● General Description

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

● Features

■ Advance high cell density Trench technology

■Low $R_{DS(ON)}$ to minimize conductive loss

■Low Gate Charge for fast switching

■Low Thermal resistance

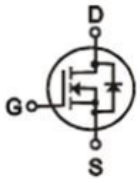
●Application

■ Synchronous Rectification for AC-DC/DC-DC converter

■Oring switches

■Power Tools

● Product Summary

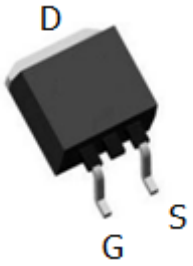


V_{DS} =100V

$R_{DS(ON)}$ =3.5mΩ

I_D =175A

RoHS



TO-263

●Ordering Information:

Part NO.	ZMS035N10HBC
Marking	ZMS035N10HC
Packing Information	REEL TAPE
Basic ordering unit (pcs)	800

●Absolute Maximum Ratings (T_C =25℃)

Parameter	**Symbol**	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	$I_{D@}T_C$=25℃	175	A
	$I_{D@}T_C$=75℃	133	A
	$I_{D\ @}T_C$=100℃	110	A
Pulsed Drain Current ①	I_{DM}	525	A
Total Power Dissipation	$P_D@T_C$=25℃	104	W
Total Power Dissipation	$P_D@T_A$=25℃	3.1	W
Operating Junction Temperature	T_J	-55 to 175	℃
Storage Temperature	T_{STG}	-55 to 175	℃
Single Pulse Avalanche Energy	E_{AS}	320	mJ

●Thermal resistance

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	R_{thJC}	-	-	1.2	°C/W
Thermal resistance, junction - ambient	R_{thJA}	-	-	40	°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 =250uA	100			V
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS} =V_{DS}, I_D =250uA	2.0		4.0	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=100V, V_{GS} =0V			1.0	uA
Gate- Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS} =0V			±100	nA
Static Drain-source On Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=25A		3.5	4.6	mΩ
Forward Transconductance	g_{FS}	V_{DS} =25V, I_D=10A		28		s
Source-drain voltage	V_{SD}	Is=25A			1.28	V

●Dynamic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	Ciss	V_{GS}=0V, V_{DS}=25V f = 1MHz	-	4028	-	pF
Output capacitance	Coss		-	1787	-	
Reverse transfer capacitance	Crss		-	91	-	
Total gate charge	Qg	V_{DD} = 25V I_D = 8A V_{GS} = 10V	-	48	-	nC
Gate - Source charge	Qgs		-	16	-	
Gate - Drain charge	Qgd		-	4.9	-	
Body Diode Reverse Recovery Time	trr	I_F=20A, di/dt=100A/μs		TBD		nS
Body Diode Reverse Recovery Charge	Qrr	I_F=20A, di/dt=100A/μs		TBD		nC

Note: ① Pulse Test : Pulse width ≤ 300μs, Duty cycle ≤ 2% ;

Fig.1 Gate-Charge Characteristics

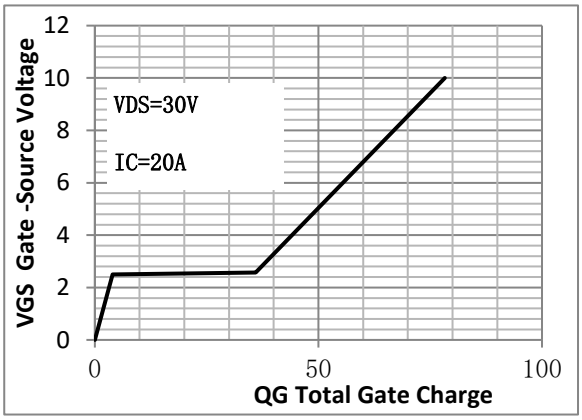


Fig.2 Capacitance Characteristics

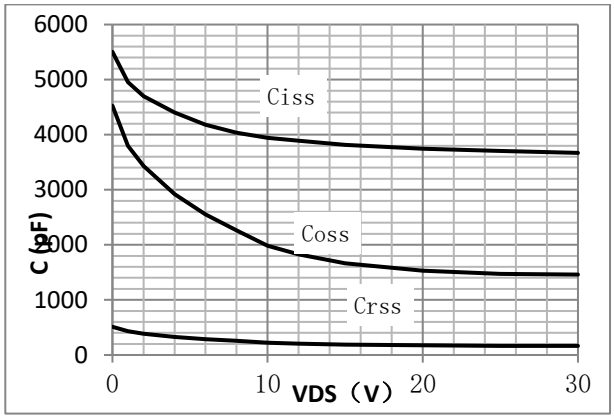


Fig.3 Power Dissipation

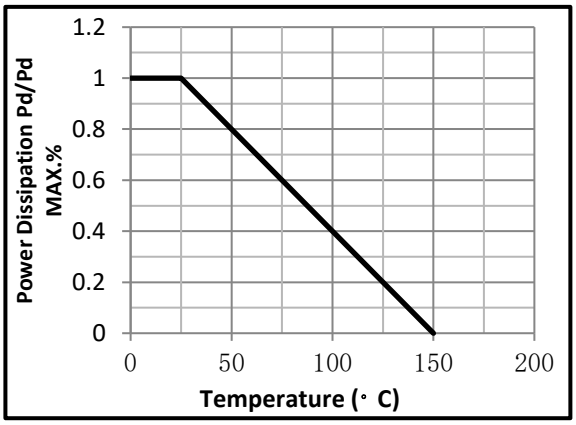


Fig.4 Typical output Characteristics

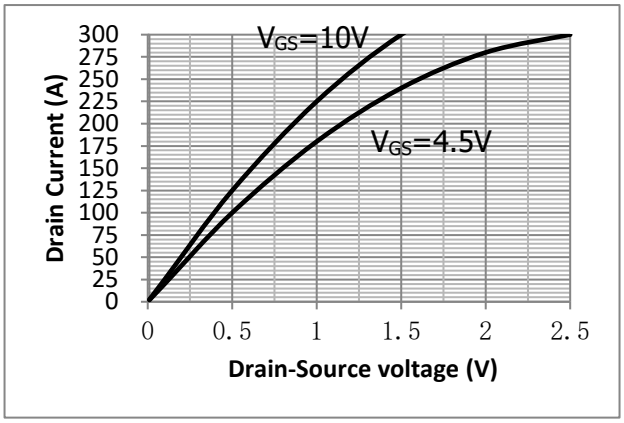


Fig.5 Threshold Voltage V.S Junction Temperature

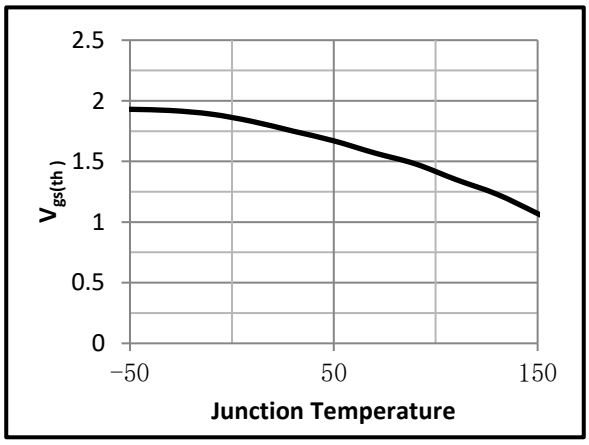


Fig.6 Resistance V.S Drain Current

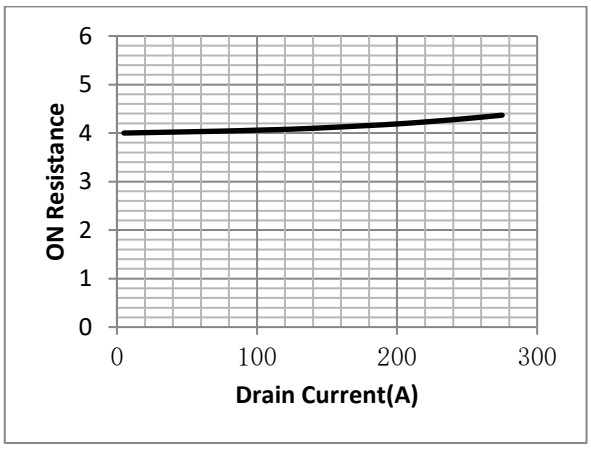


Fig.7 On-Resistance VS Gate Source Voltage

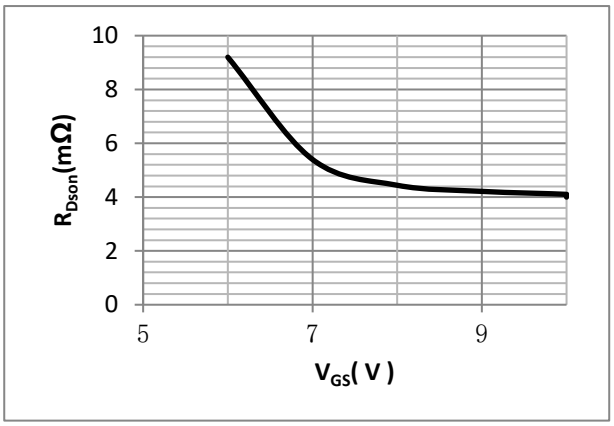


Fig.8 On-Resistance V.S Junction Temperature

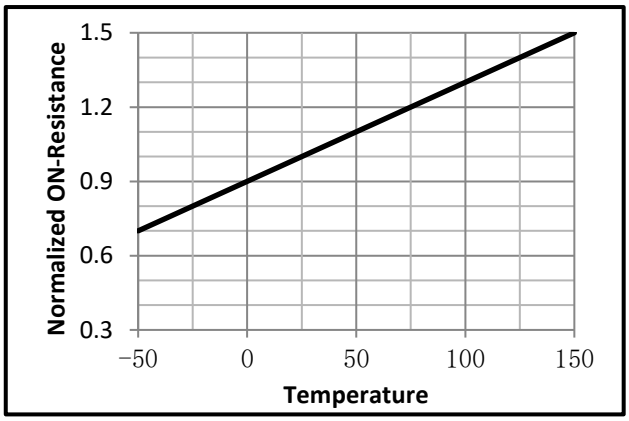


Fig.9 SOA Maximum Safe Operating Area

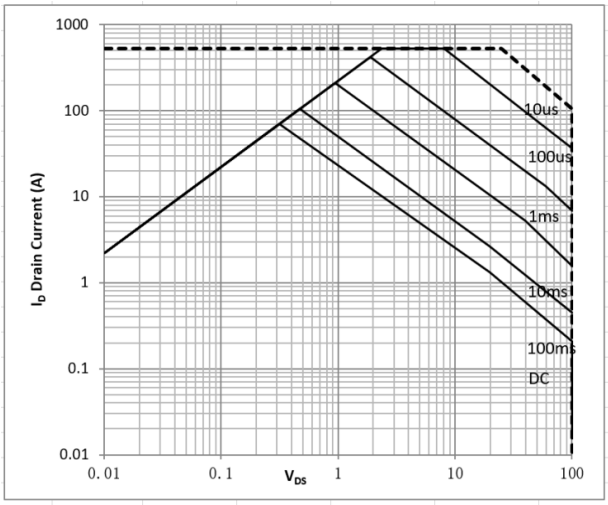


Fig.10 ID-Junction Temperature

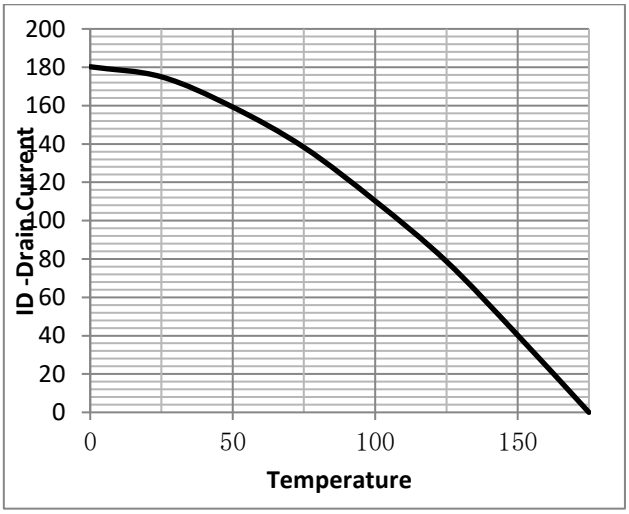


Fig.11 Switching Time Measurement Circuit

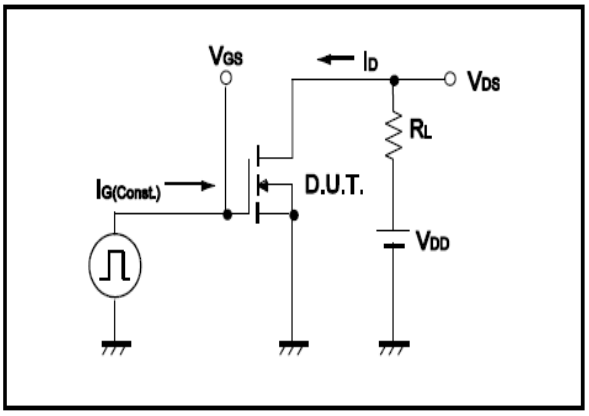


Fig.12 Gate Charge Waveform

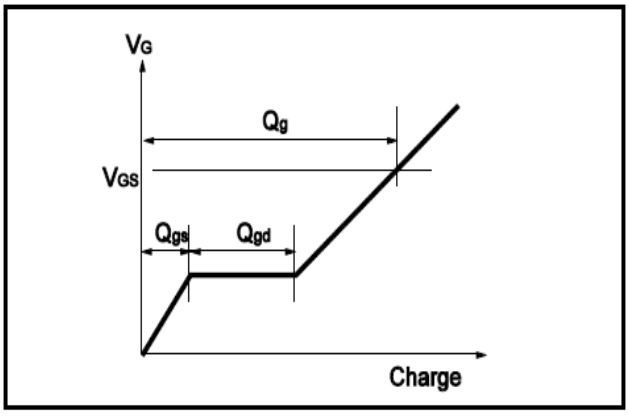


Fig.13 Switching Time Measurement Circuit

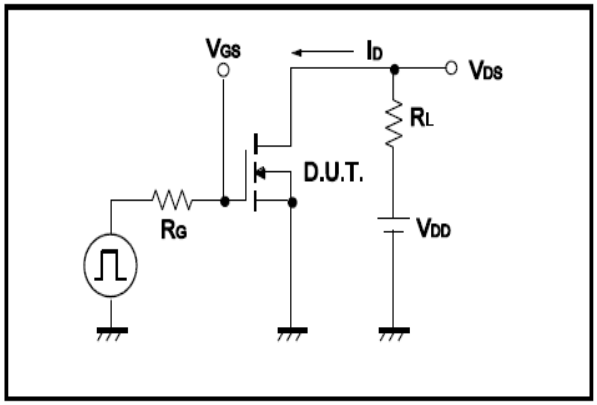


Fig.14 Gate Charge Waveform

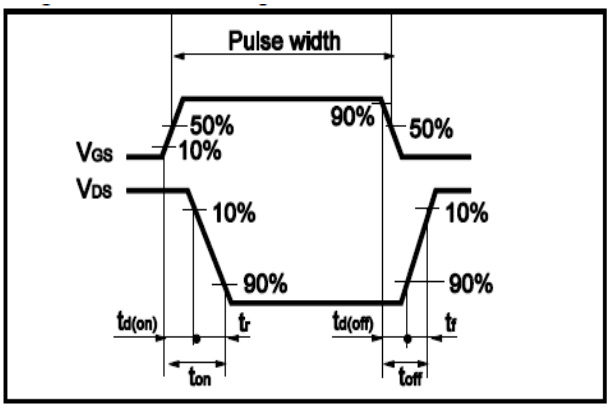


Fig.15 Avalanche Measurement Circuit

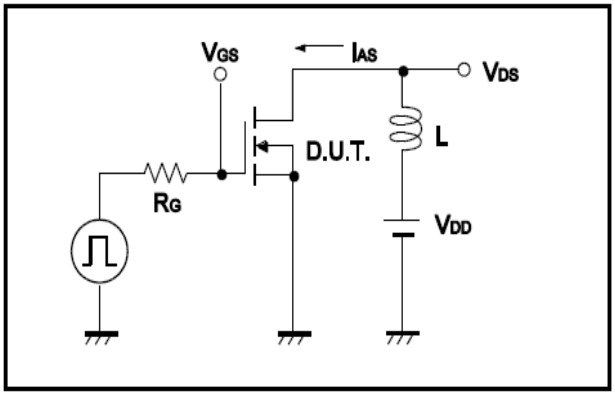
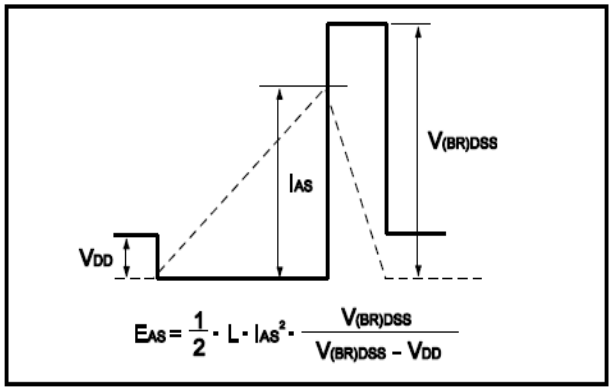


Fig.16 Avalanche Waveform



•Dimensions (TO-263)

Unit：mm

SYMBOL	MIN	TYP	MAX	SYMBOL	MIN	TYP	MAX
A	4.42		4.72	E	8.99		9.29
B	1.22		1.32	e1	2.44		2.64
b	0.76		0.86	e2	4.98		5.18
b1	1.22		1.32	L1	15.19		15.79
b2	0.33		0.43	L2	2.29		2.79
C	1.22		1.32	L3	1.3		1.75
D	9.95		10.25