

### Features

- Transient protection for single line  
IEC 61000-4-2 (ESD)  $\pm 30\text{kV}$  (Air)  
 $\pm 30\text{kV}$  (Contact)  
IEC 61000-4-5 (Lightning) 20A (8/20 $\mu\text{s}$ )
- For 12V and below operating voltage
- Protects one data, control or power line
- Capacitance: 70pF (Typical)
- Low leakage current: 0.01 $\mu\text{A}$  @  $V_{\text{RWM}}$  (Typical)
- Low clamping voltage
- Each I/O pin can withstand over 1000 ESD strikes for  $\pm 8\text{kV}$  contact discharge

### Description

SYS01H12AMC is a single line Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for cell phones, notebook computers, PDA's. The SYS01H12AMC is designed to protect sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other over-current transient events. It complies with IEC 61000-4-2 (ESD) ( $\pm 30\text{kV}$  air,  $\pm 30\text{kV}$  contact discharge), IEC 61000-4-5 (Lightning) 20A (8/20 $\mu\text{s}$ ), etc.

SYS01H12AMC is in SOD-323 package with working voltage of 12 volts. SYS01H12AMC can protect one bi-directional line. It offers system designers flexibility to protect single data line, SYS01H12AMC has wide applications.

### Applications

- Desktops, Servers and Notebooks
- Cellular Phones
- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Portable Instrumentation
- Pagers Peripherals

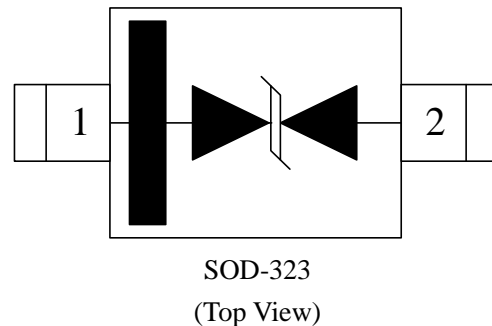
### Mechanical Characteristics

- SOD-323 package
- Flammability Rating: UL 94V-0
- Marking: Part number, date code
- Packaging: Tape and Reel

### Circuit Diagram



### Pin Configuration

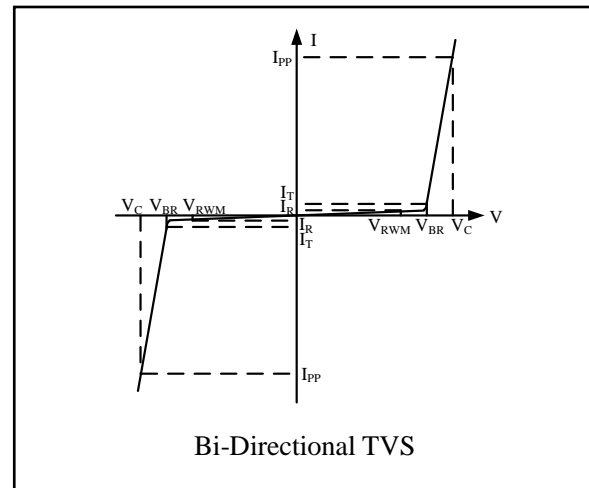


## Absolute Maximum Rating

Symbol	Parameter	Value	Units
$P_{PK}$	Peak Pulse Power ( $t_p=8/20\mu s$ )	550	Watts
$I_{PP}$	Peak Pulse Current ( $t_p=8/20\mu s$ )	20	A
$V_{ESD}$	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$\pm 30$ $\pm 30$	kV
$T_{OPT}$	Operating Temperature	-40/+125	$^{\circ}C$
$T_{STG}$	Storage Temperature	-55/+150	$^{\circ}C$

## Electrical Characteristics ( $T_A = 25^{\circ}C$ )

Symbol	Parameter
$V_{RWM}$	Nominal Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Reverse Breakdown Voltage @ $I_T$
$I_T$	Test Current for Reverse Breakdown
$V_C$	Clamping Voltage @ $I_{PP}$
$I_{PP}$	Maximum Peak Pulse Current
$C_{ESD}$	Parasitic Capacitance
$V_R$	Reverse Voltage
f	Small Signal Frequency

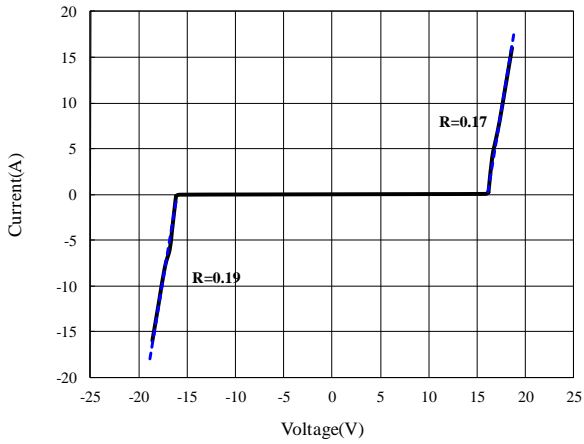


Symbol	Test Condition	Minimum	Typical	Maximum	Units
$V_{RWM}$				12.5	V
$I_R$	$V_{RWM} = 12V, T_A = 25^{\circ}C$ Between I/O_1 and I/O_2		0.01	0.1	$\mu A$
$V_{BR}$	$I_T = 1mA$ Between I/O_1 and I/O_2	13.3		17.5	V
$V_C^1$	$I_{PP} = 1A, t_p = 8/20\mu s$ Between I/O_1 and I/O_2		16.5		V
$V_C^1$	$I_{PP} = 20A, t_p = 8/20\mu s$ Between I/O_1 and I/O_2		28		V
$C_{ESD}^1$	$V_R = 0V, f = 1MHz$ Between I/O_1 and I/O_2		70	100	pF

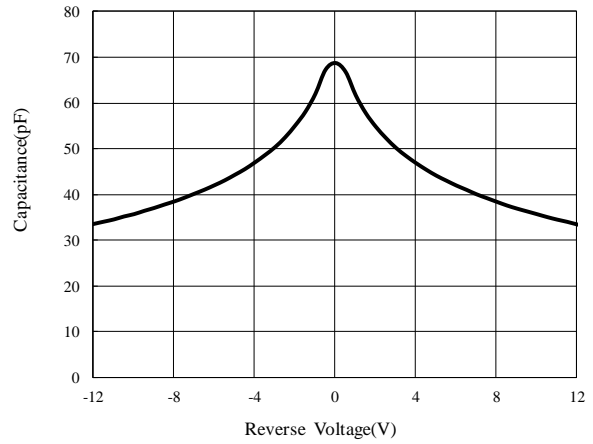
### NOTES

<sup>1</sup>Guaranteed by design and not subject to production test.

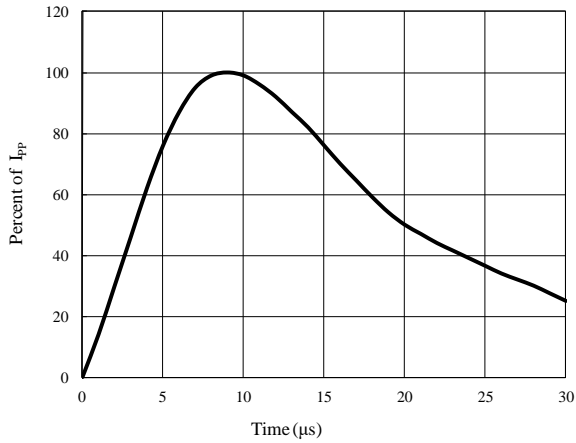
### TLP Testing of I/O\_1 to I/O\_2



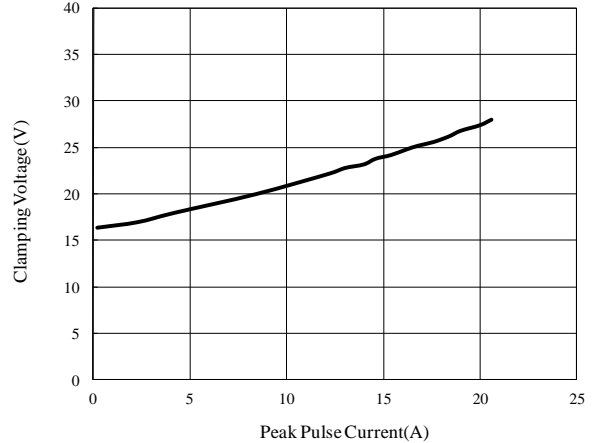
### Capacitance vs. Reverse Voltage



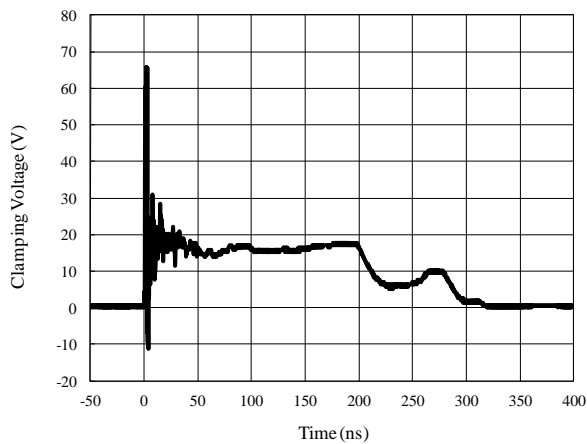
### 8/20µs Pulse Waveform



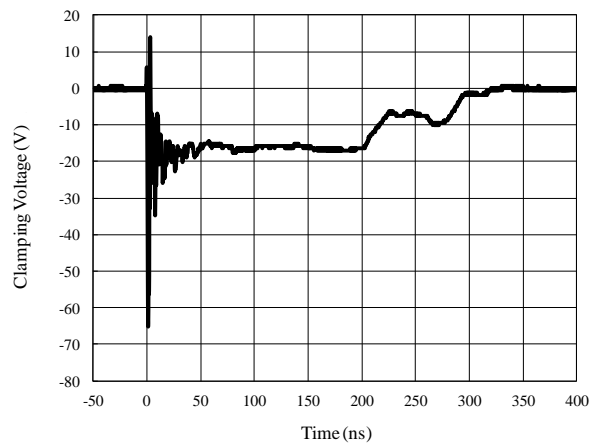
### Clamping Voltage vs. Peak Pulse Current



### ESD Clamping of I/O\_1 to I/O\_2 (+8kV Contact per IEC 61000-4-2)

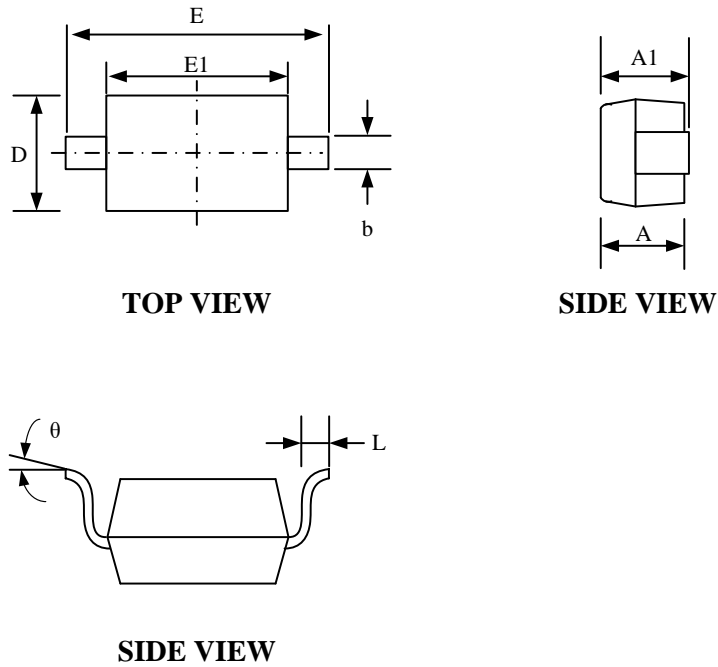


### ESD Clamping of I/O\_1 to I/O\_2 (-8kV Contact per IEC 61000-4-2)



## Package Outline

- SOD-323 package

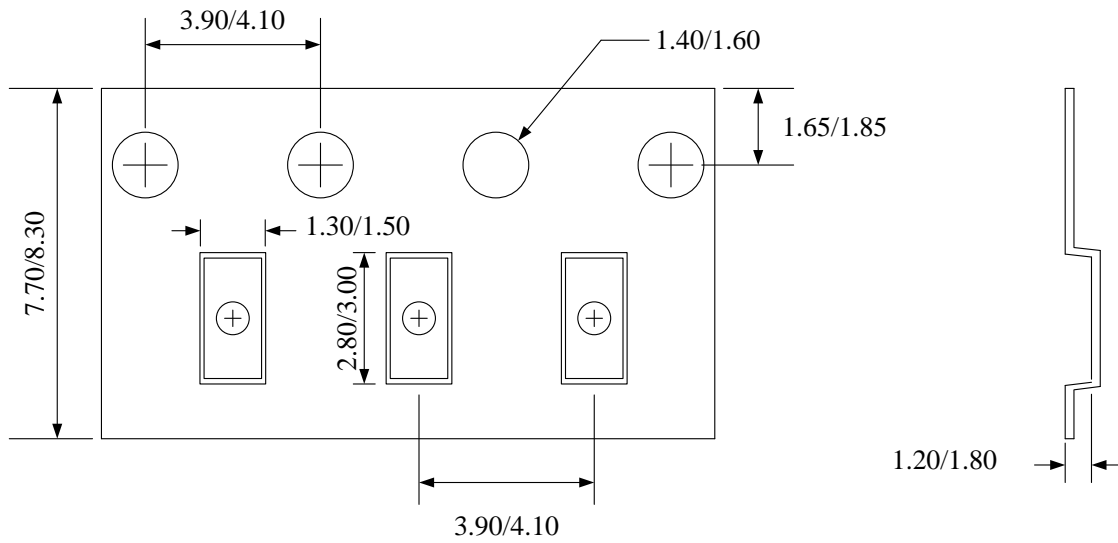


Package Dimensions

Symbol	Dimensions (mm)	
	Minimum	Maximum
A	0.80	0.90
A1	0.90	1.00
b	0.25	0.35
D	1.20	1.40
E	2.50	2.70
E1	1.60	1.80
L	0.25	0.40
$\theta$	0°	8°

**Notes:** All dimension in mm and exclude mold flash & metal burr.

## Tape and Reel Specification

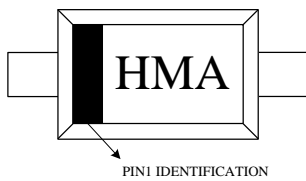


Dimensions In mm

Feeding direction →

Package types	Tape width (mm)	Pocket pitch(mm)	Reel size (Inch)	Trailer * length(mm)	Leader * length (mm)	Qty per reel (pcs)
SOD-323	8	4	7"	400	200	3000

## Marking Codes



### Note:

- (1) "H" is the device code.
- (2) "MA" is the assembly date code & lot code.

## Ordering Information

Part Number	Working Voltage	Qty Per Reel	Reel Size
SYS01H12AMC	12	3,000	7 Inch



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