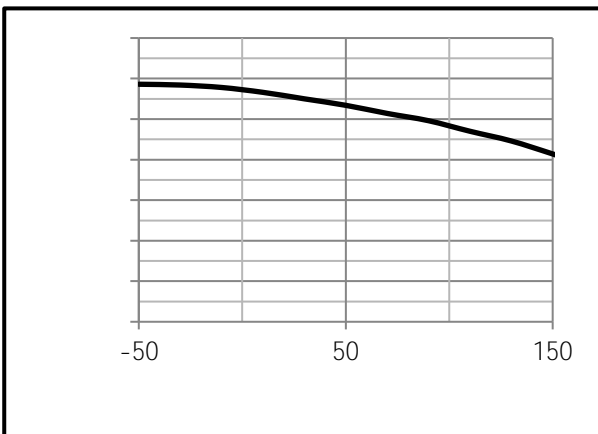
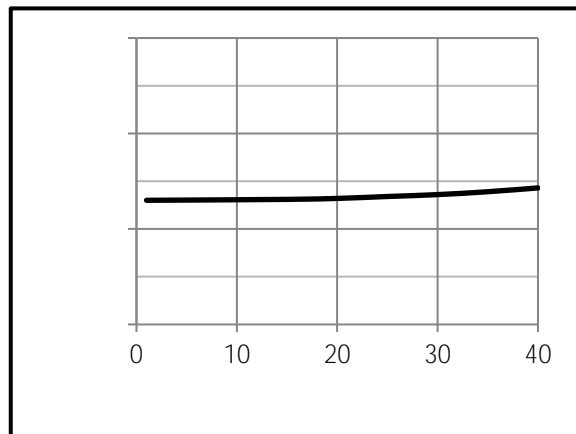


Fig.6 Resistance V.S Drain Current



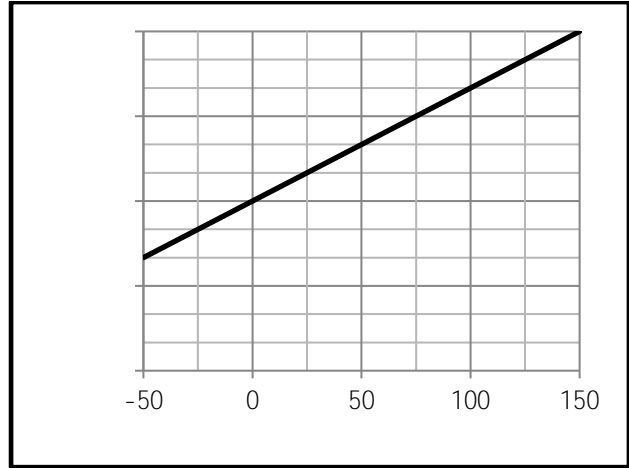
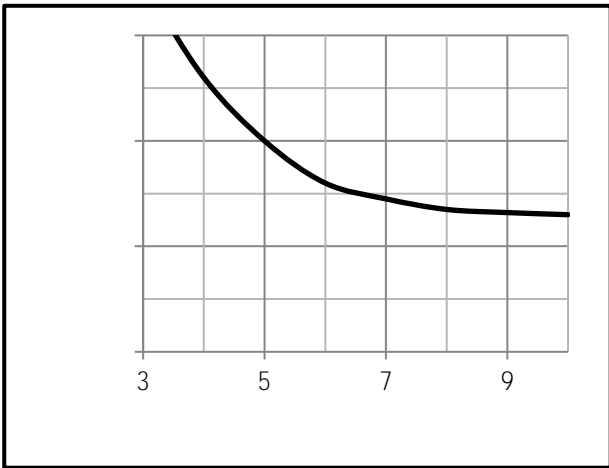


Fig.9 Switching Time Measurement Circuit

Fig.10 Gate Charge Waveform

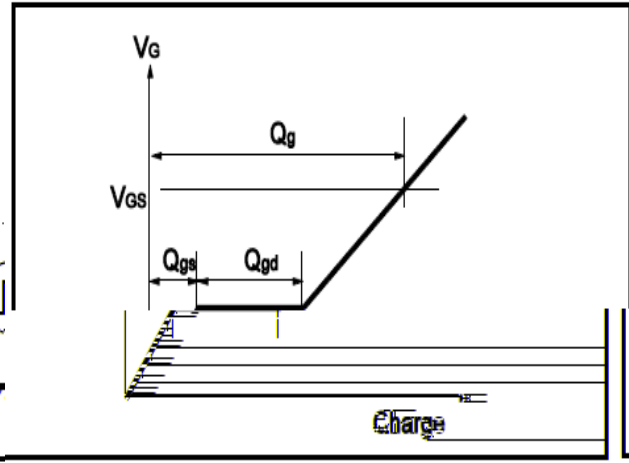
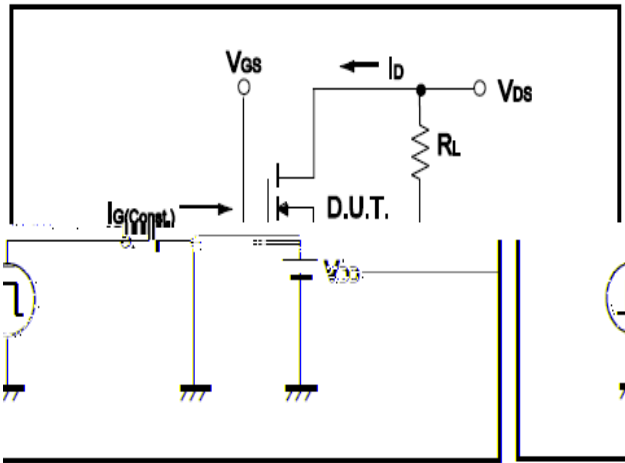
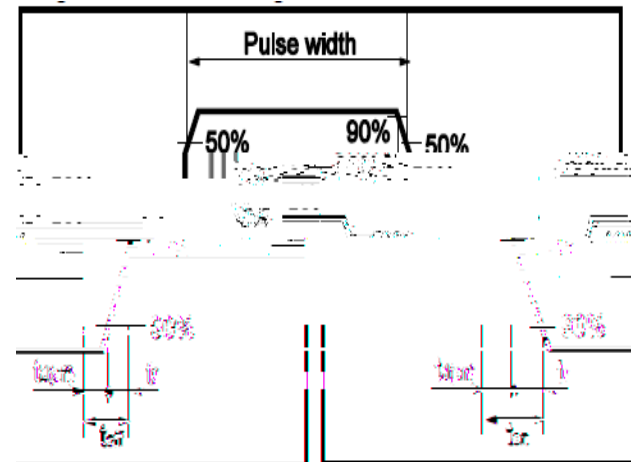
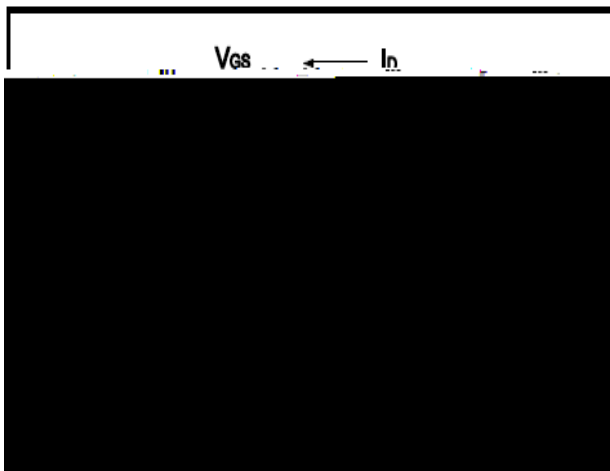


Fig.11 Switching Time Measurement Circuit

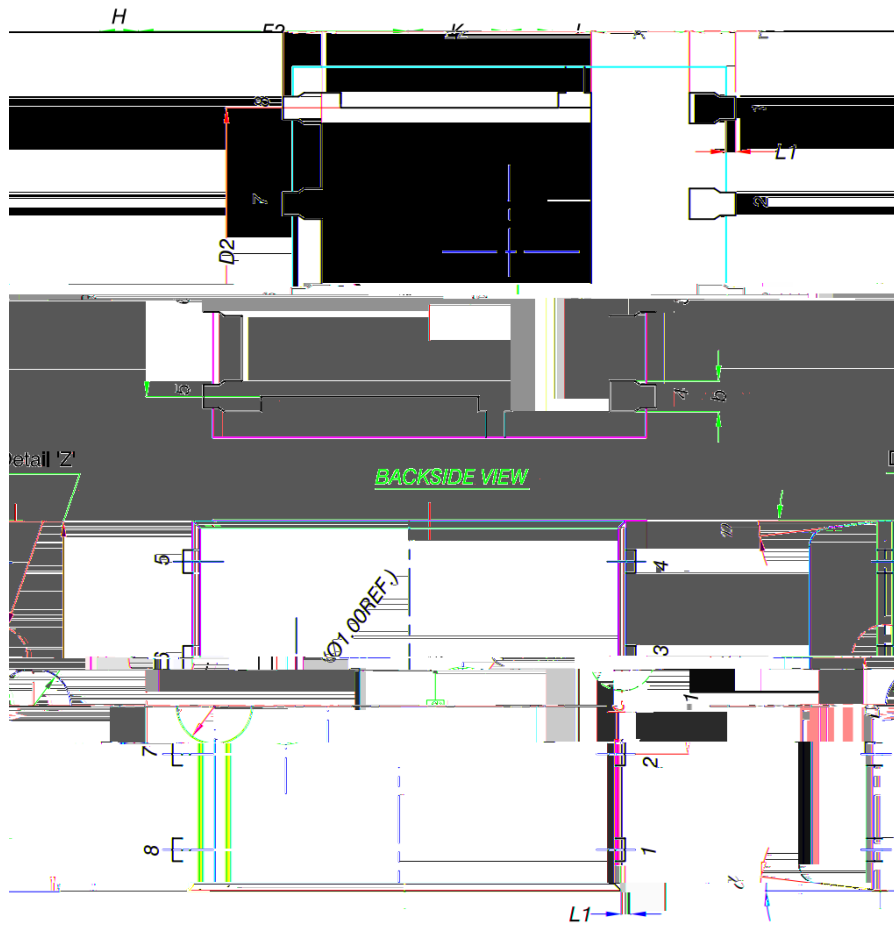
Fig.12 Gate Charge Waveform





Dimensions DFN5x6

Unit mm



	MILLIMETERS	
$A1$	0.90	1.00 ~ 1.10
$A2$	0	0.95
$B1$	0.28	0.47 ~ 0.51
$B2$	0.09	0.25 ~ 0.30
$D1$	4.80	4.90
$D2$	3.61	3.81
$E$	5.90	6.00
$E1$	5.70	5.75
$F2$	3.28	
$H$	6.00	
$K$	0.60	
$L$	0.75	
$L1$	0.19	0.20
$L2$		1.2