Electrostatic Discharged Protection Devices (ESD) Data Sheet

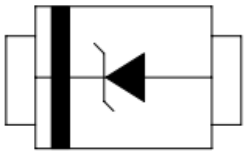
Description

The SJD32AXXL01-J series are designed to protect voltage sensitive components from high voltage, high energy transients. Excellent clamping capability, high surge capability, low zener impedance and fast response time. Because of its small size, it is ideal for use in cellular phones, portable device, business machines, power supplies and many other industrial/consumer applications.

Contact : ±30kV
Air : ±30kV

Features

- IEC61000-4-2 ESD 30KV Air, 30KV contact compliance
- SOD-323J surface mount package
- Protects one I/O line
- Peak power dissipation of 1000W under 8/20μs waveform
- Working voltage: 5V~36V
- Low leakage current
- 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



SJD32AXXL01-J

Pin Configuration

Applications

- Personal digital assistants (PDA)
- Cellular handsets & Accessories
- Portable devices
- Portable instrumentation
- Handhelds and notebooks
- Digital cameras

Maximum Ratings

Rating	Symbol	Value	Unit
Peak pulse power (tp=10/1000μs waveform)	P_{PP}	130	W
Peak pulse power (tp=8/20μs waveform)	P_{PP}	1000	W
ESD voltage (Contact discharge)	V_{ESD}	±30	kV
ESD voltage (Air discharge)		±30	
Storage & operating temperature range	T_{STG} ,T_J	-55~+150	℃

Electrical Characteristics (T_J=25℃)

Part Number	Type ①	Device Marking Code	Reverse Stand-Off Voltage	Breakdown Voltage @I_T		Test Current	Maximum Clamping Voltage @I_{PP}②	Peak Pulse Current ②	Maximum Clamping Voltage @I_{PP}③	Peak Pulse Current ③	Reverse Leakage @V_{RWM}
			V_{RWM}(V)	$V_{BR\ MIN.}$(V)	$V_{BR\ MAX.}$(V)	I_T(mA)	V_C(V)	I_{PP}(A)	V_C(V)	I_{PP}(A)	I_R(μA)
SJD32A05L01	J	B05	5.0	6.4	7.0	10	15	100	9.2	14.17	800
SJD32A07L01	J	B07	7.0	7.78	8.60	10	18.0	90	12.0	10.86	200
SJD32A10L01	J	B10	10.0	11.10	12.30	1	24.0	62	17.0	7.67	5
SJD32A12L01	J	B12	12.0	13.30	14.70	1	25.0	60	19.9	6.57	1
SJD32A15L01	J	B15	15.0	16.70	18.50	1	30.0	45	24.4	5.33	1
SJD32A18L01	J	B18	18.0	20.00	22.10	1	35.0	45	29.2	4.49	1
SJD32A24L01	J	B24	24.0	26.70	29.50	1	40.0	40	38.9	3.38	1
SJD32A36L01	J	B36	36.0	40.00	44.20	1	70.0	22	58.1	2.28	1

Notes: ①.Specific code by request ②.Maximum Clamping Voltage and Peak Pulse Current at 8/20us waveform.
③.Maximum Clamping Voltage and Peak Pulse Current at 10/1000us waveform.

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Typical Characteristics Curves

Figure 1. Peak Pulse Power Rating Curve

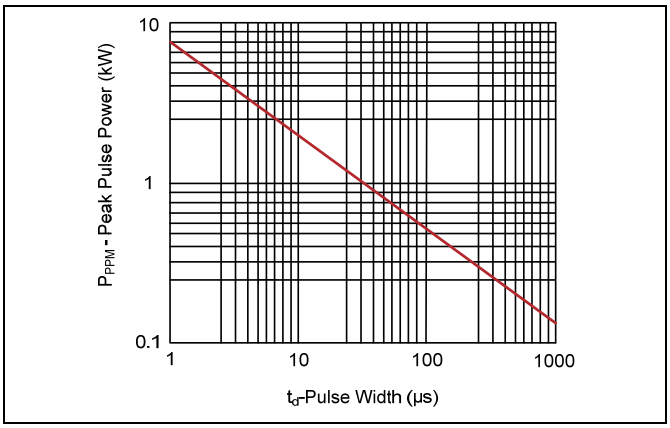


Figure 2. 10/1000μs Pulse Waveforms

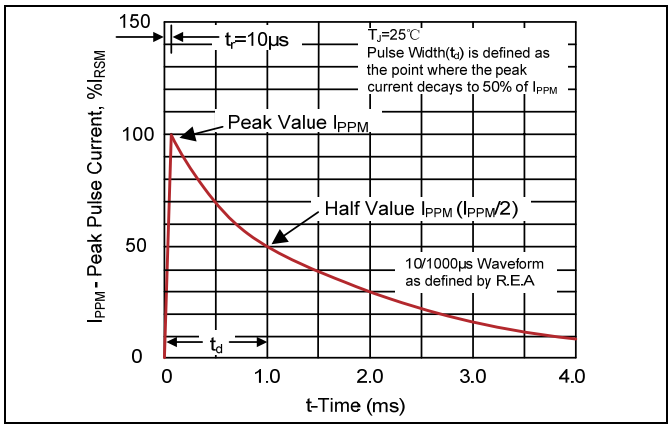


Figure 3. 8/20μs Pulse Waveforms

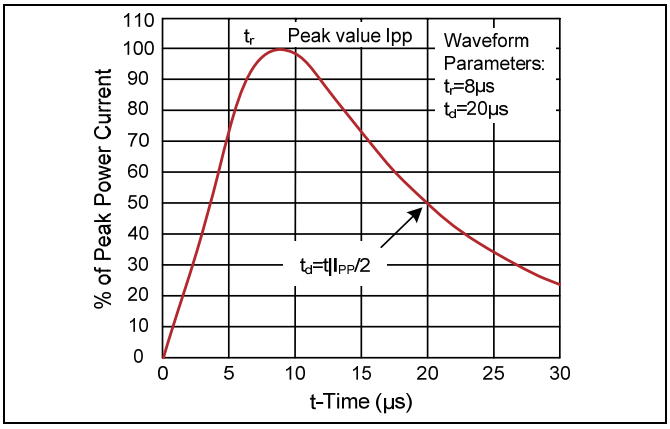
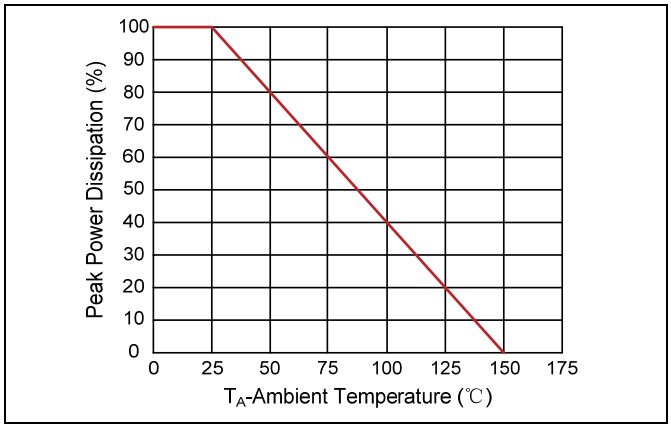
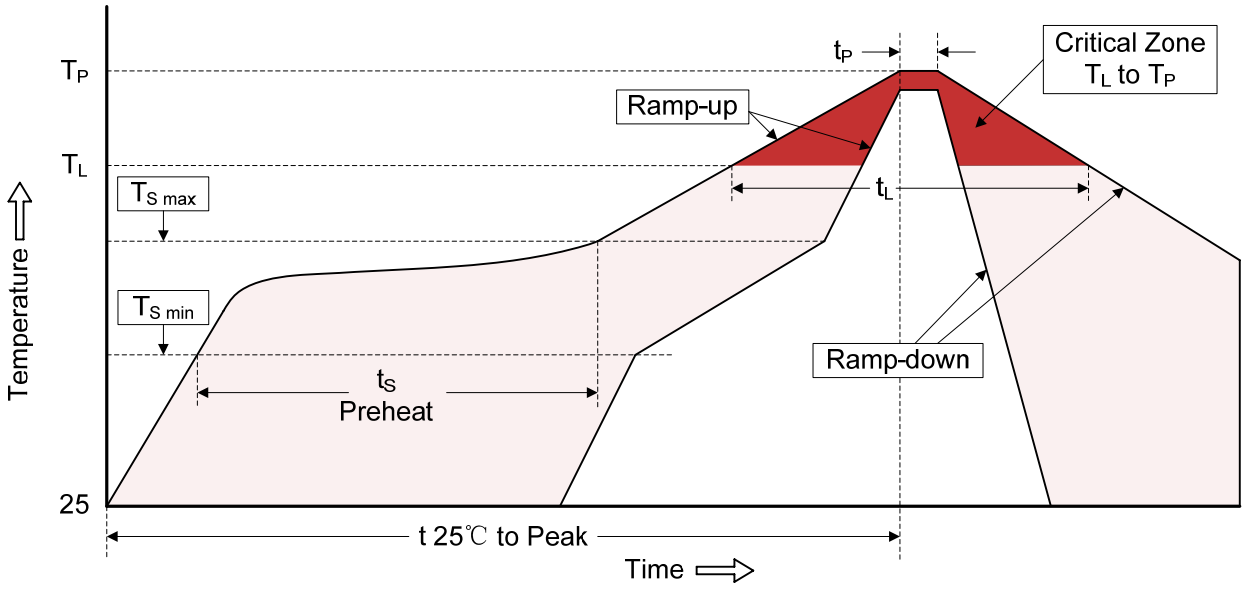


Figure 4. Power Derating Curve



Recommended Soldering Conditions

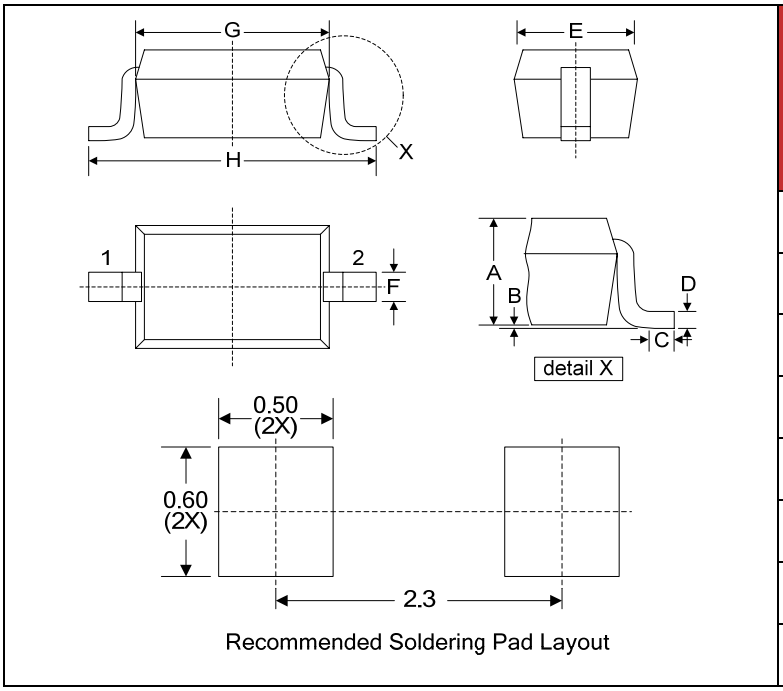
Reflow Soldering



Recommended Conditions

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

Dimensions (SOD-323J)

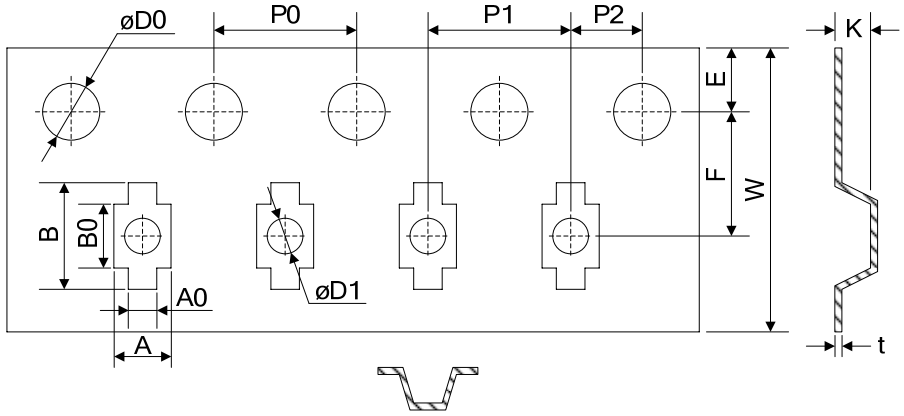


Recommended Soldering Pad Layout

Symbol	Dimension			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.80	1.10	0.031	0.043
B	-	0.20	-	0.008
C	0.20	-	0.008	-
D	0.08	0.20	0.003	0.008
E	1.15	1.50	0.045	0.060
F	-	0.45	-	0.018
G	1.40	1.80	0.055	0.071
H	2.40	2.85	0.094	0.112

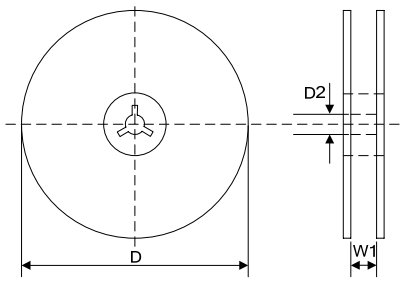
Packaging

Tape



Symbol	Dimension (mm)
W	8.00±0.30
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.10
D0	Φ1.55±0.10
D1	Φ1.00±0.05
E	1.75±0.10
F	3.50±0.10
A	1.48±0.10
A0	0.80±0.10
B	3.00±0.10
B0	1.80±0.10
K	1.05±0.10
t	0.25±0.05

Reel



D	Φ178.0±2.0
D2	Φ13.0
W1	9.5
Quantity: 3000PCS	