Dual N-Channel Enhancement Mode MOSFET

◆ DESCRIPTION

The MT9926SS uses advanced technology to provide excellent $R_{DS(ON)}$, low switching loss and reasonable price.

This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application such as cellular phone and notebook computer power management and other battery powered circuits, and low in-line power loss are needed in a very small outline surface mount package.

◆ FEATURES

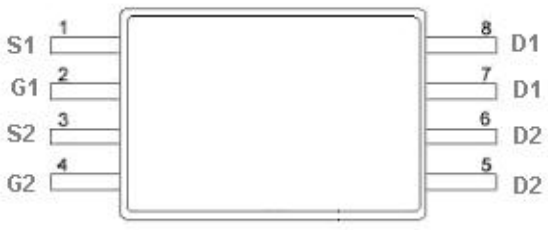
- V_{DS} = 20V
- $R_{DS(ON)}$, V_{GS} @ 2.5V, I_{DS} @ 3.8A = 43mΩ
- $R_{DS(ON)}$, V_{GS} @ 4.5V, I_{DS} @ 4.5A = 30mΩ
- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- High power and Current handing capacity.

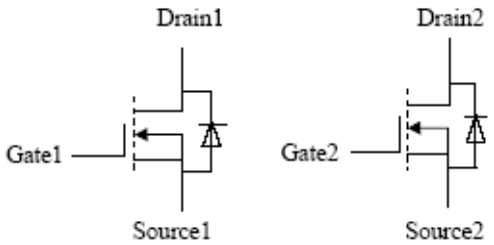
◆ APPLICATIONS

- POWER Management in Notebook
- Portable Equipment
- Battery Powered System

◆ PIN CONFIGURATION

TSSOP-8





MT9926SS

◆ ABSOLUTE MAXIMUM RATINGS

(T_A=25°C Unless Otherwise Noted)

Parameter		Symbol	Maximum	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 12	V
Continuous Drain Current		I_D	4.5	A
Pulsed Drain Current		I_{DM}	20	A
Maximum Power Dissipation	T_A = 25℃	P_D	1	W
	T_A = 75℃		0.6	
Operating junction temperature range		T_J	150	°C
Storage temperature range		T_{STG}	- 55 to 150	°C

◆ THERMAL RESISTANCE RATINGS

Thermal Resistance	Symbol	Maximum	Unit
Junction-to-Ambient	$R_{\theta JA}$	125	°C/W

◆ ELECTRICAL CHARACTERISTICS

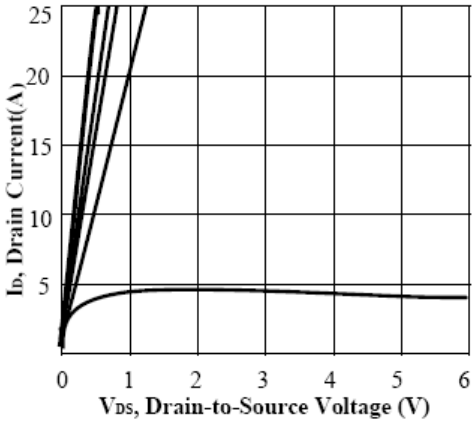
(T_A=25°C Unless Otherwise Noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = 250 μA	20	-	-	V
Drain-Source On State Resistance	$R_{DS(ON)}$	V_{GS} = 4.5V, I_D = 4.5 A	-	22	30	mΩ
		V_{GS} = 2.5V, I_D = 3.8 A	-	30	43	
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS} = V_{DS}, I_D = 250 μA	0.6	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 20V, V_{GS} = 0 V	-	-	1	μA
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ± 12 V,	-	-	±100	nA
Diode Forward Voltage	g_{fs}	I_D = 4.5 A, V_{DS} = 10V	7	13	-	S
Dynamic Characteristics (2)						
Total Gate Charge	Q_g	V_{DS} = 10V, V_{GS} = 4.5V, I_D = 4.5A	-	4.86	-	nC
Gate Source Charge	Q_{gs}		-	0.92	-	
Gate Drain Charge	Q_{gd}		-	1.4	-	
Input Cap.	C_{iss}	V_{DS} = 8V, V_{GS} = 0V f = 1MHz	-	562	-	pF
Output Cap.	C_{oss}		-	106	-	
Reverse Transfer Cap.	C_{rss}		-	75	-	
Turn-On Delay Time	$T_{D(on)}$	V_{DS} = 10V, V_{GEN} = 4.5V, R_G = 6Ω, I_D = 1A,	-	8.1	-	nS
Turn-On Rise Time	T_r		-	9.95	-	
Turn-On Delay Time	$T_{D(off)}$		-	21.85	-	
Turn-On Rise Time	T_f		-	5.35	-	
Source-Drain Diode						
Max. Diode Forward Current	I_S		-	-	1.7	A
Diode Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = 1.7A	-	-	1.2	V

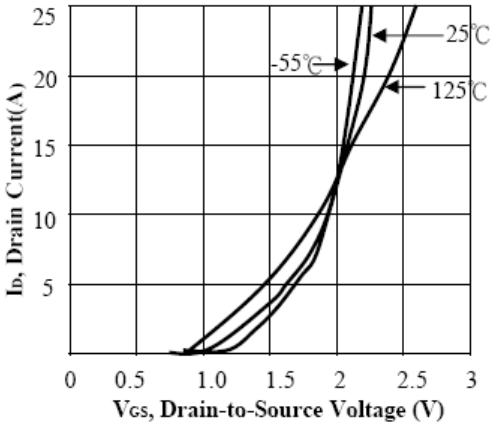
Note :

Pulse Test：Pulse width ≤ 300us , Duty Cycle ≤ 2%

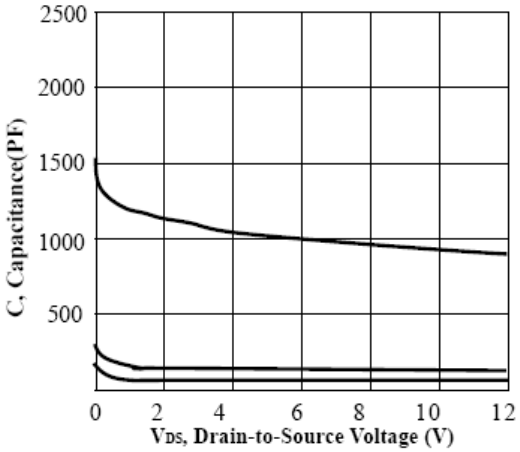
◆ TYPICAL CHARACTERICTICS



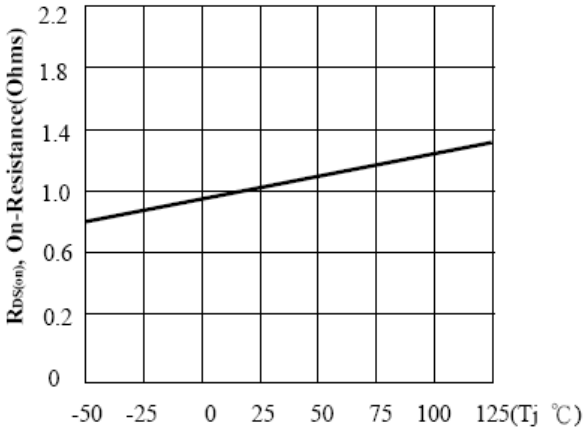
Output Characteristics



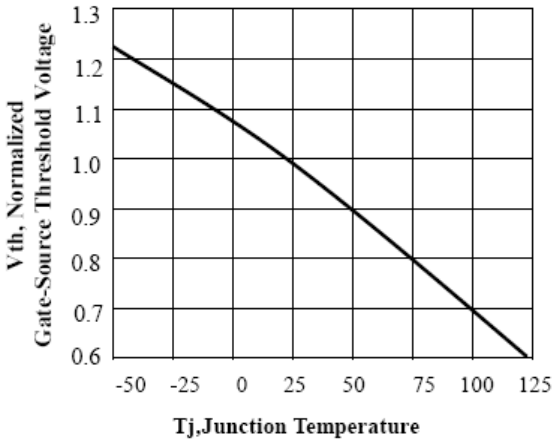
Transfer Characteristics



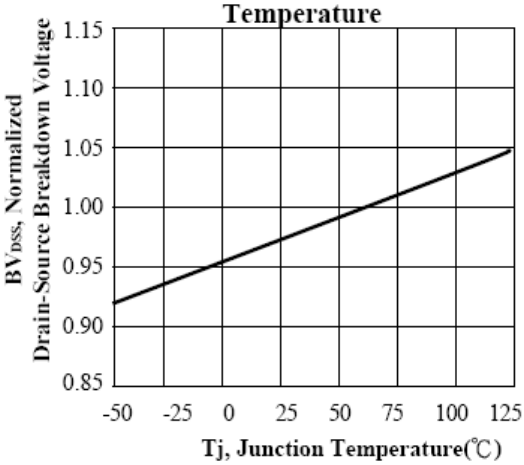
Capacitance



On-Resistance Variation with Temperature

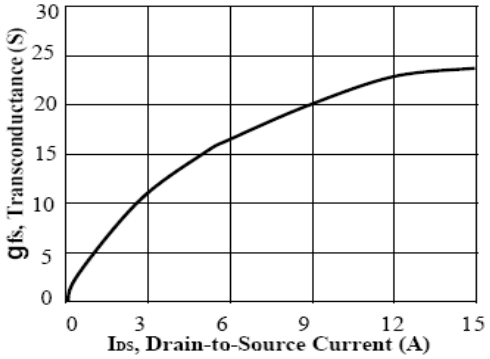


Gate Threshold Variation with Temperature

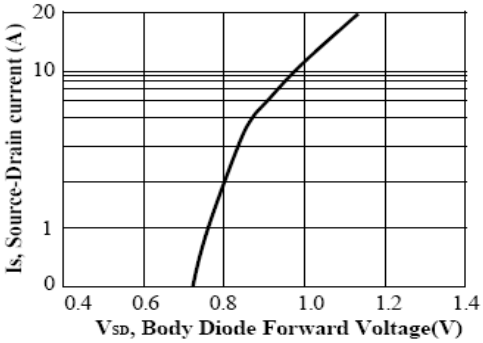


Breakdown Voltage Variation with Temperature

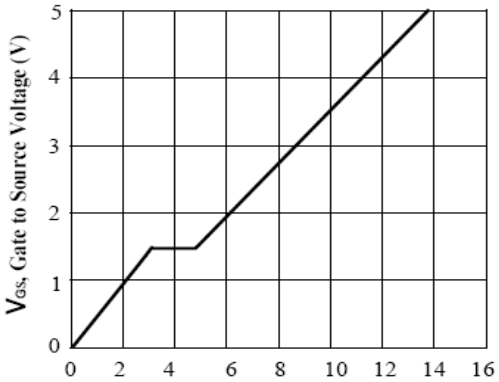
◆ TYPICAL CHARACTERICTICS



Transconductance Variation with Drain Current

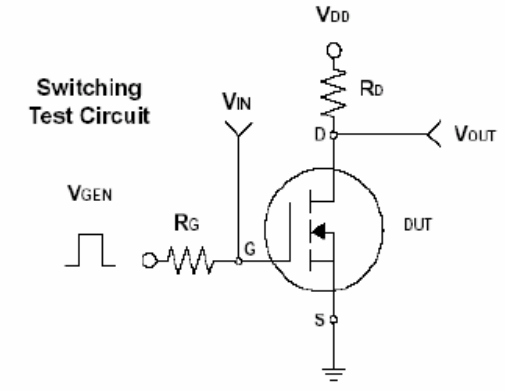


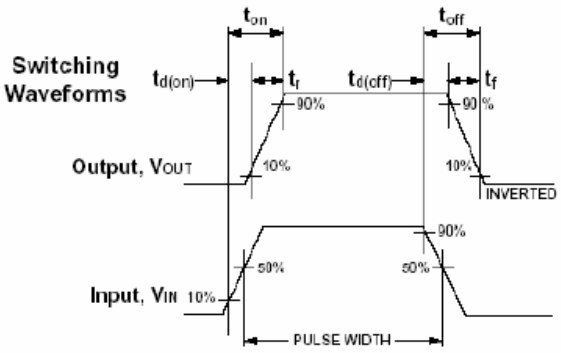
Body Diode Forward Voltage Variation with Source Current



Gate Charge

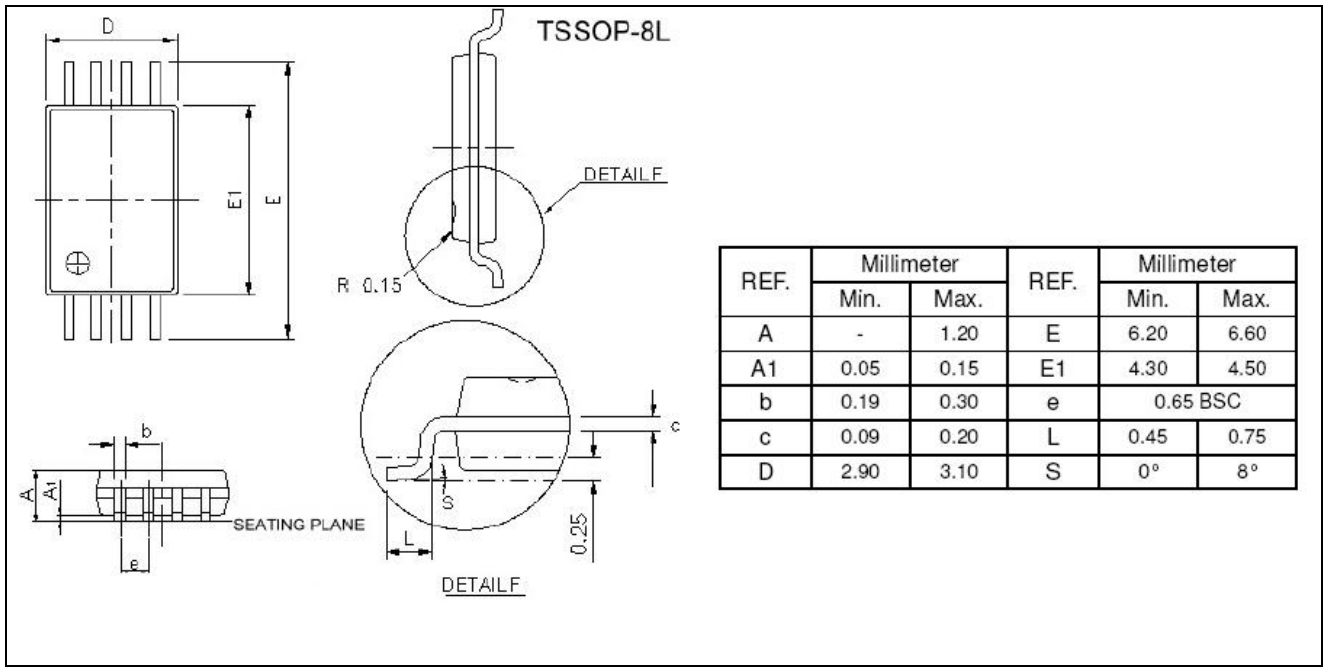
◆ TYPICAL APPLICATIONS





◆ PHYSICAL DIMENSIONS

8-Pin Plastic TSSOP



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	-	1.20	E	6.20	6.60
A1	0.05	0.15	E1	4.30	4.50
b	0.19	0.30	e	0.65 BSC	
c	0.09	0.20	L	0.45	0.75
D	2.90	3.10	S	0°	8°