N-CH100V Fast Switching MOSFETs

❖ GENERAL DESCRIPTION

The AMS0026 is the high cell density trenched N-ch MOSFETs, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications.

The AMS0026 meet the RoHS and Green Product requirement, 100% EAS guaranteed with full function reliability approved.

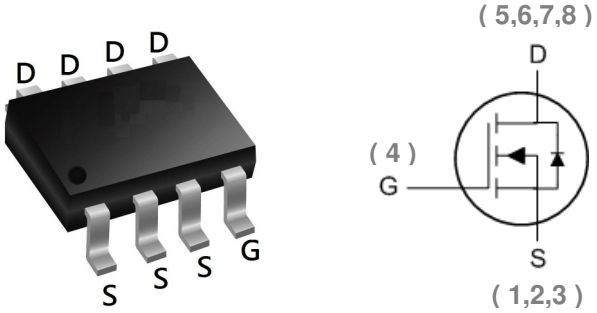
❖ FEATURES

- Advanced high cell density Trench technology
- Super Low Gate Charge
- Excellent CdV/dt effect decline
- Green Device Available

Product Summery

BVDSS	RDSON	ID
100V	20mΩ	7.5A

SOP8 Pin configuration



❖ ORDER/MARKING INFORMATION

Order Information	Top Marking
AMS0026 X X Package Type S: SOP-8L Packing Blank : Bag A : Taping	AM0026 → Part number YYWWX → ID code:internal WW:01~26 (A~Z) 27~52 (a~z) Year: 11=2011 12=2012 ⋮ 19=2019

❖ ABSOLUTE MAXIMUM RATINGS

Characteristics	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current, V_{GS} @ 10V (Note 1)	I_D@T_A=25°C	7.5	A
Continuous Drain Current, V_{GS} @ 10V (Note 1)	I_D@T_A=70°C	6	A
Pulsed Drain Current (Note 2)	I_{DM}	40	A
Single Pulse Avalanche Energy (Note 3)	EAS	16	mJ
Avalanche Current	I_{AS}	18	A
Total Power Dissipation (Note 4)	P_D@T_A=25°C	2.5	W
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C
Thermal Resistance Junction-ambient (Note 1) (t≦10S)	$R_{\theta JA}$	50	°C/W
Thermal Resistance Junction-ambient (Note 1) (Steady State)		85	°C/W

Note 1: The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.
Note 2: The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
Note 3: The EAS data shows Max. rating . The test condition is V_{DD}=25V, V_{GS}=10V, L=0.1mH
Note 4: The power dissipation is limited by 150°C junction temperature
Note 5: The Min. value is 100% EAS tested guarantee.
Note 6: The data is theoretically the same as I_D and I_{DM}, in real applications, should be limited by total power dissipation.

❖ ELECTRICAL CHARACTERISTICS

(T_J=25 °C, unless otherwise noted)

Characteristics	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V , I_D=250uA	100	-	-	V
BVDSS Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	Reference to 25°C, I_D=1mA	-	0.098	-	V/°C
Static Drain-Source On-Resistance (Note 2)	$R_{DS(ON)}$	V_{GS}=10V , I_D=7A	-	16	20	mΩ
		V_{GS}=4.5V , I_D=5A	-	19	25	
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS} , I_D =250uA	1.2	-	2.5	V
$V_{GS(th)}$ Temperature Coefficient	$\Delta V_{GS(th)}$		-	-5.5	-	mV/°C
Drain-Source Leakage Current	I_{DSS}	V_{DS}=80V , V_{GS}=0V , T_J=25°C	-	-	10	uA
		V_{DS}=80V , V_{GS}=0V , T_J=55°C	-	-	100	
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V , V_{DS}=0V	-	-	±100	nA
Forward Transconductance	gfs	V_{DS}=5V , I_D=7A	-	24	-	S
Gate Resistance	R_g	V_{DS}=0V , V_{GS}=0V , f=1MHz	-	1.6	-	Ω
Total Gate Charge (10V)	Q_g	V_{DS}=80V , V_{GS}=10V , I_D=7A	-	36	-	nC
Gate-Source Charge	Q_{gs}		-	95	-	
Gate-Drain Charge	Q_{gd}		-	10	-	
Turn-On Delay Time	$T_{d(on)}$	V_{DD}=50V , V_{GS}=10V, R_G=3.3Ω, I_D=7A	-	11.5	-	ns
Rise Time	T_r		-	29	-	
Turn-Off Delay Time	$T_{d(off)}$		-	42	-	
Fall Time	T_f		-	18	-	
Input Capacitance	C_{iss}	V_{DS}=15V , V_{GS}=0V , R_G=3.3Ω, f=1MHz	-	1930	-	pF
Output Capacitance	C_{oss}		-	245	-	
Reverse Transfer Capacitance	C_{rss}		-	125	-	
Diode Characteristics						
Continuous Source Current (Note 1, 6)	I_S	V_G=V_D=0V , Force Current	-	-	7	A
Pulsed Source Current (Note 2, 6)	I_{SM}		-	-	40	A
Diode Forward Voltage (Note 2)	V_{SD}	V_{GS}=0V , I_S=1A , T_J=25°C	-	-	1.2	V
Reverse Recovery Time	t_{rr}	I_F=7A , dI/dt=100A/μs , T_J=25°C	-	48	-	nS
Reverse Recovery Charge	Q_{rr}		-	29	-	nC

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Note 2: The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
Note 3: The EAS data shows Max. rating . The test condition is V_{DD}=25V, V_{GS}=10V, L=0.1mH
Note 4: The power dissipation is limited by 150°C junction temperature
Note 5: The Min. value is 100% EAS tested guarantee.
Note 6: The data is theoretically the same as I_D and I_{DM}, in real applications, should be limited by total power dissipation.

❖ TYPICAL CHARACTERISTICS

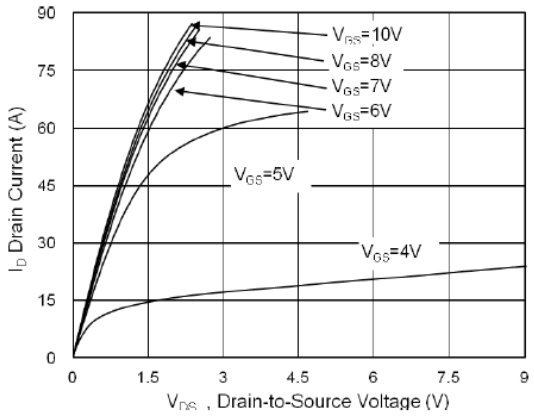

Fig.1 Typical Output Characteristics

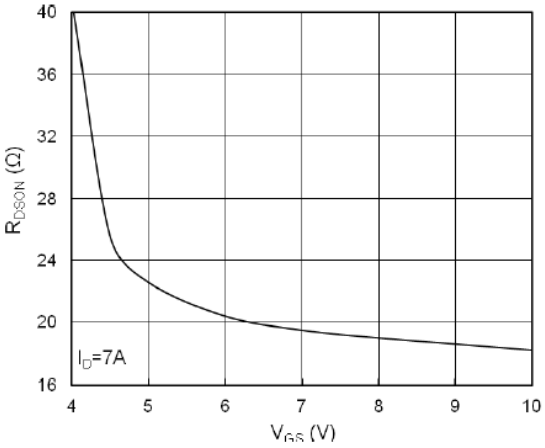

Fig.2 On-Resistance vs. Gate-Source

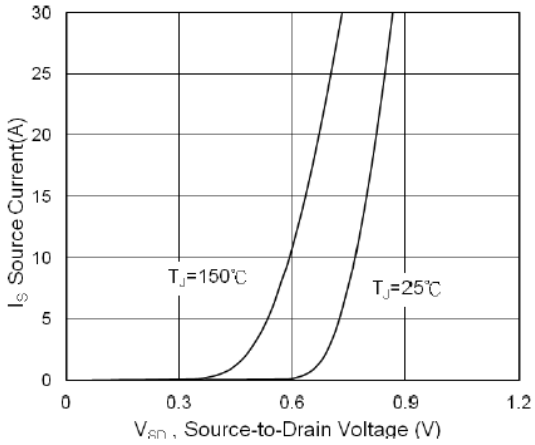

Fig.3 Forward Characteristics Of Reverse

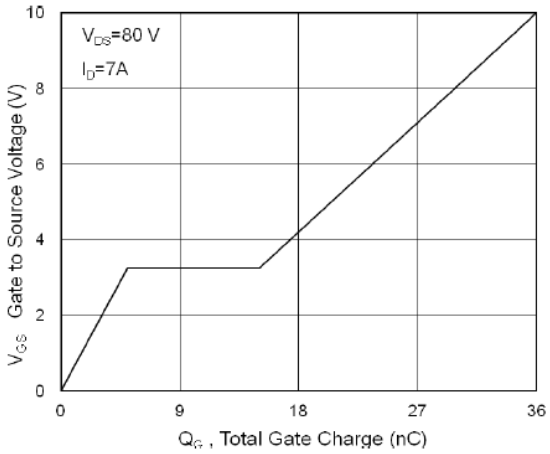

Fig.4 Gate-Charge Characteristics

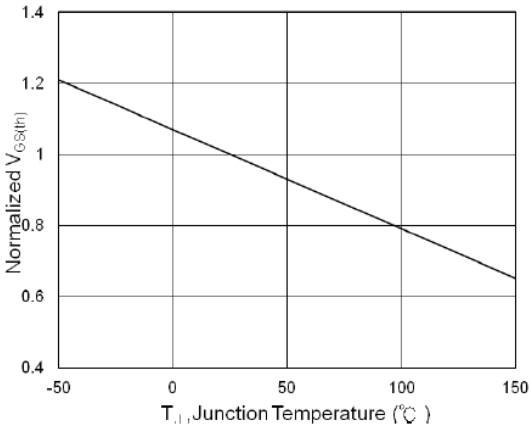

Fig.5 Normalized $V_{GS(th)}$ vs. T_J

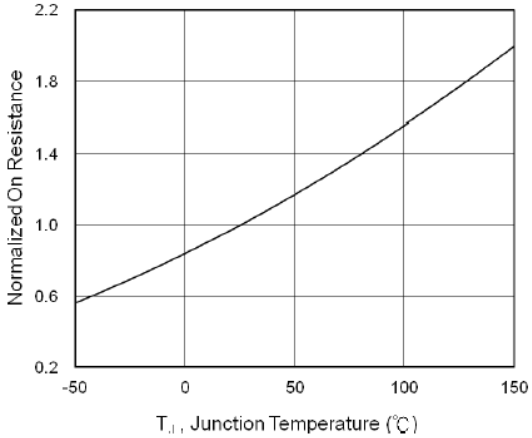

Fig.6 Normalized R_{DSON} vs. T_J

❖ TYPICAL CHARACTERISTICS (COUNTINOUS)

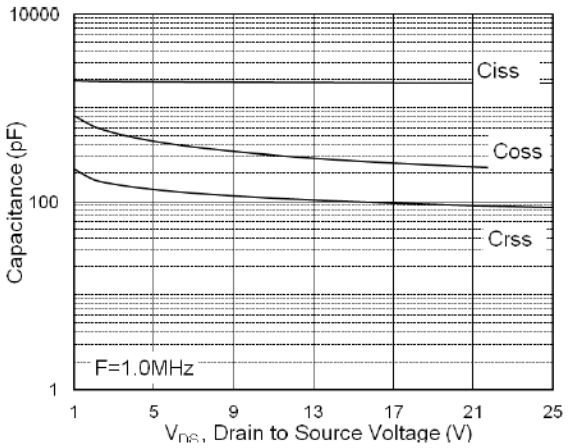

Fig.7 Capacitance

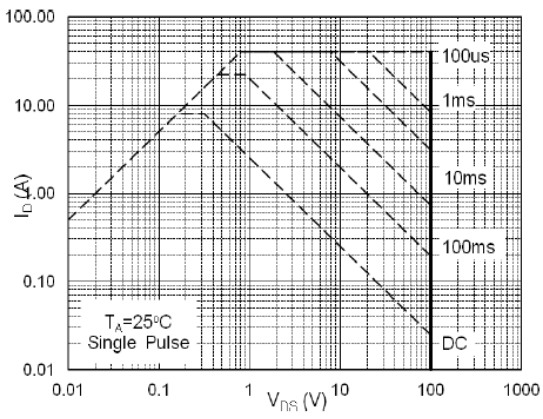

Fig.8 Safe Operating Area

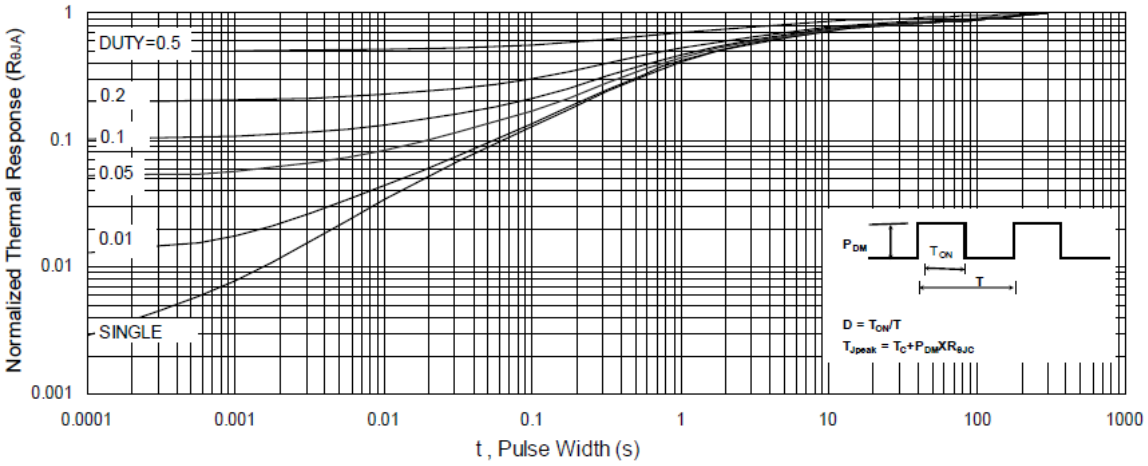

Fig.9 Normalized Maximum Transient Thermal Impedance

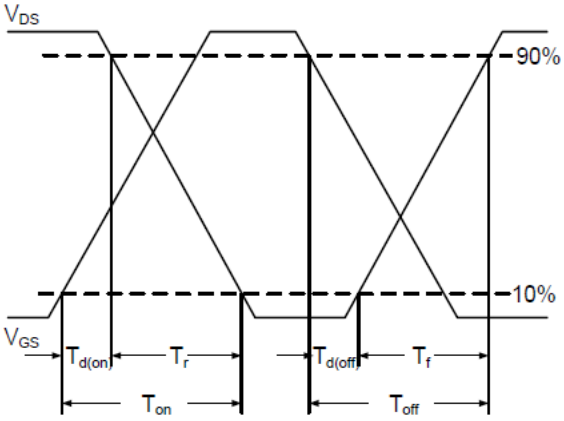

Fig.10 Switching Time Waveform

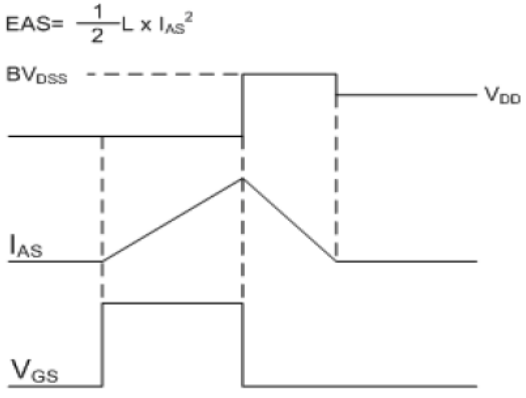

Fig.11 Unclamped Inductive Switching Waveform