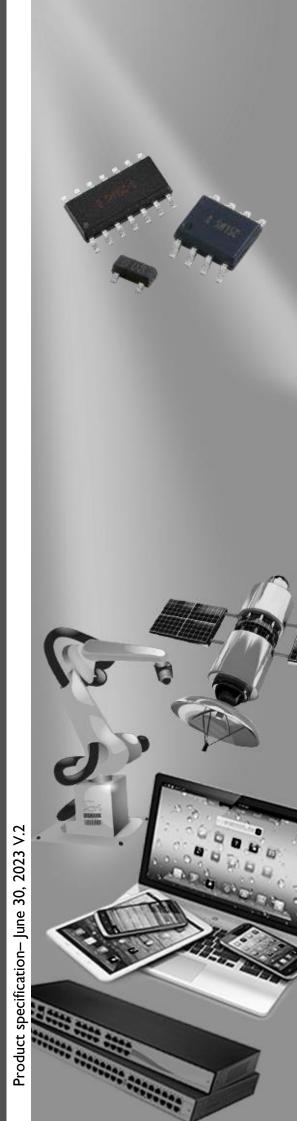


DATA SHEET

ELECTROSTATIC DISCHARGE PROTECTION DEVICES INDUSTRIAL / CONSUMER LBD52A24L01

RoHS compliant & Halogen free





Electrostatic Discharged Protection Devices (ESD) Data Sheet

Description

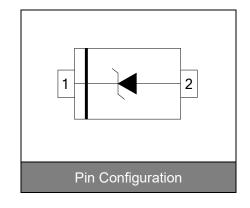
The LBD52A24L01 is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computer, and PDAs. It offer superior electrical characteristics such as lower clamping voltage and no device degradation when compared to MLVs. It is designed to protect sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD), lightning, electrical fast transients (EFT), and cable discharge events (CDE).

Contact: ±20kV Air: ±20kV



Features

- IEC61000-4-2 ESD 20KV Air, 20KV contact compliance
- SOD523 surface mount package
- Working voltage:24V
- Low leakage current
- Low operating and clamping voltages
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant
- Solder reflow temperature: Pure Tin-Sn, 260~270 ℃
- Flammability rating UL 94V-0
- Meets MSL level 1, per J-STD-020
- Marking: BI



Maximum Ratings

Rating	Symbol	Value	Unit	
ESD voltage (Contact discharge)	V	±20	kV	
ESD voltage (Air discharge)	V_{ESD}	±20		
Storage & operating temperature range	T _{STG} ,T _J	-55~+150	$^{\circ}\!\mathbb{C}$	

Electrical Characteristics (T_J=25°C)

Parameter	Symbol	Condition	Min.	Тур.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				24	٧
Reverse breakdown voltage	V_{BR}	I _{BR} =1mA	26			V
Reverse leakage current	I _R	V _R =24V			1	μA
Clamping voltage (tp=8/20µs)	Vc	I _{PP} =1A			45	V
Clamping voltage (tp=8/20µs)	Vc	I _{PP} =3A			56	V
Peak pulse current (tp=8/20µs)	I _{PP}				3	Α
Off state junction capacitance	Сл	0Vdc,f=1MHz		30		pF



Typical Characteristics Curves

Figure 1. Pulse Waveforms

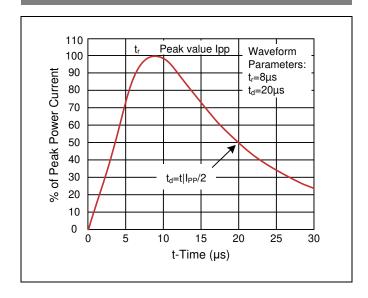


Figure 2. Clamping Voltage vs. Peak Pulse Current

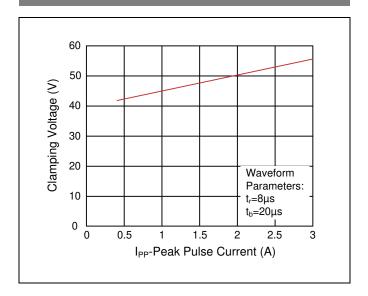


Figure 3. Capacitance vs. Reverse Voltage

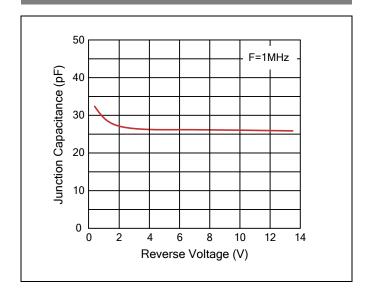
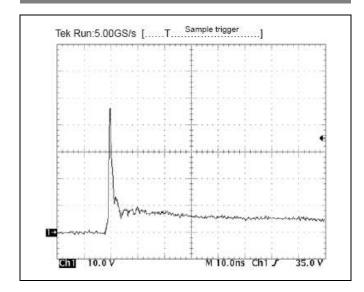
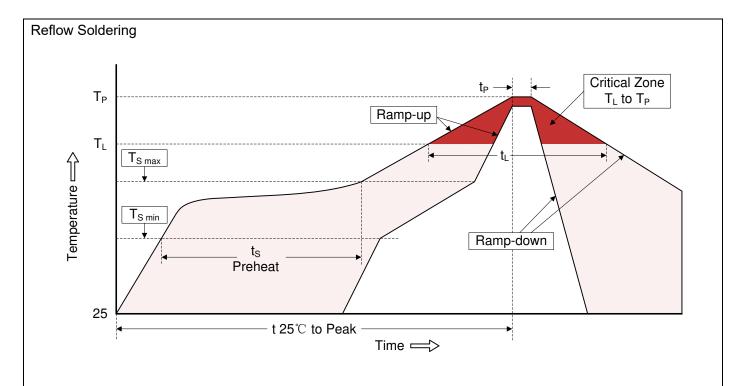


Figure 4. ESD Clamping(8kV Contact IEC61000-4-2)



Recommended Soldering Conditions

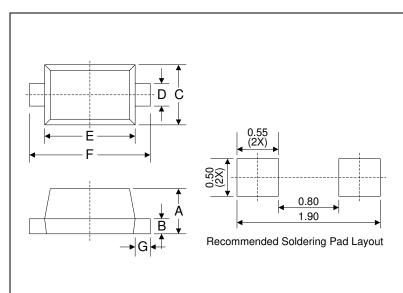


Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate $(T_L \text{ to } T_P)$	3°ℂ/second max.
Preheat	
-Temperature Min (T _{S min})	150 ℃
-Temperature Max (T _{S max})	200℃
-Time (min to max) (ts)	60-180 seconds
T _{S max} to T _L	
-Ramp-up Rate	3℃/second max.
Time maintained above:	
-Temperature (T _L)	217℃
-Time (t _L)	60-150 seconds
Peak Temperature (T _P)	260℃
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.

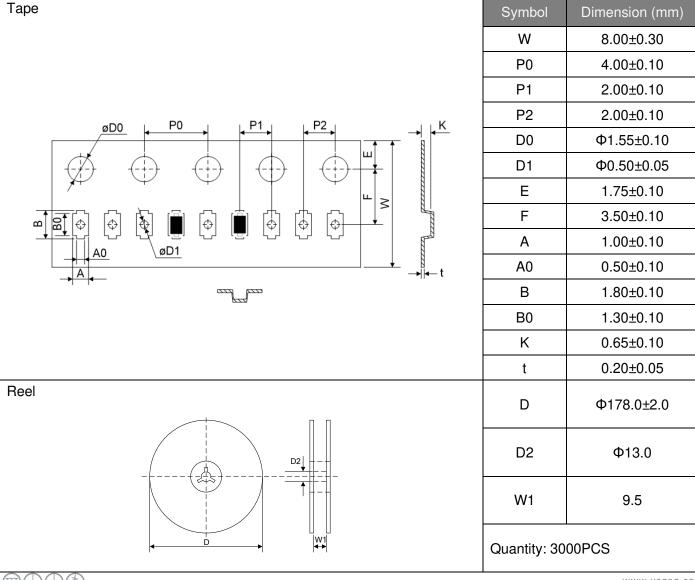
Dimensions (SOD-523)

<u>5</u>



	Dimension (mm)				
Symbol	Millimeters		Inc	hes	
	Min.	Max.	Min.	Max.	
Α	0.50	0.70	0.020	0.028	
В	0.07	0.20	0.003	0.008	
С	0.70	0.90	0.028	0.035	
D	0.25	0.35	0.010	0.014	
Е	1.10	1.30	0.043	0.051	
F	1.50	1.70	0.059	0.067	
G	0.15	0.25	0.006	0.010	

Packaging





Circuit Protection Components

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