SDXXC
3.3V~36V Ultra Low Capacitance
Bi-directional TVS Diode

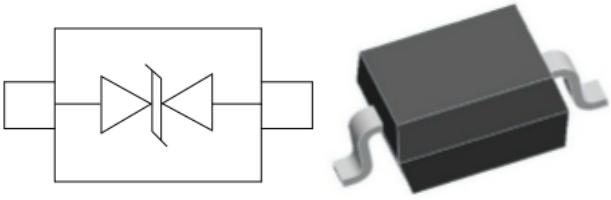
Description

The SDXXC is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computers and PDA's, using monolithic silicon technology to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting sensitive semiconductor components from damage. The SDXXC complies with the IEC 61000- 4-2 (ESD) standard with ±30kV air and ±30kV contact discharge. The SDXXC is assembled into a lead-free SOD- 323 package and will protect one unidirectional line. These devices will fit on the same PCB pad area as an 0805 MLV device.

Features

- 350W peak pulse power (8/20us)
- Protects one data or power line
- Ultra low leakage: nA level
- Stand−off Voltage: 3.3 V ~ 36 V
- Ultra low clamping voltage
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - – IEC61000-4-4 (EFT) 40A (5/50ns)
- RoHS Compliant

Dimensions & Symbol（Unit: mm Max）



SOD-323

Mechanical Characteristics

- Package: SOD-323
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Peripherals
- Pagers Peripherals
- Desktop and Servers

Marking information

Details marking code reference customer approval list

Ordering Information

Part Number	Packaging	Reel Size
SD03C	3000/Tape & Reel	7 inch
SD05C	3000/Tape & Reel	7 inch
SD08C	3000/Tape & Reel	7 inch
SD12C	3000/Tape & Reel	7 inch
SD15C	3000/Tape & Reel	7 inch
SD18C	3000/Tape & Reel	7 inch
SD24C	3000/Tape & Reel	7 inch
SD36C	3000/Tape & Reel	7 inch

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (t_p= 8/20μs)	P_{PP}	350	Watts
Operating Temperature	T_J	-55°C to 125°C	℃
Storage Temperature	T_{STG}	-55°C to 150°C	℃

Electrical Characteristics (T_A = 25 °C unless otherwise noted)

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	TYPICAL CLAMPING VOLTAGE (See Fig. 2) @ I_{PP} = 1A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @8/20μs V_C @ I_{PP}	MAXIMUM LEAKAGE CURRENT @V_{WM} I_D μA	TYPICAL CAPACITANCE @0V, 1 MHz C_J pF
SD03C	2A	3.3	4.0	7.5	13V @ 20A	40	450
SD05C	2B	5	6.0	9.8	18V @ 17A	10	200
SD08C	8C	8	8.89	10.5	15.7V @ 28.7A	20	125
SD8.5C	8.5C	8.5	9.44	11.2	17.1V @ 26.4A	10	110
SD09C	9C	9	10.0	11.8	18.2V @ 24.8A	4	105
SD10C	10C	10	11.1	13.1	19.4V @ 23.3A	2	95
SD11C	11C	11	12.2	14.3	21.1V @ 21.4A	0.1	85
SD12C	12C	12	13.3	15.6	22.9V @ 19.7A	0.1	80
SD13C	13C	13	14.4	16.8	24.8V @ 18.2A	0.1	75
SD14C	14C	14	15.6	18.2	25.8V @ 17.5A	0.1	70
SD15C	15C	15	16.7	19.5	26.8V @ 16.8A	0.1	65
SD16C	16C	16	17.8	20.7	28.0V @ 16.1A	0.1	60
SD17C	17C	17	18.9	22.1	29.2V @ 15.4A	0.1	50
SD18C	18C	18	20.0	23.4	32.4V @ 13.9A	0.1	47
SD20C	20C	20	22.2	25.8	33.5V @ 13.5A	0.1	45
SD22C	22C	22	24.4	28.3	36.9V @ 12.2A	0.1	42
SD24C	24C	24	26.7	30.9	40.2V @11.2 A	0.1	40
SD26C	26C	26	28.9	33.6	43.5V @ 10.4A	0.1	37
SD28C	28C	28	31.1	36.1	46.8V @ 9.7A	0.1	35
SD30C	30C	30	33.3	38.6	51.0V @ 8.9A	0.1	32
SD33C	33C	33	36.7	42.4	57.0V @ 7.9A	0.1	30
SD36C	36C	36	40.0	46.1	63.6V @ 7.1A	0.1	27

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

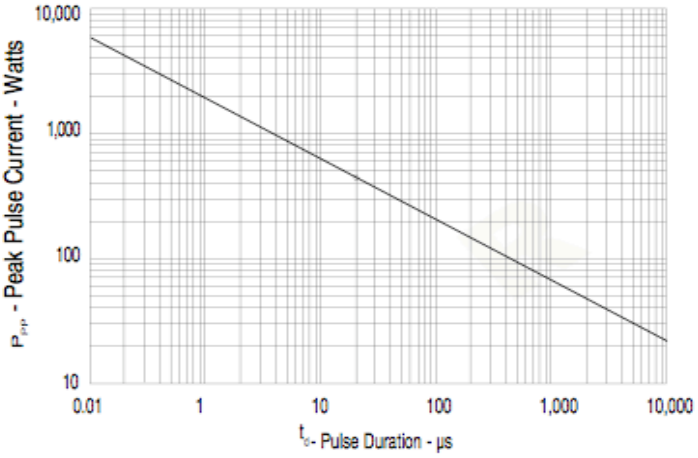


FIGURE 2
PULSE WAVE FORM

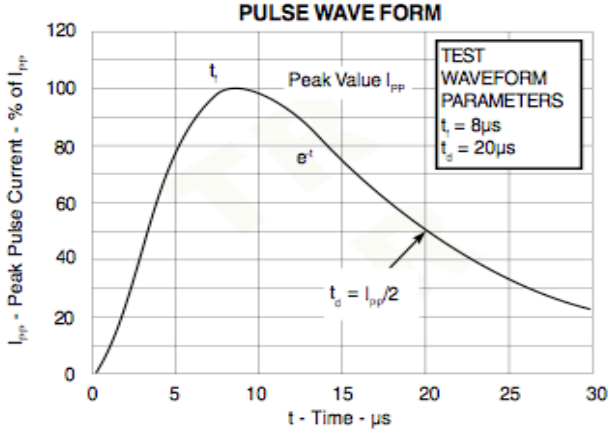
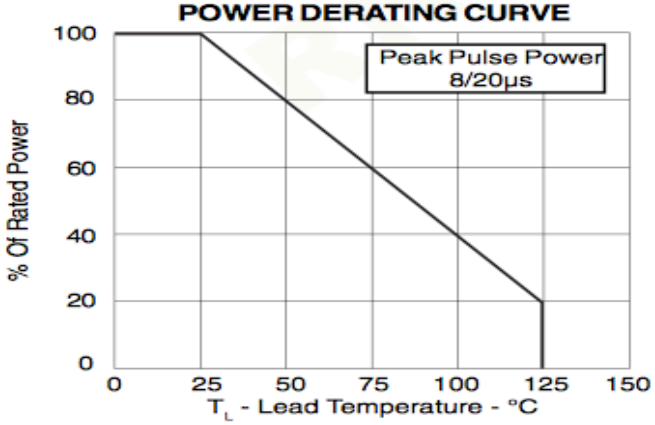
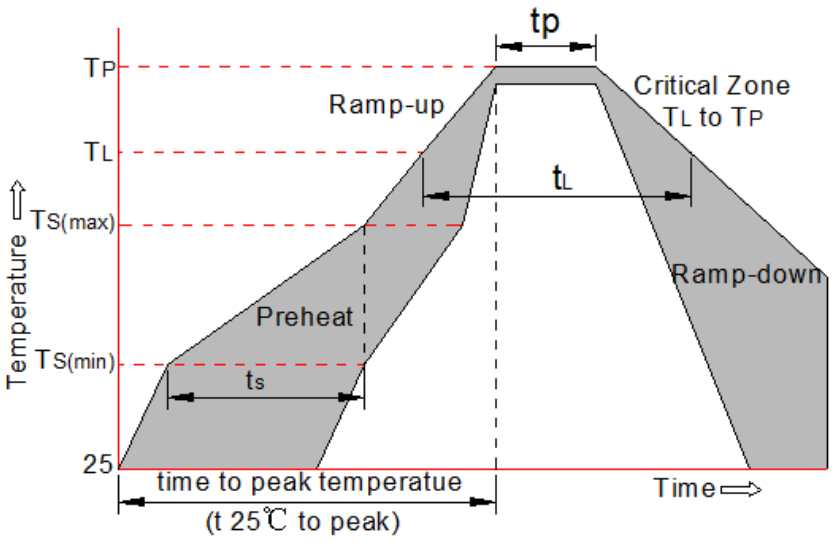


FIGURE 3
POWER DERATING CURVE

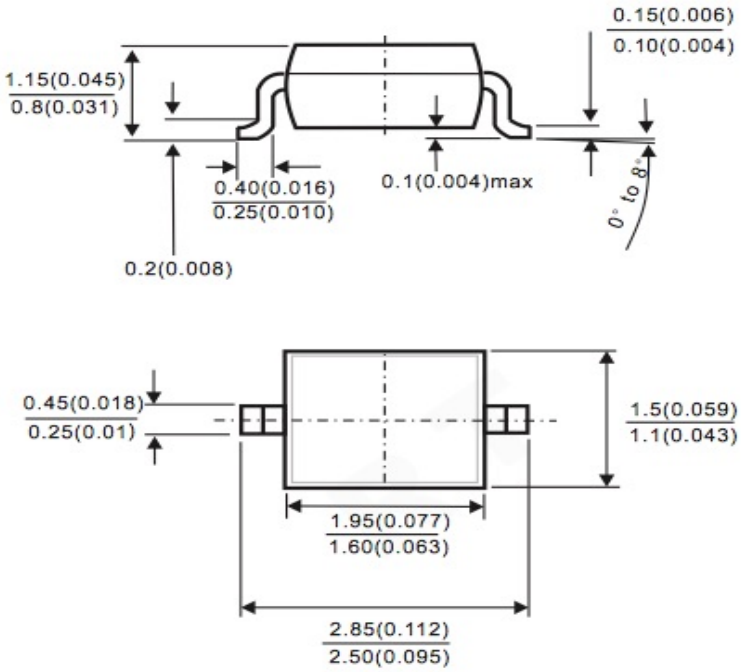


Soldering parameters

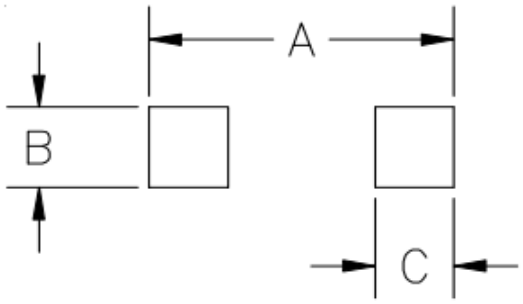
Reflow Condition		Pb-Free assembly (see FIG.2)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃



Package mechanical data (mm/inch)



Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	3.15	0.120
B	0.80	0.031
C	0.80	0.031

Contact information

WPMTEK Incorporated Limited

Room 206-207,2nd Floor,Block 3,Minxing Industry Park,Minzhi

Longhua New District,Shenzhen

TEL：86755-29308003 FAX：86755-23739900