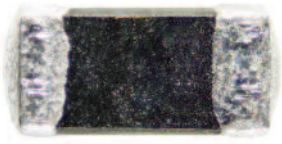
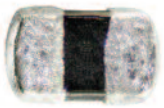
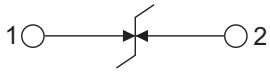
TVSA
Transient voltage ESD suppressor





Surface Mount Device



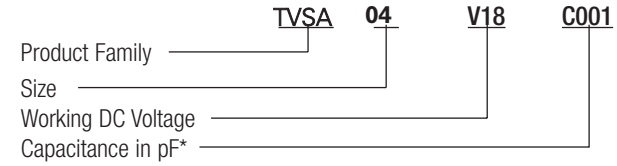
Equivalent Circuits

Applications

- Computers and peripherals
- Digital cameras
- Mobile phones
- DVD/Media Players
- MP3/Multimedia players
- A-V Equipment
- External storage
- DSL Modems
- Set top boxes
- Docking systems

Product features

- Lead free, halogen free and RoHS compliant for global applications
- Single-line, bi-directional device for placement flexibility
- Silicon based chip
- Low capacitance to meet the needs for high speed single transient voltage protection
- Provides ESD protection with fast response time (<1ns) allowing equipment to pass IEC 61000-4-2 level 4 test
- Low profile designs for board space savings
- Low leakage current reduces power consumption
- Low clamping voltage
- Solid-state silicon-avalanche technology



* Part numbers use "R" to denote decimal point for decimal values of pico farads.

Packaging

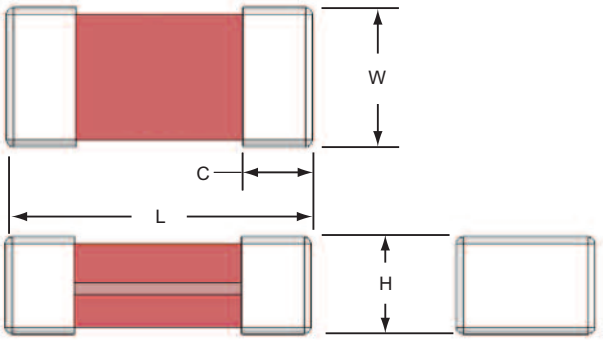
- Size 0201: 15,000 pieces per reel - EIA (EIAJ)
- Size 0402: 10,000 pieces per reel - EIA (EIAJ)

Specifications

Part Number	Size	Stand-Off Voltage	Breakdown Voltage	Clamping Voltage At I_{peak} = 1A	Capacitance pF	ESD Air/Contact (kV)	Leakage Current (typical)
TVSA02V05C004	0201	5	10	17	4	15/8	< 10nA
TVSA04V05C006	0402	5	10	17	6	15/8	< 10nA

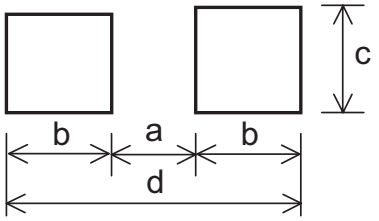
Stand-off Voltage - Maximum DC operating voltage the diode can maintain and not exceed 1mA leakage current. Breakdown Voltage - Measured at any I/O pin to ground at 1mA DC current.
Clamping Voltage - Maximum peak voltage across the diode with 8/20ms waveform and 1A pulse current.
Capacitance - Device capacitance measured with zero volt bias at 1MHz.
ESD Air/Contact - Voltages tested to IEC 61000-4-2.

Dimensions - mm



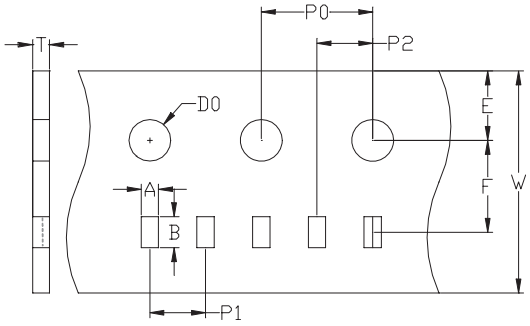
Size	L	W	H	C
0201	0.60±0.05	0.30±0.05	0.30±0.05	0.20±0.10
0402	1.00±0.15	0.50±0.10	0.50±0.10	0.25±0.15

Recommended Pad Layout - mm (in)



Size	a	b	c	d
0201	0.23 (0.009)	0.30 (0.012)	0.45 (0.018)	0.83 (0.033)
0402	0.51 (0.020)	0.61 (0.024)	0.51 (0.020)	1.70 (0.067)

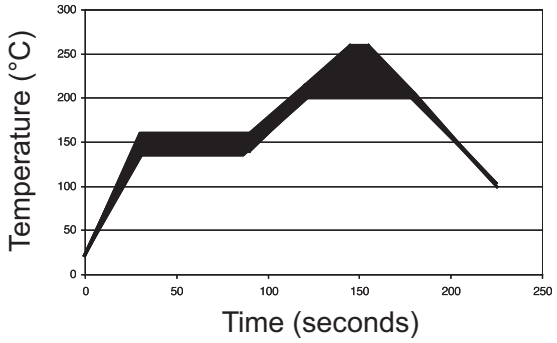
Tape Packaging Specifications - mm



0201 Carrier Dimensions									
A	B	W	E	F	P0	P1	P2	D0	T
0.37 ±0.03	0.69 ±0.03	8.0 ±0.1	1.75 ±0.05	3.5 ±0.05	4.0 ±0.1	2.0 ±0.05	2.0 ±0.05	1.55 ±0.05	0.42 ±0.03
0402 Carrier Dimensions									
0.58 ±0.03	1.2 ±0.03	8.0 ±0.1	1.75 ±0.05	3.5 ±0.05	4.0 ±0.1	2.0 ±0.05	2.0 ±0.05	1.55 ±0.05	0.60 ±0.03

Soldering Recommendations

- Compatible with lead and lead-free solder reflow processes
- Peak reflow temperatures and durations:
  - IR Reflow = 260°C max for 30 sec. max.
  - Wave Solder = 260°C max. for 10 sec. max.
- Recommended IR Reflow Profile:



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