

Description

The LY323BC1524L is designed for asymmetrical (15V to – 24V) protection in multi-point data transmission application, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The LY323BC1524L 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 a leadfree SOD-323 package. The small size, low capacitance and high ESD surge protection make LY323BC1524L an ideal choice to protect one data line of the Local information Network (LIN) in an automotive

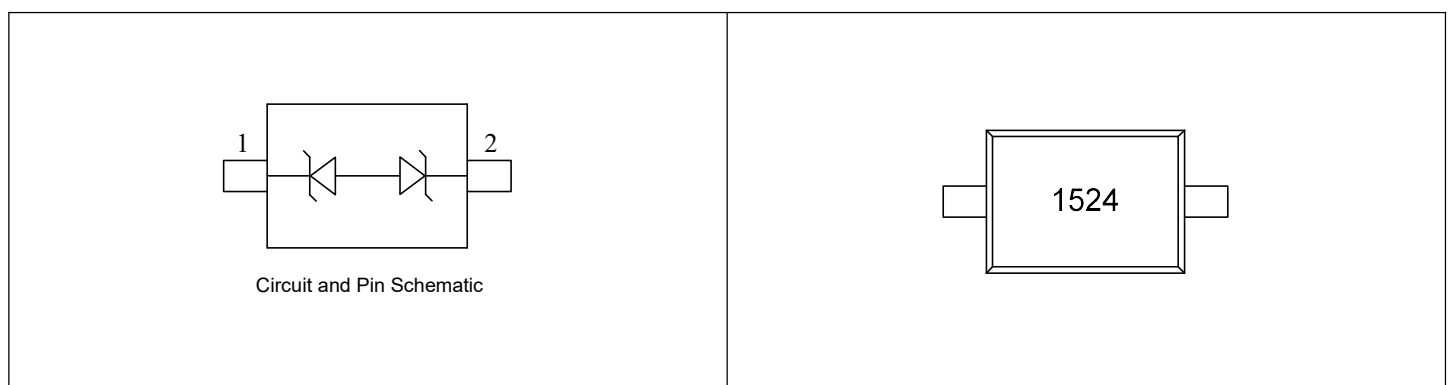
Features

- 160W peak pulse power (8/20 μs)
- Low Channel input capacitance
- Ultra low leakage current
- Low clamping voltage
- RoHS compliant
- IEC-61000-4-2 ESD $\pm 30\text{kV}$ Air, $\pm 30\text{kV}$ Contact
- Packaging: 7 inch reel, 3000pcs/reel

Applications

- LIN Bus Protection Personal Digital Assistants

Pin Configuration and Marking



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$)

Parameter	Symbol	Value
Peak Pulse Power (8/20 μs)	P_{PP}	160W
Peak Pulse Current ($t_p = 8/20\mu\text{s}$), Pin 1 to Pin 2 Peak Pulse Current ($t_p = 8/20\mu\text{s}$), Pin 2 to Pin 1	I_{PP}	5A 3A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	$\pm 30\text{kV}$ $\pm 30\text{kV}$
Ambient Temperature Range	T_A	-55°C to $+125^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55°C to $+150^\circ\text{C}$

Electrical Characteristics ($T_A=25^\circ\text{C}$)

Pin1 to Pin2

Parameter	Symbol	Test Condition	Min.	Typ.	Max.
Reverse Working Voltage	V_{RWM}		-	-	15V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	17.1V	-	-
Reverse Leakage Current	I_R	$V_{RWM} = 15\text{V}$	-	-	50nA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8/20 μs)	-	-	25V
		$I_{PP} = 5\text{A}$ (8/20 μs)	-	-	35V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$	-	-	13pF

Pin2 to Pin1

Parameter	Symbol	Test Condition	Min.	Typ.	Max.
Reverse Working Voltage	V_{RWM}		-	-	24V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	25.4V	-	-
Reverse Leakage Current	I_R	$V_{RWM} = 7\text{V}$	-	-	50nA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8/20 μs)	-	-	35V
		$I_{PP} = 3\text{A}$ (8/20 μs)	-	-	50V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$	-	-	13pF

Typical Characteristic Curves ($T_A=25^{\circ}\text{C}$)

Figure 1. Peak Pulse Power Rating Curve

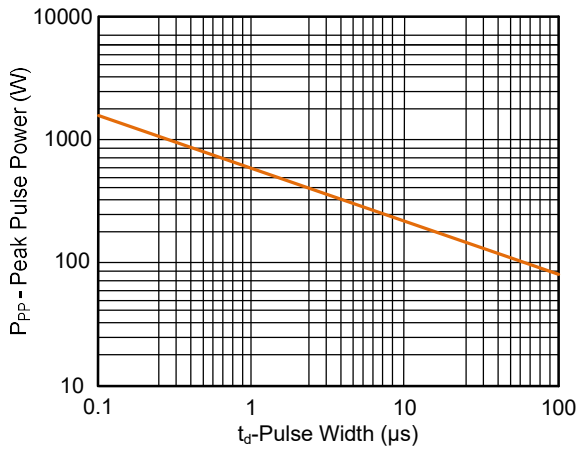


Figure 2. Pulse Derating Curve

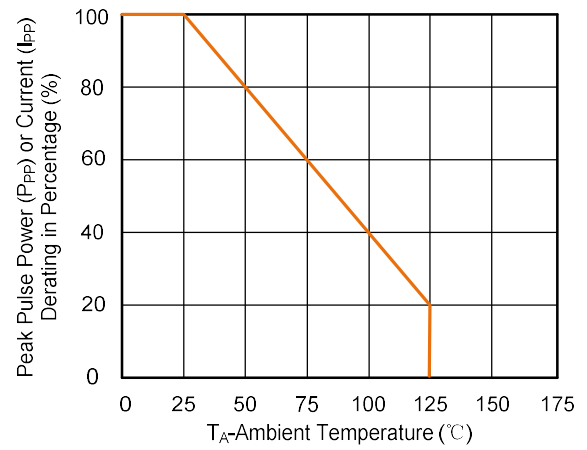


Figure 3. Pulse Waveform (8/20 μs)

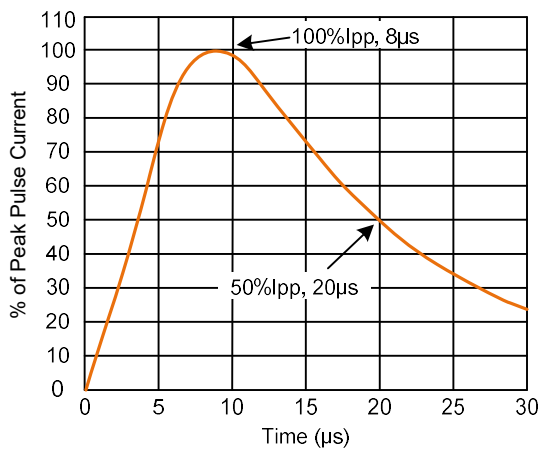
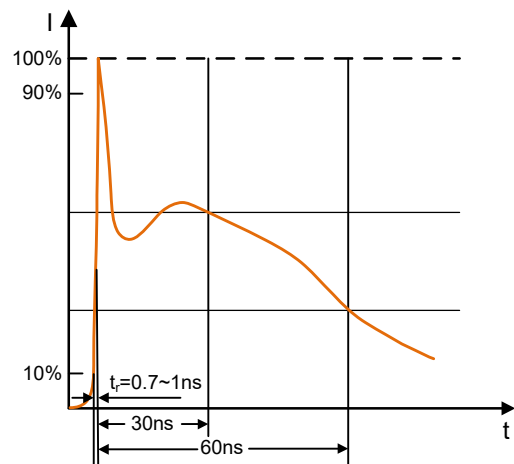
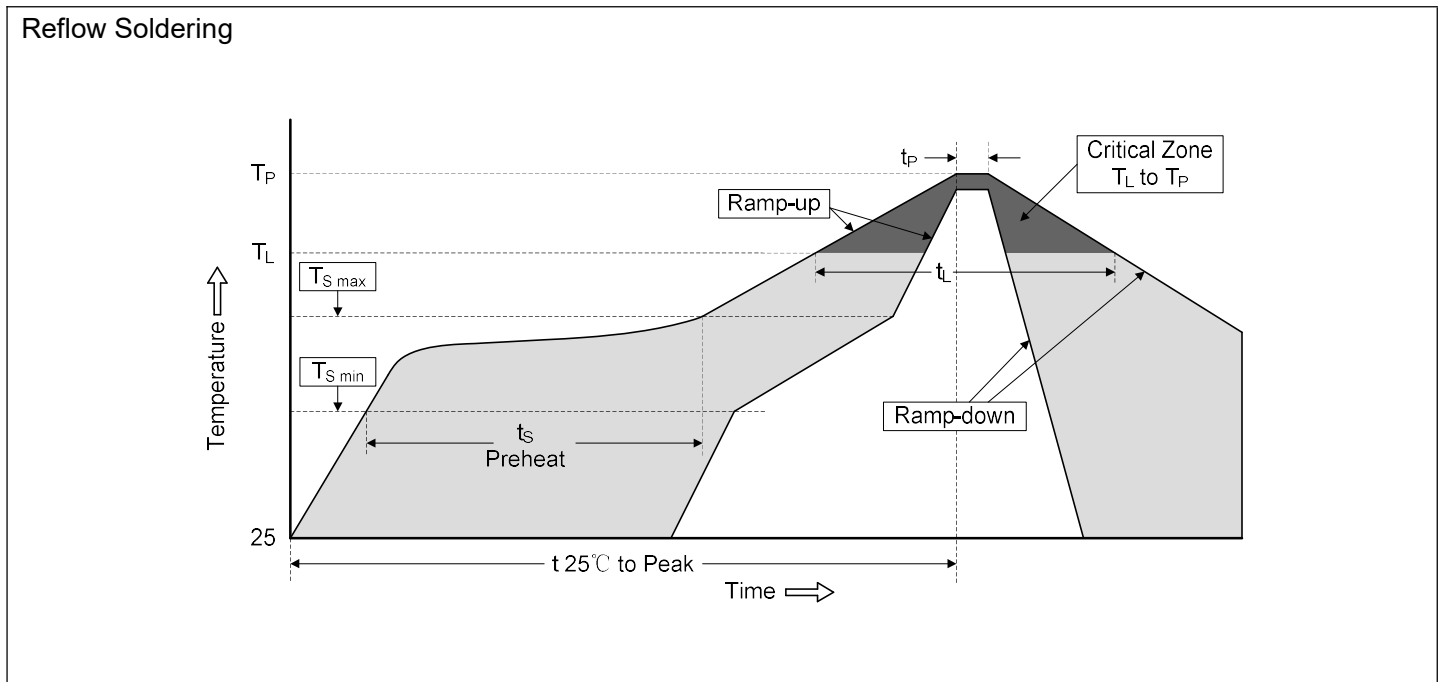


Figure 4. Pulse Waveform (IEC61000-4-2)

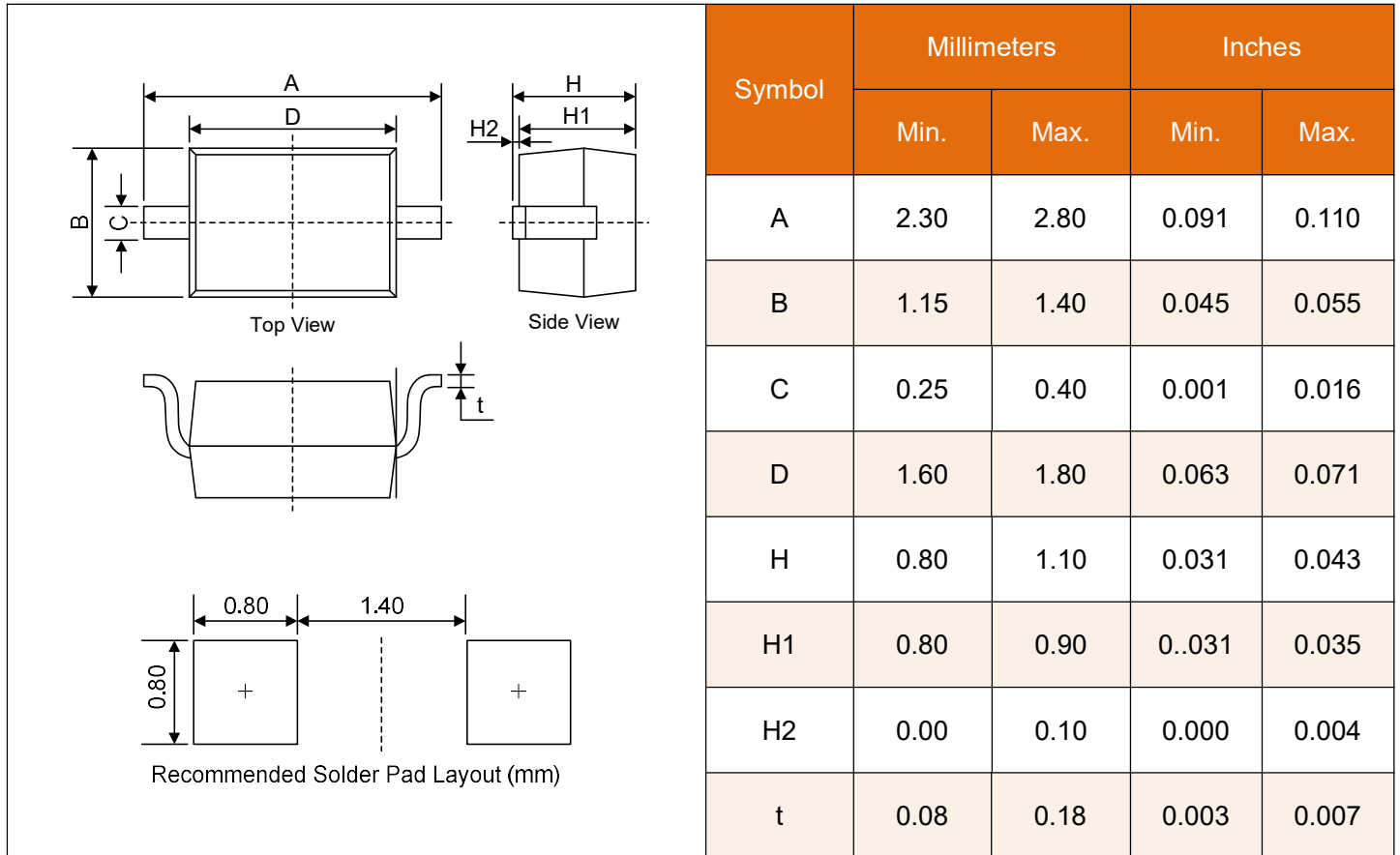


Soldering Parameters



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.

Dimensions (SOD-323)



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