

Electrostatic Discharged Protection Devices (ESD) Data Sheet

Description

The SODJXXA(C) series are designed to protect voltage sensitive components from high voltage, high energy transients. Excellent clamping capability, high surge capability, low zero 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.



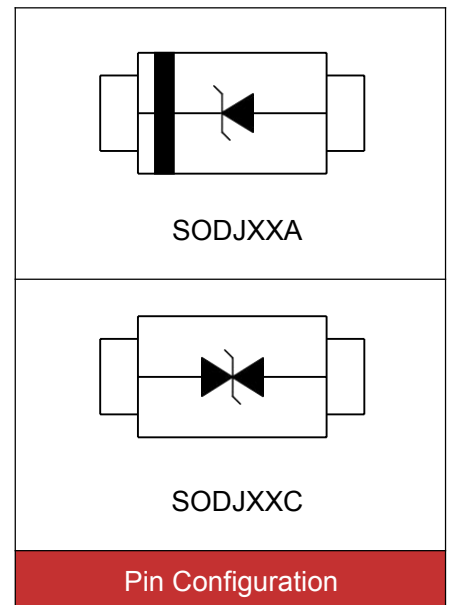
Features

- IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- SOD-123S surface mount package
- Protects one I/O line
- Peak power dissipation of 1000W under 8/20μs waveform
- Working voltage: 5V~170V
- Low leakage current
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant
- Solder reflow temperature: Pure Tin-Sn, 260~270°C
- Flammability rating UL 94V-0
- Meets MSL level 1, per J-STD-020



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}	200	W
Peak pulse power (tp=8/20μs waveform)	P _{PP}	1000	W
ESD voltage (Contact discharge)	V _{ESD}	±8	kV
ESD voltage (Air discharge)		±15	
Storage & operating temperature range	T _{STG} , T _J	-55~+150	°C

Electrical Characteristics (T_J=25°C)

Part Number	Reverse Stand-Off Voltage	Breakdown Voltage @I _T		Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
		V _{RWM} (V)	V _{BR MIN.} (V)				
SODJ5.0A(C)	5.0	6.4	7.0	10	9.2	21.8	800
SODJ6.0A(C)	6.0	6.67	7.37	10	10.3	19.4	800
SODJ6.5A(C)	6.5	7.22	7.98	10	11.2	17.9	500
SODJ7.0A(C)	7.0	7.78	8.60	10	12.0	16.7	200
SODJ7.5A(C)	7.5	8.33	9.21	1	12.9	15.5	100
SODJ8.0A(C)	8.0	8.89	9.83	1	13.6	14.7	50
SODJ8.5A(C)	8.5	9.44	10.40	1	14.4	13.9	20
SODJ9.0A(C)	9.0	10.0	11.10	1	15.4	13.0	10
SODJ10A(C)	10.0	11.10	12.30	1	17.0	11.8	5
SODJ11A(C)	11.0	12.20	13.50	1	12.2	11.0	3
SODJ12A(C)	12.0	13.30	14.70	1	19.9	10.1	1
SODJ13A(C)	13.0	14.40	15.90	1	21.5	9.3	1
SODJ14A(C)	14.0	15.60	17.20	1	23.2	8.6	1
SODJ15A(C)	15.0	16.70	18.50	1	24.4	8.2	1
SODJ16A(C)	16.0	17.80	19.70	1	26.0	7.7	1
SODJ17A(C)	17.0	18.90	20.90	1	27.6	7.3	1
SODJ18A(C)	18.0	20.00	22.10	1	29.2	6.9	1
SODJ20A(C)	20.0	22.20	24.50	1	32.4.0	6.2	1
SODJ22A(C)	22.0	24.40	26.90	1	35.5	5.7	1
SODJ24A(C)	24.0	26.70	29.50	1	38.9	5.2	1
SODJ26A(C)	26.0	28.90	31.90	1	42.1	4.8	1
SODJ28A(C)	28.0	31.10	34.40	1	45.4	4.4	1
SODJ33A(C)	30.0	33.30	36.80	1	48.4	4.2	1
SODJ33A(C)	33.0	36.70	40.60	1	53.3	3.8	1
SODJ36A(C)	36.0	40.00	44.20	1	58.1	3.5	1
SODJ40A(C)	40.0	44.40	49.10	1	64.5	3.1	1
SODJ43A(C)	43.0	47.80	52.80	1	69.4	2.9	1

Typical Characteristics Curves

Figure 1. Peak Pulse Power Rating Curve

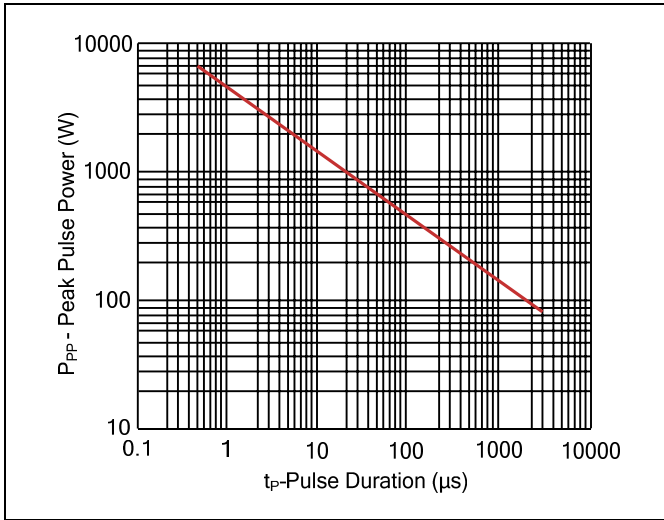


Figure 2. 10/1000 μ s Pulse Waveforms

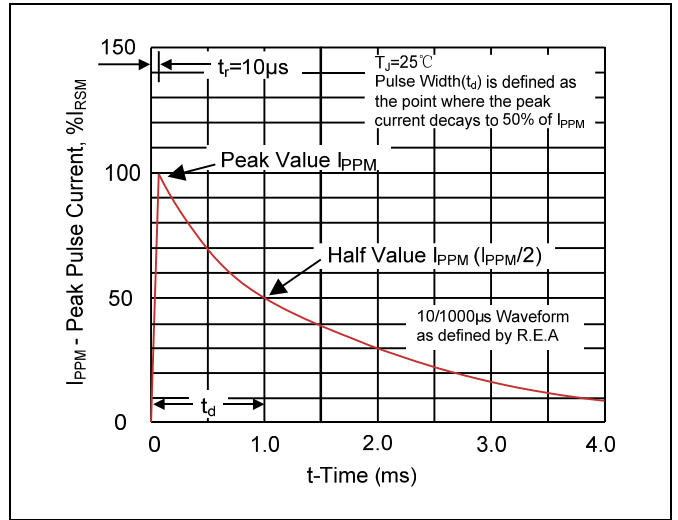


Figure 3. 8/20 μ s Pulse Waveforms

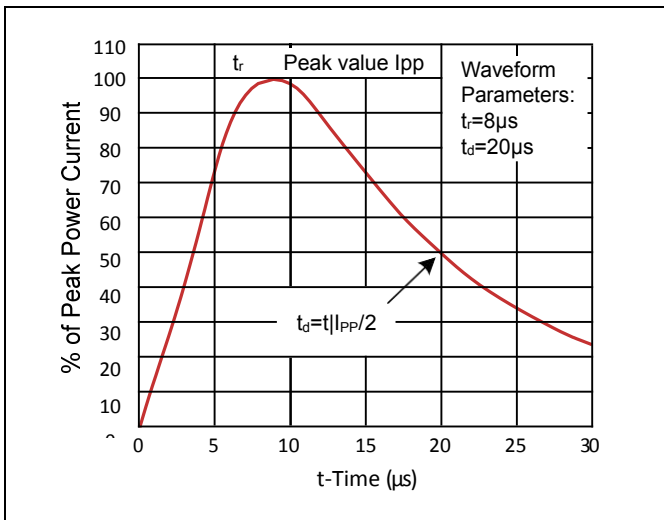


Figure 4. Power Derating Curve

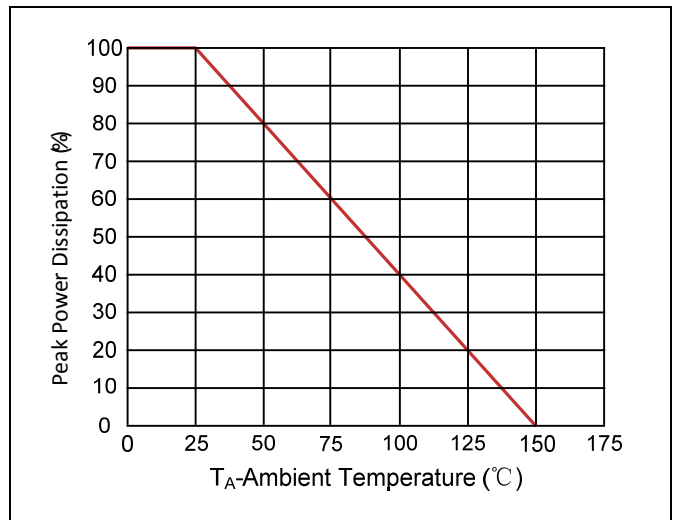
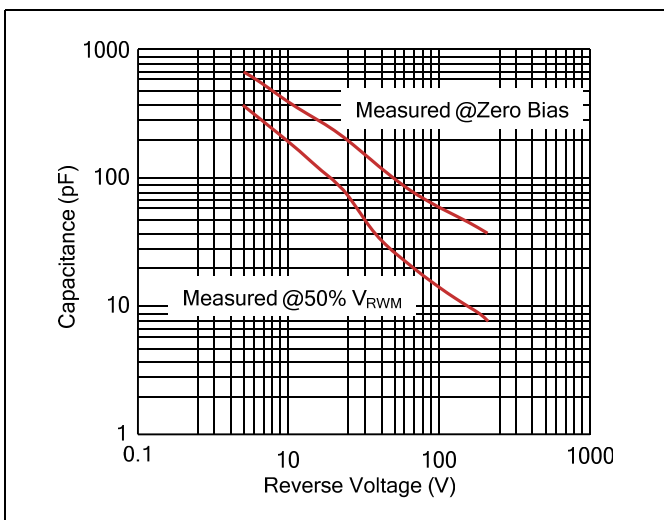
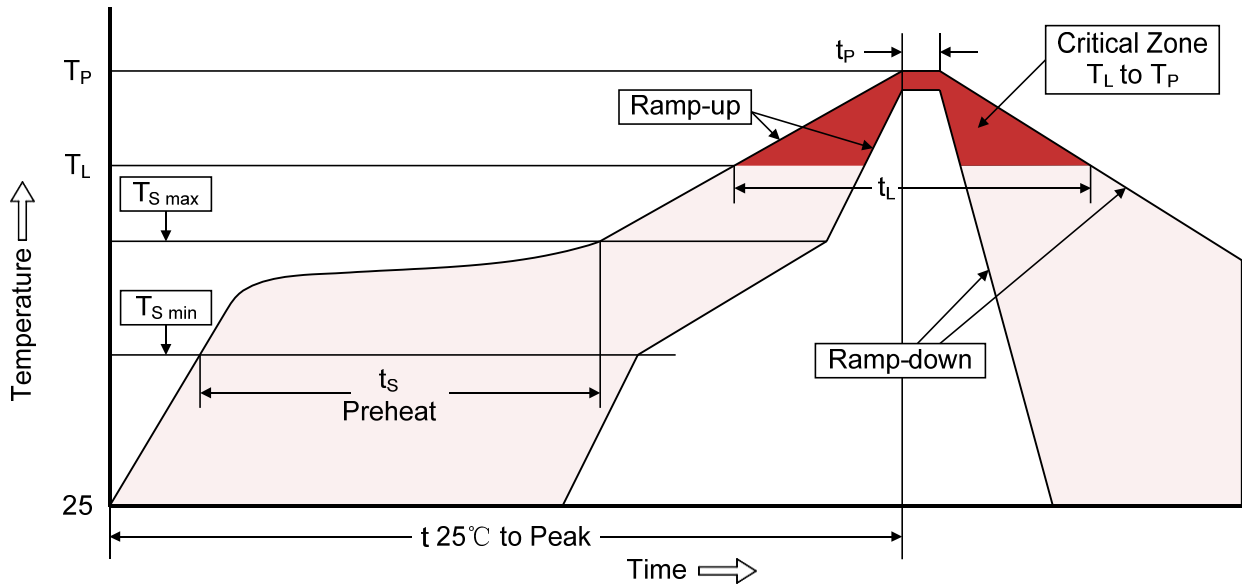


Figure 5. Capacitance vs. Reverse Voltage



Recommended Soldering Conditions

Reflow Soldering



Recommended Conditions

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-123S)

Symbol	Dimension			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.50	3.90	0.138	0.154
B	2.60	3.00	0.102	0.118
C	0.75	1.10	0.030	0.043
D	1.60	2.00	0.063	0.079
E	0.80Typ.		0.031Typ.	
F	0.90	1.40	0.035	0.055
G	0.12	0.22	0.005	0.009

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	Φ1.50±0.10		
		D1	Φ1.00±0.05		
		E	1.75±0.10		
		F	3.50±0.10		
		A	2.00±0.10		
		B	3.95±0.10		
		K	1.40±0.12		
		t	0.23±0.10		
		Reel		Symbol	Dimension (mm)
				D	Φ178.0±2.0
D2	Φ13.0				
W1	9.5				
Quantity: 3000PCS					