

*Low Capacitance 5V Single-Line Bi-Directional ESD protection Diode*

■ *DESCRIPTION*

The EB05VLS02 Series is designed to protect voltage sensitive components that require low capacitance from ESD and transient voltage events. The EB05VLS02 are low capacitance Transient Voltage (TVS) Design Bidirectional device that is to protect sensitive electronics from damage or latch-up due to ESD. They are designed for use in applications where board space is at a premium.

EB05VLS02 will protect single line, and may be used on lines where the signal polarities swing above and below ground.

EB05VLS02 offer desirable characteristics for board level protection including fast response time, low operating and clamping voltage and no device degradation.

EB05VLS02 may be used to meet the immunity requirements of IEC 61000-4-2, level 4. The small SOD-723, SOD-523, SOD-323 package makes them ideal for use in portable electronics such as cell phone, PDA's, notebook computers, DSC, MP3, USB ports and ADSL.

■ *IEC COMPATIBILITY*

Transient protection for high-speed data lines to

**IEC 61000-4-2 (ESD) ±15KV (Air)  
±8KV (contact)  
IEC 61000-4-4 (EFT) 40A (5/50ns)**

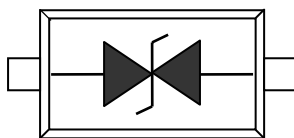
■ *APPLICATIONS*

- ◆ Cellphoner Handsets & Accessories
- ◆ PDAs
- ◆ Digital Cameras
- ◆ PCMCIA Cards
- ◆ Display Port
- ◆ Notebooks and Handhelds
- ◆ HDMI Ports
- ◆ USB Ports
- ◆ PCI Express
- ◆ Portable Instrumentation
- ◆ Cordless Phone
- ◆ MP3 Player
- ◆ DSC
- ◆ ADSL

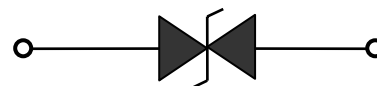
■ *FEATURE*

- ◆ 250Watts peak pulse (tp=8/20µs)
- ◆ Protects Single I/O lines
- ◆ Working voltage : 5.0V
- ◆ Low leakage current
- ◆ Low operating and clamping voltages
- ◆ Ultra-small package  
SOD-723, SOD-523, SOD-323
- ◆ Qualified max reflow temperature 260°C
- ◆ This is a Full RoHS compliance

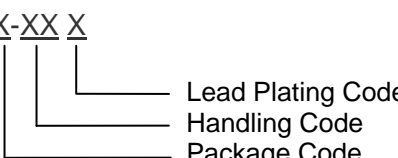
■ *PIN CONFIGURATION*



TOP VIEW  
SOD723 / SOD523 / SOD323



**PART MARKING INFORMATION**

<p>EB05VLS02X-XX X</p>  <p><b>MARKING</b></p> <div style="display: flex; align-items: center; gap: 20px;"> <div style="border: 1px solid black; padding: 2px 5px;">X</div> <div style="text-align: left;"> <p>2 : SOD-723    0 : SOD523</p> <p>N : SOD-323</p> </div> </div>	<p><b>Lead Plating Code</b> G : Lead-free product. This product is RoHS compliant</p> <p><b>Handling Code</b> TR : Tape&amp;Reel</p> <p><b>Package Code</b> N7 : SOD-723    N5 : SOD-523 N3 : SOD-323</p>
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**ORDERING INFORMATION**

Part Number	Package Code	Package	Shipping
EB05VLS02N7	N7	SOD-723	3000 / Tape&Reel
EB05VLS02N5	N5	SOD-523	3000 / Tape&Reel
EB05VLS02N3	N3	SOD-323	3000 / Tape&Reel

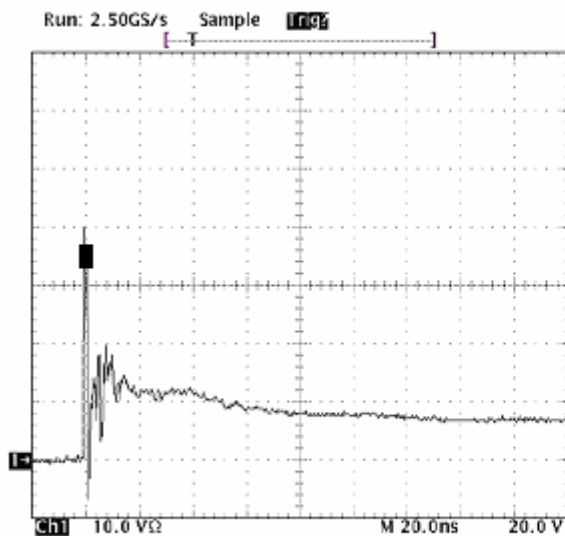
※ G : Lead-free product. This product is RoHS compliant

**ABSOLUTE MAXIMUM RATINGS** ( $T_A = 25^\circ\text{C}$  Unless otherwise noted)

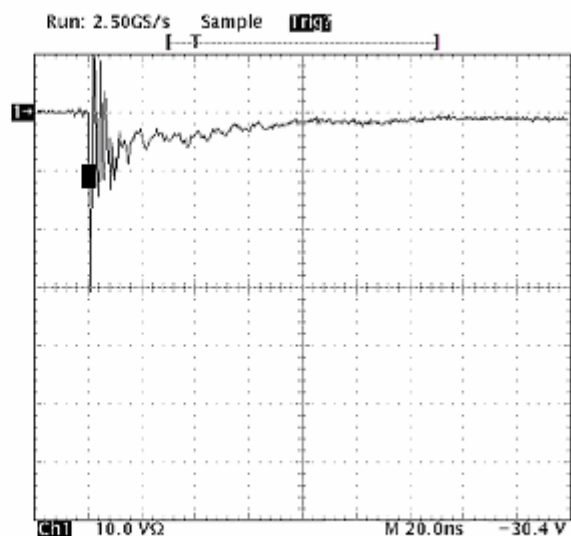
Symbol	Parameter	Typical	Unit
V <sub>PP</sub>	ESD per ICE 61000-4-2 (Air)	±15	KV
V <sub>PP</sub>	ESD per ICE 61000-4-2 (Contact)	±8	KV
P <sub>PK</sub>	Peak Pulse Power (tp=8/20μs)	250	W
I <sub>PP</sub>	Maximum Peak Pulse Current (tp=8/20μs)	7	A
T <sub>J</sub>	Operating Junction Temperature	-55~+150	°C
T <sub>STG</sub>	Storage Temperature Range	-55~+150	°C
T <sub>L</sub>	Lead Soldering Temperature-Maximum (10 Second Duration)	260	°C

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  Unless otherwise noted)

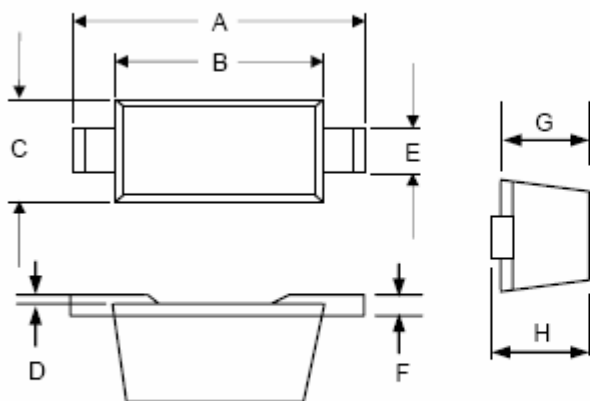
Symbol	Parameter	Condition	Min	Typ	Max	Unit
VRWM	Reverse Stand-Off Voltage				5	V
VBR	Reverse Breakdown Voltage	$I_t=1\text{mA}$	6		10	V
IR	Reverse Leakage Current	VRWM=5V, T=25°C		0.01	1	$\mu\text{A}$
IR		VRWM=3V, T=25°C		0.01	0.5	$\mu\text{A}$
Vc	Clamping Voltage	$I_{pp}=1\text{A}$ , $t_p=8/20\mu\text{s}$			13	V
Vc	Clamping Voltage	$I_{pp}=7\text{A}$ , $t_p=8/20\mu\text{s}$			17	V
CJ	Junction Capacitance	VR=0V, f=1MHz (Between I/O Pin and GND)		4	8	pF

**TYPICAL CHARACTERISTICS** (25°C Unless Note)


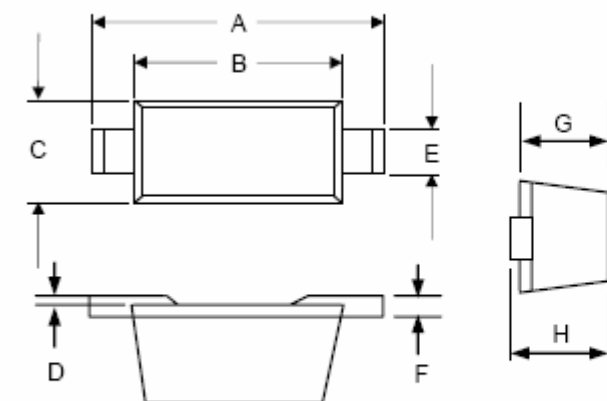
ESD Clamping Voltage Screenshot  
Positive 8 kV Contact per IEC61000-4-2



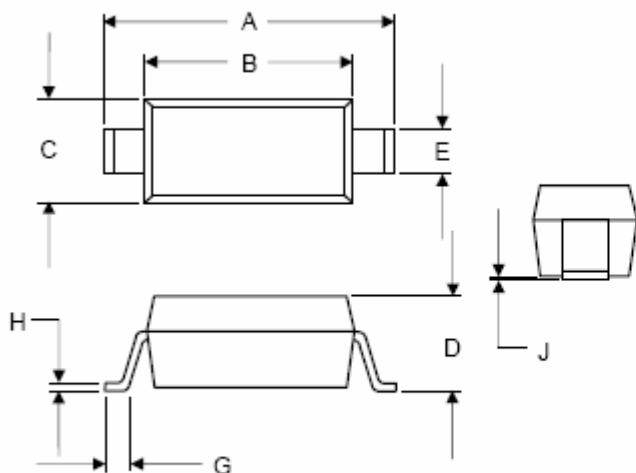
ESD Clamping Voltage Screenshot  
Negative 8 kV Contact per IEC61000-4-2

**SOD-723 PACKAGE DIMENSIONS**


Dimensions				
Symbol	Inches		Millimeters	
	Min	Max	Min	Max
A	.051	.059	1.30	1.50
B	.035	.043	0.90	1.10
C	.022	.026	0.55	0.65
D	.001	.003	0.01	0.07
E	.010	.014	0.25	0.35
F	.003	.006	0.08	0.15
G	.020	.023	0.52	0.58
H	.021	.026	0.53	0.65

**SOD-523 PACKAGE DIMENSIONS**


Dimensions				
Symbol	Inches		Millimeters	
	Min	Max	Min	Max
A	.059	.067	1.50	1.70
B	.043	.051	1.10	1.30
C	.030	.033	0.75	0.85
D	.001	.003	0.01	0.07
E	.010	.014	0.25	0.35
F	.003	.006	0.08	0.15
G	.020	.028	0.50	0.70
H	.020	.031	0.51	0.77

**■ SOD-323 PACKAGE DIMENSIONS**


Dimensions				
Symbol	Inches		Millimeters	
	Min	Max	Min	Max
A	.090	.107	2.30	2.70
B	.063	.071	1.60	1.80
C	.045	.053	1.15	1.35
D	.031	.045	0.80	1.15
E	.010	.016	0.25	0.40
G	.004	.018	0.10	0.45
H	.004	.010	0.10	0.25
J	----	.006	----	0.15