



DESCRIPTION

The AM9926 uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications.

AM9926 is available in SOP8 package.

ORDERING INFORMATION

Package Type	Part Number	
SOP8	M8	AM9926M8R
		AM9926M8VR
Note	V: Halogen free Package R: Tape & Reel SPQ:2,500pcs/Reel	
AiT provides all RoHS products Suffix " V " means Halogen free Package		

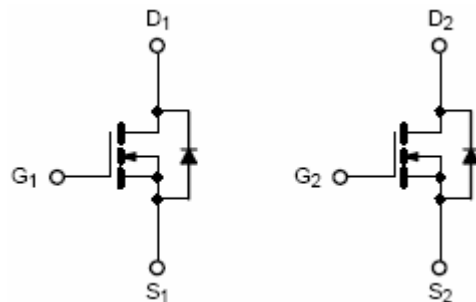
FEATURES

- $V_{DS}=20V, I_D=6A$
 $R_{DS(ON)} < 30m\Omega @ V_{GS}=4.5V$
 $R_{DS(ON)} < 40m\Omega @ V_{GS}=2.5V$
- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized Avalanche voltage and current
- Available in SOP8 package.

APPLICATION

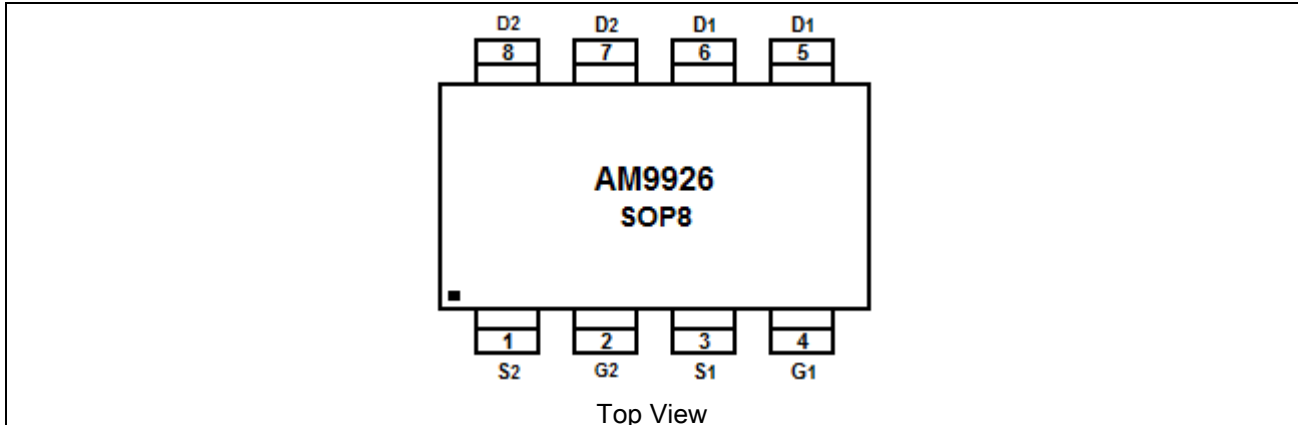
- Power switching application
- Hard Switched and High Frequency Circuits
- Uninterruptible Power Supply

PIN DESCRIPTION





PIN DESCRIPTION



Pin #	Symbol	Function
1	S2	Source
2	G2	Gate
3	S1	Source
4	G1	Gate
5	D1	Drain
6	D1	Drain
7	D2	Drain
8	D2	Drain



ABSOLUTE MAXIMUM RATINGS

T_A = 25°C, unless otherwise noted

V _{DS} , Drain-Source Voltage	20V
V _{GS} , Gate-Source Voltage	±12V
I _D , Drain Current-Continuous	6A
I _D (100°C), Drain Current-Continuous(T _C =100°C)	3.8A
I _{DM} , Pulsed Drain Current	25A
P _D , Maximum Power Dissipation	1.25W
T _J , T _{STG} , Operating Junction and Storage Temperature Range	-55°C~150°C
Thermal Characteristic	
R _{θJA} , Thermal Resistance, Junction-to-Ambient ^{NOTE1}	100°C/W

Stress beyond above listed "Absolute Maximum Ratings" may lead permanent damage to the device. These are stress ratings only and operations of the device at these or any other conditions beyond those indicated in the operational sections of the specifications are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

NOTE1: Surface Mounted on FR4 Board, t ≤ 10 sec.



ELECTRICAL CHARACTERISTICS

T_A = 25°C, unless otherwise noted

Parameter	Symbol	Conditions	Min	Typ.	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _{DS} =250μA	20	22	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V	-	-	±100	nA
On Characteristics NOTE 2						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _{DS} =250μA	0.5	-	1.2	V
Drain-Source On-state Resistance	R _{DS(ON)}	V _{GS} =4.5V, I _{DS} =6A	-	26	30	mΩ
		V _{GS} =2.5V, I _D =5A	-	36	40	
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =6A	20	-	-	S
Dynamic Characteristics NOTE 3						
Input Capacitance	C _{ISS}	V _{DS} =10V, V _{GS} =0V, F=1.0MHz	-	640	-	pF
Output Capacitance	C _{OSS}		-	140	-	
Reverse Transfer Capacitance	C _{RSS}		-	80	-	
Switching Characteristics NOTE 3						
Turn-on Delay Time	t _{D(ON)}	V _{DD} =10V, I _{DS} =1A, V _{GEN} =4.5V, R _G =6Ω	-	8	-	ns
Turn-on Rise Time	t _R		-	9	-	
Turn-Off Delay Time	t _{D(OFF)}		-	15	-	
Turn-Off Fall Time	t _F		-	4	-	
Total Gate Charge	Q _G	V _{DS} =10V, I _D =3A V _{GS} =4.5V	-	10	-	nC
Gate-Source Charge	Q _{GS}		-	1.5	-	
Gate-Drain Charge	Q _{GD}		-	1.6	-	
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =1.7A	-	-	1.2	V
Diode Forward Current	I _S		-	-	6	A

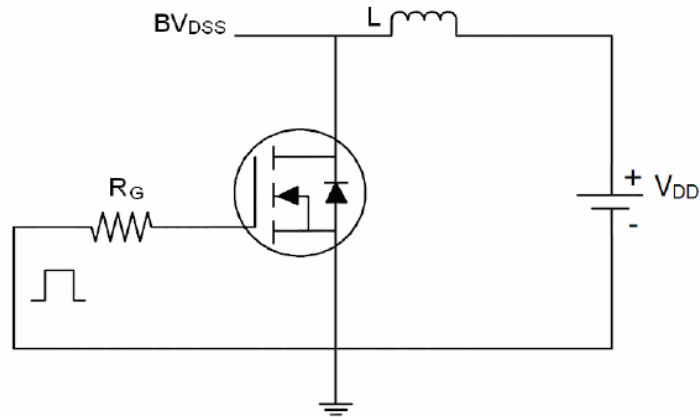
NOTE3: Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

NOTE4: Guaranteed by design, not subject to production

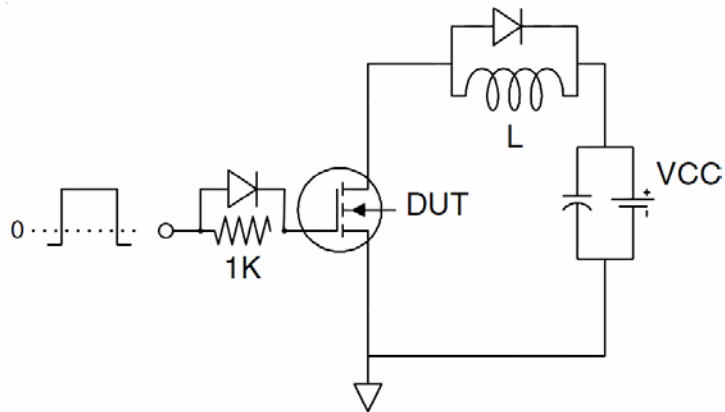


TEST CIRCUIT

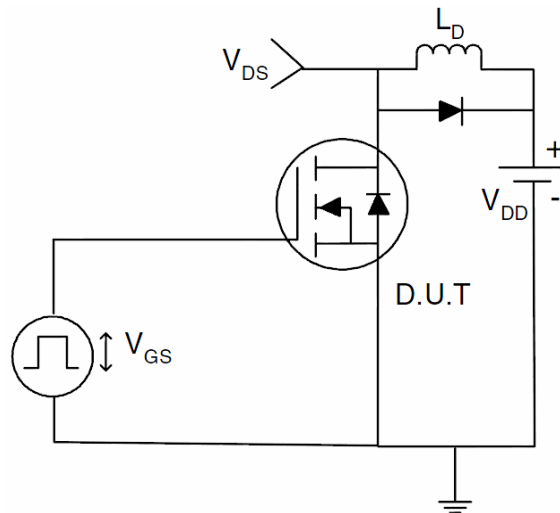
1. E_{AS} test Circuits



2. Gate charge test Circuit



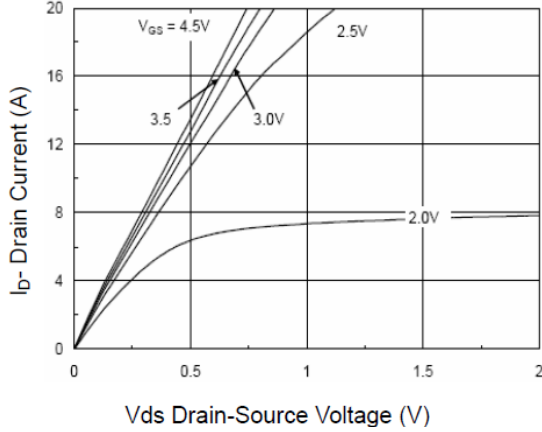
3. Switch Time Test Circuit



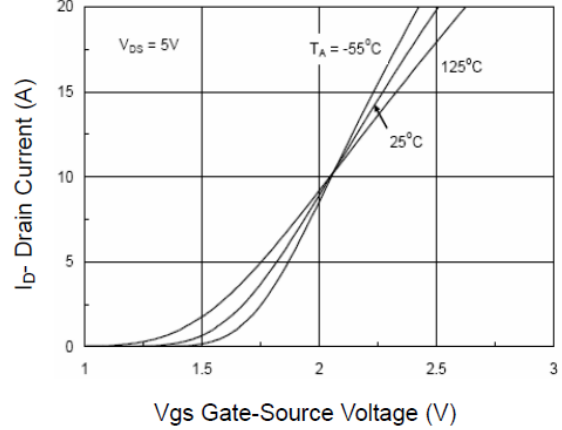


TYPICAL CHARACTERISTICS

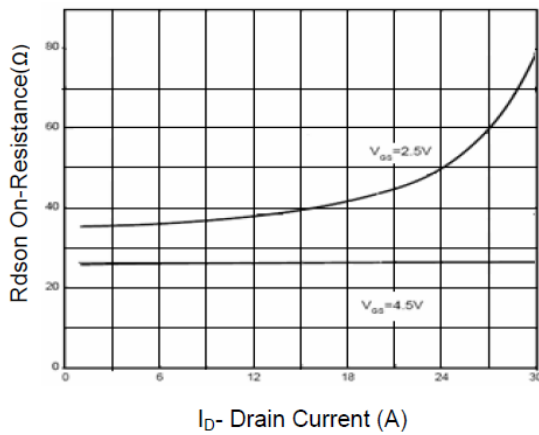
1. Output Characteristics



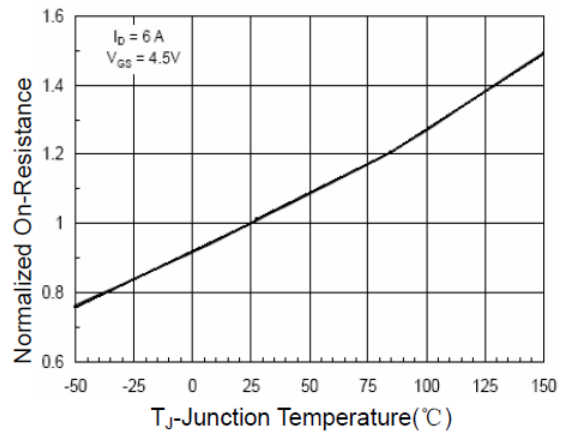
2. Transfer Characteristics



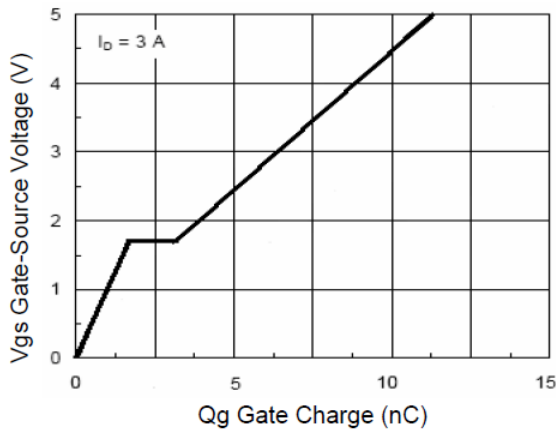
3. $R_{DS(on)}$ - Drain Current



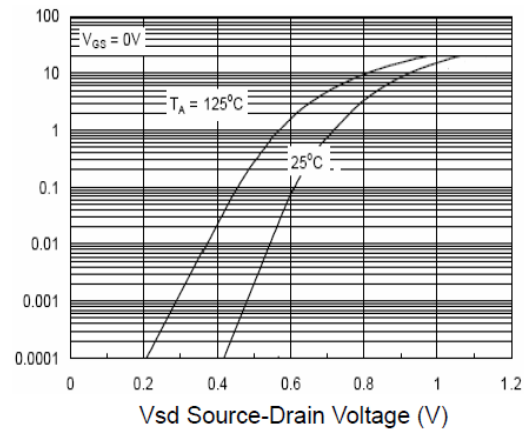
4. $R_{DS(on)}$ -Junction Temperature



5. Gate Charge

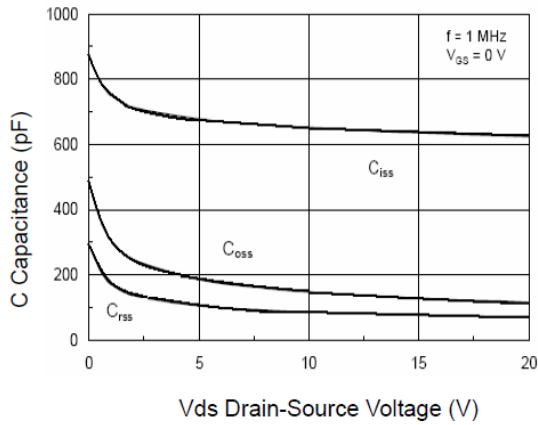


6. Source- Drain Diode Forward

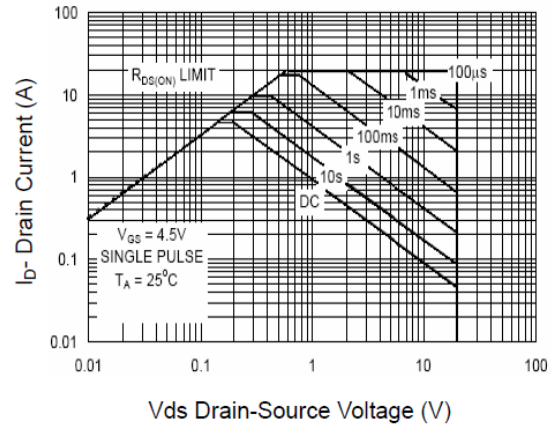




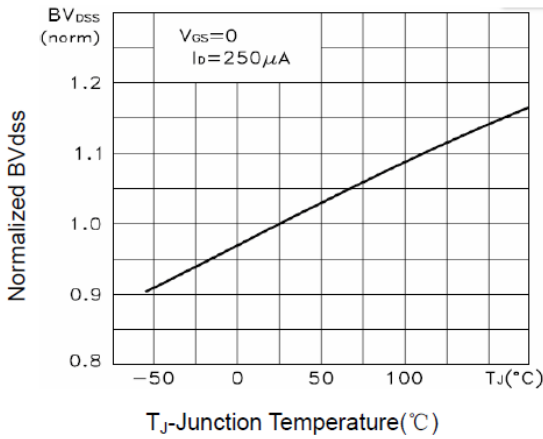
7. Capacitance vs. V_{DS}



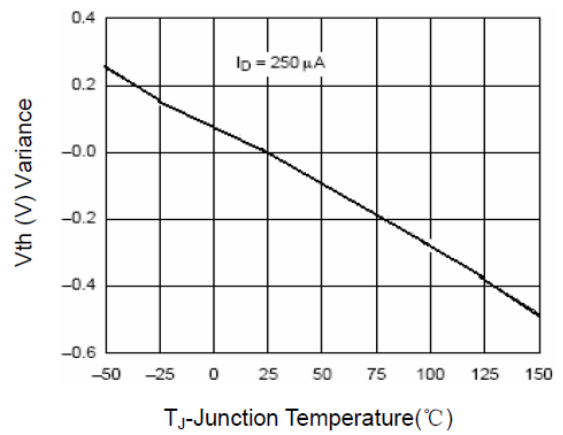
8. Safe Operation Area



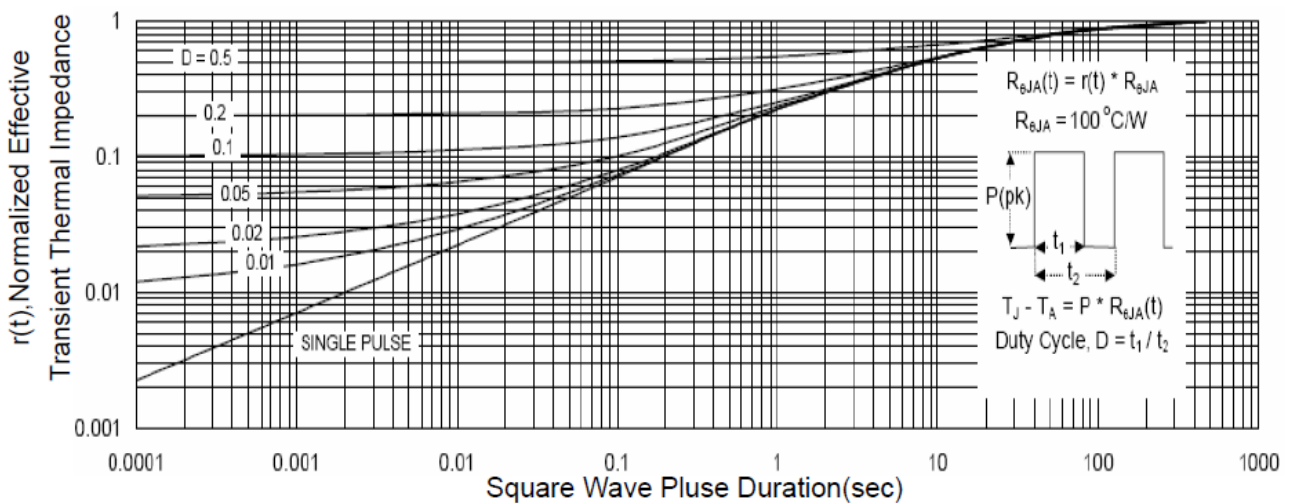
9. BV_{DSS} vs. Junction Temperature



10. $V_{GS(th)}$ vs. Junction Temperature



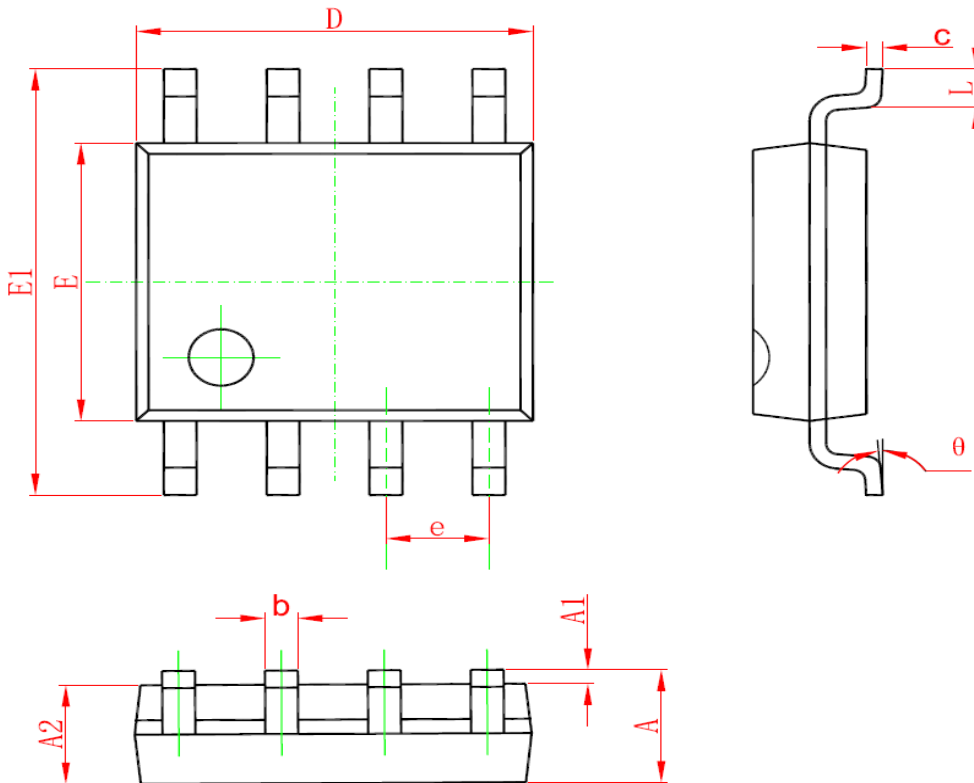
11. Normalized Maximum Transient Thermal Impedance





PACKAGE INFORMATION

Dimension in SOP8 (Unit: mm)



Symbol	Min	Max
A	1.350	1.750
A1	0.100	0.250
A2	1.350	1.550
b	0.330	0.510
c	0.170	0.250
D	4.700	5.100
E	3.800	4.000
E1	5.800	6.200
e	1.270(BSC)	
L	0.400	1.270
θ	0°	8°



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