

Features

- Transient protection for single line
 - IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (Air)
 - $\pm 30\text{kV}$ (Contact)
 - IEC 61000-4-4 (EFT) 40A (5/50 ns)
 - IEC 61000-4-5 (Lightning) 24A (8/20 μs)
 - Cable Discharge Event (CDE)
- Protects one data, control or power line
- Capacitance: 350pF (Maximum)
- Low leakage current: 0.1 μA @ V_{RWM} (Typical)
- Low clamping voltage
- Each I/O pin can withstand over 1000 ESD strikes for $\pm 8\text{kV}$ contact discharge

Description

SYS02V05AMC is a single line Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for cell phones, notebook computers, PDA's. The SYS02V05AMC 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 61000-4-4 (electrical fast transient - EFT) (40A, 5/50 ns), IEC 61000-4-5 (Lightning) 24A (8/20 μs), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

SYS02V05AMC is in SOD-323 package with working voltage of 5 volts. SYS02V05AMC can protect unidirectional line. It offers system designers flexibility to protect single data line, and it can be used to meet the ESD immunity requirements of IEC 61000-4-2, Level 4 ($\pm 15\text{kV}$ air, $\pm 8\text{kV}$ contact discharge). SYS02V05AMC can be used in lots of applications.

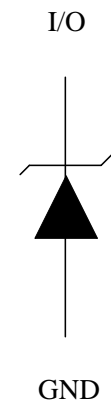
Applications

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

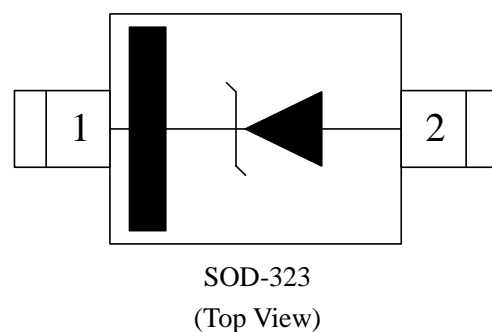
Mechanical Characteristics

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

Circuit Diagram



Pin Configuration

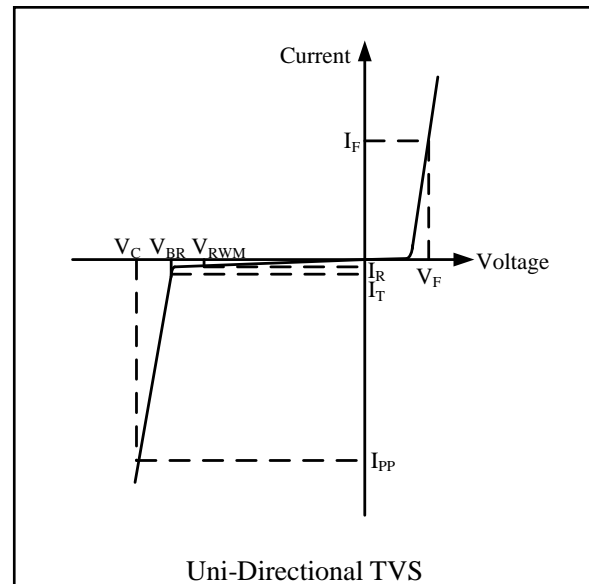


Absolute Maximum Rating

Symbol	Parameter	Value	Units
P _{PK}	Peak Pulse Power (t _p =8/20μs)	350	Watts
V _{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±30 ±30	kV
T _{OPT}	Operating Temperature	-55/+125	°C
T _{STG}	Storage Temperature	-55/+150	°C

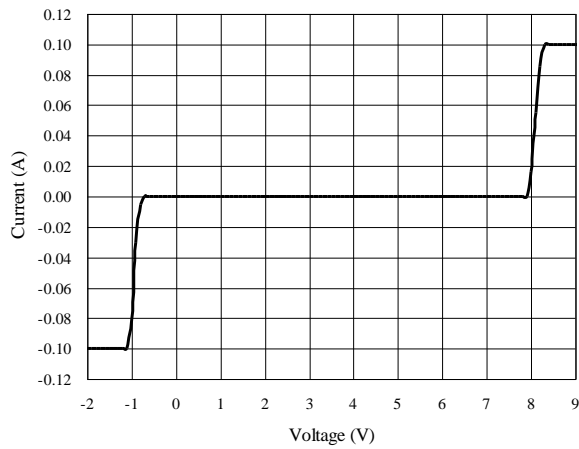
Electrical Characteristics (T = 25°C)

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
I _F	Forward Current
V _F	Forward Voltage @ I _F

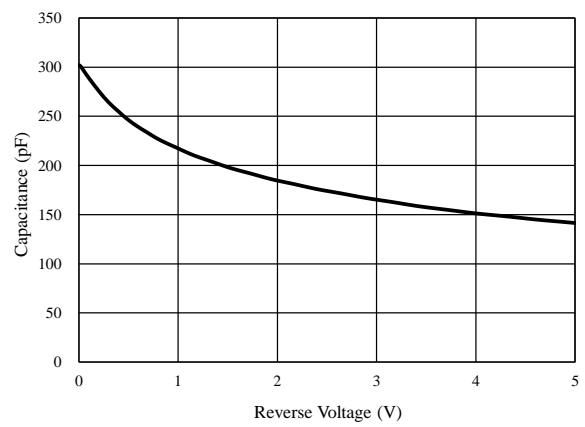


Symbol	Test Condition	Minimum	Typical	Maximum	Units
V _{RWM}				5.0	V
I _R	V _{RWM} = 5V, T = 25°C Between I/O and GND			10	μA
V _{BR}	I _T = 1mA Between I/O and GND	6.0			V
V _C	I _{PP} = 5A, t _p = 8/20μs Between I/O and GND			11	V
I _{PP}	Peak Pulse Current			24	A
C _{ESD}	V _R = 0V, f = 1MHz Between I/O and GND			350	pF

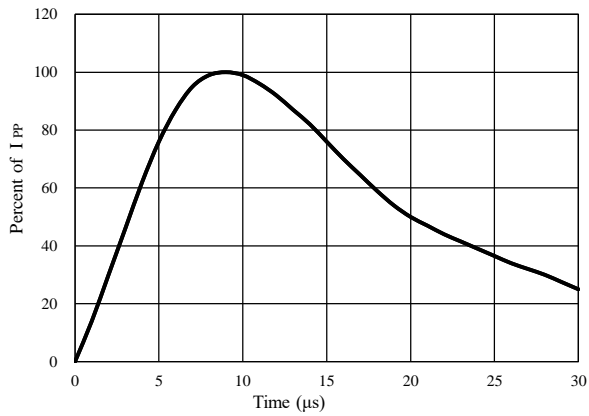
Voltage Sweeping of I/O to GND



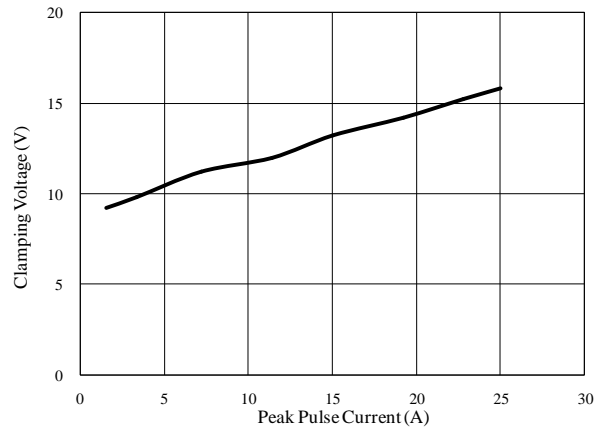
Capacitance vs. Reverse Voltage



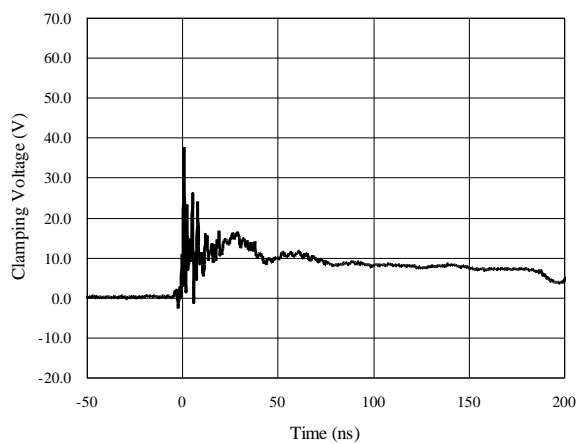
8/20µs Pulse Waveform



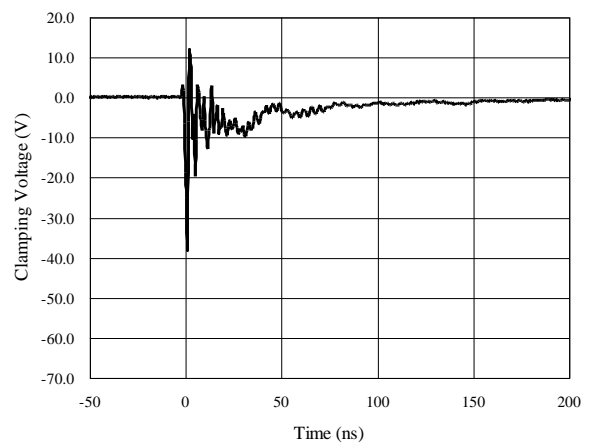
Clamping Voltage vs. Peak Pulse Current



ESD Clamping of I/O to GND (+8kV Contact per IEC 61000-4-2)

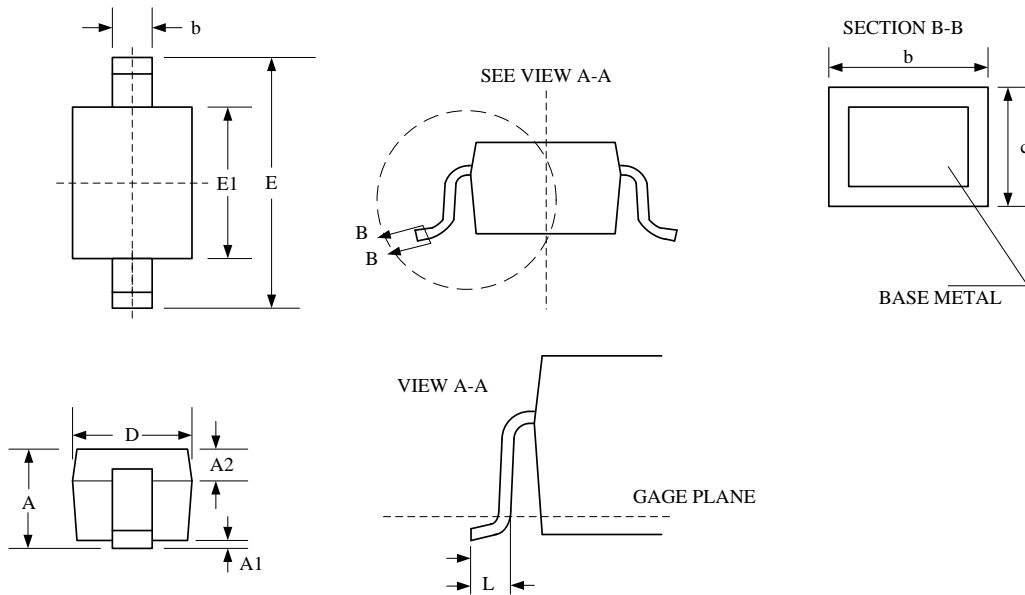


ESD Clamping of I/O to GND (-8kV Contact per IEC 61000-4-2)



Package Outline

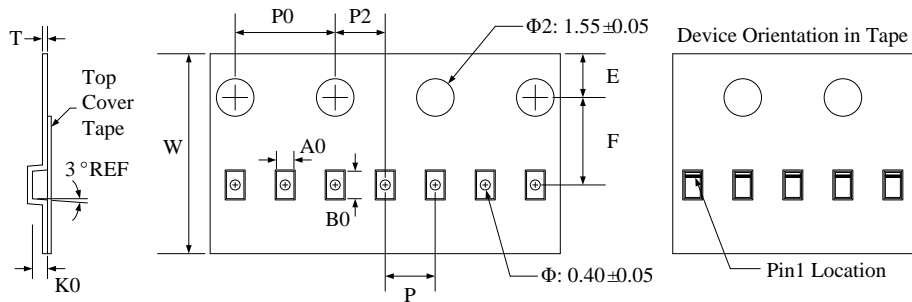
- SOD-323 package



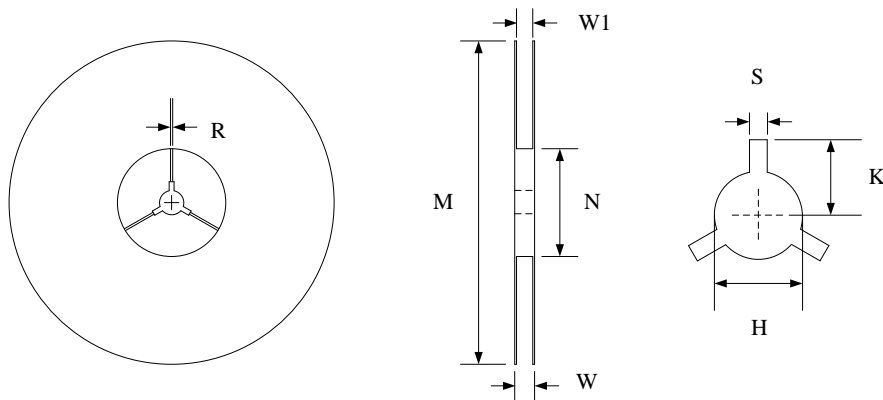
Package Dimensions (Controlling dimensions are in millimeters)

Symbol	Dimensions (mm)			Dimensions (Inches)		
	Minimum	Typical	Maximum	Minimum	Typical	Maximum
A	0.910	—	1.170	0.036	—	0.046
A1	0.000	—	0.100	0.000	—	0.004
A2	0.300	—	0.400	0.012	—	0.016
b	0.330	—	0.430	0.013	—	0.017
c	0.130	—	0.200	0.005	—	0.008
D	1.180	1.280	1.370	0.044	0.050	0.054
E	2.460	2.590	2.720	0.097	0.102	0.107
E1	1.500	1.640	1.780	0.060	0.065	0.070
L	0.250	0.350	0.450	0.010	0.014	0.018

Tape and Reel Specification

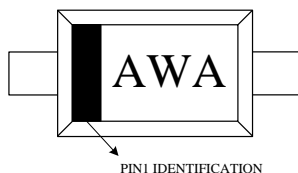


Symbol	W	A0	B0	K0	E	F	P	P0	P2	T
Dimensions (mm)	8.00±0.1	0.7±0.05	1.15±0.05	0.55±0.05	1.75±0.1	3.5±0.05	2.0±0.1	4.0±0.1	2.0±0.05	0.2±0.05



Symbol	Reel Size	M	N	W	W1	H	S	K	R
Dimensions (mm)	Φ178	178.0±1.0	60.0±1.0	11.5±0.5	9.0±0.5	13.0±0.5	2.0±0.1	11.0±0.2	1.0±0.05

Marking Codes



Note:

- (1) "A" is the device marking.
- (2) "W" is date code. "W" is the assembly week in a year, from A to Z.
- (3) "A" is the production lot number, from A to Z.

Ordering Information

Part Number	Working Voltage	Quantity Per Reel	Reel Size
SYS02V05AMC	5V	3,000	7 Inch