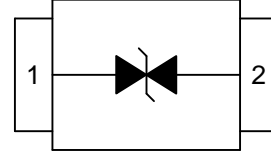


## Description

The LAD52CXXL01 Series of Transient Voltage Suppressors (TVS) are designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computer, and PDAs.

They offer superior electrical characteristics such as lower clamping voltage and no device degradation when compared to MLVs. They are designed to protect sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD), lightning, electrical fast transients (EFT), and cable discharge events (CDE).



## Features

- IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- Working voltage: 3.3V, 5V
- Low leakage current
- Low operating and clamping voltages
- Solder reflow temperature: Pure Tin-Sn, 260~270°C

## Maximum Ratings

Rating	Symbol	Value	Unit
ESD voltage (Contact discharge)	$V_{ESD}$	±8	kV
ESD voltage (Air discharge)		±15	
Storage & operating temperature range	$T_{STG}, T_J$	-55~+150	°C

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

### LAD52C03L01

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	$V_{RWM}$				3.3	V
Reverse breakdown voltage	$V_{BR}$	$I_{BR}=1mA$	4.0			V
Reverse leakage current	$I_R$	$V_R=3.3V$			1	μA
Clamping voltage ( $t_p=8/20\mu s$ )	$V_C$	$I_{PP}=1A$			7	V
Off state junction capacitance	$C_J$	0Vdc, f=1MHz		10		pF

LAD52C05L01

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	$V_{RWM}$				5	V
Reverse breakdown voltage	$V_{BR}$	$I_{BR}=1mA$	5.6			V
Reverse leakage current	$I_R$	$V_R=5V$			1	$\mu A$
Clamping voltage ( $t_p=8/20\mu s$ )	$V_C$	$I_{PP}=1A$			9.8	V
Off state junction capacitance	$C_J$	0Vdc, f=1MHz		12		pF

Typical Characteristics Curves

Figure 1. Pulse Waveforms

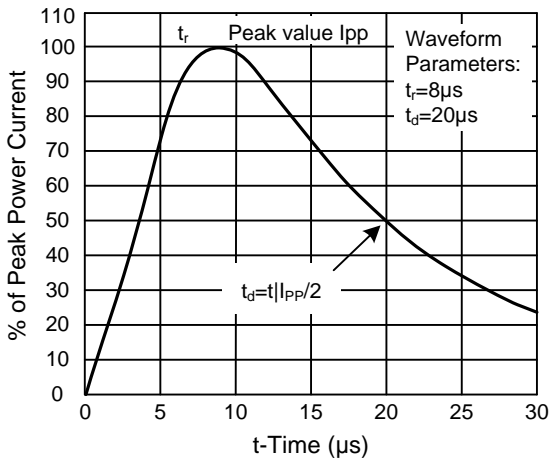


Figure 2. Clamping Voltage vs. Peak Pulse Current

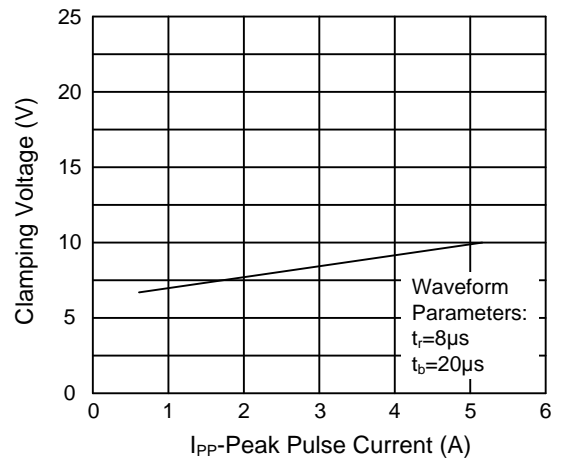


Figure 3. Capacitance vs. Reverse Voltage

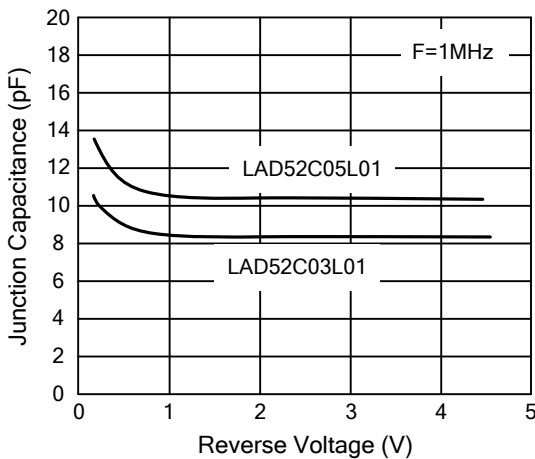
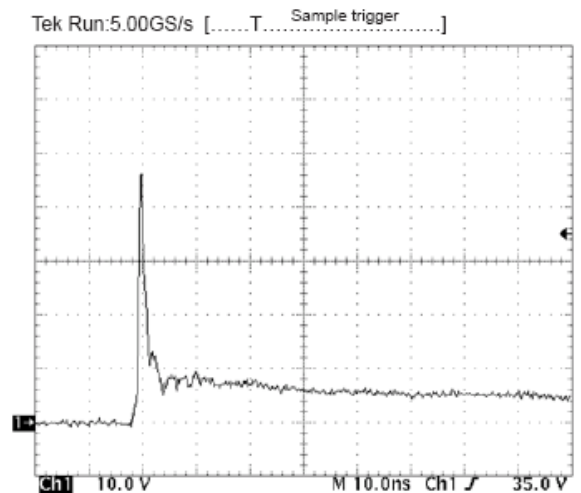
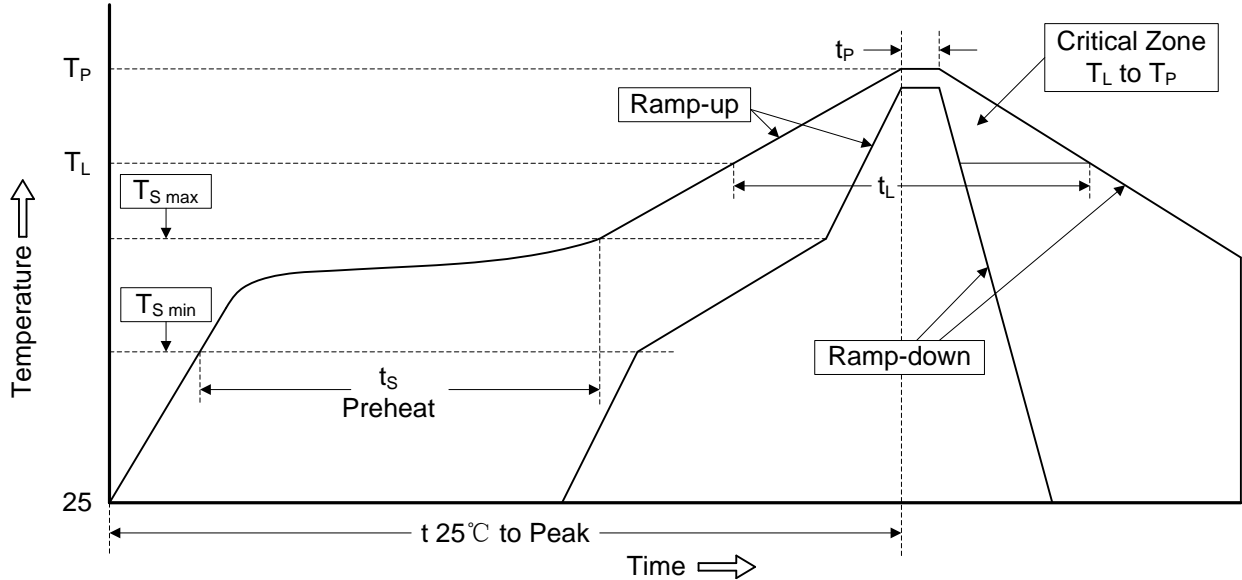


Figure 4. ESD Clamping(8kV Contact IEC61000-4-2)



### Recommended Soldering Conditions

#### Reflow Soldering

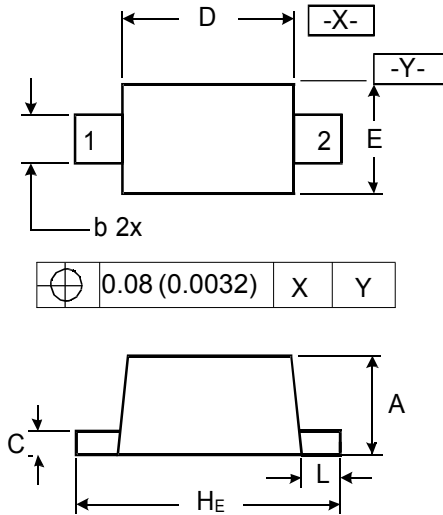


#### Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate ( $T_L$ to $T_P$ )	3°C/second max.
Preheat -Temperature Min ( $T_{S\ min}$ ) -Temperature Max ( $T_{S\ max}$ ) -Time (min to max) ( $t_s$ )	150°C 200°C 60-180 seconds
$T_{S\ max}$ to $T_L$ -Ramp-up Rate	3°C/second max.
Time maintained above: -Temperature ( $T_L$ ) -Time ( $t_L$ )	217°C 60-150 seconds
Peak Temperature ( $T_P$ )	260°C
Time within 5°C of actual Peak Temperature ( $t_P$ )	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

**Package outline dimensions**

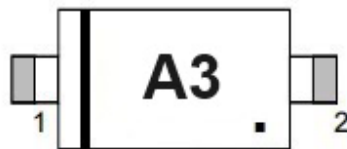
**SOD-523**



**DIMENSIONS**

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.50	0.70	0.020	0.028
b	0.25	0.35	0.010	0.014
C	0.07	0.20	0.0028	0.0079
D	1.10	1.30	0.043	0.051
E	0.70	0.90	0.028	0.035
HE	1.50	1.70	0.059	0.067
L	0.15	0.25	0.006	0.010

**Marking**



**Ordering information**

Order code	Package	Base qty	Delivery mode
UMW LAD52CxxL01	SOD-523	3000	Tape and reel

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