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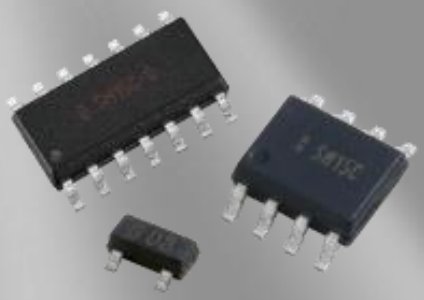
DATA SHEET

ELECTROSTATIC DISCHARGE PROTECTION DEVICES

INDUSTRIAL / CONSUMER

UDD32C03L01-IP11

RoHS compliant & Halogen free





Product specification– July 04, 2023 V.0

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Electrostatic Discharged Protection Devices (ESD) Data Sheet

Description

The UDD32C03L01-IP11 is an ultra low ESD protection devices designed to protect high speed data interfaces. It is specifically designed to protect sensitive components which is connected to data transmission lines from overvoltage caused by electrostatic discharge (ESD), cable discharge events (CDE) and lightning. During a transient spike, the broken-down diodes direct the transient current to the ground. The internal TVS diode clamps the transient voltage to a safe level. The ultra low junction capacitance allows the user to protect the high-speed data lines. This device is in a signal package, RoHS/WEEE compliant, SOD-323 package. It measures 2.5×1.25×1.0mm. This device may be used to meet the immunity requirements of IEC61000-4-2 (ESD), IEC61000-4-4 (EFT) and IEC61000-4-5 (Surge).

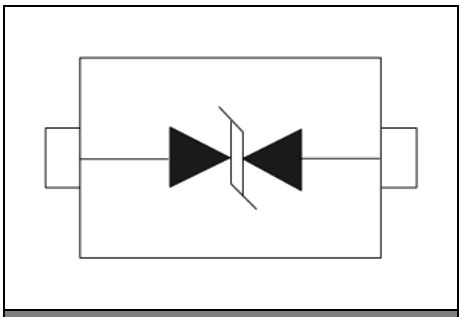


Contact : ±30kV
Air : ±30kV



Features

- IEC61000-4-2 ESD 30KV Air, 30KV contact compliance
- SOD-323 surface mount package
- Protection one power line
- Peak power dissipation of 280W under 8/20μs waveform
- Working voltage: 3.3V
- Low leakage current
- Low operating and clamping voltages
- Solid-state silicon avalanche technology
- Solder reflow temperature: Pure Tin-Sn, 260~270℃
- Flammability rating UL 94V-0
- Meets MSL level 1, per J-STD-020
- Marking:3LH



Pin Configuration

Applications

- USB 2.0 interface
- 10/100/1000 Ethernet
- Personal digital assistants (PDA)
- Serial ATA protection
- Digital visual interface (DVI)
- Wireless system devices
- Handhelds and notebooks
- Digital cameras
- RF interface

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Maximum Ratings

Rating	Symbol	Value	Unit
Peak pulse power (tp=8/20μs waveform)	P_{PP}	280	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_A=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				3.3	V
Reverse breakdown voltage	V_{BR}	I_{BR}=1mA	4.0			V
Reverse leakage current	I_R	V_R=3.3V			1	μA
Clamping voltage (tp=8/20μs)	V_C	I_{PP}=11A			23	V
Peak pulse current (tp=8/20μs)	I_{PP}				11	A
Off state junction capacitance	C_J	0Vdc,f=1MHz		1.4		pF

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Typical Characteristics Curves

Figure 1. Power Derating Curve

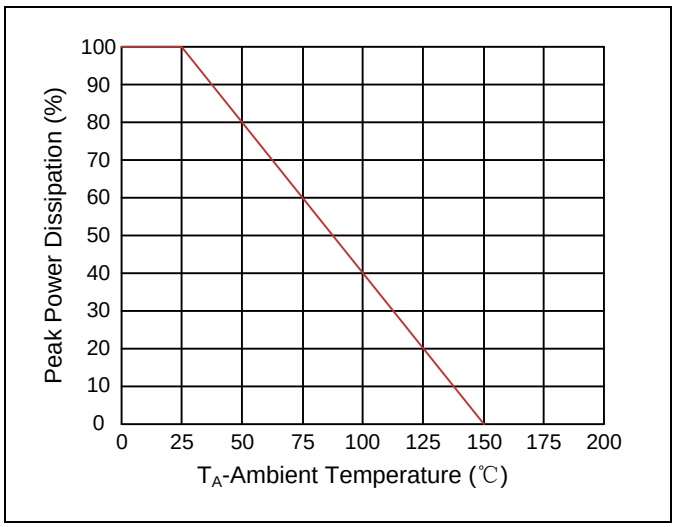


Figure 2. Pulse Waveform

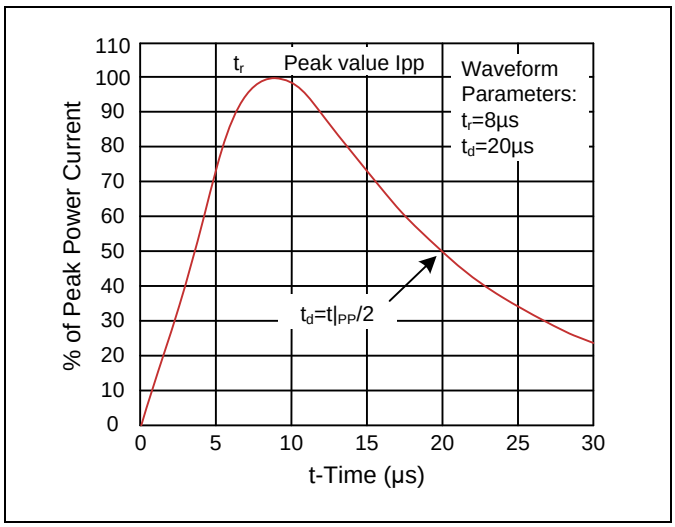


Figure 3. Clamping Voltage vs. Peak Pulse Current

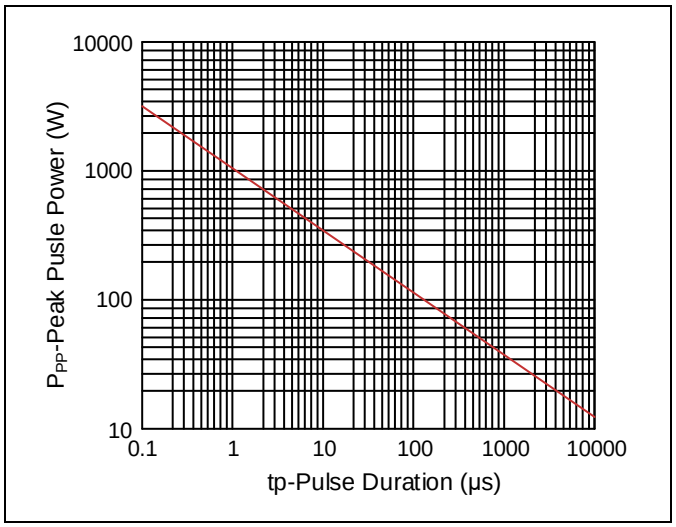
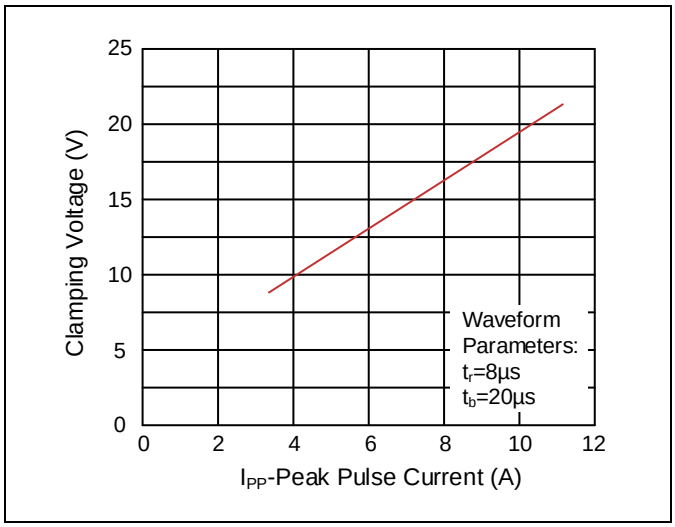


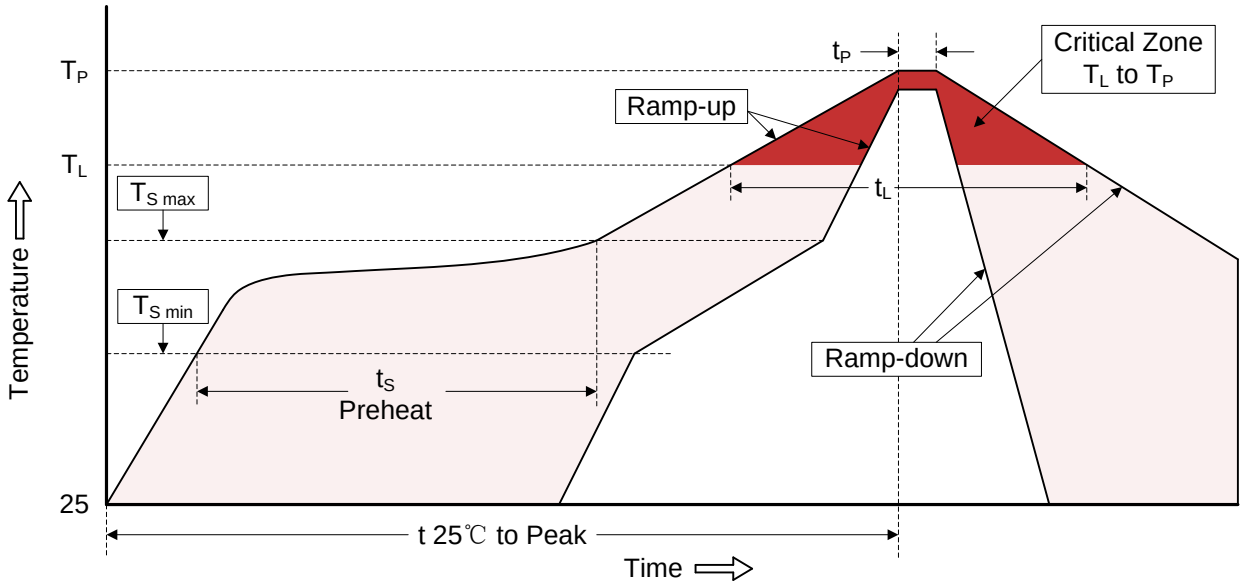
Figure 4. Clamping Voltage vs. Peak Pulse Current



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Recommended Soldering Conditions

Reflow Soldering

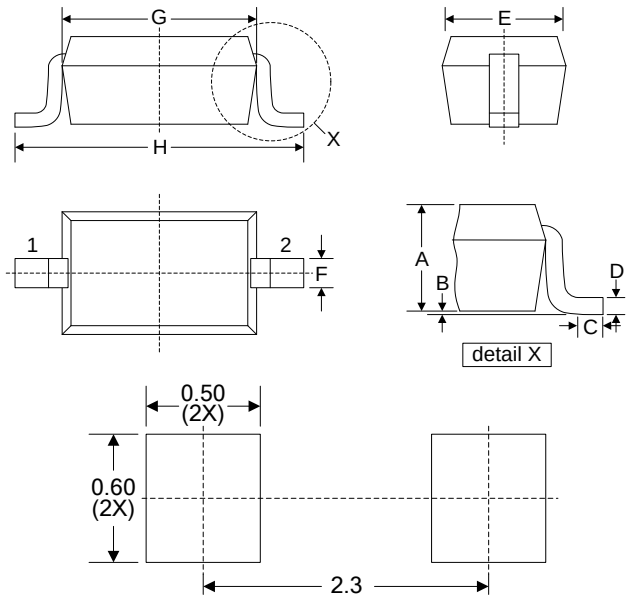


Recommended Condition

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.

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Dimensions (SOD-323)

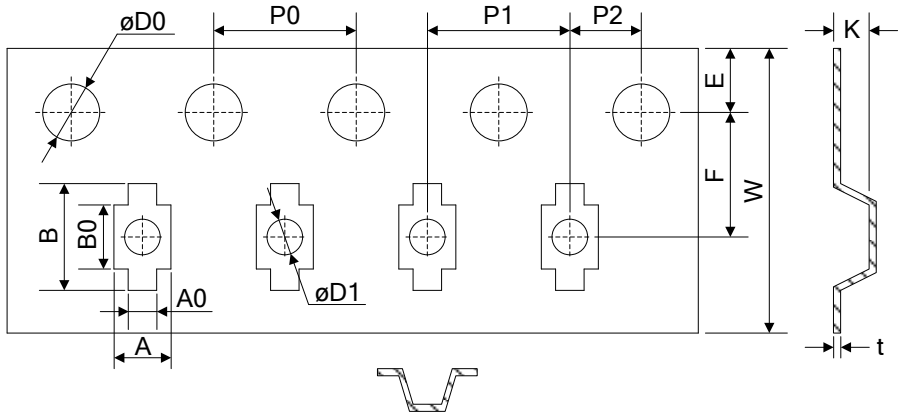


Recommended Soldering Pad Layout

Symbol	Dimension			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.80	1.10	0.031	0.043
B	0.00	0.10	0.000	0.004
C	0.20	-	0.008	-
D	0.11	0.20	0.004	0.008
E	1.15	1.35	0.045	0.053
F	0.25	0.35	0.010	0.014
G	1.60	1.80	0.063	0.071
H	2.40	2.70	0.094	0.102

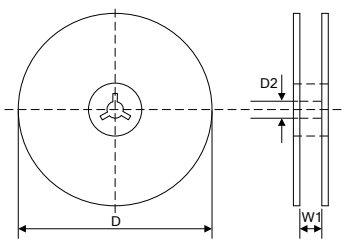
Packaging

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	

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