

Description

The LY523BA05 is an uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The LY523BA05 complies with the IEC 61000-4-2 (ESD) with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into an ultra-small lead-free SOD package. The small size and high ESD surge protection make LY523BA05 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- Ultra small package: SOD-523
- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- 2-Pin leadless package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 8A (8/20 μs)
- RoHS Compliant

Mechanical Characteristics

- Package: SOD-523
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

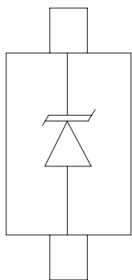
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

Marking Information



D 5 = Device Marking Code
Dot denotes Pin1/Pin1

Dimensions and Pin Configuration



SOD-523 (Top View)

Circuit and Pin Schematic

Ordering Information

Part Number	Packaging	Reel Size
LY523BA05	3000/Tape & Reel	7 inch

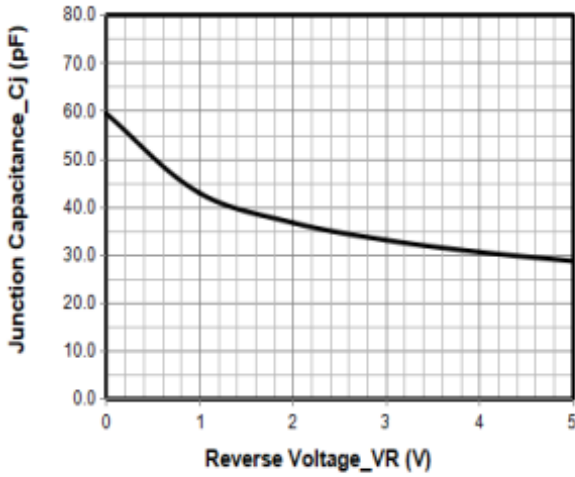
Absolute Maximum Ratings (TA=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	100	W
Peak Pulse Current (8/20μs)	Ipp	8	A
ESD per IEC 61000-4-2 (Air)	VESD	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

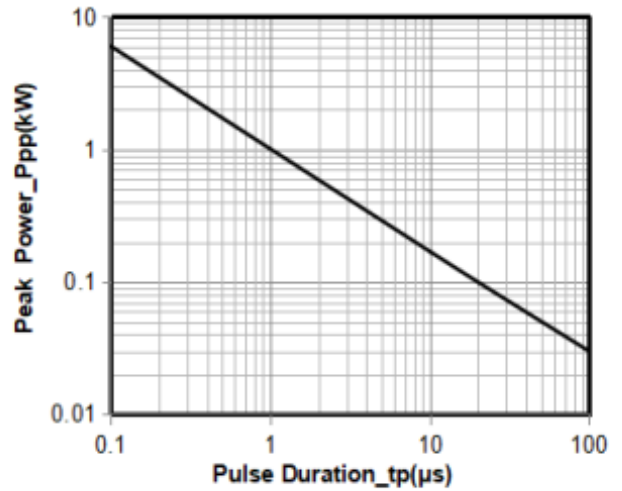
Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			5	V	Pin 1 to Pin 2
Breakdown Voltage	VBR	6		8.5	V	IT = 1mA, Pin 1 to Pin 2
Reverse Leakage Current	IR			0.2	μA	VRWM = 5V, Pin 1 to Pin 2
Forward Voltage	VF		1.0	1.2	V	IF = 10mA, Pin 2 to Pin 1
Clamping Voltage	VC			12	V	I _{PP} = 8A (8 x 20μs pulse), Pin 1 to
Junction Capacitance	CJ		60		pF	VR = 0V, f = 1MHz

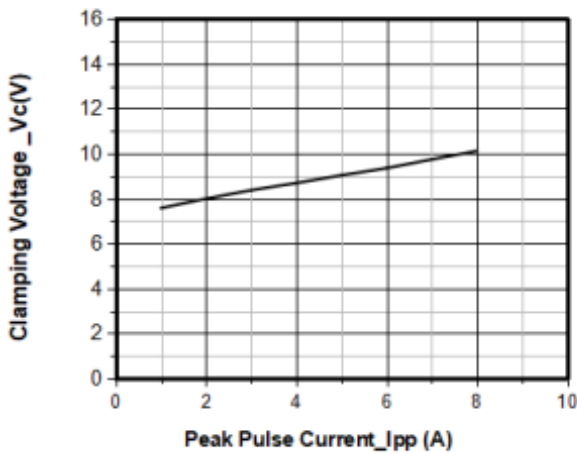
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



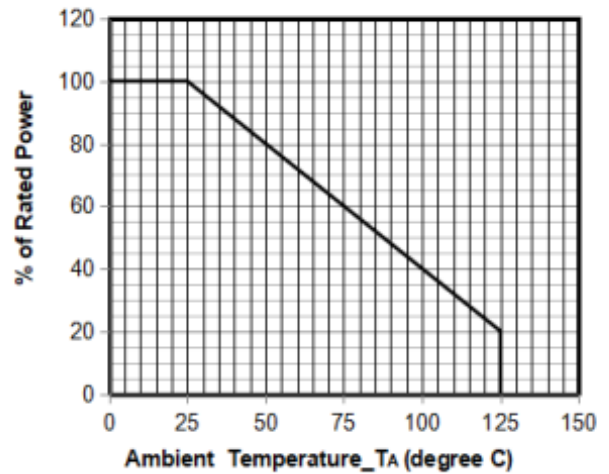
Junction Capacitance vs. Reverse Voltage



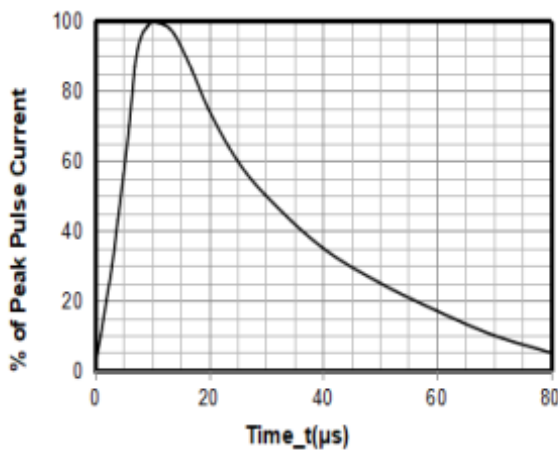
Peak Pulse Power vs. Pulse Time



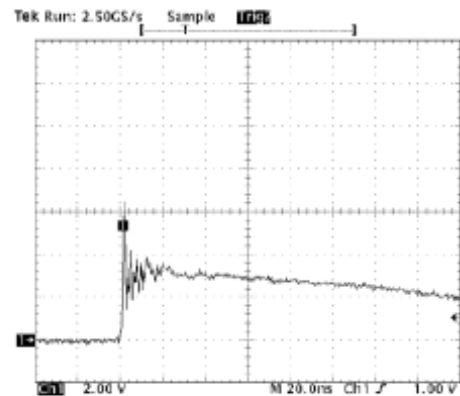
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform

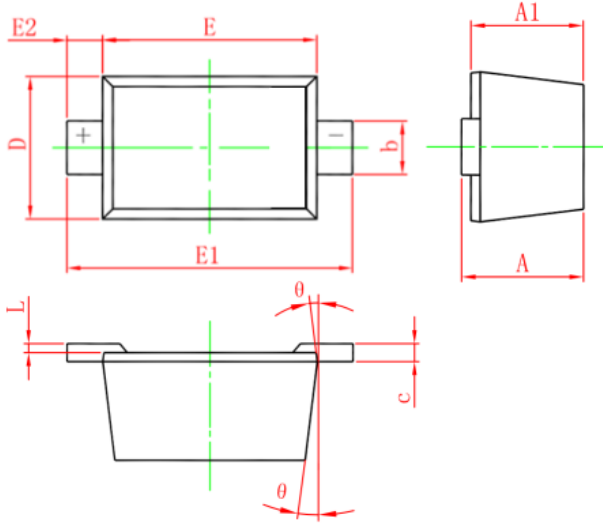


Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

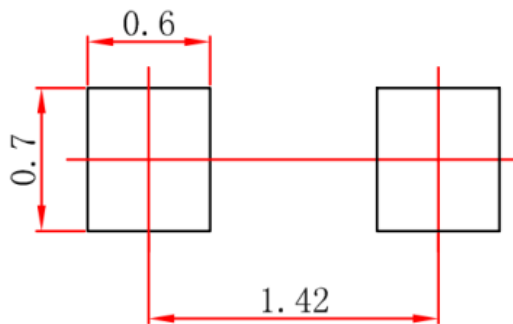
8 kV Contact per IEC61000-4-2

SOD-523 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.51	--	0.77	0.020	--	0.031
A1	0.50	--	0.70	0.020	--	0.028
b	0.25	--	0.35	0.010	--	0.014
c	0.08	--	0.15	0.003	--	0.006
D	0.75	--	0.85	0.030	--	0.033
E	1.10	--	1.30	0.043	--	0.051
E1	1.50	--	1.70	0.059		0.067
E2	0.20REF			0.008REF		
L	0.01	--	0.07	0.001	--	0.003
Θ	7° REF			7° REF		

Suggested Land Pattern



Unit: mm