

### • General Description

The ZMS035N08HF combines advanced trench MOSFET technology with a low resistance package to provide extremely low  $R_{DS(ON)}$ .

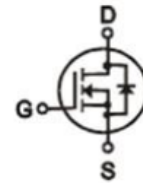
### • Features

- Advance device constructure
- Low  $R_{DS(ON)}$  to minimize conduction loss
- Low Gate Charge for fast switching
- Low Thermal resistance

### • Application

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

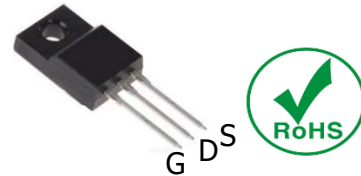
### • Product Summary



$V_{DS} = 80V$

$R_{DS(ON)} = 3.5m\Omega$

$I_D = 140A$



### • Ordering Information:

Part NO.	ZMS035N08HF
Marking	ZMS035N08H
Packing Information	Bulk Tube
Basic ordering unit (pcs)	500

### • Absolute Maximum Ratings ( $T_c = 25^\circ C$ )

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	80	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_{D@TC=25^\circ C}$	140	A
	$I_{D@TC=75^\circ C}$	106.4	A
	$I_{D@TC=100^\circ C}$	88.2	A
Pulsed Drain Current ①	$I_{DM}$	320	A
Total Power Dissipation( $TC=25^\circ C$ )	$P_D@TC=25^\circ C$	150	W
Operating Junction Temperature	$T_J$	-55 to 150	$^\circ C$
Storage Temperature	$T_{STG}$	-55 to 150	$^\circ C$
Single Pulse Avalanche Energy@L=0.1mH	$E_{AS}$	125	mJ
Avalanche Current@L=0.1mH	$I_{AS}$	50	A

**•Thermal resistance**

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	$R_{thJC}$	-	-	0.75	° C/W
Thermal resistance, junction - ambient	$R_{thJA}$	-	-	70	° C/W
Soldering temperature, wavesoldering for 10s	$T_{sold}$	-	-	265	° C

**•Electronic Characteristics**

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	80			V
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS} = V_{DS}, I_D = 250\mu A$	2		4	V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS} = 80V, V_{GS} = 0V$			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	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 30A$		3.5	5	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS} = 10V, I_D = 40A$		28		s
Source-drain voltage	$V_{SD}$	$I_S = 30A$			1.28	V

**•Electronic Characteristics**

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	$C_{iss}$	f = 1MHz	-	3100	-	pF
Output capacitance	$C_{oss}$		-	890	-	
Reverse transfer capacitance	$C_{rss}$		-	130	-	

**•Gate Charge characteristics( $T_a = 25^\circ C$ )**

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Total gate charge	$Q_g$	$V_{DD} = 30V$	-	42	-	nC
Gate - Source charge	$Q_{gs}$	$I_D = 30A$	-	12	-	
Gate - Drain charge	$Q_{gd}$	$V_{GS} = 10V$	-	9	-	

Note: ① Pulse Test : Pulse width  $\leq 10\mu s$ , Duty cycle  $\leq 1\%$  ;

Fig.1 Gate-Charge Characteristics

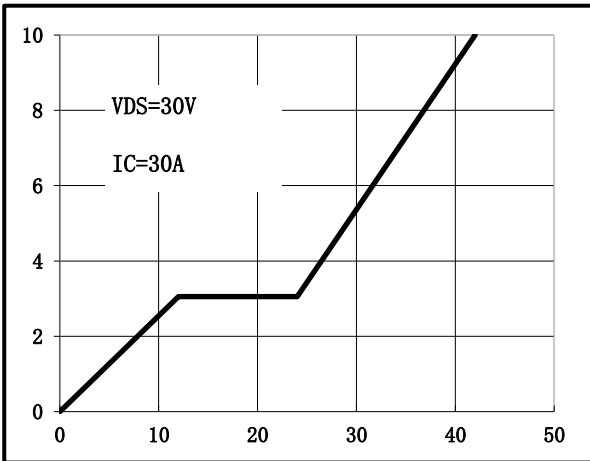


Fig.2 Capacitance Characteristics

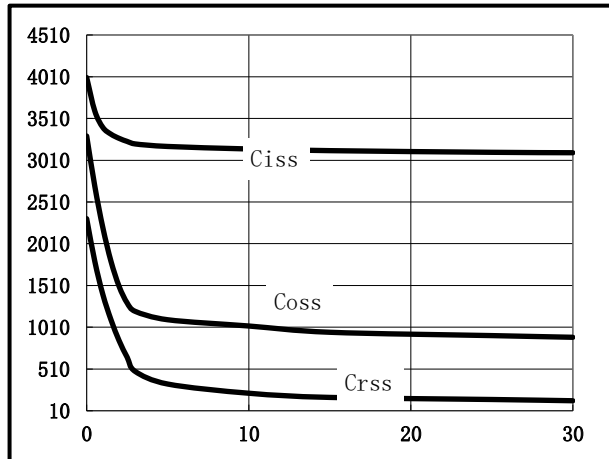


Fig.3 Power Dissipation

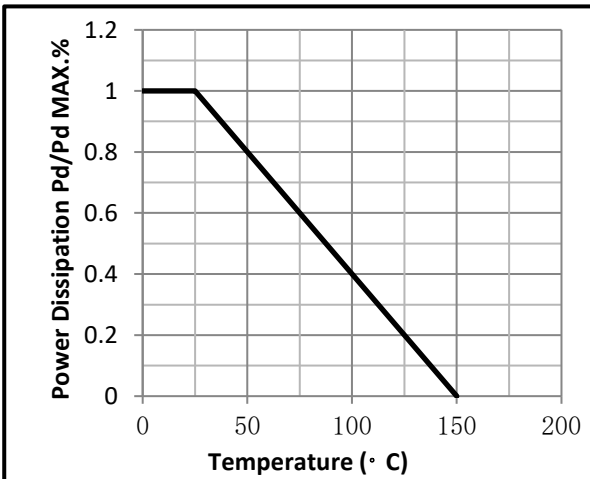


Fig.4 Typical output Characteristics

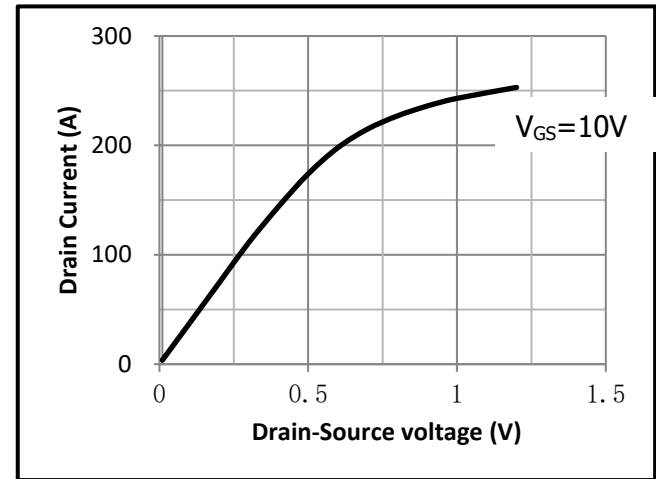


Fig.5 Threshold Voltage V.S Junction Temperature

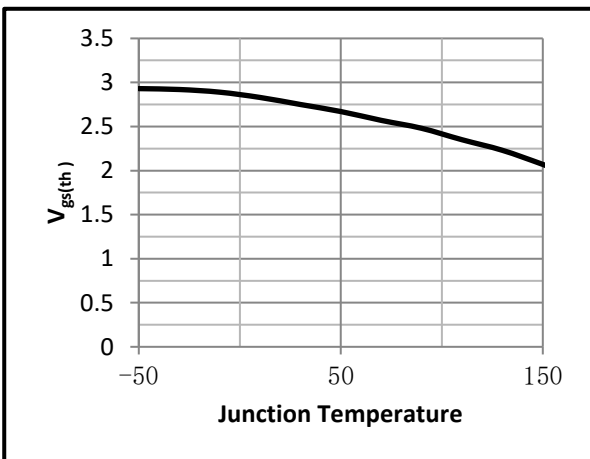


Fig.6 Resistance V.S Drain Current

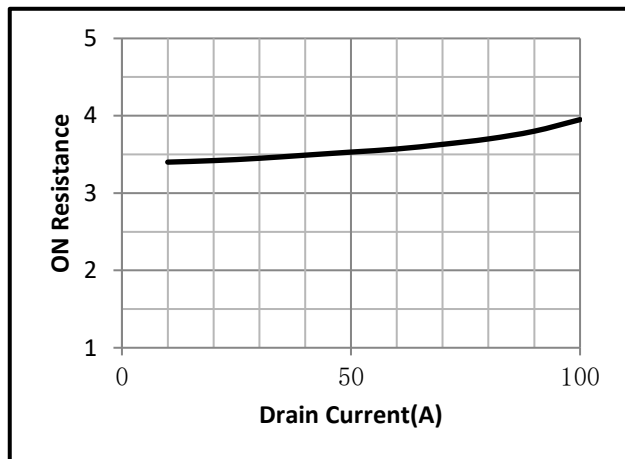


Fig.7 On-Resistance VS Gate Source Voltage

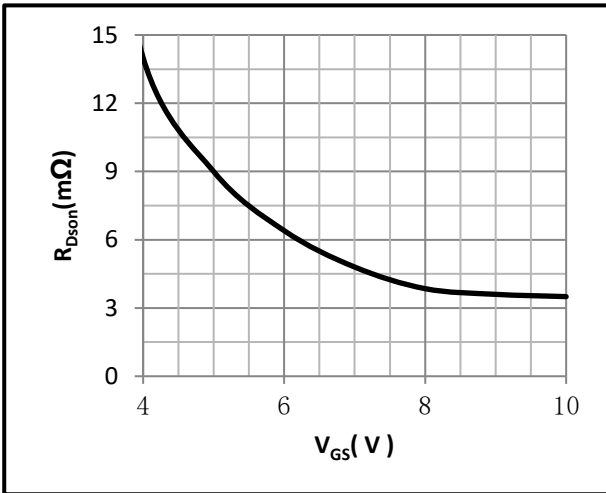


Fig.8 On-Resistance V.S Junction Temperature

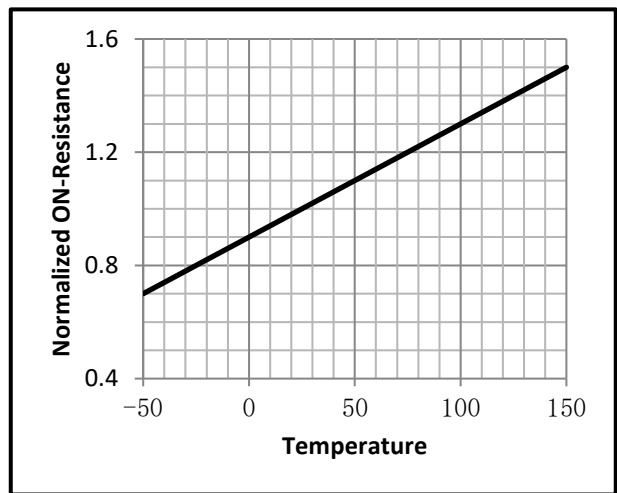


Fig.9 Switching Time Measurement Circuit

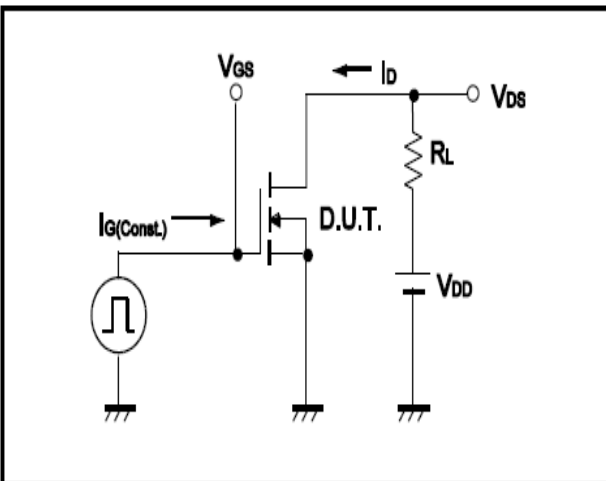


Fig.10 Gate Charge Waveform

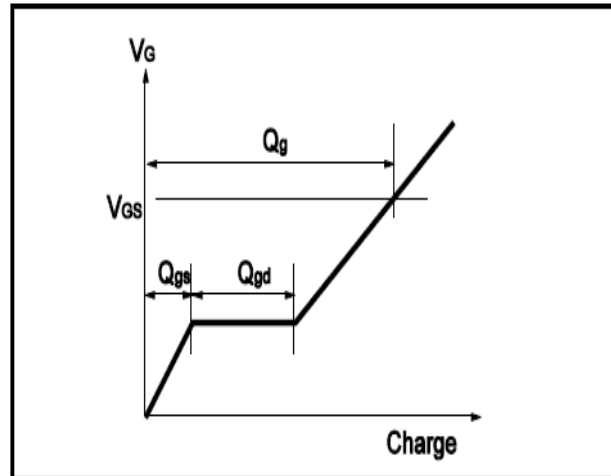


Fig.11 Switching Time Measurement Circuit

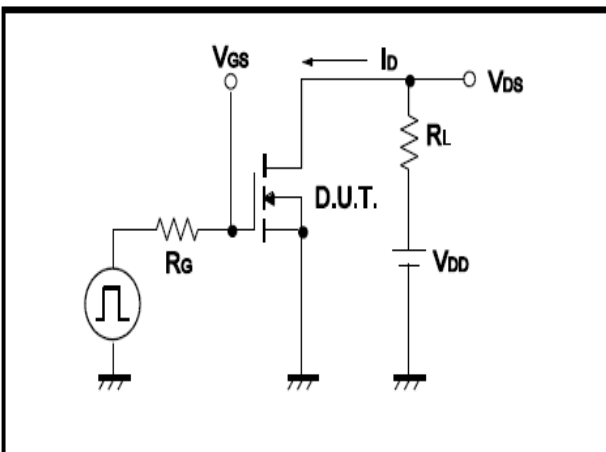
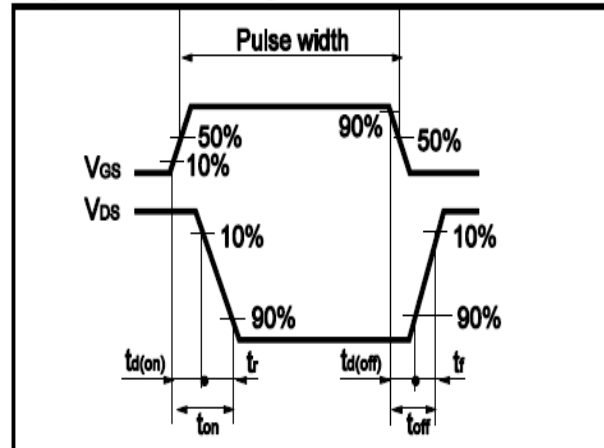


Fig.12 Gate Charge Waveform



•Dimensions(TO-220F)

Unit: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
C	4.5	4.9	b1	2.90	3.90
c	0.4	0.6	a	1.08	1.48
A	9.96	10.36	a1	0.70	0.90
B	15.67	16.07	E	2.34	2.74
B1	3.30	3.50	E1	2.34	2.74
R	3.08	3.28	C1	2.34	2.74
b	12.48	13.48	C2	2.56	2.96

