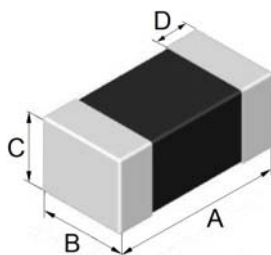


SMD Transient Voltage Suppressors

TVSD0201ESXF-Series

1. Dimension



Series	A (mm)	B (mm)	C (mm)	D (mm)
0201	0.60±0.05	0.30±0.05	0.30±0.05	0.15±0.05

2. Part Numbering

TVSD 0201 ESX F 050 - 0R3 P □

A B C D E F G H

A: Series	TVS Diode
B: Dimension	
C: Category Code	Standard ESD Protection
D: Product Grade	General Grade
E: Voltage Code	050=Reverse Working Voltage 5V
F: Characteristic Code	0R3=Parasitic Capacitance 0.3 pF
G: Characteristic Unit Code	P=pF
H: Inner Code	

3. Features

- Transient protection for high-speed data lines.
IEC61000-4-2 (ESD) ±20KV (air)
±20KV (contact)
IEC61000-4-4 (EFT) 40A (5/50ns)
Cable discharge event (CDE).
- Package optimized for high-speed lines.
- Ultra-small package
- Protects one data, controller or power line.
- Low leakage current : 1nA @V_{RWM} (typical)
- Low clamping voltage
- Each I/O pin can withstand over 1000 ESD strikes for ±8KV contact discharge.

4. Applications

- Cellular handsets
- Tablets
- Laptops
- Other portable devices
- Network communication devices

5. Absolute Maximum Ratings(Ta=25°C)

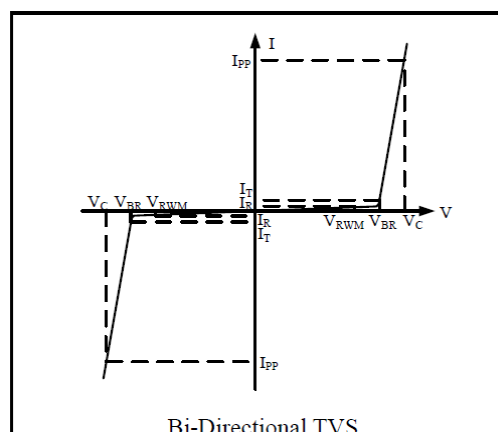
TAI-TECH Part Number	Peak pulse power (tp=8/20μs) P _{PK} (W)	Peak pulse current (tp=8/20μs) I _{PP} (A)	ESD per IEC61000-4-2 (air) V _{ESD} (KV)	ESD per IEC61000-4-2 (contact) V _{ESD} (KV)
TVSD0201ESXF050-0R3P	60	3	±20	±20
TVSD0201ESXF050-100P	72	6	±20	±20

Note:

1. Operating temperature range: -55~125°C
2. Storage temperature range: -55~150°C

6. Electrical Characteristics(Ta=25°C)

Symbol	Parameter
V_{RWM}	Nominal Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Reverse Breakdown Voltage @ I_T
I_T	Test Current for Reverse Breakdown
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Maximum Peak Pulse Current
C_{ESD}	Parasitic Capacitance
V_R	Reverse Voltage
f	Small Signal Frequency



TAI-TECH Part Number	Working peak reverse voltage V _{RWM} (V)	Maximum reverse leakage (@V _{RWM} , 25°C) (between I/O_1 and I/O_2) I _R (μA)	Breakdown voltage (@I _T =1mA) (between I/O_1 and I/O_2) V _{BR} (V)	Clamping voltage (@I _{PP} =16A, t _p =100ns, TLP) V _{CL} (V)	Clamping voltage (@V _{ESD} =8KV) V _{CL} (V)	Maximum clamping voltage (tp=8/20μs) (between I/O_1 and I/O_2) V _c (V)	Parasitic capacitance (@V _R =0V, f=1MHz) (between I/O_1 and I/O_2) C _{ESD} (pF)
TVSD0201ESXF050-0R3P	5	Typ. 0.001 (Max. 0.1)	Typ. 8.0 (Min. 6.0 Max. 10.0)	Typ. 23	Typ. 23	Max. 15 (@I _{PP} =1A) Max. 20 (@I _{PP} =3A)	Typ. 0.3 Max. 0.5
TVSD0201ESXF050-100P	5	Typ. 0.001 (Max. 0.1)	Typ. 7.5 (Min. 5.5)	12	12	Max. 8 (@I _{PP} =1A) Max. 12 (@I _{PP} =6A)	Typ. 10

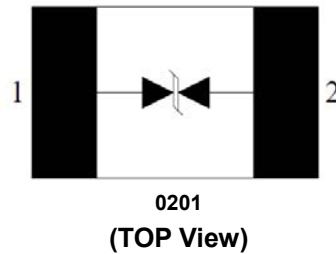
7. Mechanical Characteristics

1. Case : 0201
2. Flammability rating : UL 94V-0
3. Packaging : tape and reel
4. Polarity : bidirectional

Circuit Diagram



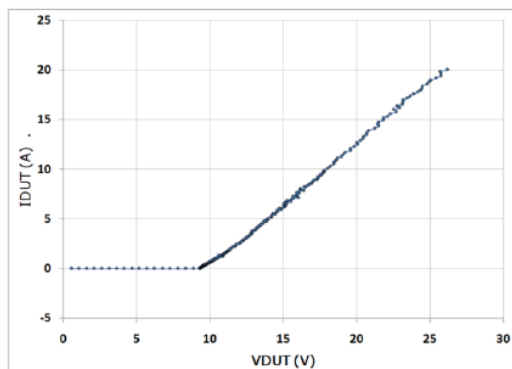
Pin Configuration



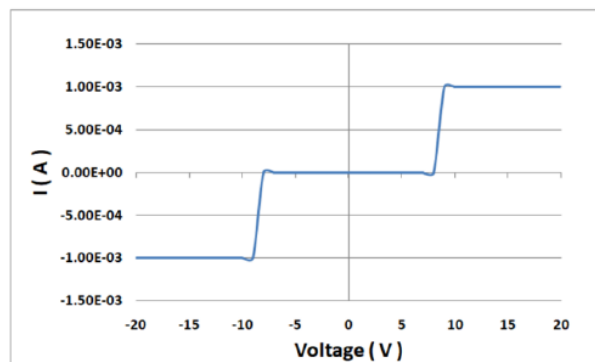
8. Rating and Characteristic Curves

TVSD0201ESXF050-0R3P

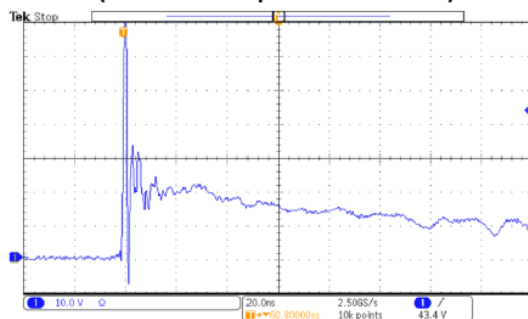
TLP Measurement



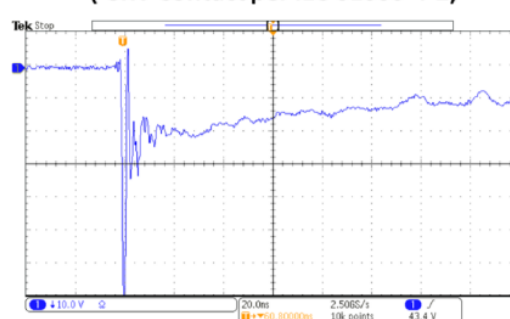
Voltage Sweeping of I/O_1 to I/O_2

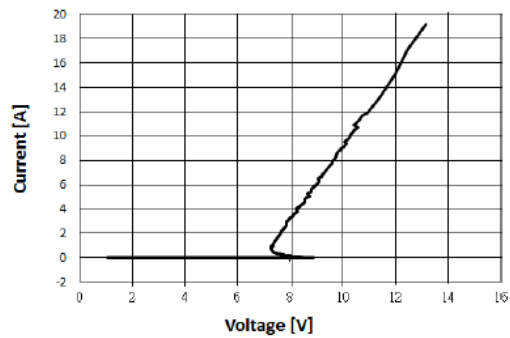
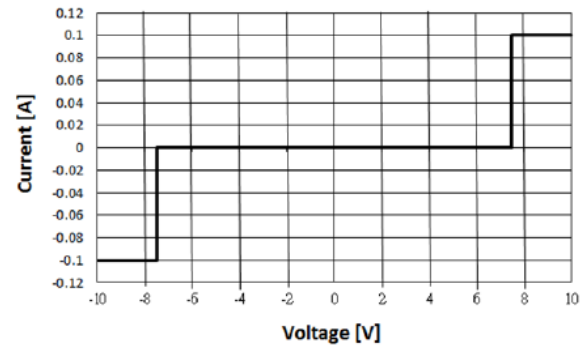
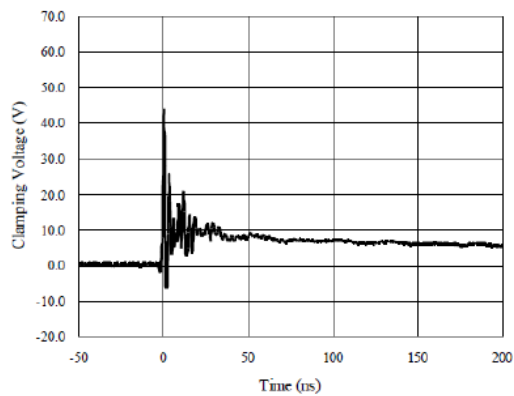


**ESD Clamping of I/O_1 to I/O_2
(+8KV Contact per IEC 61000-4-2)**



**ESD Clamping of I/O_1 to I/O_2
(-8KV Contact per IEC 61000-4-2)**



TVSD0201ESXF050-100P**TLP Measurement****Voltage Sweeping of I/O_1 to I/O_2****ESD Clamping of I/O_1 to I/O_2
(+8kV Contact per IEC 61000-4-2)****ESD Clamping of I/O_1 to I/O_2
(-8kV Contact per IEC 61000-4-2)**