Innovative Service Around the Globe YAGEO

DATA SHEET

ELECTROSTATIC DISCHARGE PROTECTION DEVICES

INDUSTRIAL / CONSUMER

UBT32A05L02

RoHS compliant & Halogen free

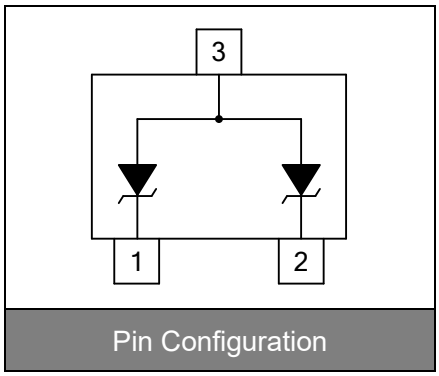
Product specification– July 04, 2023 V.2

Electrostatic Discharged Protection Devices (ESD) Data Sheet

Description

This is ultra low capacitance TVS arrays designed to protect high speed data interfaces. It has been specifically designed to protect sensitive components which is connected to high-speed data and transmission lines from overvoltage caused by electrostatic (ESD), cable discharge events (CDE) and electrical fast transients (EFT). It has a typical capacitance of only 0.8pF(typ.). This means it can be used on circuits operating in excess of 3GHz without signal attenuation.

Contact : ±8kV
Air : ±15kV



Pin Configuration

Features

- IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- SOT-323 surface mount package
- Protects two high speed data lines
- Working voltage: 5V
- Ultra low capacitance and clamping voltages
- Low leakage current
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant
- Solder reflow temperature: Pure Tin-Sn, 260~270℃
- Flammability rating UL 94V-0
- Meets MSL level 1, per J-STD-020
- Marking: B BU

Applications

- HDMI interface protection
- Mobile display digital interface
- RF/Antenna circuits
- USB 2.0 & Firewire ports
- GaAs photodetector protection
- HBT power Amp protection
- Infiniband transceiver protection

Maximum Ratings

Rating	Symbol	Value	Unit
ESD voltage (Contact discharge)	V_{ESD}	±8	kV
ESD voltage (Air discharge)		±15	
Storage & operating temperature range	T_{STG} ,T_J	-55~+150	℃

Electrical Characteristics (T_J=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				5	V
Reverse breakdown voltage	V_{BR}	I_{BR}=1mA	6			V
Reverse leakage current	I_R	V_R=5V Each I/O pin			1	μA
Clamping voltage (tp=8/20μs)	V_C	I_{PP}=3A			15	V
Peak pulse current (tp=8/20μs)	I_{PP}				3	A
Off state junction capacitance	C_J	0Vdc,f=1MHz Between I/O pins and GND		0.8		pF

Typical Characteristics Curves

Figure 1. Power Derating Curve

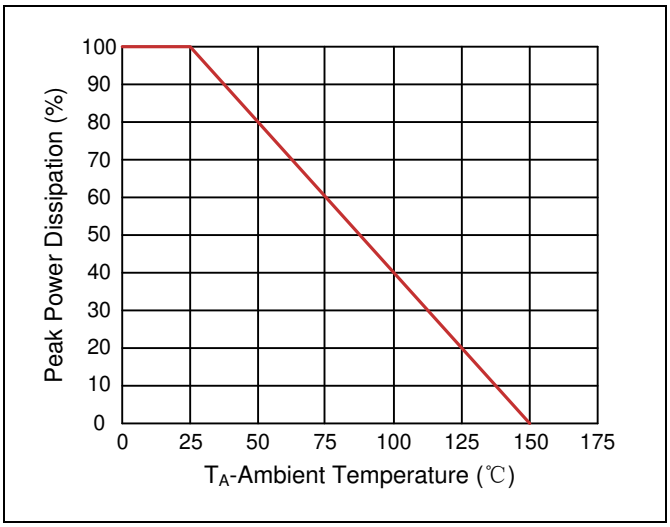


Figure 2. Pulse Waveforms

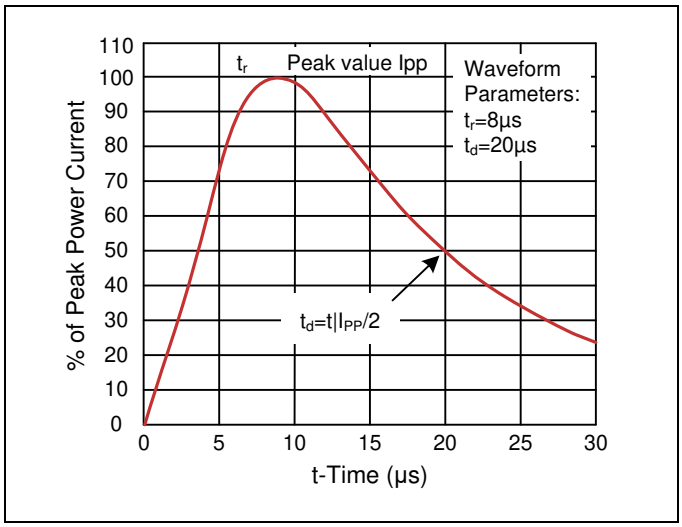


Figure 3. Non-Repetitive Peak Pulse vs. Pulse Time

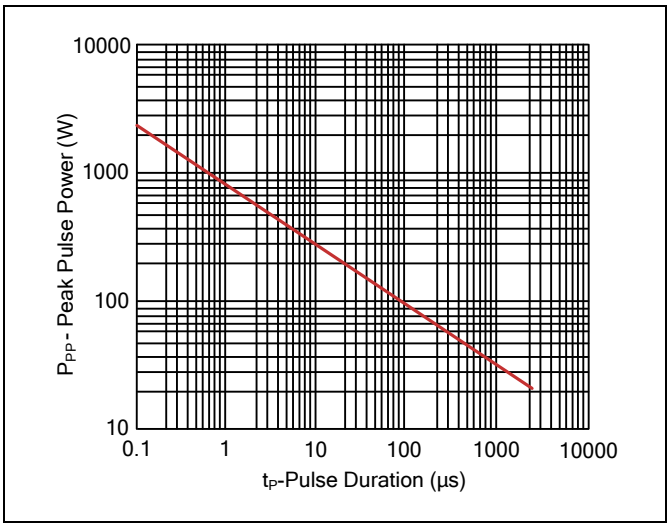
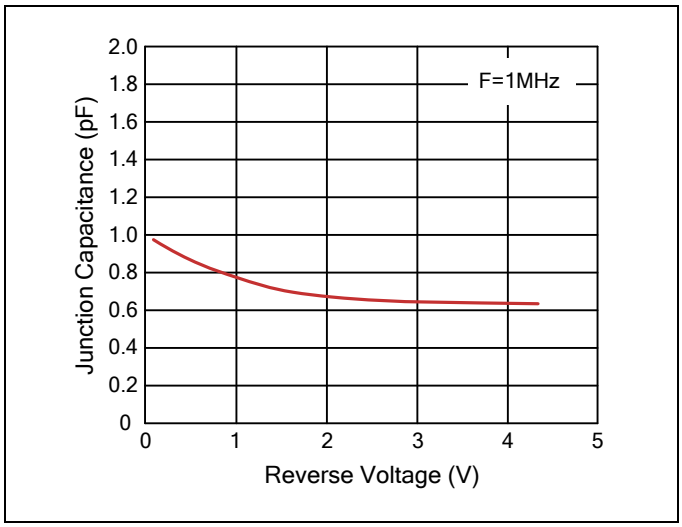
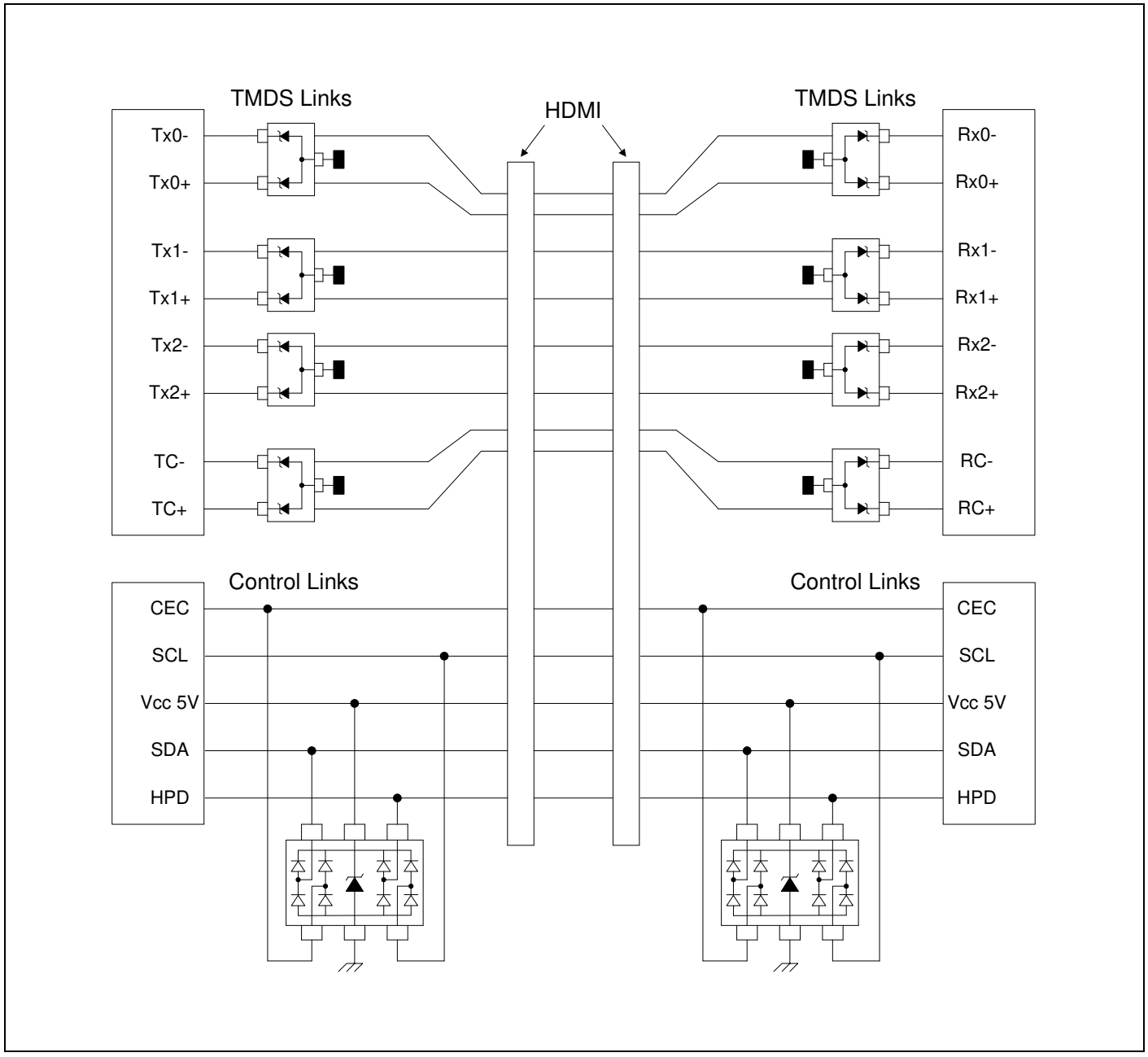


Figure 4. Capacitance vs. Reverse Voltage

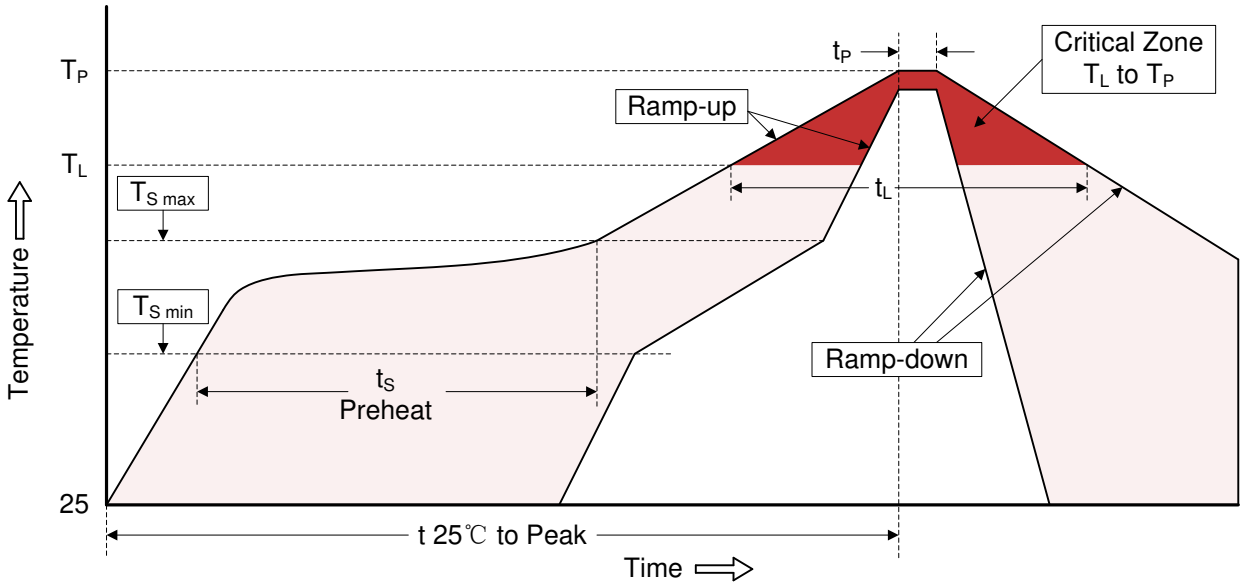


Applications Information



Recommended Soldering Conditions

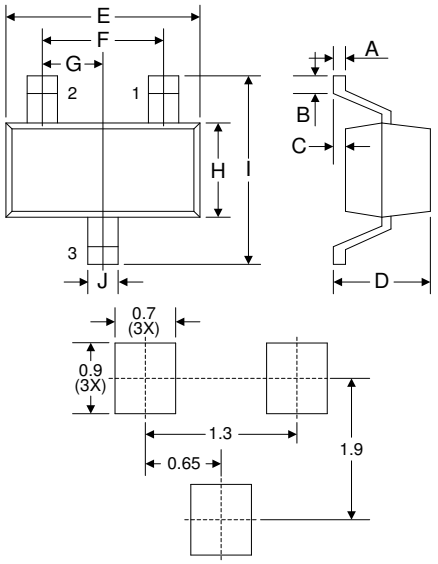
Reflow Soldering



Recommended Conditions

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.

Dimensions (SOT-323)

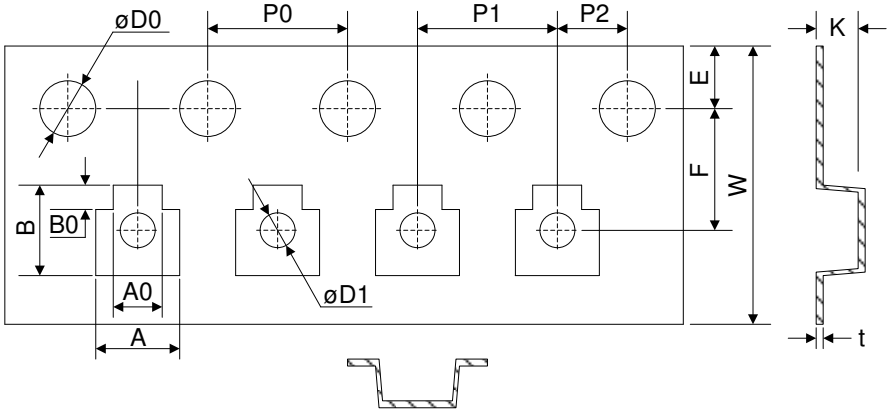


Recommended Soldering Pad Layout

Symbol	Dimension			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.05	0.20	0.002	0.008
B	0.10	-	0.004	-
C	-	0.10	-	0.004
D	0.80	1.10	0.031	0.043
E	1.80	2.20	0.071	0.087
F	1.30		0.051	
G	0.65		0.026	
H	1.15	1.35	0.045	0.053
I	2.00	2.20	0.079	0.087
J	0.20	0.40	0.008	0.016

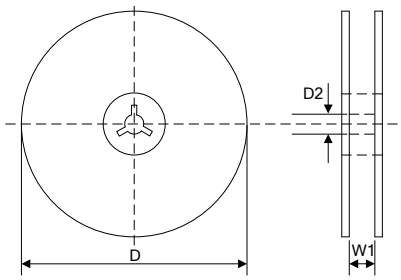
Packaging

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	Φ1.05±0.05
E	1.75±0.10
F	3.50±0.10
A	2.30±0.10
A0	1.40±0.10
B	2.60±0.10
B0	0.70±0.10
K	1.10±0.10
t	0.20±0.05

Reel



D	Φ178.0±2.0
D2	Φ13.0
W1	9.5
Quantity: 3000PCS	

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