

Electrostatic Discharged Protection Devices (ESD) Data Sheet

Description

The UED26A03L05 is an ultra low capacitance TVS array designed to Protect high speed data interfaces. It has been specifically Designed to protect sensitive components which is connected to data an transmission lines from overvoltage caused by electrostatic discharge (ESD), cable discharge events (CDE) and lightning.

The unique design incorporates surge rated, low capacitance steering diodes and a TVS diode in a single package. During transient conditions, the steering diodes direct the transient current to ground. The internal TVS diode clamps the transient voltage to a safe level. The ultra low capacitance array configuration allows the user to protect up to the high speed data lines. This device is in a signal package, RoHS/WEEE compliant, DFN2626 package. It measures 2.60x2.60x0.55mm. The device may be used to meet the immunity requirements of IEC61000-4-2 (ESD), IEC61000-4-4 (EFT) and IEC61000-4-5 (Surge).



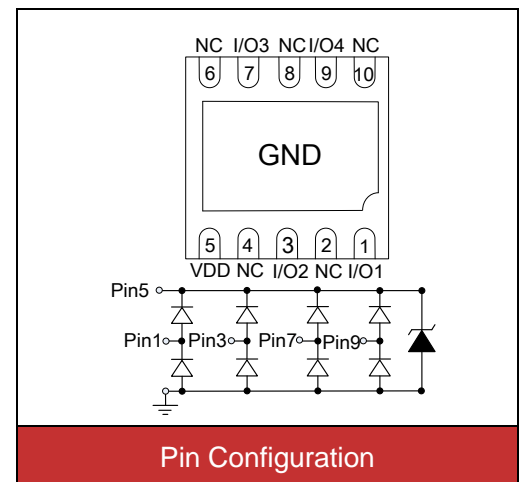
Contact : ±30kV

Air : ±30kV



Features

- IEC61000-4-2 ESD 30KV Air, 30KV contact compliance
- DFN2626 surface mount package
- Working voltage: 3.3V
- Low leakage current
- Low operating and clamping voltages
- 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
- Marking: B335



Applications

- WAN/LAN equipment
- 10/100/1000 Ethernet
- RJ-45 Connectors
- T1/E1, T3/E3 Protection
- Analog Video

Maximum Ratings

Rating	Symbol	Value	Unit
ESD voltage (Contact discharge)	V_{ESD}	± 30	kV
ESD voltage (Air discharge)		± 30	
Storage & operating temperature range	T_{STG}, T_J	-55~+150	°C

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				3.3	V
Reverse breakdown voltage	V_{BR}	$I_{BR}=1\text{mA}$	3.8			V
Reverse leakage current	I_R	$V_R=3.3\text{V}$ Each I/O pin			1	μA
Clamping voltage ($t_p=8/20\mu\text{s}$)	V_C	$I_{PP}=5\text{A}$ Any I/O to GND			12	V
Clamping voltage ($t_p=8/20\mu\text{s}$)	V_C	$I_{PP}=5\text{A}$ Between I/O pins			15	V
Clamping voltage ($t_p=8/20\mu\text{s}$)	V_C	$I_{PP}=30\text{A}$ Any I/O to GND			25	V
Clamping voltage ($t_p=8/20\mu\text{s}$)	V_C	$I_{PP}=30\text{A}$ Between I/O pins			30	V
Peak pulse current ($t_p=8/20\mu\text{s}$)	I_{PP}				30	A
Clamping voltage (TLP)	V_C	$I_{PP}=8.0\text{A}$		8.8		V
Clamping voltage (TLP)	V_C	$I_{PP}=16\text{A}$		9.7		V
Off state junction capacitance	C_J	0Vdc, $f=1\text{MHz}$ Any I/O to GND		4	5	pF
		0Vdc, $f=1\text{MHz}$ Between I/O pins		2	2.5	pF

Typical Characteristics Curves

Figure 1. Capacitance vs. Bias Voltage

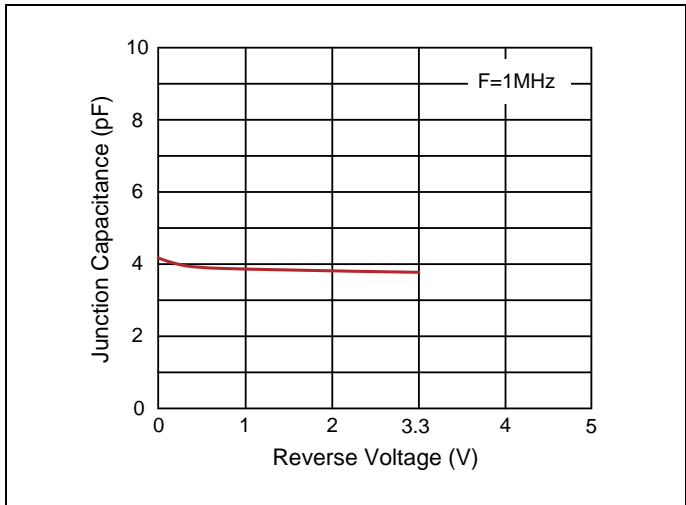


Figure 2. Insertion Loss (S21) I/O to GND

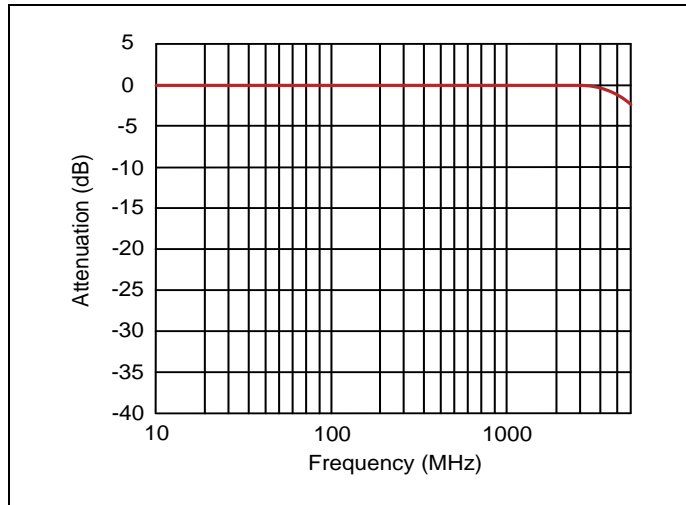


Figure 3. Pulse Waveform

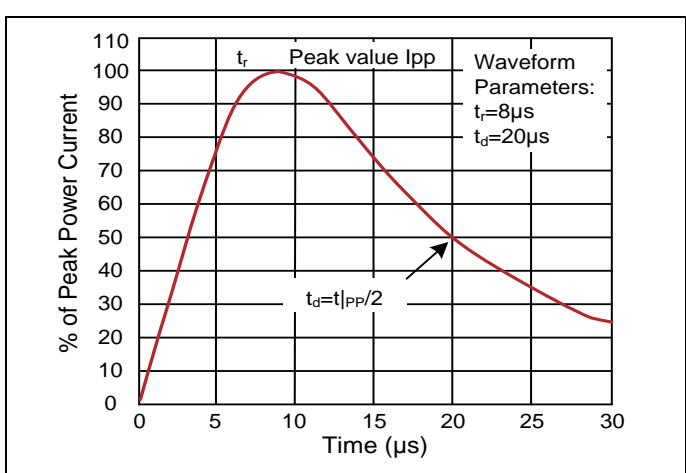


Figure 2. Clamping Voltage vs. Peak Pulse Current (Any I/O to GND)

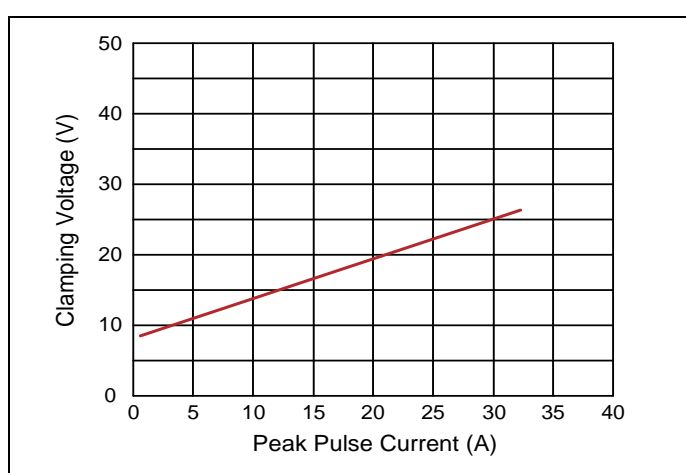


Figure 5. ESD Clamping (8kV Contact IEC61000-4-2)

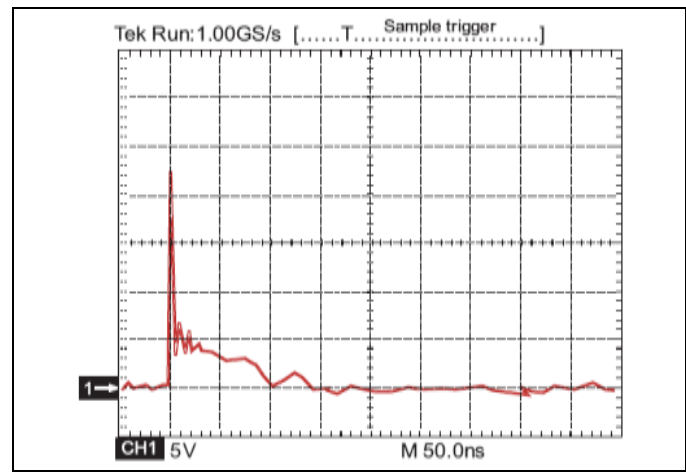
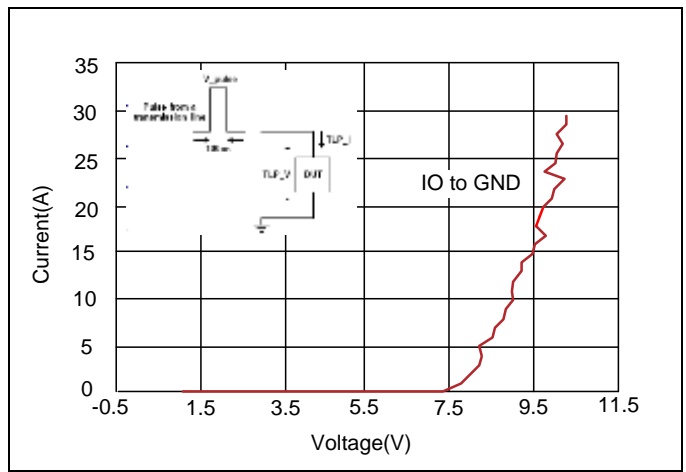
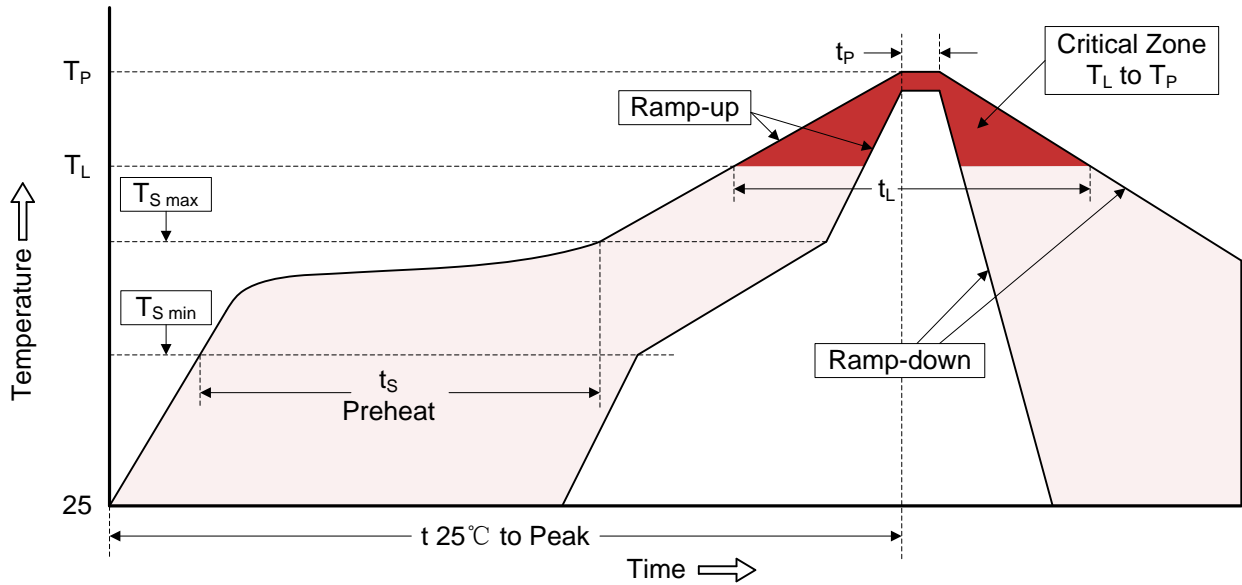


Figure 6. Transmission Line Pulsing (TLP) Measurement



Recommended Soldering Conditions

Reflow Soldering

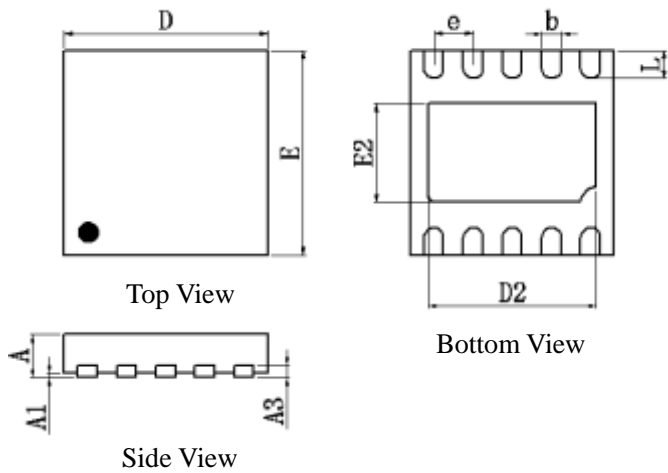


Recommended Condition

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.

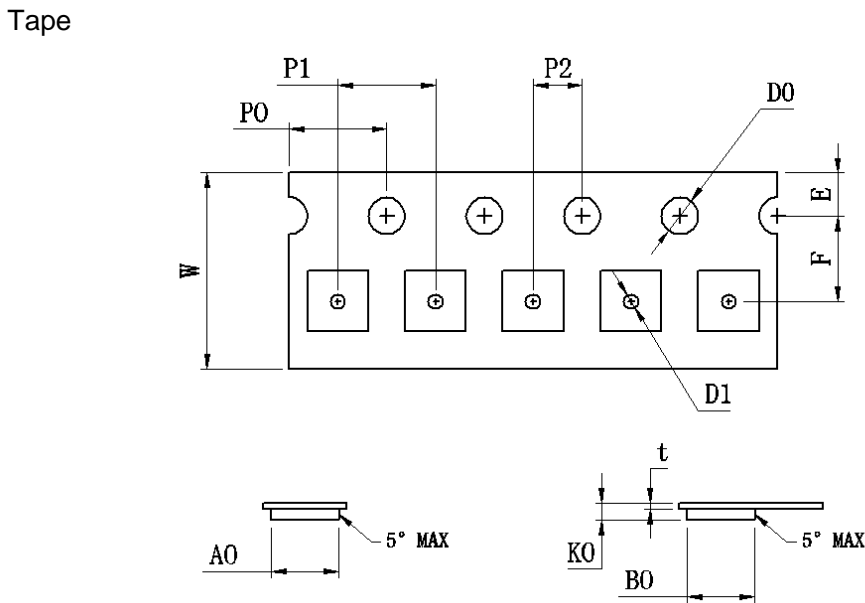
Dimensions (DFN2626)

Symbol	Dimension					
	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.50	0.55	0.60	0.020	0.022	0.024
A1	0.00	-	0.05	0.000	-	0.002
A3	0.15 REF			0.006 REF		
D	2.55	2.60	2.65	0.100	0.102	0.104
E	2.55	2.60	2.65	0.100	0.102	0.104
D2	2.00	2.15	2.25	0.079	0.085	0.089
E2	1.11	1.26	1.36	0.044	0.050	0.054
b	0.20	0.25	0.30	0.008	0.010	0.012
L	0.25	0.35	0.45	0.010	0.014	0.018
e	0.5 BSC			0.020 BSC		



Packaging

Symbol	Dimension (mm)
W	8.00+0.30/-0.10
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.05
D0	Φ1.50+0.10
D1	Φ0.60±0.05
E	1.75±0.10
F	3.50±0.05
A0	2.74±0.05
B0	2.74±0.05
K0	0.72±0.05
t	0.25±0.02
D	Φ178.0±2.0
D2	Φ13.0
W1	9.5
Quantity: 3000PCS	



Reel

