

GENERAL DESCRIPTION

The SGM9141 is a 3-input video switch which can operate from 4.5V to 13.2V single power supply. The bias input is suitable for fixed DC level of video signal.

The device has 25MHz bandwidth. Crosstalk at 4.43MHz is -73dB.

The SGM9141 is available in Green SOIC-8 and TSSOP-8 packages. It operates over an ambient temperature range of -40°C to +85°C.

FEATURES

- **Supply Voltage Range: 4.5V to 13.2V**
- **3-Input/1-Output Switch**
- **Bias Input**
- **Drive Single Video Load (2V_{pp}, 150Ω, A_v = 6dB)**
- **Crosstalk: -73dB at 4.43MHz**
- **Single Video Load Drive**
- **Wide Frequency Range: 25MHz**
- **-40°C to +85°C Operating Temperature Range**
- **Available in Green SOIC-8 and TSSOP-8 Packages**

APPLICATIONS

Camera
AV-TV
Video Disc Player

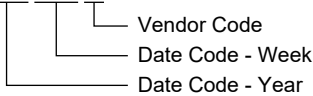
PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM9141	SOIC-8	-40°C to +85°C	SGM9141BYS8G/TR	SGM 9141BYS8 XXXXX	Tape and Reel, 2500
	TSSOP-8	-40°C to +85°C	SGM9141BYTS8G/TR	SGM9141B YTS8 XXXXX	Tape and Reel, 4000

MARKING INFORMATION

NOTE: XXXXX = Date Code and Vendor Code.

XXXXX



Green (RoHS & HSF): SG Micro Corp defines "Green" to mean Pb-Free (RoHS compatible) and free of halogen substances. If you have additional comments or questions, please contact your SGMICRO representative directly.

Input Voltage Range GND - 0.3V to $V_{CC} + 0.3V$
 Supply Voltage, GND to V_{CC} 15V
 Junction Temperature 150°C
 Storage Temperature Range -65°C to +150°C
 Lead Temperature (Soldering, 10s) 260°C
 ESD Susceptibility
 HBM 3000V
 MM 200V

RECOMMENDED OPERATING CONDITIONS

Operating Voltage Range 4.5V to 13.2V
 Operating Temperature Range -40°C to +85°C

OVERSTRESS CAUTION

Stresses beyond those listed in Absolute Maximum Ratings may cause permanent damage to the device. Exposure to absolute maximum rating conditions for extended periods may affect reliability. Functional operation of the device at any conditions beyond those indicated in the Recommended Operating Conditions section is not implied.

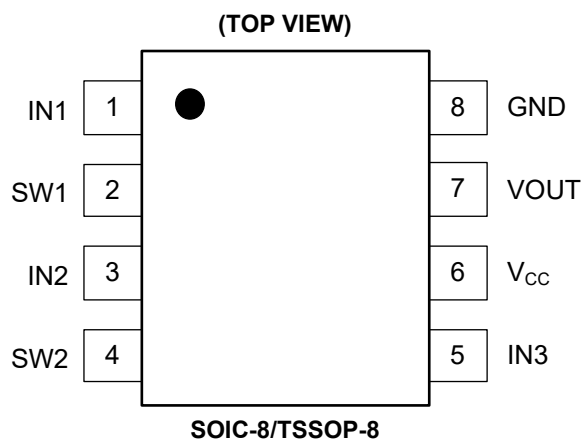
ESD SENSITIVITY CAUTION

This integrated circuit can be damaged if ESD protections are not considered carefully. SGMICRO recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage. ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because even small parametric changes could cause the device not to meet the published specifications.

DISCLAIMER

SG Micro Corp reserves the right to make any change in circuit design, or specifications without prior notice.

PIN CONFIGURATION



PIN DESCRIPTION

PIN	NAME	FUNCTION
1	IN1	Channel 1 Input.
2	SW1	Channel Switching Control.
3	IN2	Channel 2 Input.
4	SW2	Channel Switching Control.
5	IN3	Channel 3 Input.
6	V _{CC}	Power Supply.
7	VOUT	Output.
8	GND	Ground.

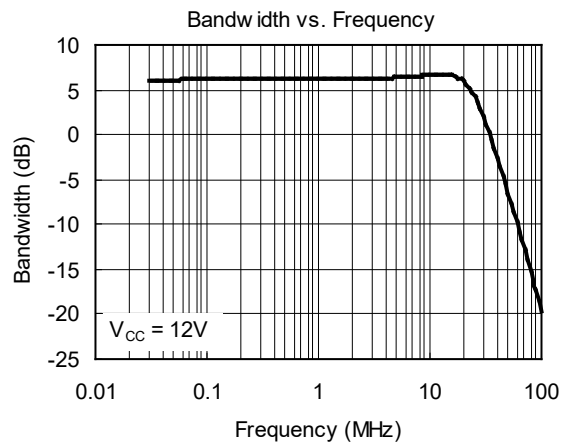
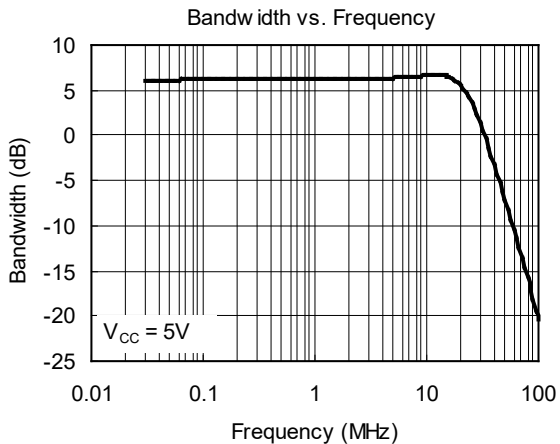
ELECTRICAL CHARACTERISTICS

($T_A = +25^\circ\text{C}$, $V_{IN} = 1V_{PP}$, $V_{CC} = 5V$, all inputs are AC-coupled with $0.1\mu\text{F}$; all outputs are AC-coupled with $220\mu\text{F}$ into 150Ω , unless otherwise noted.)

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Operating Voltage Range (V_{CC})		4.5		13.2	V
Operating Current (I_{CC})			9	11.5	mA
Voltage Gain (G_V)		5.6	6	6.4	dB
Differential Gain (DG)	4.43MHz AC to AC		0.1		%
Differential Phase (DP)	4.43MHz AC to AC		0.4		Deg
Output Distortion (THD)	$V_{OUT} = 1.4V_{PP}$, 4.43MHz		0.6		%
Crosstalk (CT)	$V_{OUT} = 2V_{PP}$, 4.43MHz		-73		dB
Switch Change Voltage (V_{IH})	All Inside SW: ON	1.5			V
Switch Change Voltage (V_{IL})	All Inside SW: OFF			0.75	V
-0.1dB Bandwidth	Referenced to 400kHz		17		MHz
-1dB Bandwidth	Referenced to 400kHz		21		MHz
-3dB Bandwidth	Referenced to 400kHz		25		MHz

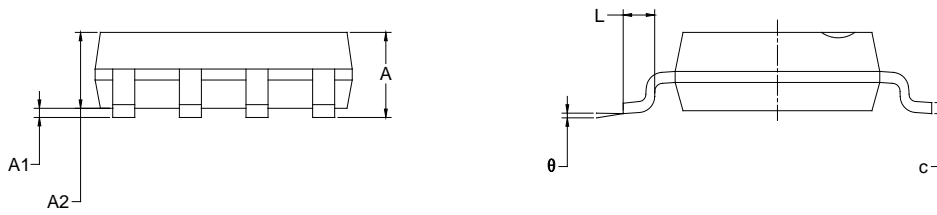
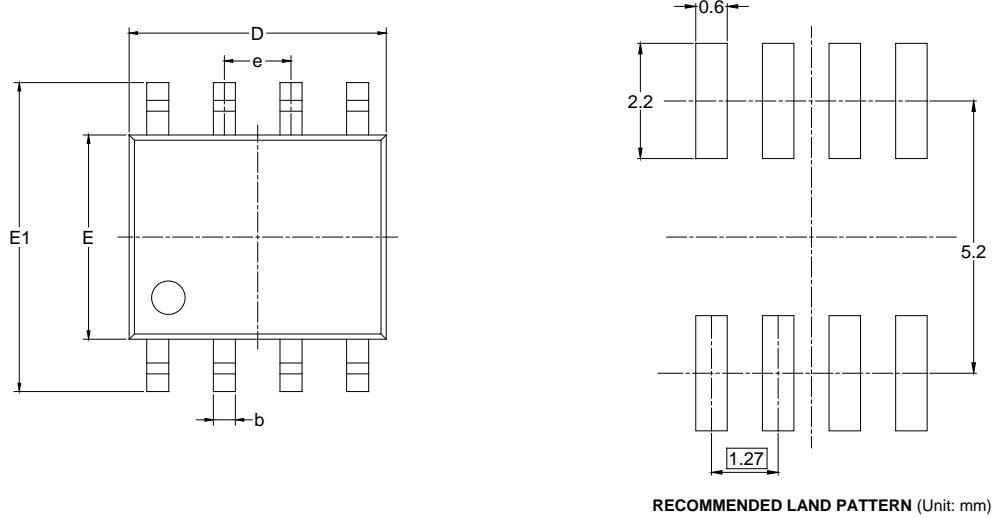
TYPICAL PERFORMANCE CHARACTERISTICS

$T_A = +25^\circ\text{C}$, $V_{IN} = 1V_{PP}$, all inputs are AC-coupled with $0.1\mu\text{F}$; all outputs are AC-coupled with $220\mu\text{F}$ into 150Ω , unless otherwise noted.



PACKAGE OUTLINE DIMENSIONS

SOIC-8

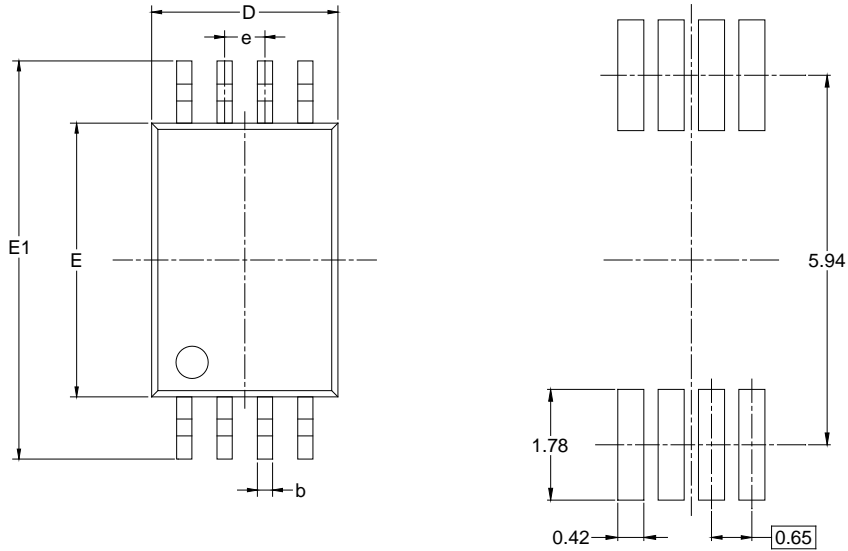


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.27 BSC		0.050 BSC	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

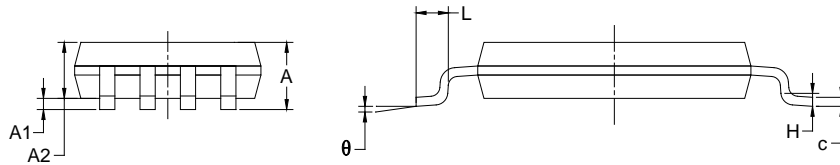
NOTES:
 1. Body dimensions do not include mode flash or protrusion.
 2. This drawing is subject to change without notice.

PACKAGE OUTLINE DIMENSIONS

TSSOP-8



RECOMMENDED LAND PATTERN (Unit: mm)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A		1.100		0.043
A1	0.050	0.150	0.002	0.006
A2	0.800	1.000	0.031	0.039
b	0.190	0.300	0.007	0.012
c	0.090	0.200	0.004	0.008
D	2.900	3.100	0.114	0.122
E	4.300	4.500	0.169	0.177
E1	6.250	6.550	0.246	0.258
e	0.650 BSC		0.026 BSC	
L	0.500	0.700	0.02	0.028
H	0.25 TYP		0.01 TYP	
θ	1°	7°	1°	7°

NOTES:

1. Body dimensions do not include mode flash or protrusion.
2. This drawing is subject to change without notice.

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF TAPE AND REEL

Package Type	Reel Diameter	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P0 (mm)	P1 (mm)	P2 (mm)	W (mm)	Pin1 Quadrant
SOIC-8	13"	12.4	6.40	5.40	2.10	4.0	8.0	2.0	12.0	Q1
TSSOP-8	13"	12.4	6.76	3.30	1.80	4.0	8.0	2.0	12.0	Q1

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PACKAGE INFORMATION

CARTON BOX DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF CARTON BOX

Reel Type	Length (mm)	Width (mm)	Height (mm)	Pizza/Carton
13"	386	280	370	5

DD0002