

**• General Description**

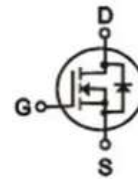
It combines advanced SGT MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$.

• 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

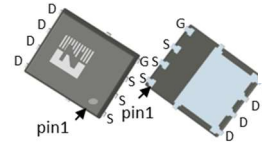
- MB/VGA Vcore
- SMPS 2nd Synchronous Rectifier
- POL application
- BLDC Motor driver

• Product Summary

$$V_{DS} = 30V$$

$$R_{DS(ON)} = 2.6m\Omega$$

$$I_D = 80A$$



DFN5 x 6

• Ordering Information:

Part NO.	ZMS026N03N
Marking	ZMS026N03
Packing Information	REEL TAPE
Basic ordering unit (pcs)	3000

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	$I_D @ T_C=25^\circ C$	80	A
	$I_D @ T_C=75^\circ C$	61	A
	$I_D @ T_C=100^\circ C$	50	A
Pulsed Drain Current ^①	I_{DM}	240	A
Total Power Dissipation	$P_D @ T_C=25^\circ C$	62.5	W
Total Power Dissipation	$P_D @ T_A=25^\circ C$	2.5	W
Operating Junction Temperature	T_J	-55 to 150	$^\circ C$
Storage Temperature	T_{STG}	-55 to 150	$^\circ C$
Single Pulse Avalanche Energy	E_{AS}	80	mJ



●Thermal resistance

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	R_{thJC}	-	-	1.9	° C/W
Thermal resistance, junction - ambient	R_{thJA}	-	-	50	° 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}	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS} = V_{DS}, I_D = 250\mu A$	1.5	1.8	2.5	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$			1.0	μA
Gate- Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Static Drain-source On Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 20A$		2.6	3.6	m Ω
		$V_{GS} = 4.5V, I_D = 10A$		3.5	4.5	m Ω
Forward Transconductance	g_{FS}	$V_{DS} = 10V, I_D = 10A$		8		S
Source-drain voltage	V_{SD}	$I_S = 20A$			1.28	V

●Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	C_{iss}	$V_{DS} = 25V$ $f = 1MHz$	-	1350	-	pF
Output capacitance	C_{oss}		-	372	-	
Reverse transfer capacitance	C_{rss}		-	32	-	

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

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Total gate charge	$Q_g(10V)$	$V_{DD} = 15V$ $I_D = 20A$ $V_{GS} = 10V$	-	23.4	-	nC
Total gate charge	$Q_g(4.5V)$			12.5		nC
Gate - Source charge	Q_{gs}		-	5.0	-	nC
Gate - Drain charge	Q_{gd}		-	2.7	-	nC
Turn-ON Delay time	$t_{D(on)}$	$V_{DD} = 15V$ $I_D = 15A$ $V_{GS} = 4.5V$		15		ns
Turn-ON Rise time	t_r			23		ns
Turn-Off Delay time	$t_{D(off)}$			29		ns



Turn-Off Fall time	tf	$R_G = 2\Omega$		8.7		ns
Body Diode Reverse Recovery Time	trr	IF=20A, dI/dt=100A/ μ s		12		ns
Body Diode Reverse Recovery Charge	Qrr			37		nC

Note: ① Pulse Test : Pulse width $\leq 300\mu$ s, Duty cycle $\leq 2\%$;

Fig.1 Power Dissipation

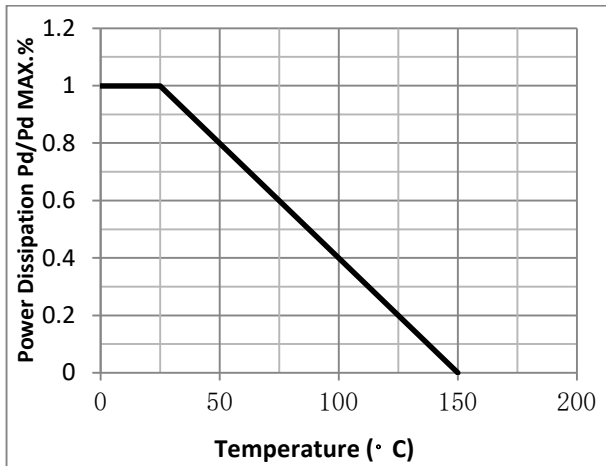


Fig.2 Typical output Characteristics

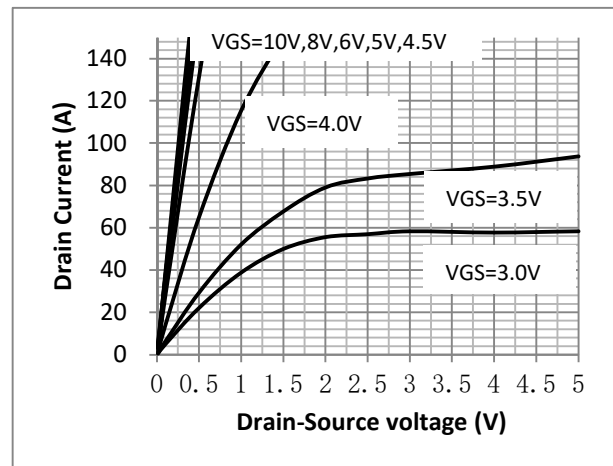


Fig.3 Threshold Voltage V.S Junction Temperature

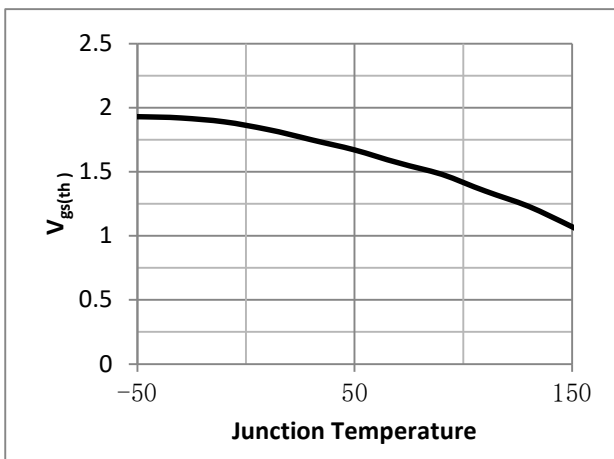


Fig.4 Resistance V.S Drain Current

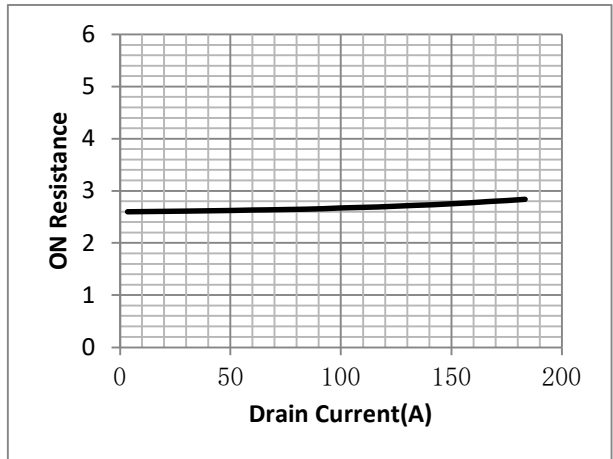




Fig.5 On-Resistance VS Gate Source Voltage

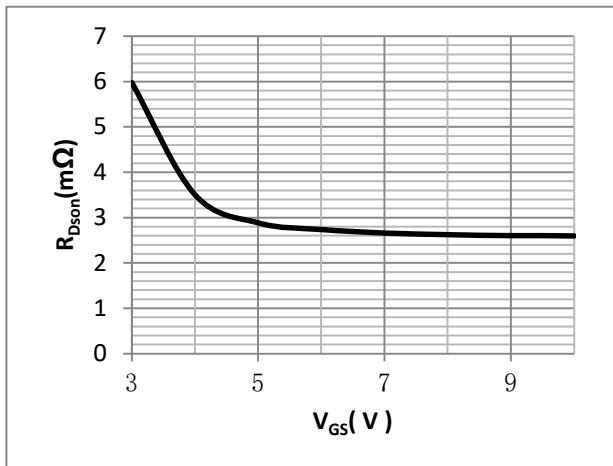


Fig.6 On-Resistance V.S Junction Temperature

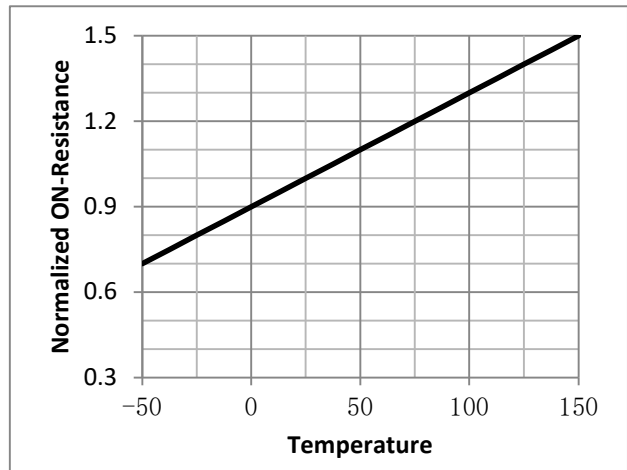


Fig.7 Gate Charge Characteristics

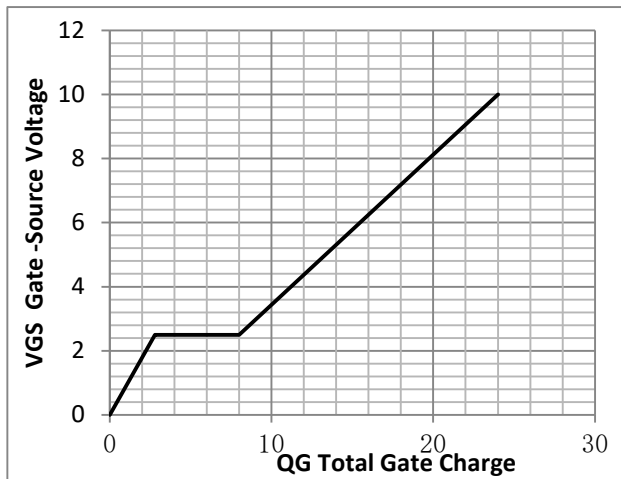


Fig.8 Capacitance vs V_{DS}

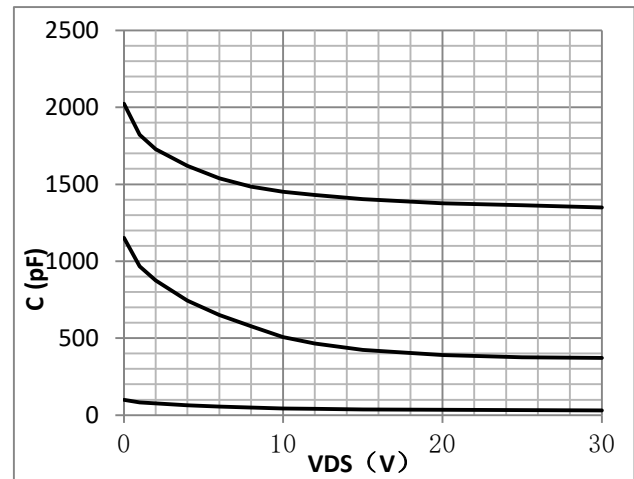


Fig.9 SOA Maximum Safe Operating Area

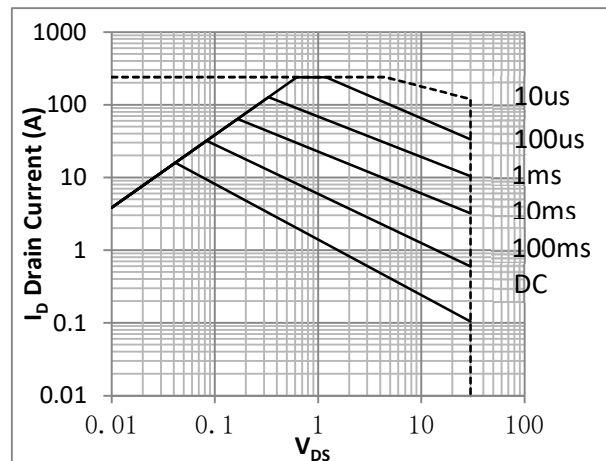


Fig.10 I_D-Junction Temperature

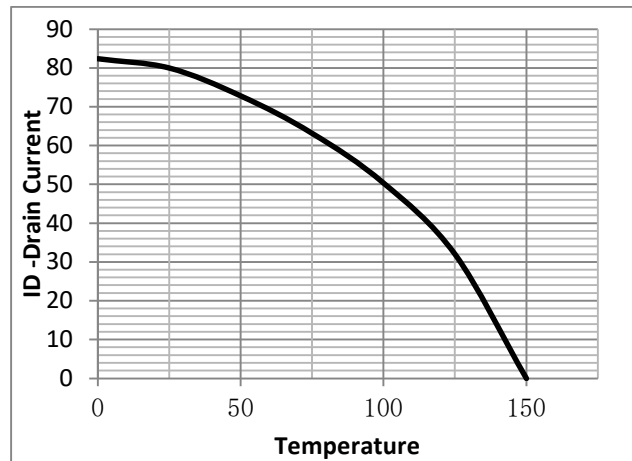


Fig.11 Gate Charge Measurement Circuit

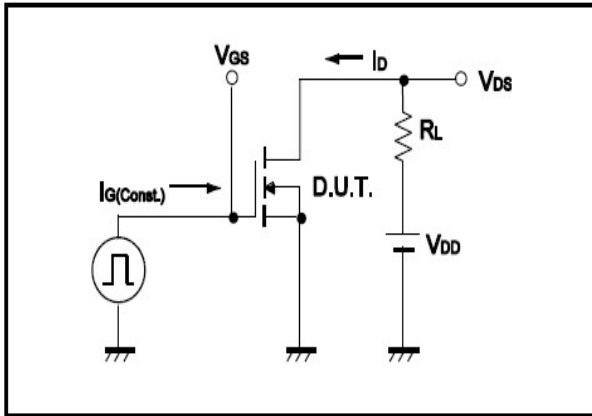


Fig.12 Gate Charge Waveform

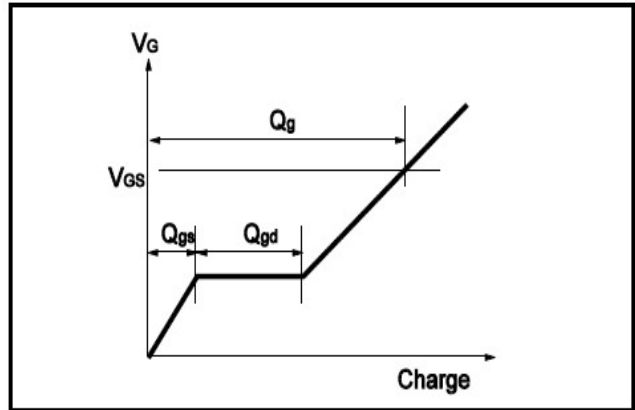


Fig.13 Resistive Switching Test Circuit

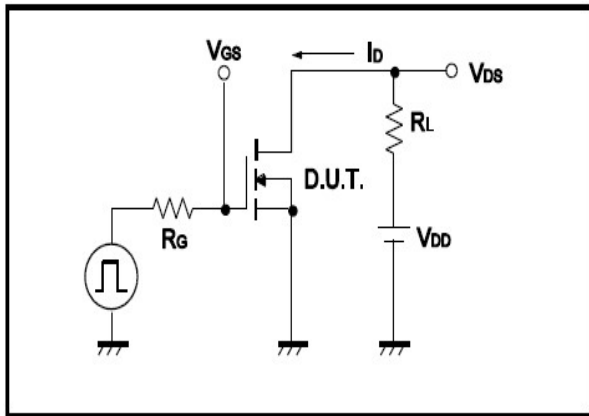


Fig.14 Resistive Switching Test Waveform

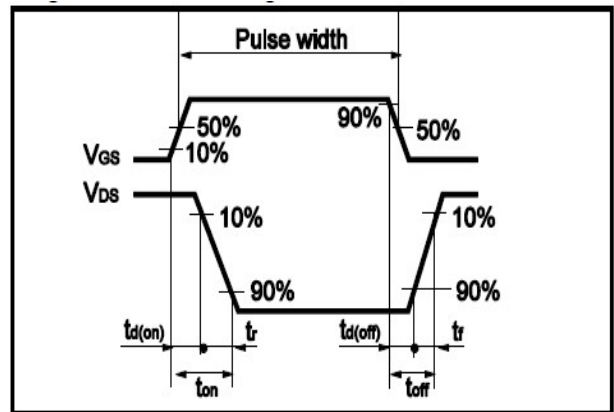


Fig.15 Avalanche Measurement Circuit

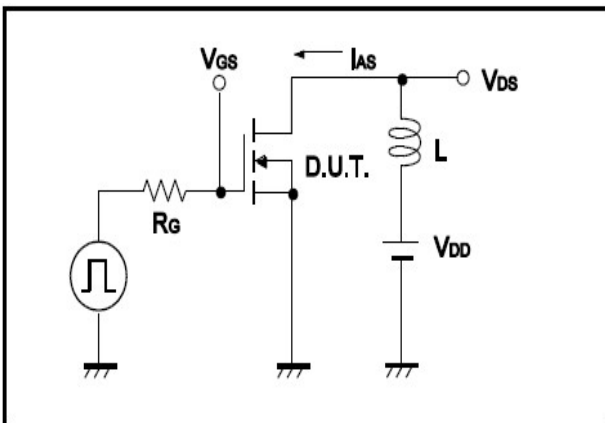
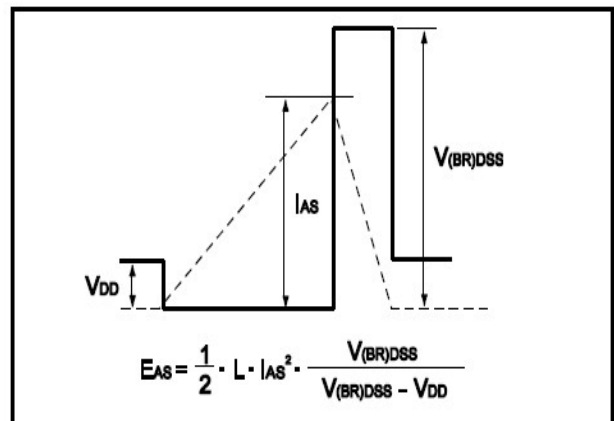
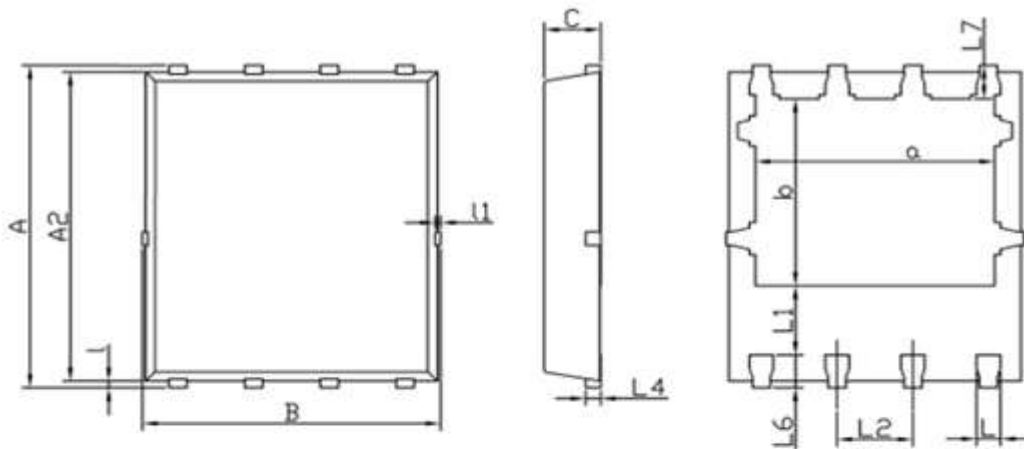


Fig.16 Avalanche Waveform





•Dimensions (DFN5×6)



Dimensions In Millimeters			
Symbol	MIN	TYP	MAX
A	5.90	6.00	6.10
a	3.91	4.01	4.11
A2	5.48	-	5.80
B	4.90	5.00	5.35
b	3.375	3.475	3.575
C	0.90	0.95	1.00
L	0.30	0.40	0.50
l	0.06	0.15	0.30
L1	1.10	-	-
l1	-	-	0.10
L2	1.17	1.27	1.37
L4	0.21	0.26	0.34
L6	0.51	0.61	0.71
L7	0.51	0.61	0.75



●Revision History

Version	Date	Change
A	2022/3/15	New
B	2022/6/11	Add Qg(4.5V) value.
C	2024/6/20	Update package picture with ZMJ logo.
D	2025/9/8	Update POD Dimension.