DESCRIPTION

The AM4953 is the Dual P-Channel logic enhancement mode power field effect transistor is produced using high cell density. Advanced trench technology to provide excellent $R_{DS(ON)}$.

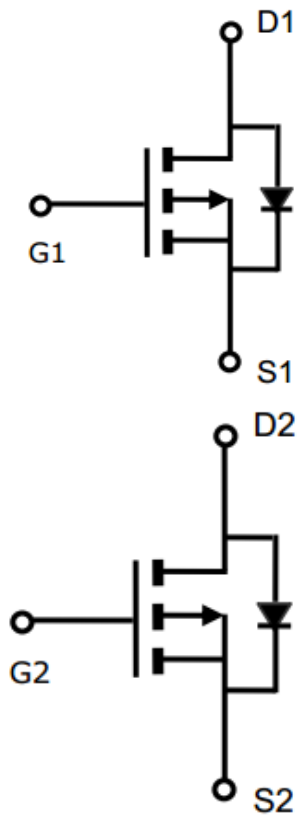
This device is suitable for use as a load switch or in PWM and gate charge for most of the synchronous buck converter applications.

The AM4953 is available in SOP8 Package

FEATURES

- -30V/-5.3A, $R_{DS(ON)}$ =46mΩ(typ.)@V_{GS} =-10V
- -30V/-3.6A, $R_{DS(ON)}$ =75mΩ(typ.)@V_{GS} =-4.5V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and Maximum DC current capability
- Available in SOP8 Package

P CHANNEL MOSFET



APPLICATIONS

- Power Management in Note book
- Portable Equipment
- DSC
- LCD Display inverter
- Battery Powered System
- DC/DC Converter
- Load Switch

ORDERING INFORMATION

Package Type	Part Number	
SOP8	M8	AM4953M8R
		AM4953M8VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products Suffix " V " means Halogen free Package		

PIN DESCRIPTION

Top View

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

ABSOLUTE MAXIMUM RATINGS

T_A = 25℃ Unless otherwise Specified

V_{DSS}, Drain-Source Voltage		-30V
V_{GSS}, Gate-Source Voltage		±20V
I_D, Continuous Drain Current, V_{GS} = -10V NOTE1	T_A=25℃	-5.3A
	T_A=70℃	-4.0A
I_{DM}, Pulsed Drain Current NOTE2		-12A
E_{AS}, Single Pulse Avalanche energy L=0.1mH NOTE3		38mJ
I_{AS}, Avalanche Current		15A
P_D, Power Dissipation	T_A=25°C	2.0W
	T_A=70°C	1.4W
T_J, Operation Junction Temperature		-55℃~150℃
T_{STG}, Storage Temperature Range		-55℃~150℃

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

NOTE1. The value of $R_{\theta JA}$ is measured with the device mounted on 1in 2 FR-4 board with 2oz. Copper, in a still air environment with T_A=25°C.

NOTE2. The data tested by pulsed , pulse width ≦ 300uS , duty cycle ≦ 2%

NOTE3. The EAS data shows Max. rating . The test condition is V_{DD}=-25V,V_{GS}=-10V,L=0.1mH.

THERMAL INFORMATION

Symbol	Max	Unit
$R_{\theta JA}$	85	℃/W
$R_{\theta JC}$	60	℃/W

ELECTRICAL CHARACTERISTICS

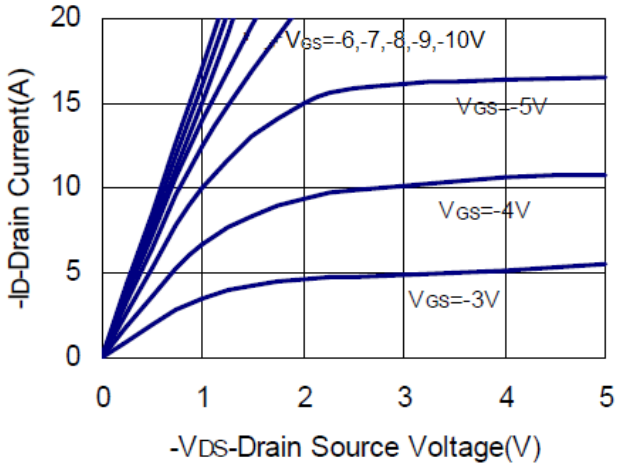
T_A = 25℃ Unless otherwise specified

Parameter	Symbol	Conditions	Min	Typ.	Max	Units
Static Parameters						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=-250μA	-30	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250μA	-1.0	-	-2.0	V
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±20V	-	-	±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-24V,V_{GS}=0V T_J=25°C	-	-	-1	μA
		V_{DS}=-24V,V_{GS}=0V T_J=55°C	-	-	-5	
Drain-source On-Resistance NOTE2	$R_{DS(ON)}$	V_{GS}=-10V,I_D=-5.3A	-	46	55	mΩ
		V_{GS}=-4.5V,I_D=-3.6A	-	75	85	
Forward Transconductance	G_{FS}	V_{DS}=-10V,I_D=-5.3A	-	5.5	-	S
Source-Drain Doide						
Diode Forward Voltage NOTE2	V_{SD}	I_S=-1.7A,V_{GS}=0V	-	-0.8	-1.2	V
Continuous Source Current NOTE1,4	I_S		-	-	-6	A
Dynamic Parameters						
Total Gate Charge	Q_G(-4.5V)	V_{DS}=-20V, V_{GS}=-4.5V I_D=-5.3A	-	5.3	-	nC
Gate-Source Charge	Q_{GS}		-	1.25	-	
Gate-Drain Charge	Q_{GD}		-	2.35	-	
Input Capacitance	C_{ISS}	V_{DS}=-15V, V_{GS}=0V f=1MHz	-	468	-	pF
Output Capacitance	C_{OSS}		-	83	-	
Reverse Transfer Capacitance	C_{RSS}		-	70	-	
Turn-On Time	$t_{D(ON)}$	V_{DD}=-15V, V_{GEN}=-10V, I_D=-1.0A, R_G=3.3Ω	-	18.5	-	nS
	t_R		-	11.5	-	
Turn-Off Time	$t_{D(OFF)}$		-	38.8	-	
	t_F		-	5.3	-	

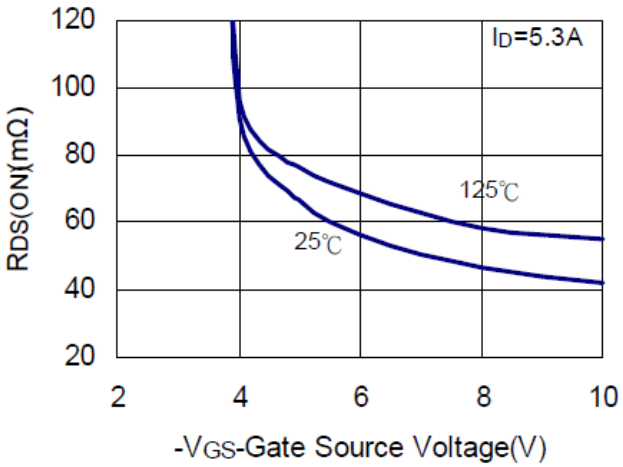
NOTE4. The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

TYPICAL CHARACTERISTICS

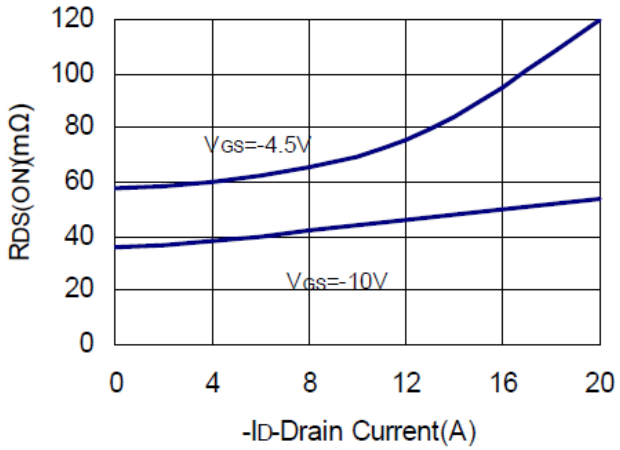
1. Output Characteristics



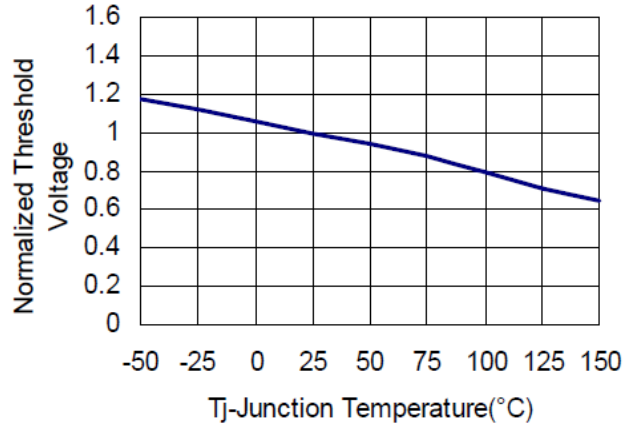
2. Drain-Source On Resistance



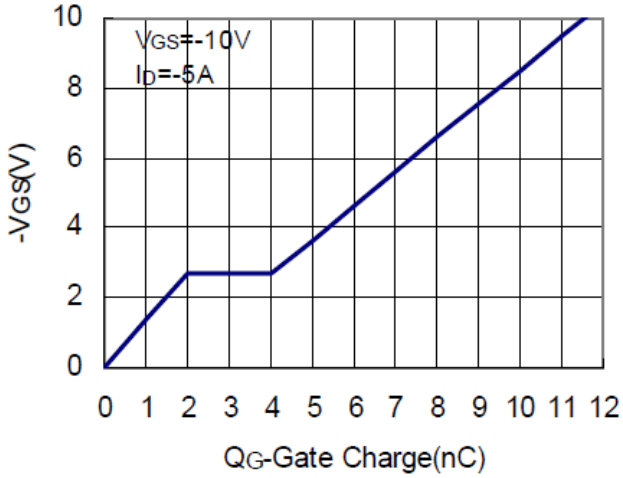
3. Drain Source On Resistance



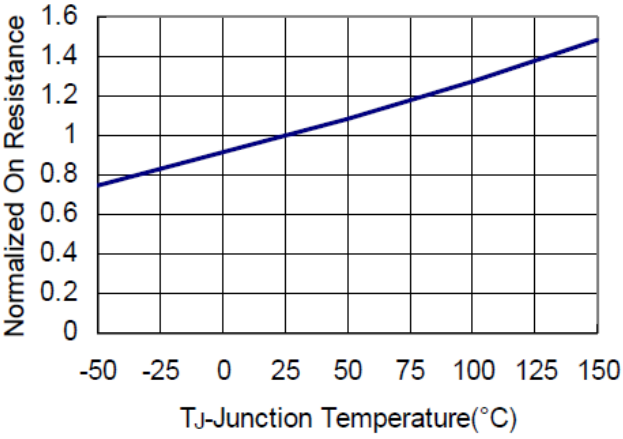
4. Gate Threshold Voltage



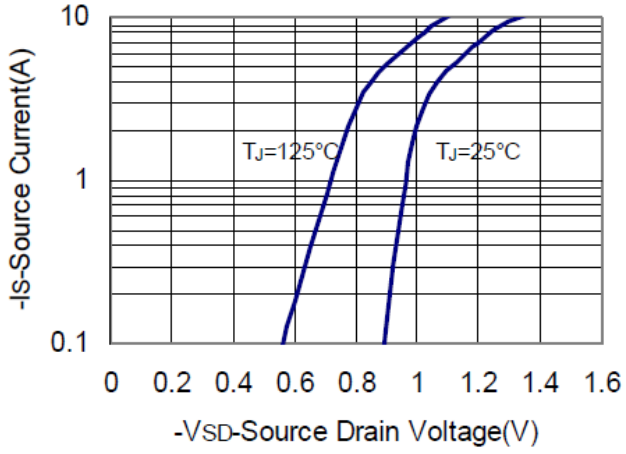
5. Gate Charge



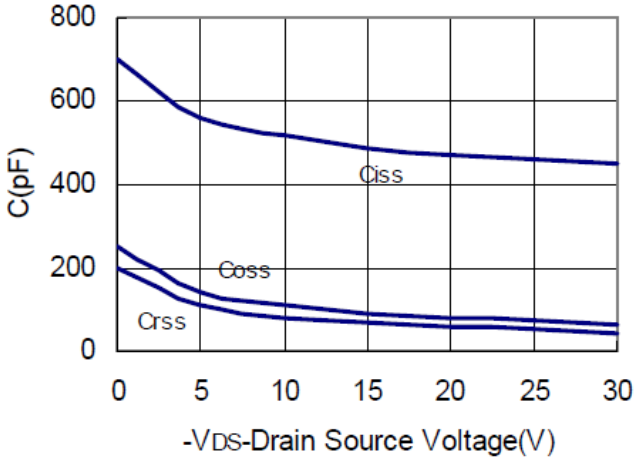
6. Drain Source On Resistance



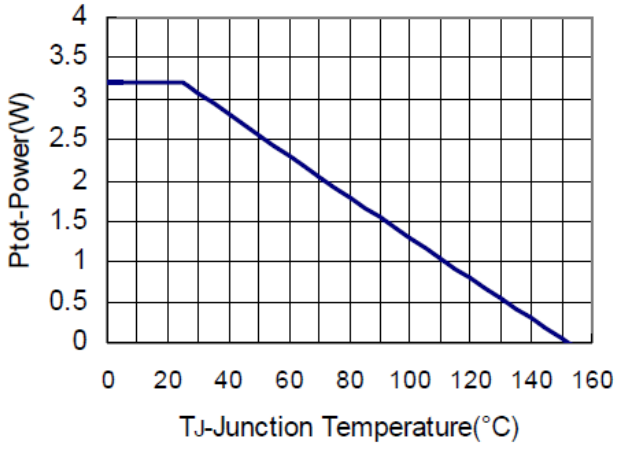
7. Source Drain Diode Forward



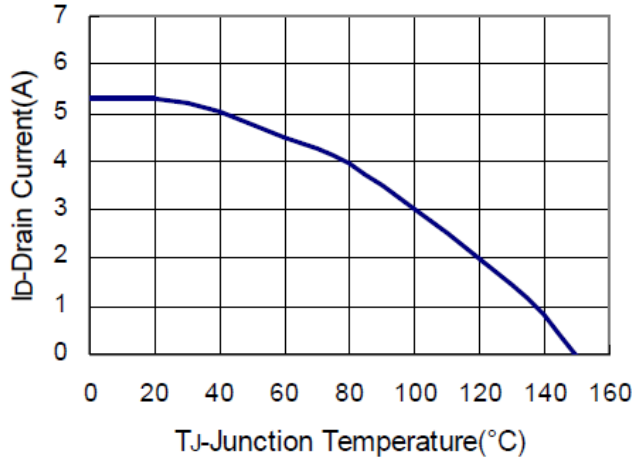
8. Capacitance



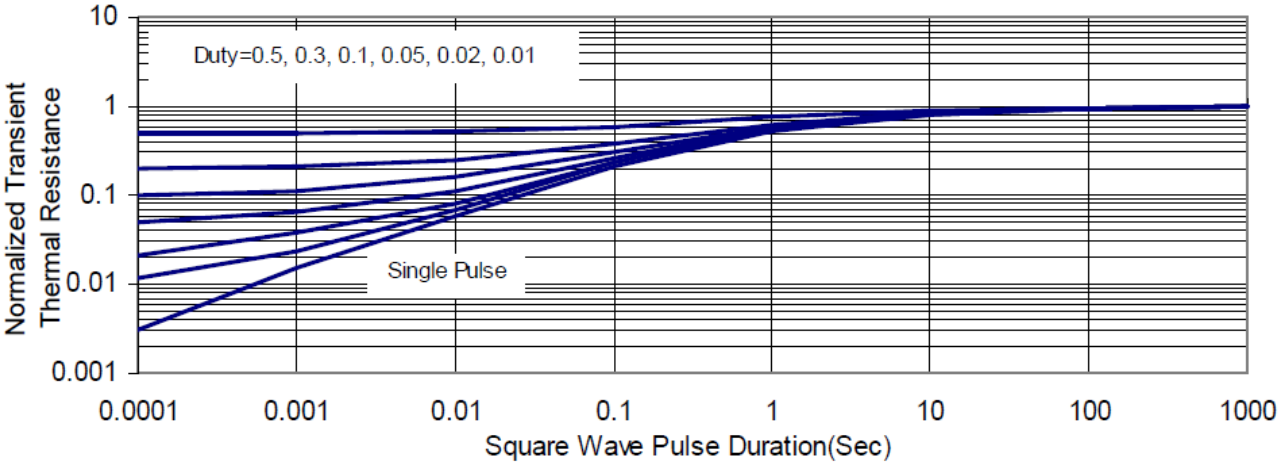
9. Power Dissipation



10. Drain Current

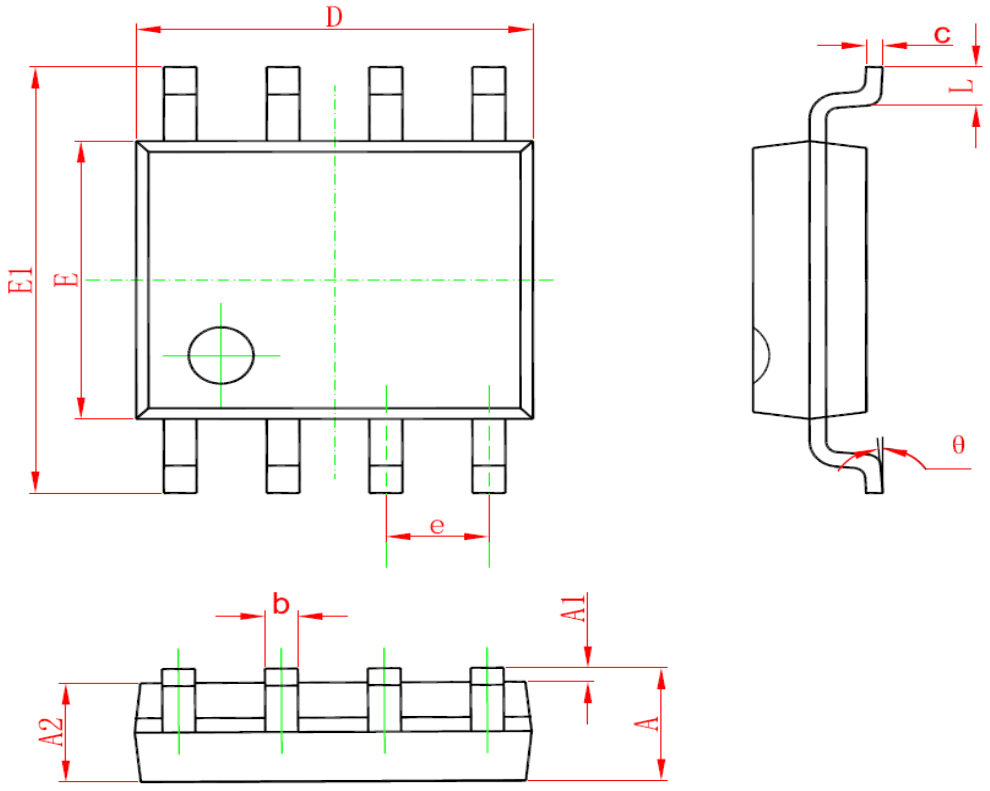


11. Thermal Transient Impedance



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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