AG066SN060MPG

N-Channel Enhancement Mode MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
60V	6.5mΩ@10V	66A
	9mΩ@4.5V	

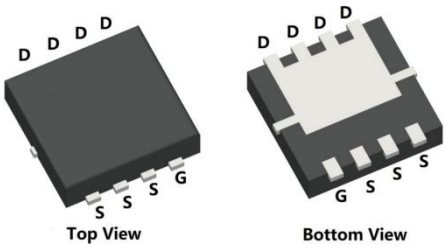
Feature

- Advanced Shielded-Gate Trench technology
- Low on-resistance
- Fast switching speed
- Low thermal resistance

Application

- DC-DC converter
- Power switching application

Package



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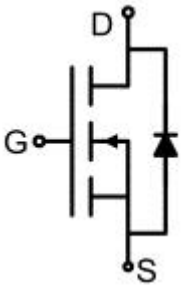
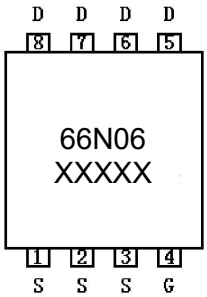
Circuit diagram



Marking



Absolute maximum ratings (T_C=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	66	A
Continuous Drain Current (T_C =100℃)	I_D (100℃)	42	A
Pulsed Drain Current (t_p =10μs)	I_{DM}	264	A
Single Pulse Avalanche Energy[1)]	E_{AS}	80	mJ
Power Dissipation	P_D	52	W
Thermal Resistance Junction to Case	$R_{\theta JC}$	2.4	℃/W
Operating Junction Temperature	T_J	-55 ~ +150	℃
Storage Temperature	T_{STG}	-55 ~ +150	℃

Electrical characteristics (T_A=25 ºC, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} =0V, I_D =250μA	60			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =48V, V_{GS} =0V			1	μA
Gate-body leakage current	I_{GSS}	V_{DS} = 0V, V_{GS} =±20V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1	1.8	2.5	V
Drain-source on-resistance[2)]	$R_{DS(on)}$	V_{GS} =10V, I_D =30A		4.5	6.5	mΩ
		V_{GS} =4.5V, I_D =20A		7.5	9	
Dynamic characteristics[3)]						
Input Capacitance	C_{iss}	V_{DS} =30V, V_{GS} =0V, f =1MHz		1527		pF
Output Capacitance	C_{oss}			638		
Reverse Transfer Capacitance	C_{rss}			16		
Total Gate Charge	Q_g	V_{DS} =48V, V_{GS} =10V, I_D =15A		30.7		nC
Gate-Source Charge	Q_{gs}			4.2		
Gate-Drain Charge	Q_{gd}			9.3		
Turn-on delay time	$t_{d(on)}$	V_{DS} =30V, V_{GS} =15V, I_D =15A R_G =3.3Ω		17		nS
Turn-on rise time	t_r			19		
Turn-off delay time	$t_{d(off)}$			45		
Turn-off fall time	t_f			10		
Source-Drain Diode characteristics						
Diode Forward Current	Is				66	A
Diode Forward voltage[2)]	V_{SD}	V_{GS} =0V, I_S =5A			1.2	V
Reverse Recovery Time	T_{rr}	V_{GS} =0V, I_F =30A di/dt =-100A/μs		41		nS
Reverse Recovery Charge	Q_{rr}			37		nC

Notes:

1) The E_{AS} data shows Max. rating. The test condition is V_{DD} = 25V, V_{GS} = 10V, L = 0.5mH.

2) The data tested by pulsed, pulse width ≤300μs, duty cycle ≤2%.

3) Guaranteed by design, not subject to production testing.

Typical Characteristics

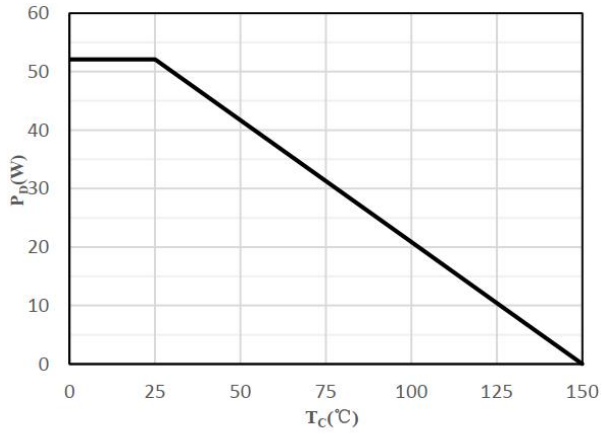


Fig 1 Power Dissipation

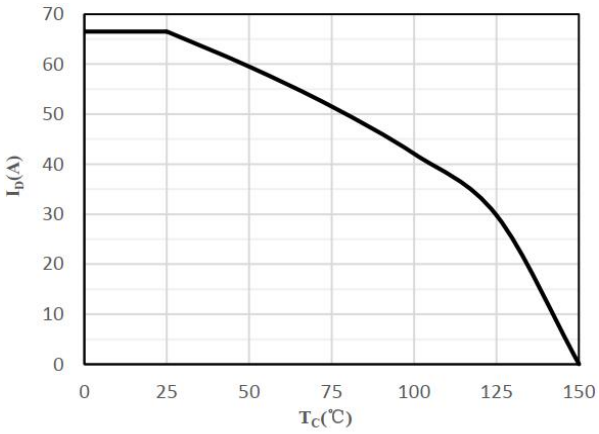


Fig 2 Drain Current

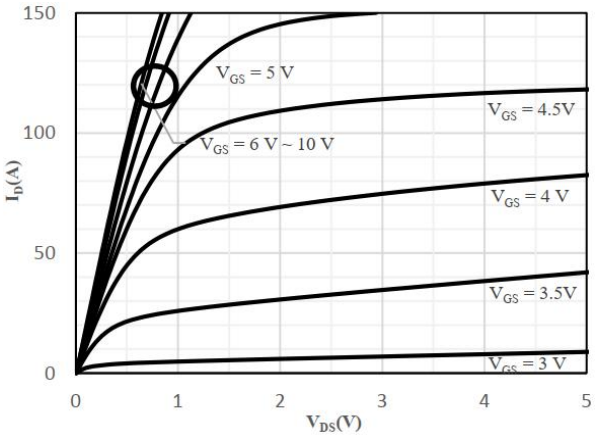


Fig 3 Typical Output Characteristics

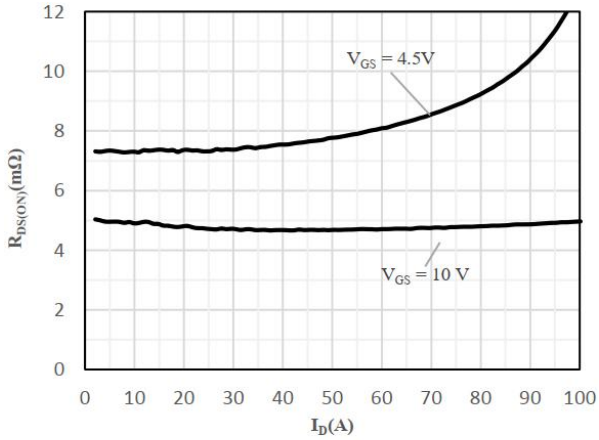


Fig 4 On-Resistance vs. Drain Current and Gate Voltage

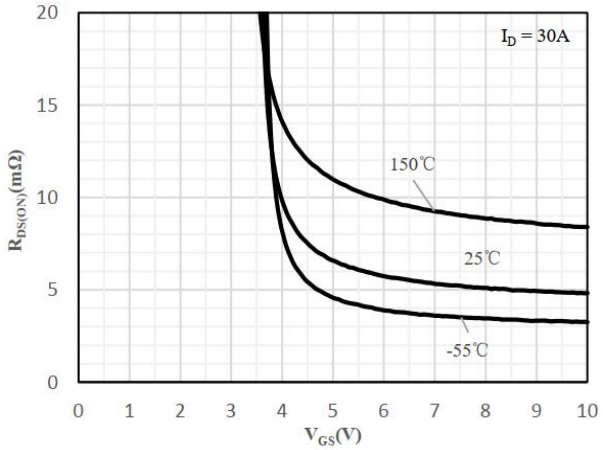


Fig 5 On-Resistance vs. Gate-Source Voltage

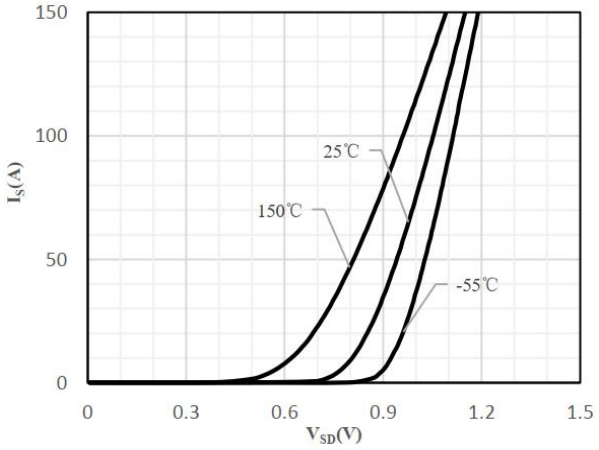


Fig 6 Body-Diode Characteristics

Typical Characteristics

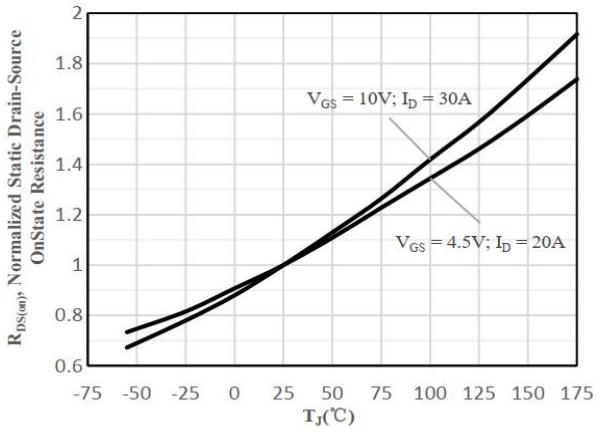


Fig 7 Normalized On-Resistance vs. Junction Temperature

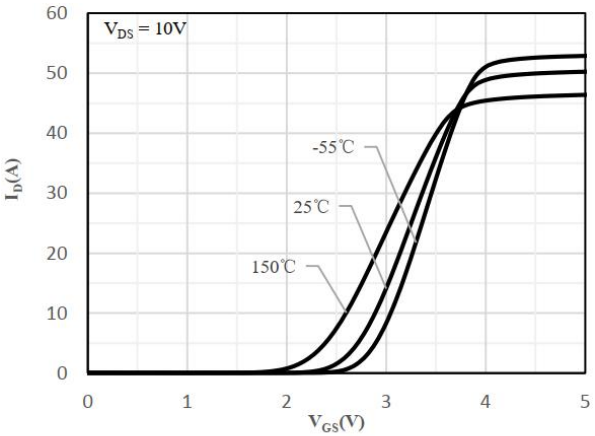


Fig 8 Transfer Characteristics

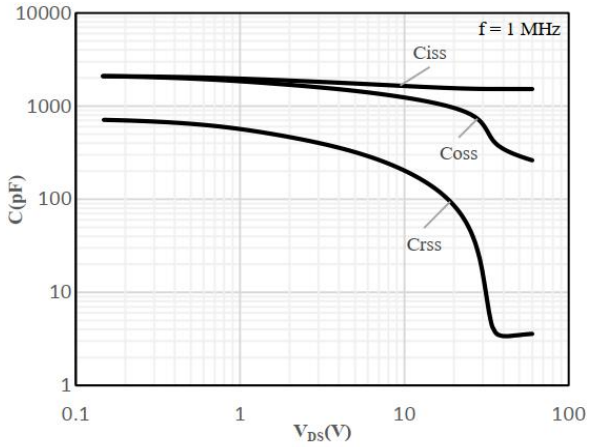


Fig 9 Capacitance Characteristics

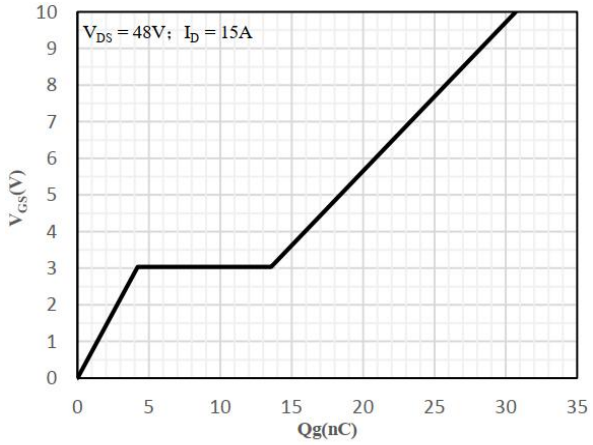


Fig 10 Gate-Charge Characteristics

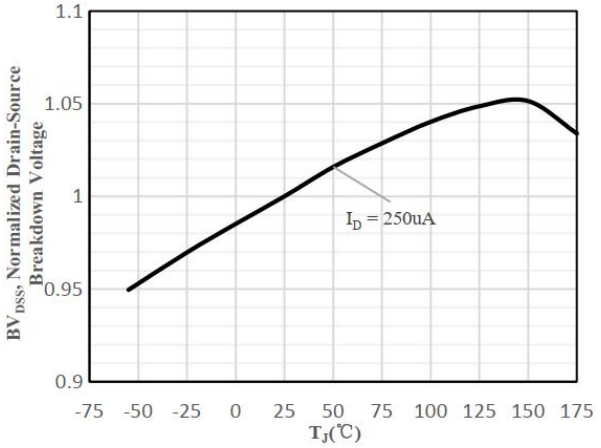


Fig 11 Normalized Breakdown Voltage vs. Junction Temperature

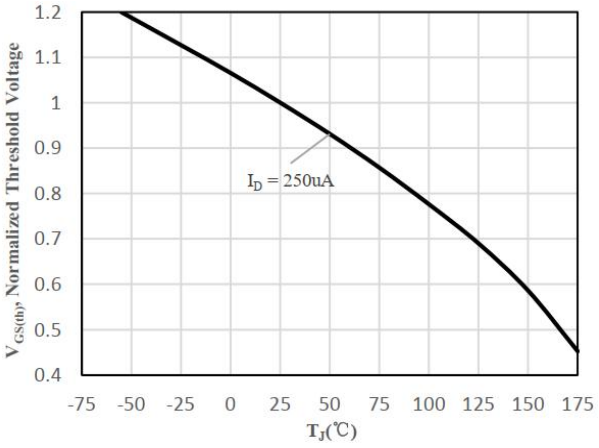


Fig 12 Normalized $V_{GS(th)}$ vs. Junction Temperature

Typical Characteristics

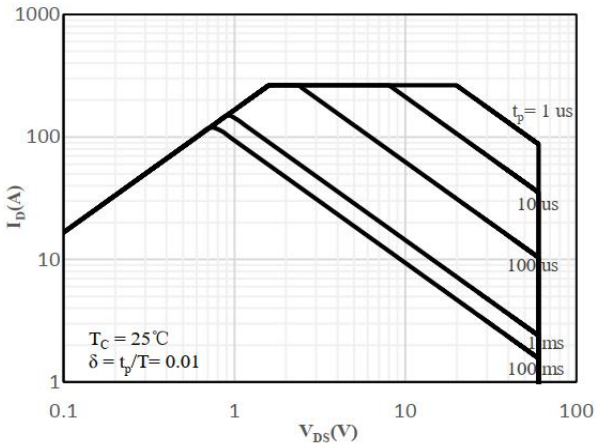


Fig 13 Safe Operating Area

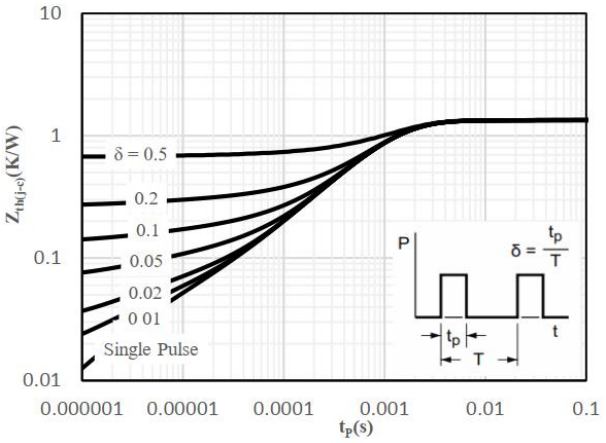
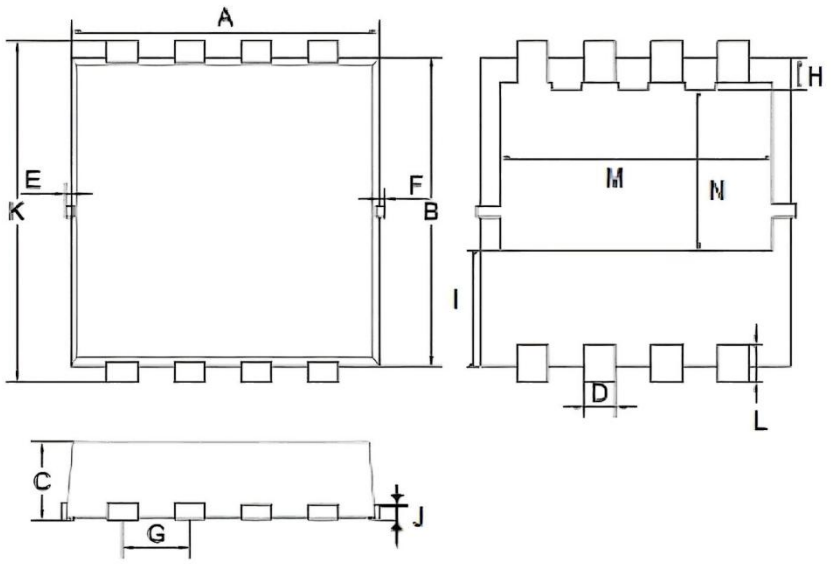


Fig 14 Maximum transient thermal impedance

PDFN3*3-8L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.900	3.100	0.114	0.122
B	2.900	3.100	0.114	0.122
C	0.650	0.850	0.026	0.033
D	0.200	0.400	0.008	0.016
E	0.000	0.100	0.000	0.004
F	0.000	0.100	0.000	0.004
G	0.550	0.750	0.022	0.030
H	0.200	0.400	0.008	0.016
I	0.700	1.100	0.028	0.043
J	0.100	0.200	0.004	0.008
K	3.150	3.450	0.124	0.136
L	0.200	0.400	0.008	0.016
M	2.350	2.550	0.093	0.100
N	1.500	1.900	0.059	0.075