

Description

The ESD323DCXX 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 sensitive semiconductor components from damage. It complies with IEC 61000-4-2 (ESD), $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into a lead-free SOD-323 package. It is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computers and PDA's.

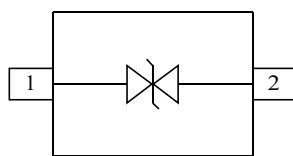
Features

- Protects one data or power line
- Ultra low leakage current
- Operating voltage: 3.3V~36V
- RoHS compliant
- IEC-61000-4-2 ESD $\pm 30\text{kV}$ Air, $\pm 30\text{kV}$ Contact
- Packaging: 7 inch reel, 3000pcs/reel

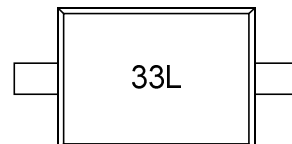
Applications

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

Pin Configuration and Marking



Circuit and Pin Schematic



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

Parameter	Symbol	Value
Peak Pulse Power (8/20 μs)	P_{PP}	300W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	$\pm 30\text{kV}$ $\pm 30\text{kV}$
Ambient Temperature Range	T_A	-55°C to $+125^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55°C to $+150^\circ\text{C}$

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

Part Number	Marking	Reverse Working Voltage	Reverse Breakdown Voltage @ $I_T=1\text{mA}$	Reverse Leakage Current @ V_{RWM}	Clamping Voltage @8/20 μs		Peak Pulse Current	Junction Capacitance @ $V_R=0\text{V}$, $f=1\text{MHz}$	
		V_{RWM} (V)	V_{BR} (V)	I_R (μA)	V_C (V)		I_{PP} (A)	C_J (pF)	
		Max.	Min.	Max.	@1A	@ $I_{PP\text{ Max.}}$	Max.	Typ.	Max.
ESD323DC03	33L	3.3	3.8	1.0	6	12	25	-	100
ESD323DC05	05CL	5.0	6.0	1.0	8	15	20	-	80
ESD323DC12	12L	12.0	13.3	0.5	18	25	12	32	-
ESD323DC15	15CM	15.0	16.7	0.5	20	25	18	-	50
ESD323DC18	18	18.0	19.8	0.2	25	38	13	-	60
ESD323DC24	24L	24.0	27.0	0.2	40	60	5	15	-
ESD323DC36	36L	36.0	38.0	0.2	50	75	4	12	-

Typical Characteristic Curves ($T_A=25^\circ\text{C}$)

Figure 1. Peak Pulse Power Rating Curve

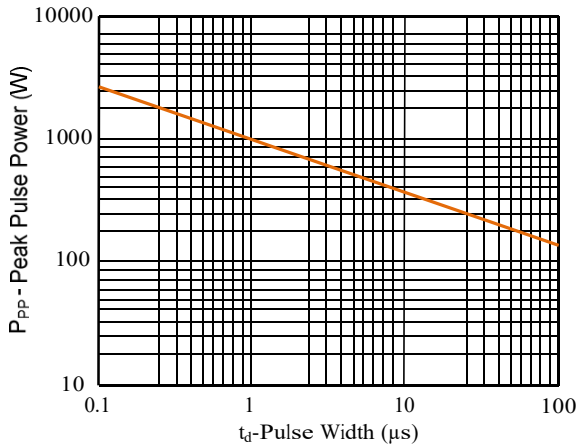


Figure 2. Pulse Derating Curve

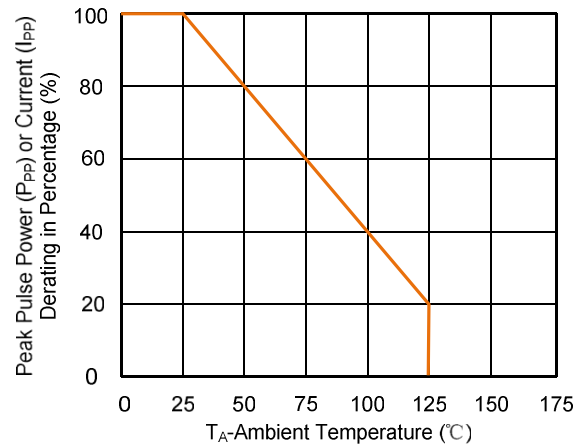


Figure 3. Pulse Waveform (8/20 μs)

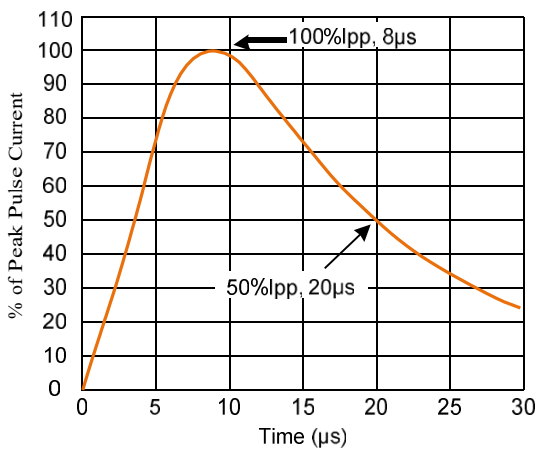
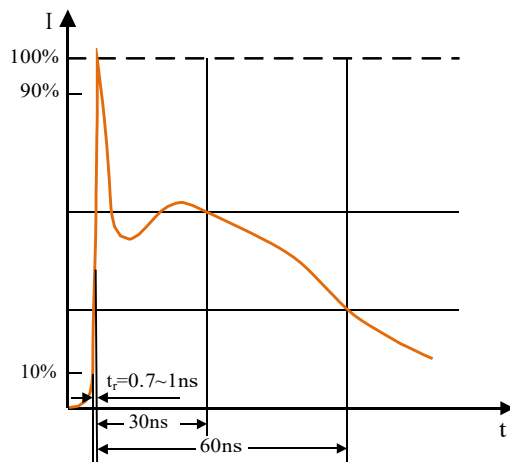
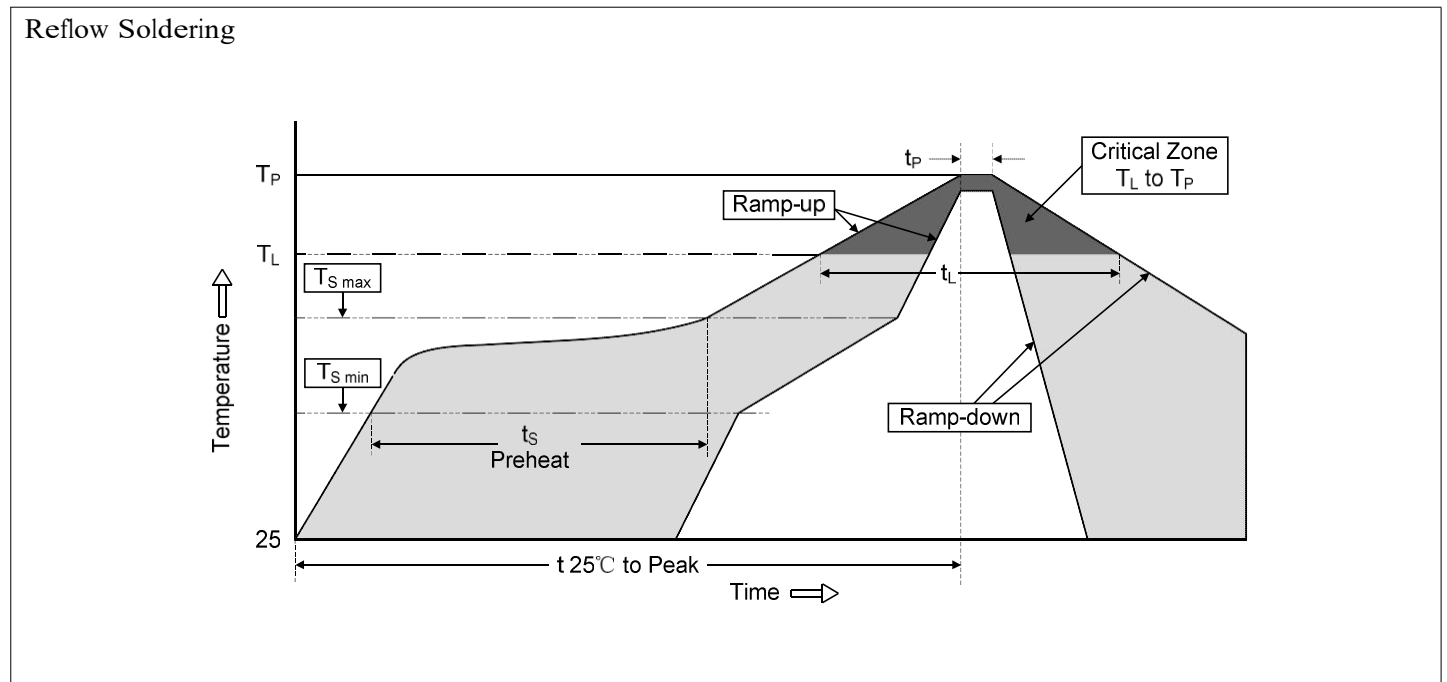


Figure 4. Pulse Waveform (IEC61000-4-2)



Soldering Parameters



Profile Feature	Pb-Free AssemblESD
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-323)

