

TVU FB02 01 AD0 Engineering Specification

1.. Scope

TVU FB02 01 AD0 is a single-channel ultra low capacitance rail clamp ESD protection diodes array including a pair of ESD diodes that steer positive or negative ESD current to respectively positive or negative rail. The maximum capacitance of channel to ground is 0.9pF. A zener diode is integrated in the array between the positive and negative supply rails. In the typical applications, the negative rail pin is connected with the ground of the circuit protected. Thus, the positive ESD current is steered to the ground through the internal zener diode to protect the power supply of the circuit protected.

2.. Features

- ◆ Single-channel ESD protection;
- ◆ Provide ESD protection meeting IEC61000-4-2(ESD):
 - ±15kV air discharge
 - ±10kV contact discharge;
- ◆ Super low capacitance between input and ground is no more than 0.9pF
- ◆ Low clamping voltage;

3.. Applications

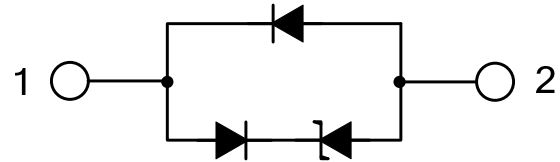
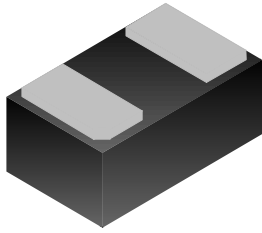
- ◆ Cell phone accessories;
- ◆ USB(1.1/2.0/3.0) interface;
- ◆ Notebooks(DVI/HDMI);
- ◆ High-speed data line interface
- ◆ Digital cameras;
- ◆ MP3/MP4/PMP players

4. Explanation of Part Number

<u>TV</u>	<u>U</u>	<u>FB02</u>	<u>01</u>	<u>AD0</u>
(1)	(2)	(3)	(4)	(5)

- (1) Product Type : TV=TVS Diode
- (2) Capacitance Code : U= Ultra Low Capacitance
- (3) Package Size Code
- (4) Channel Code : 01=1 Channels
- (5) Specialized Specification Code

5.. Circuit Diagram /Pin Configuration



6.. Specifications

6.1. ABSOLUTE MAXIMUM RATINGS

Characteristics	Symbol	Ratings	Unit
Peak pulse power (tp=8/20us)	Ppk	120	W
Maximum peak pulse current (tp=8/20us)	Ipp	5	A
ESD Per IEC61000-4-2 (Air)	Vpp	+/-15	KV
ESD Per IEC61000-4-2 (Contact)		+/-10	KV
Storage temperature range	Tstg	-55 to +150	°C
Operating temperature range	Topr	-55 to +125	°C

6.2. ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Working Voltage	V_{RWM}	Any I/O pin to GND	--	--	5	V
Reverse Breakdown Voltage	V_{BR}	Any I/O pin to GND It=1mA	6	--	--	V
Reverse Leakage Current	I_R	VRWM =5V; T=25° C Any I/O pin to GND	--	--	1	μA
Positive Clamping Voltage	V_{C1}	IPP=1A, tP=8/20μS; Positive pulse; Any I/O pin to GND	--	8.5	12.0	V
Negative Clamping Voltage	V_{C2}	IPP=1A, tP=8/20μS; Negative pulse; Any I/O pin to GND	--	1.8	--	V
Junction Capacitance Between I/O And GND	C_J	VR=0V, f=1MHz; Any I/O pin to GND	--	0.5	0.9	pF

6.3. TYPICAL CHARACTERISTICS

Fig.1. ESD lamping voltage
Positive 8kV IEC61000-4-2 contact discharge

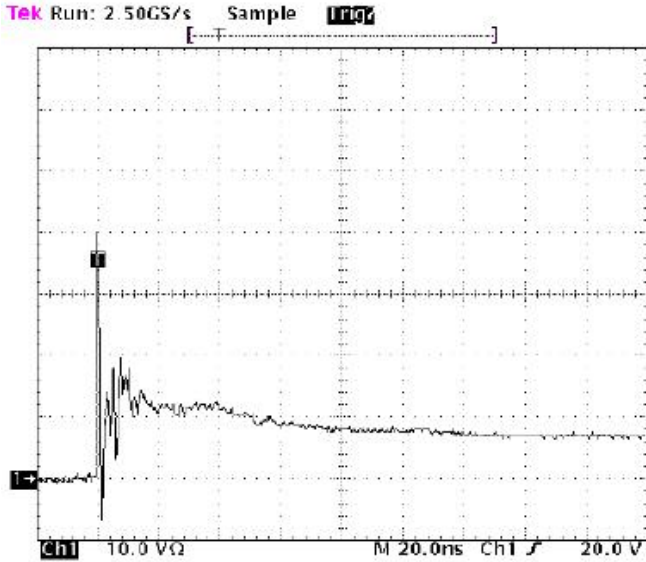
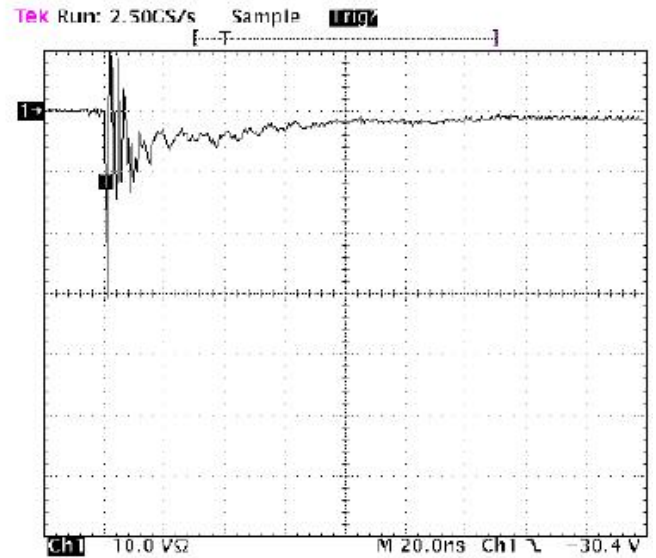
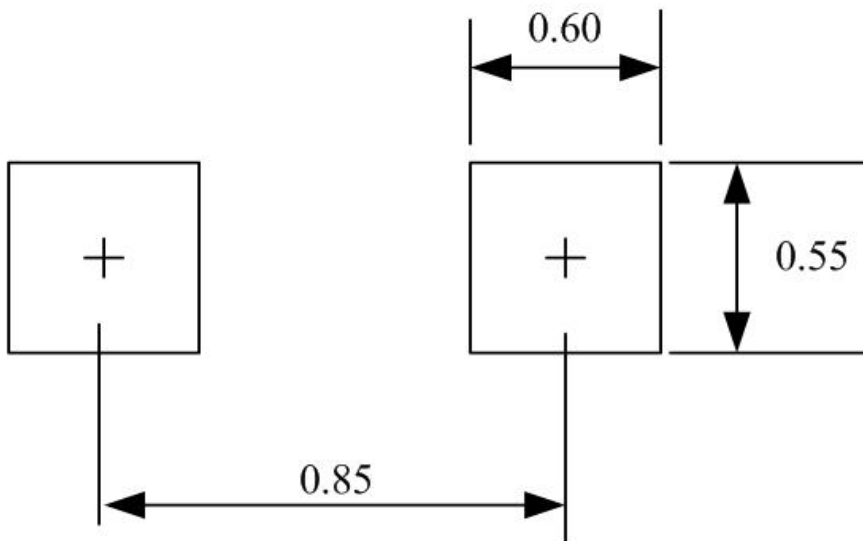


Fig.2. ESD lamping voltage
Negative 8kV IEC61000-4-2 contact discharge



7.. LAND LAYOUT



UNIT: mm

8.. MARKING CODE



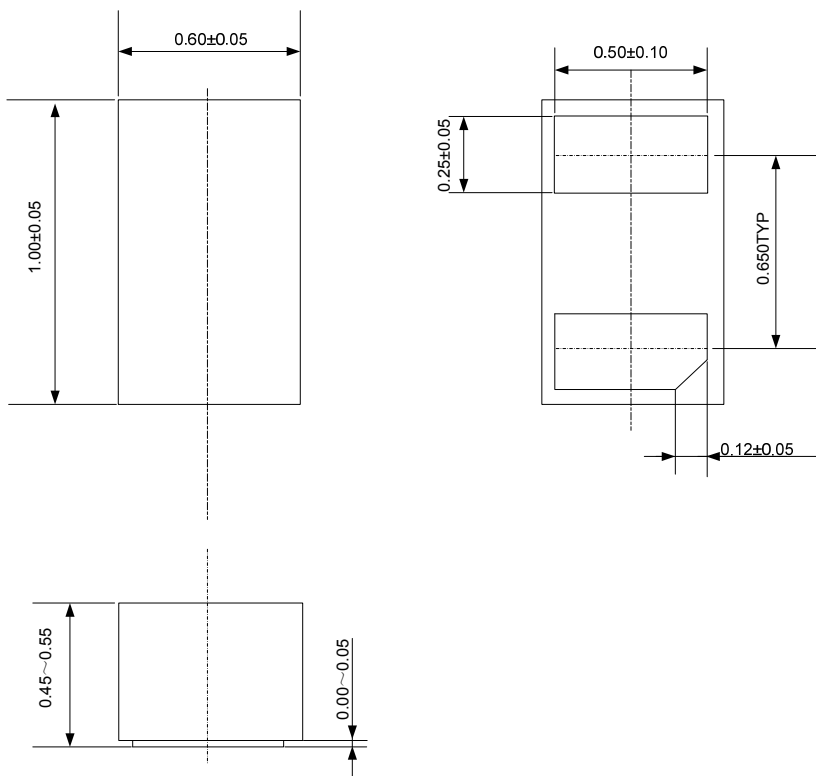
* = Date Code

X = Product Code

9.. Mechanical Details

1.0x0.6x0.50-0.65

UNIT: mm



Note: Layout pad size: $80 \times 80 (\mu\text{m}^2)$.

9.1. Taping Quantity: 12,000pcs/ Reel