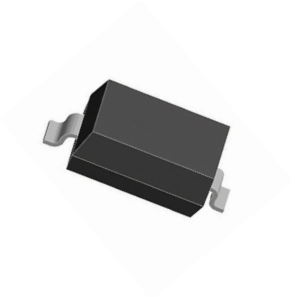
SP4P323CXXP01 Series

Electrostatic Discharged Protection Devices

Descriptions

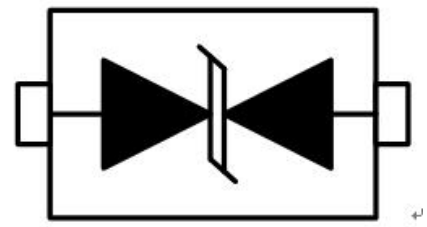
The SP4P323 Series is so standard capacitance, low leakage current,excellent clamping Voltage.Because of its small size, it is suited for use in cellular phones, portable devices, digital cameras, power supplies and many other portable applications The devices will meet IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements.



Features

- 400W Peak power dissipation under 8/20μs waveform
- IEC 61000-4-2 (ESD): Air 30KV, Contact 30KV
- IEC 61000-4-4 (EFT): 40A - 5/50ns
- SOD-323 surface mount package
- Protects one Bi-directional line
- Response time ＜1ns
- Reverse stand-off voltage:3V、5V、8V、12V、15V、24V、36V
- Lower leakage current
- Excellent clamping voltages
- Solid-state silicon avalanche technology
- Solder reflow temperature: Pure Tin-Sn,260-270℃
- Plastic package has underwriters laboratory flammability 94V-0
- Meet Lead Free/RoHS compliant

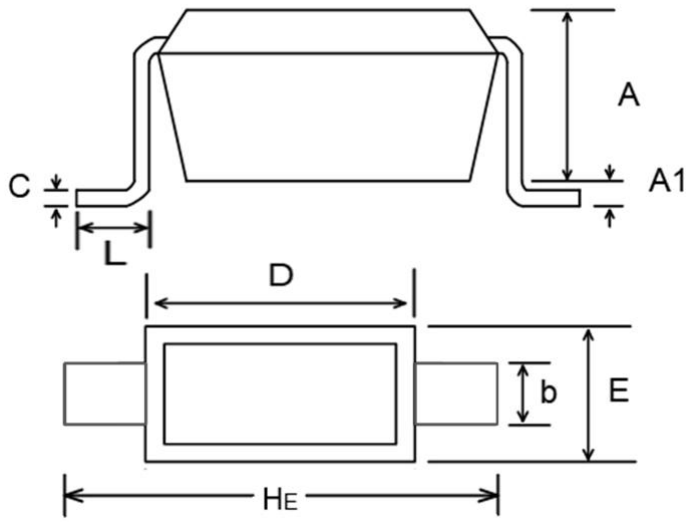
Schematic



Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants (PDA's)
- Notebooks & Handhelds
- Portable Instrumentation

Dimensions (SOD-323)



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.80	1.10	0.031	0.043
A1	0.00	0.20	0.000	0.008
b	0.25	0.40	0.010	0.016
C	0.00	0.15	0.000	0.006
D	1.60	1.80	0.063	0.071
E	1.15	1.45	0.045	0.057
HE	2.30	2.80	0.091	0.110
L	-	0.40	-	0.016

Maximum Rating and Characteristics(T_A=25℃ unless otherwise noted)

Rating	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20μs)	P_{PPM}	400	W
ESD voltage (Contact discharge)	V_{ESD}	±30	KV
ESD voltage (Air discharge)		±30	
Operating junction and Storage Temperature Range.	T_J,T_{STG}	-55 to +150	℃

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Part Number	Reverse Stand-Off Voltage	Breakdown Voltage @I_T	Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}	Capacitance At 1MHZ 0V
	V_{RWM}(V)	V_{BR}(V)min	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(μA)	Cj(PF)
SP4P323C03P01	3.3	4.0	1	11	39	20	200
SP4P323C05P01	5.0	6.0	1	18.3	28	10	175
SP4P323C08P01	8	8.5	1	24	17	1	150
SP4P323C12P01	12	13.3	1	28.6	14	1	50
SP4P323C15P01	15	16.7	1	35	12	1	40
SP4P323C24P01	24	26.7	1	56	9.0	1	40
SP4P323C36P01	36	40	1	75	5.0	1	35

Ratings and Characteristic Curves (T_A=25℃ unless otherwise noted)

Figure 1. Peak Pulse Power Rating Curve

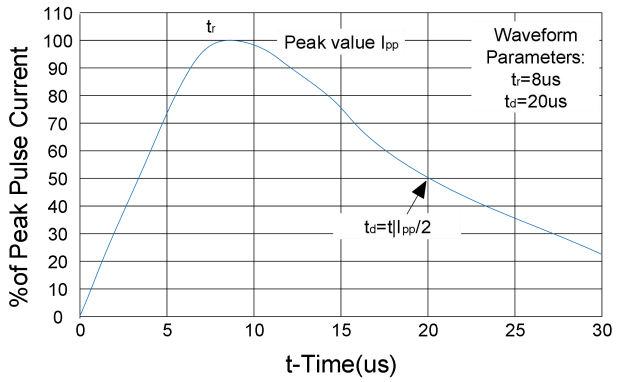


Figure 2. Pulse Derating Curve

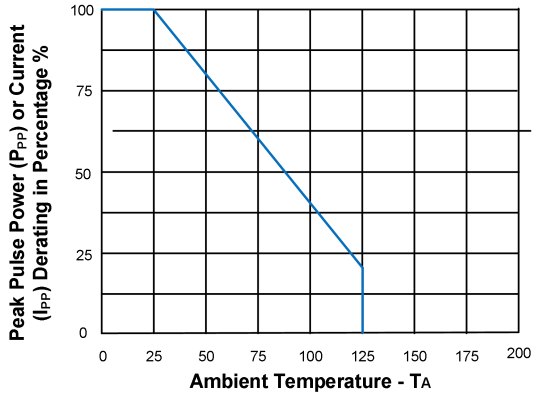


Figure 3. Typical Junction Capacitance

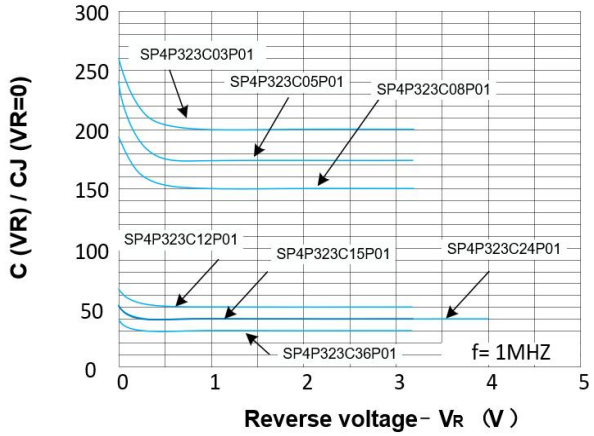
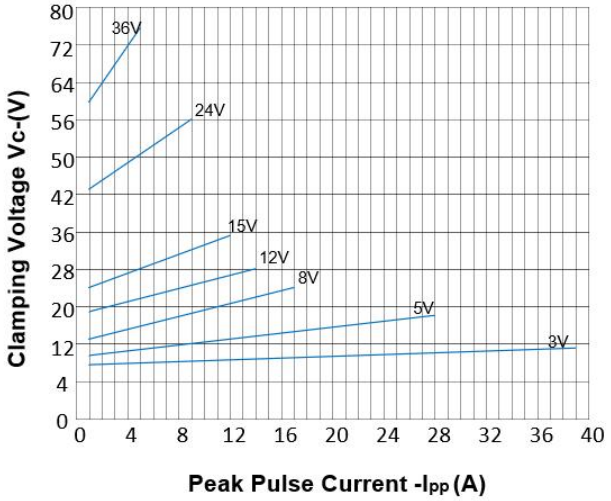
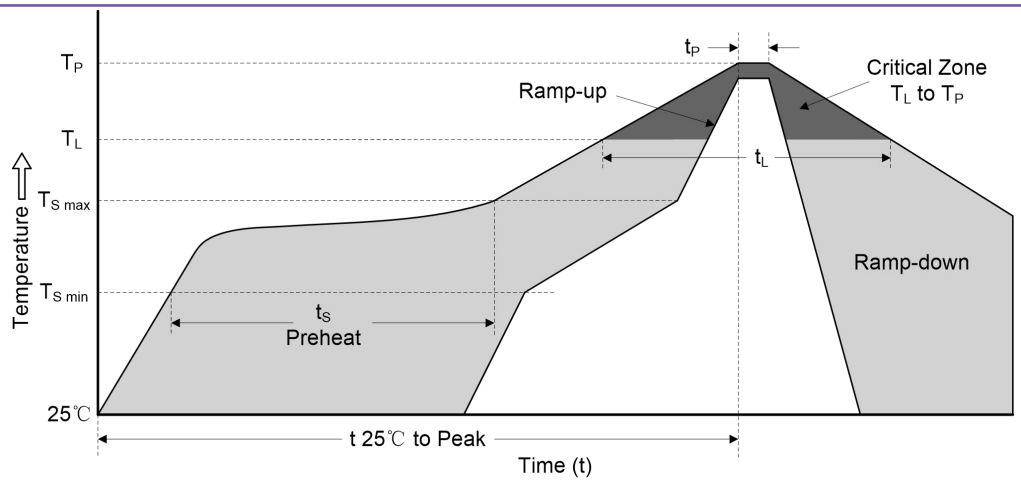


Figure 4. Clamping Voltage VS Peak Pulse Current



Reflow Soldering Parameters



Reflow Condition		Lead-free Assembly
Pre heat	-Temperature Min ($T_{S\ min}$)	150℃
	-Temperature Max ($T_{S\ max}$)	200℃
	-Time (min to max) (t_S)	60-180 seconds
Average ramp-up rate (T_L to T_P)		3℃/second max.
$T_{S\ max}$ to T_L -Ramp-up Rate		3℃/second max.
Reflow	-Temperature (T_L) (Liquidus)	217℃
	-Time (min to max) (t_S)	60-150 seconds
Peak Temperature (T_P)		260(+0/-5)℃
Time within 5℃ of actual Peak Temperature (t_P)		20-40 seconds
Ramp-down Rate		6℃/second max.
Time 25℃ to Peak Temperature(T_p)		8 minutes max.
Do not exceed		260℃

Package

Part number	QTY/Reel	Reel Size
SP4P323 Series	3000PCS	7Inch