

-30V Dual P-Channel Enhancement Mode MOSFET

❖ DESCRIPTION

The AM4953 is the Dual P-Channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology.

This high density process is especially tailored to minimize on-state resistance.

These devices are particularly suited for low voltage application, notebook computer power management and other battery powered circuits where high-side switching.

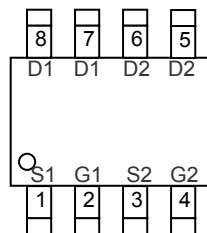
❖ APPLICATIONS

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

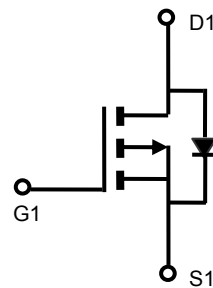
❖ FEATURE

- -30V/-5.2A, $R_{DS(ON)} < 60m\Omega @ V_{GS} = -10V$
- -30V/-4.5A, $R_{DS(ON)} < 90m\Omega @ V_{GS} = -4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- Full RoHS compliance
- SOP-8 package design

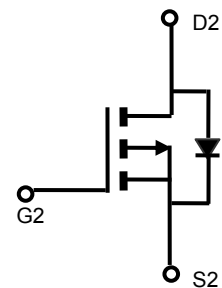
❖ PIN CONFIGURATION



TOP VIEW
SOP-8

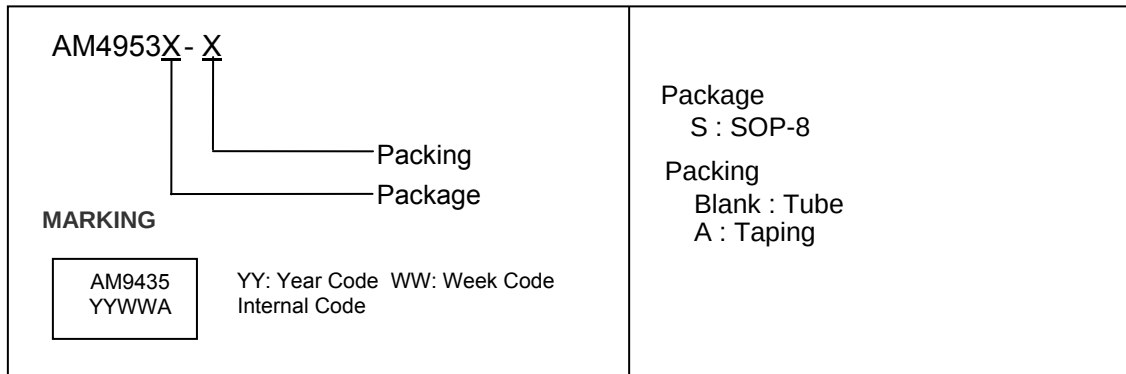


P-Channel



P-Channel

❖ PART MARKING INFORMATION



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Part Number	Package Code	Package	Shipping
AM4953S-A	S	SOP-8	2500 /Tape&Reel

※ Year Code : 00 ~ 99

※ Week Code : 01~52

※ SOP-8 : Only available in tape and reel packaging. (A reel contains 2500 devices)

※ G : Lead-free product. This product is RoHS compliant

❖ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^{\circ}\text{C}$ Unless otherwise noted)

Symbol	Parameter	Typical	Unit
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current ($T_J=150^{\circ}\text{C}$)	$V_{GS} = -10\text{V}$ -5.2	A
I_{DM}	Pulsed Drain Current	-20	A
I_S	Continuous Source Current (Diode Conduction)	-2.4	A
T_J	Operation Junction Temperature	-55~150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature Range	-55~150	$^{\circ}\text{C}$
P_D	Power Dissipation	$T_A=25^{\circ}\text{C}$ $T_A=70^{\circ}\text{C}$ 2.8 1.8	W
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	70	$^{\circ}\text{C}/\text{W}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

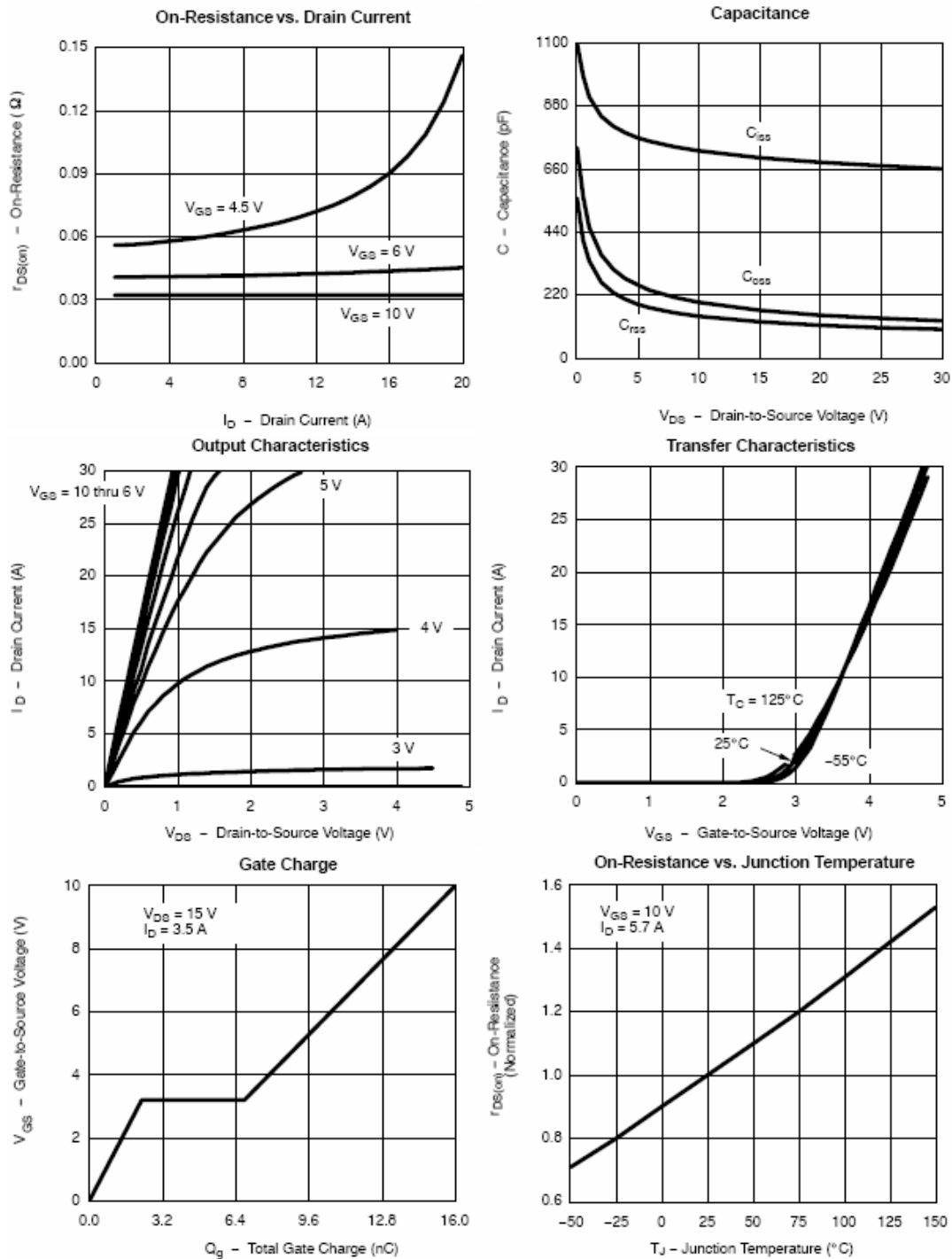
❖ ELECTRICAL CHARACTERISTICS($T_A = 25^\circ\text{C}$ Unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Parameters						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-1.0		-3.0	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±20V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-30V, V _{GS} =0V			-1	μA
		V _{DS} =-30V, V _{GS} =0V T _J =55℃			-5	
I _{D(ON)}	On-State Drain Current	V _{DS} ≤ -5V, V _{GS} ≤ -10V	-25			A
R _{DS(ON)}	Drain-source On-Resistance	V _{GS} =-10V, I _D =-5.2A V _{GS} =-4.5V, I _D =-4.5A		45 60	60 90	mΩ
G _{fs}	Forward Transconductance	V _{DS} =-10V, I _D =-5.2A		10		S
Source-Drain Doide						
I _s	Diode forward Current (Max.)				2.6	A
V _{SD}	Diode Forward Voltage	I _s =-2.0A, V _{GS} =0V		-0.8	-1.2	V
Dynamic Parameters						
Q _g	Total Gate Charge	V _{DS} =-15V, V _{GS} =-10V I _D =-5.0A		15	10	nC
Q _{gs}	Gate-Source Charge			4.0		
Q _{gd}	Gate-Drain Charge			2.0		
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V f =1MHz		680		pF
C _{oss}	Output Capacitance			120		
C _{rss}	Reverse Transfer Capacitance			75		
t _{d(on)}	Turn-On Time	V _{DD} =-15V, R _L =15Ω I _D =-1.0A, V _{GEN} =-10V R _G =6Ω		7.0	15	nS
t _r				10	20	
t _{d(off)}	Turn-Off Time			40	80	
t _f				20	40	

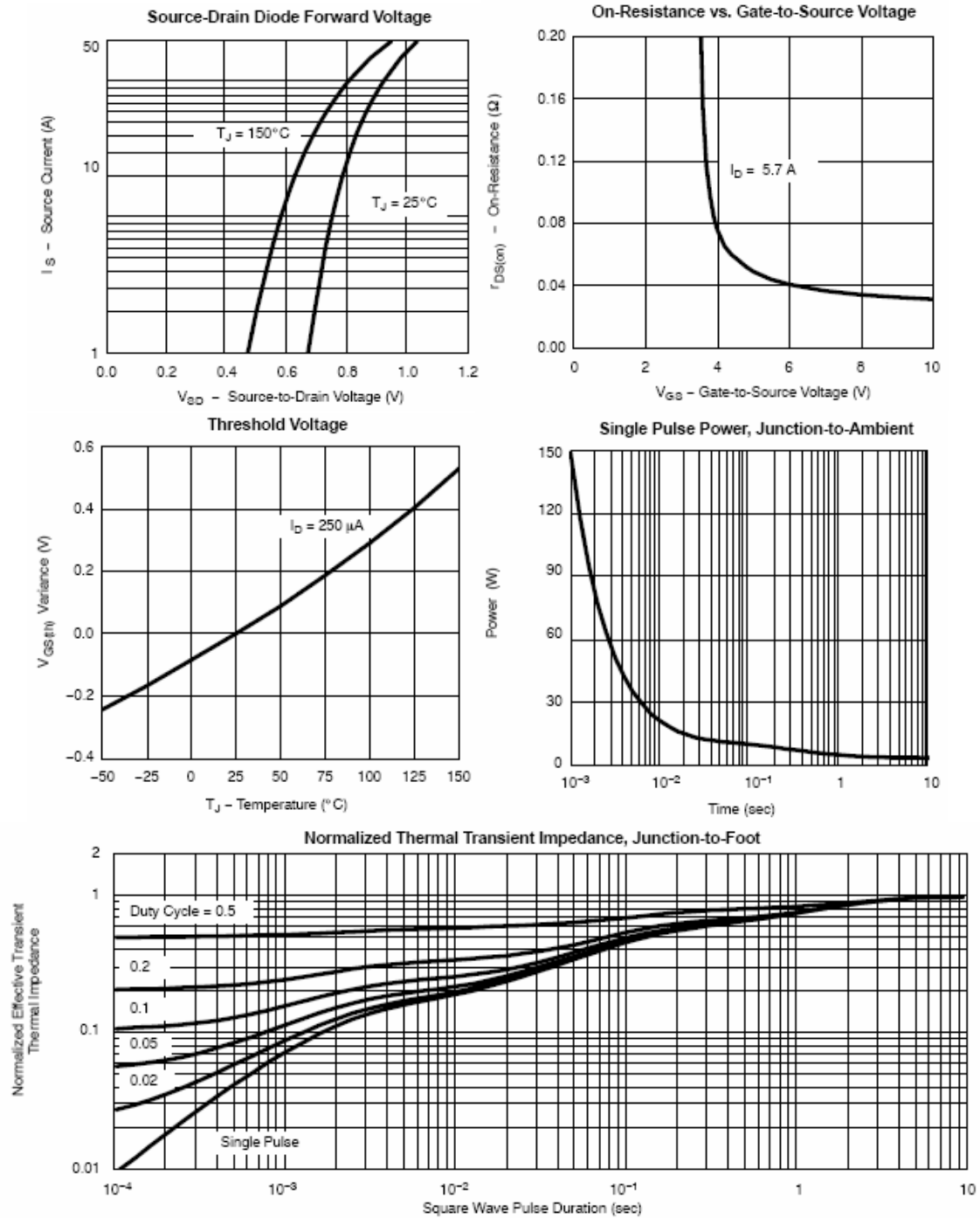
Note : 1. Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

2. Static parameters are based on package level with recommended wire-bonding

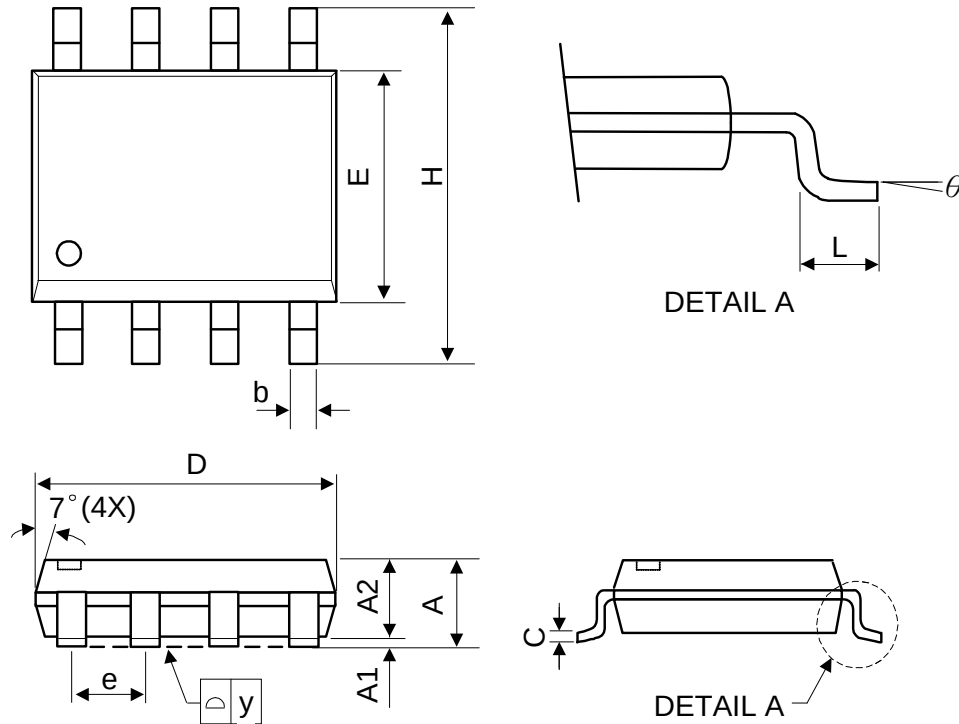
❖ **TYPICAL CHARACTERISTICS (25°C Unless Note)**



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❖ PACKAGE OUTLINES



Symbol	Dimensions in Millimeters			Dimensions in Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	-	-	1.75	-	-	0.069
A1	0.1	-	0.25	0.04	-	0.1
A2	1.25	-	-	0.049	-	-
C	0.1	0.2	0.25	0.0075	0.008	0.01
D	4.7	4.9	5.1	0.185	0.193	0.2
E	3.7	3.9	4.1	0.146	0.154	0.161
H	5.8	6	6.2	0.228	0.236	0.244
L	0.4	-	1.27	0.015	-	0.05
b	0.31	0.41	0.51	0.012	0.016	0.02
e	1.27 BSC			0.050 BSC		
y	-	-	0.1	-	-	0.004
θ	0°	-	8°	0°	-	8°

Mold flash shall not exceed 0.25mm per side
JEDEC outline: MS-012 AA