

SE9945

Revision:A

General Description

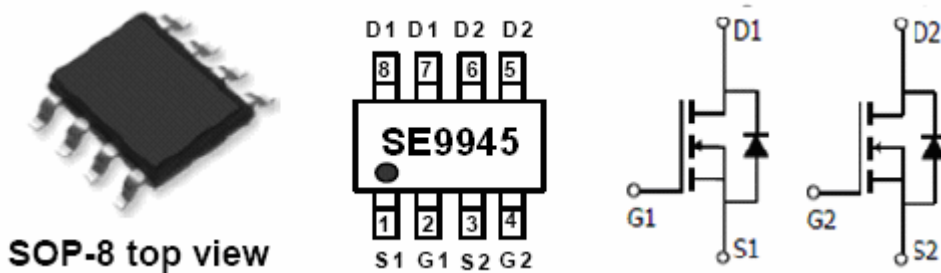
The SE9945 uses advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge .This device is suitable for use as a load switch or in PWM applications

Features

- $V_{DS} = 30V, I_D = 8.5A$
- $R_{DS(ON)} < 40m\Omega @ V_{GS} = 4.5V$
- $R_{DS(ON)} < 26m\Omega @ V_{GS} = 10V$
- High Power and current handling capability
- Lead free product is acquired
- Surface Mount Package y.

Pin configurations

See Diagram below



Absolute Maximum Ratings

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current (Note 1)	Continuous	I_D	8.5	A
	Pulsed		50	
Total Power Dissipation		P_D	3	W
Operating Junction Temperature Range		T_J	-55 to 150	$^{\circ}C$

Electrical Characteristics (T _J =25°C unless otherwise noted)							
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units	
OFF/ON CHARACTERISTICS (Note 2)							
BV _{DSS}	Drain-Source Breakdown Voltage	I _D =250 μ A, V _{GS} =0 V	30			V	
I _{BSS}	Zero Gate Voltage Drain Current	V _{DS} =24 V, V _{GS} =0 V			1	μ A	
I _{GSS}	Gate-Body leakage current	V _{DS} =0 V, V _{GS} =±20 V			±100	nA	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} I _D =-250 μ A	1	1.9	3	V	
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =-4.5V, I _D =5A	-	31	40	mΩ	
		V _{GS} =10V, I _D =-8.5A	-	20	26		
g _{FS}	Forward Transconductance	V _{DS} =5V, I _D =5A	10	17		mS	
DYNAMIC PARAMETERS							
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =15V, f=1MHz	-	680	820	pF	
C _{oss}	Output Capacitance		-	100	-	pF	
C _{rss}	Reverse Transfer Capacitance		-	75	-	pF	
t _{ON}	Turn-On Time	V _{DS} =15V, R _L = 1.8Ω V _{GS} = 10 V, R _{GEN} = 3Ω	-	4.5	6.5	ns	
t _{OFF}	Turn-Off Time		-	20	30	ns	
T _r	Turn-on Rise Time		-	4.2	6.3	ns	
T _f	Turn-on Fall Time		-	4.9	7.5	ns	
Q _g	Total Gate Charge	V _{DS} =15V, I _D =8.5A, V _{GS} =10V		13.8	17	nC	
Q _{gs}	Gate-Source Charge			1.8		nC	
Q _{gd}	Gate-Drain Charge			3.3		nC	
T _r	Body Diode Reverse Recovery Time	I _F =8.5A, dI/dt=100A/μs		17.2	21	nS	
Q _{rr}	BodyDiode Reverse Recovery Charge	I _F =8.5A, dI/dt=100A/μs		8.6	10	nC	
DRAIN-SOURCE DIODE CHARACTERISTICS							
Diode Forward Voltage (Note 3)		V _{SD}	V _{GS} =0V, I _S =1A	-	0.76	1	V

Typical Characteristics

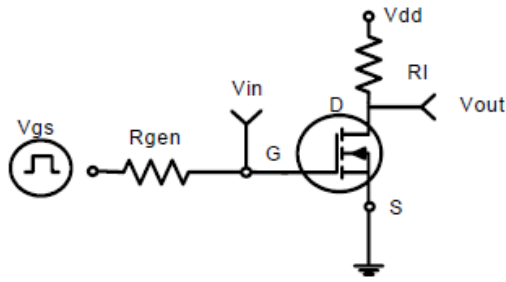


Figure 1: Switching Test Circuit

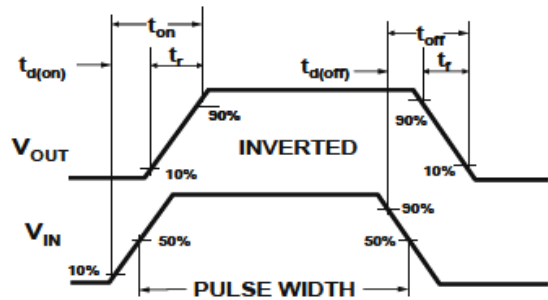


Figure 2: Switching Waveforms

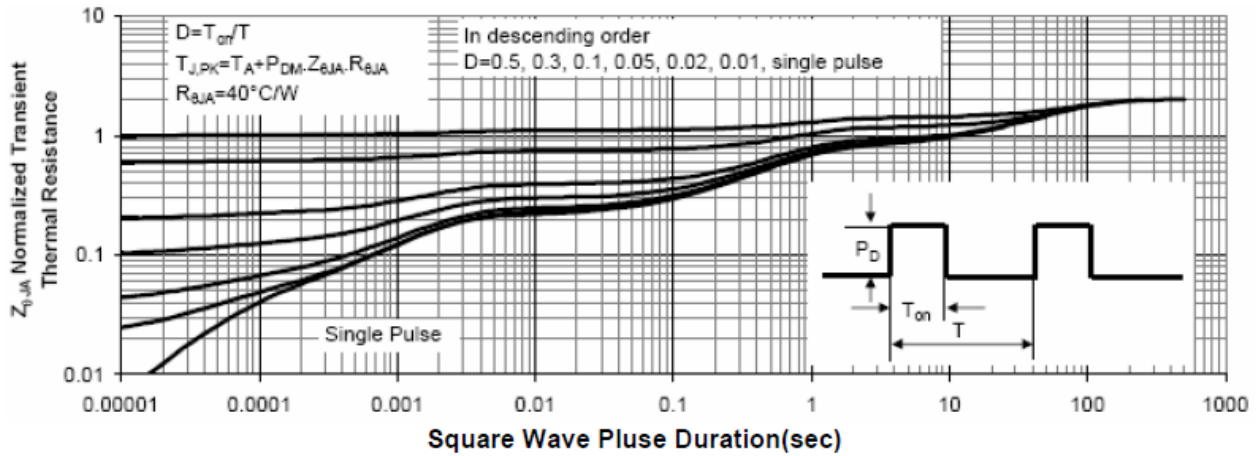
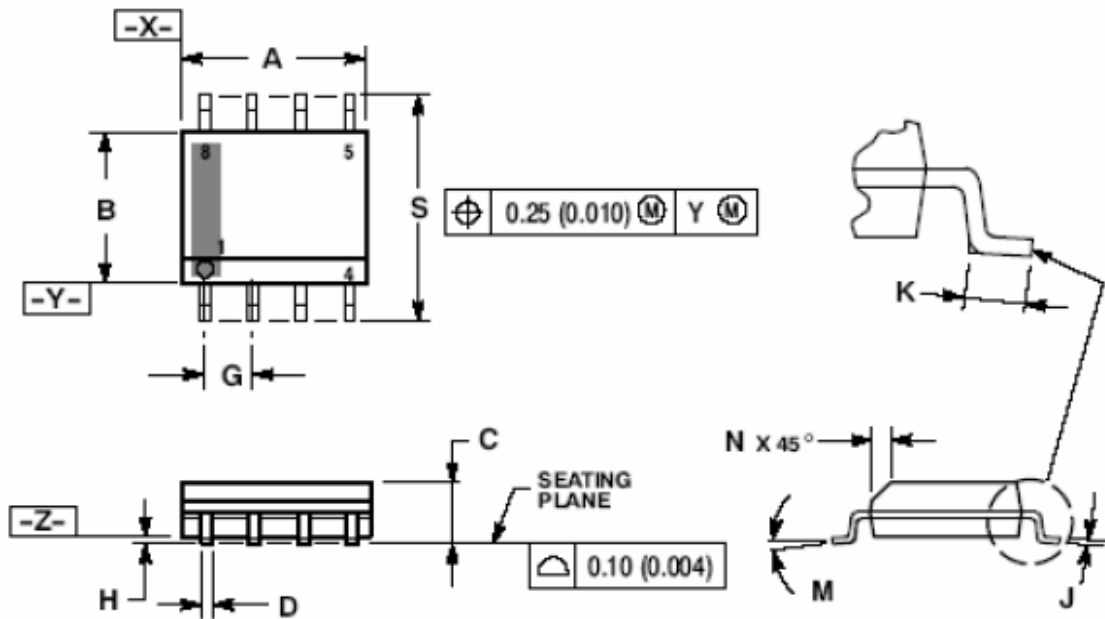
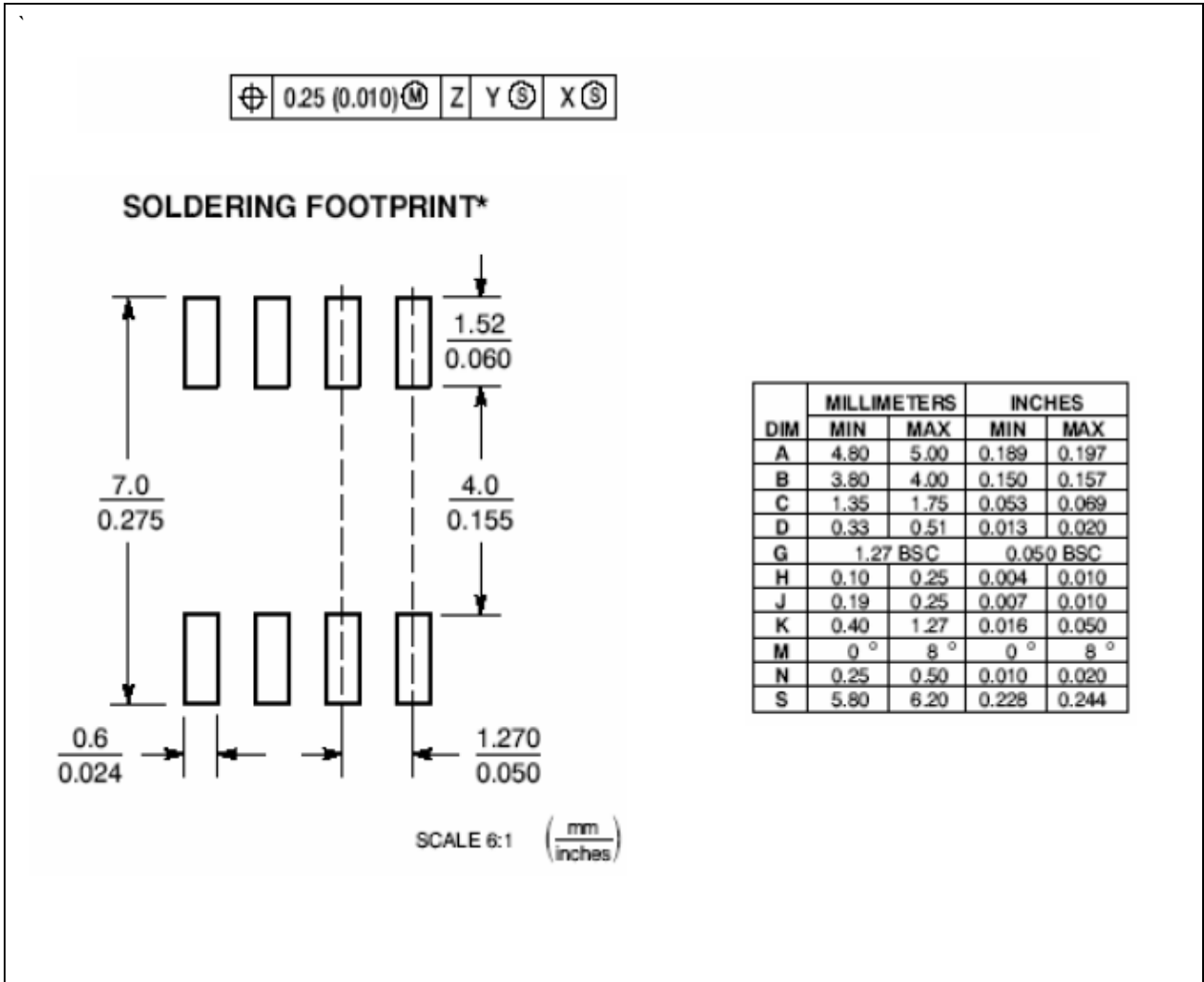


Figure 3: Normalized Maximum Transient Thermal Impedance

SOIC-8 PACKAGE INFORMATION





The SINO-IC logo is a registered trademark of ShangHai Sino-IC Microelectronics Co., Ltd.

© 2005 SINO-IC – Printed in China – All rights reserved.

SHANGHAI SINO-IC MICROELECTRONICS CO., LTD

Add: Building 3, Room 3401-03, No.200 Zhangheng Road, ZhangJiang Hi-Tech Park, Pudong, Shanghai 201203, China

Phone: +86-21-33932402 33932403 33932405 33933508 33933608

Fax: +86-21-33932401

Email: webmaster@sino-ic.com

Website: <http://www.sino-ic.com>