

LYT32CC24L

General Purpose ESD Protection

 AUTOMOTIVE GRADE **HF**  

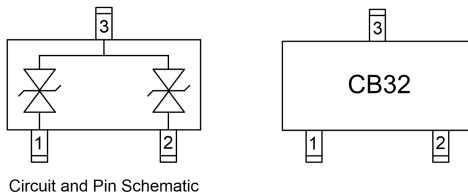


SOT-323

Description

The LYT32CC24L is a bi-directional TVS diode array, 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 lines. It complies with IEC 61000-4-2 (ESD), $\pm 25\text{kV}$ air and $\pm 15\text{kV}$ contact discharge. It is assembled into a lead-free SOT-323 package. The small size and high ESD surge protection make it an ideal choice to protect cell phone, digital video interfaces and other portable applications.

Pin Configuration and Marking



Features

- Low clamping voltage
- Low leakage current
- Operating voltage: 24V
- RoHS compliant
- IEC-61000-4-2 ESD $\pm 25\text{kV}$ Air, $\pm 15\text{kV}$ Contact
- Packaging: 7 inch reel, 3000pcs/reel
- AEC-Q101 qualified

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

Parameter	Symbol	Value
Peak Pulse Power (8/20 μs)	P_{PP}	260W
Peak Pulse Current (8/20 μs)	I_{PP}	6A
ESD (Air Discharge)	V_{ESD}	$\pm 25\text{kV}$
ESD (Contact Discharge)		$\pm 15\text{kV}$
Ambient Temperature Range	T_A	-55°C to $+125^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55°C to $+150^\circ\text{C}$

Applications

- Cellular Handsets and Accessories
- Control & Monitoring Systems
- RS-232, RS-422 & RS-485
- Set-Top Box
- Portable Electronics

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.
Reverse Working Voltage	V_{RWM}		-	-	24V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	26.7V	-	-
Reverse Leakage Current	I_R	$V_{RWM} = 24\text{V}$	-	-	0.5 μA
Clamping Voltage	V_C	$I_{PP} = 6\text{A}$ (8/20 μs)	-	40V	-
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$	-	15pF	-

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Typical Characteristic Curves (T_A=25°C)

Figure 1. Peak Pulse Power Rating Curve

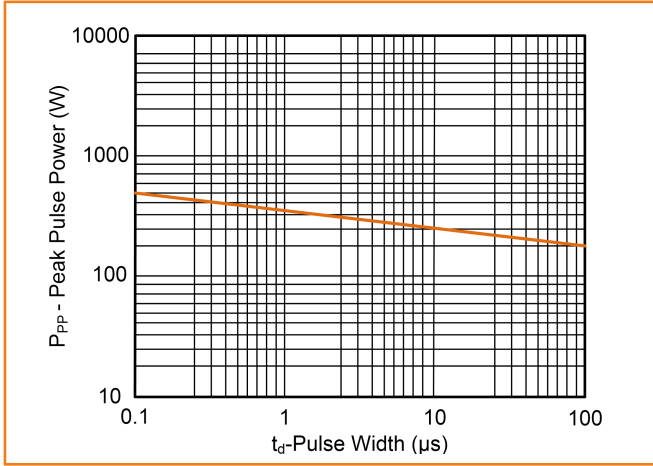


Figure 2. Pulse Derating Curve

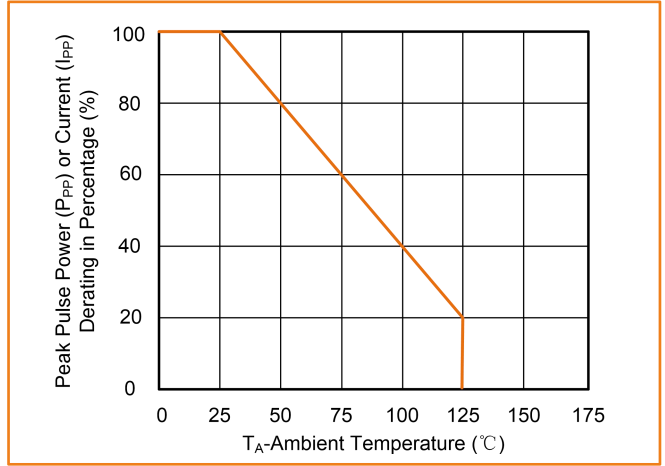


Figure 3. Clamping Voltage vs. Peak Pulse Current

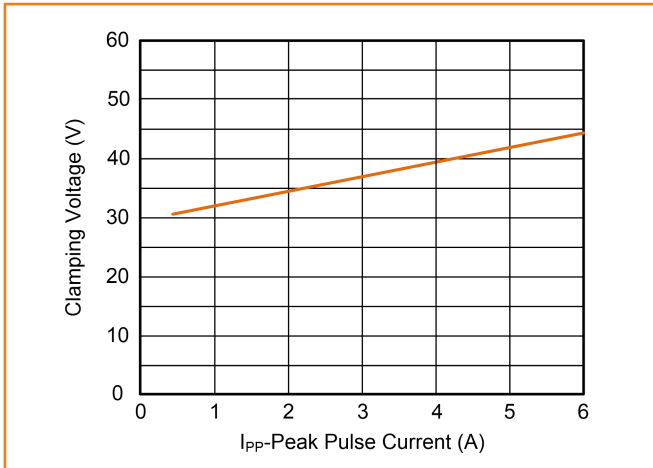


Figure 4. Junction Capacitance vs. Reverse Voltage

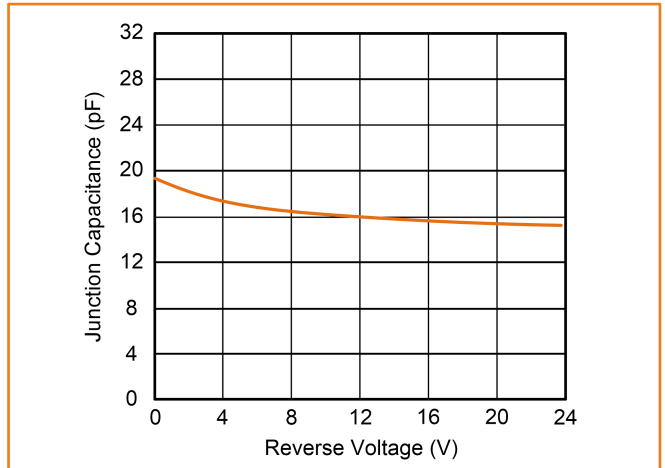


Figure 5. Pulse Waveform (8/20μs)

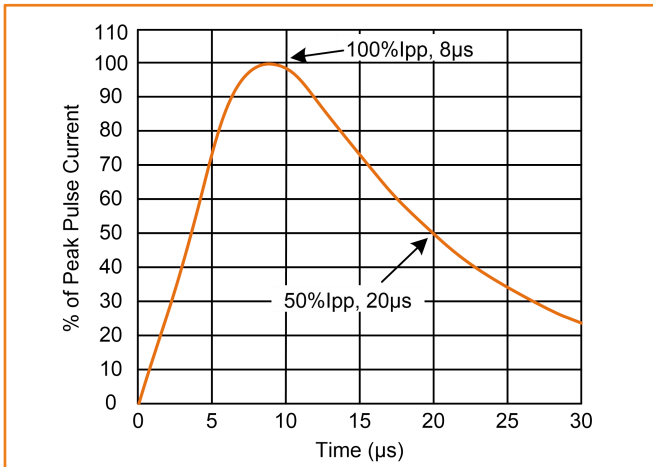
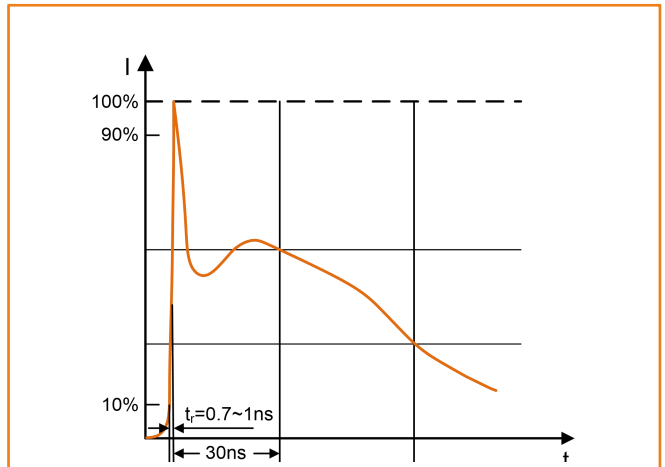


Figure 6. Pulse Waveform (IEC61000-4-2)

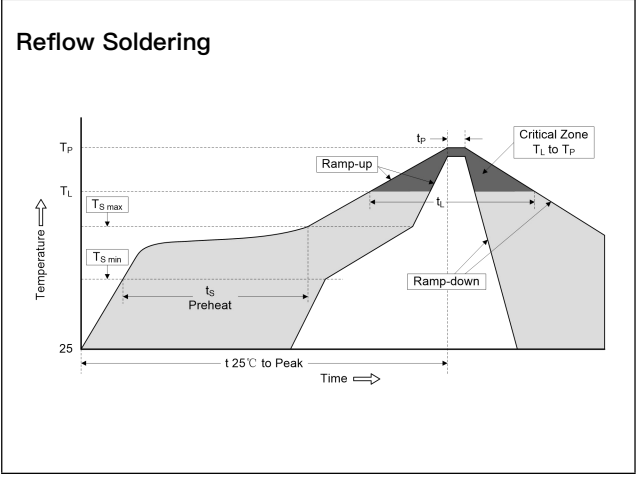


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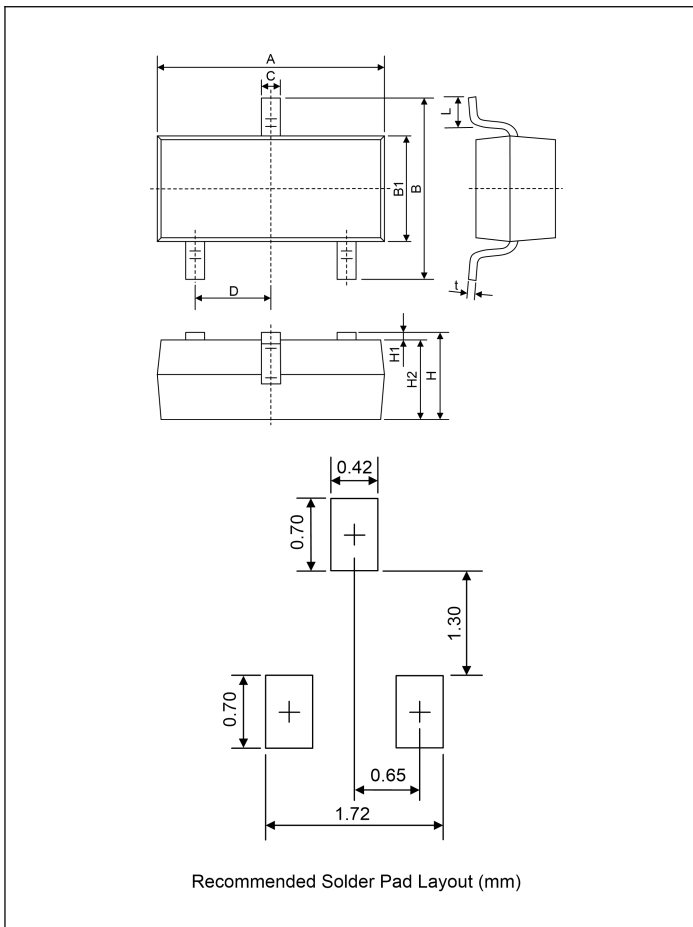
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Soldering Parameters

Reflow Condition		Lead-free
Pre Heat	-Temperature Min ($T_{S\ min}$)	150°C
	-Temperature Max ($T_{S\ max}$)	200°C
	-Time (min to max) (t_s)	60-180 seconds
Average ramp-up rate (T_L to T_P)		3°C/second max.
$T_{S\ max}$ to T_L -Ramp-up Rate		3°C/second max.
Time maintained above:	-Temperature (T_L)	217°C
	-Time (t_L)	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 (SOT-323)



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.00	2.20	0.079	0.087
B	2.15	2.45	0.085	0.096
B1	1.15	1.35	0.045	0.053
C	0.20	0.40	0.008	0.016
D	0.65 TYP		0.026 TYP	
L	0.26	0.46	0.010	0.018
H	0.80	1.10	0.031	0.043
H1	0.00	0.10	0.000	0.041
H2	0.80	1.00	0.031	0.039
t	0.08	0.15	0.003	0.006