

ASES 12U 02 0R2

Amotech Chip ESD Suppressor



Overview

The Chip ESD-Suppressor is specially designed to protect sensitive electronics from the threat of the electrostatic discharge (ESD). The product reacts almost instantly to the transient voltage and effectively clamps it to the low voltage for the duration of the ESD transient. The product uses voltage variable polymers that inherently produce low capacitance and very low leakage current. Thus the device is virtually invisible to the circuit during normal operational mode. It is especially transparent to the high-speed digital circuits due to the high off-state impedance and low capacitance. Signals are not distorted or disrupted as shown by extensive testing. Using the ESD-Suppressor ESD protection, devices maintain signal integrity of high-speed data signals while protecting the circuit from ESD. The nature of the material creates a bi-directional part, which means that only one device per surge path is required to provide complete ESD protection regardless of the surge polarity.

Features

- 0402inch/ 1005mm foot print
- Ideal ESD protection for high frequency, low voltage applications.
- Exceeds testing requirements outlined in IEC 61000-4-2
- Ultra low capacitance (0.2pF typ.)
- Very low leakage current
- Fast response time
- Bi-directional
- Surface mount
- RoHS compliant for global applications.

Applications

- **High Speed Data Ports**
(USB 2.0, IEEE 1394 , HDMI/DVI)
- **Computers & Peripherals**
(Cell phone, PDA, HDTV, DVD players)

Model Description

<u>ASES</u>	<u>12</u>	<u>U</u>	<u>02</u>	<u>0R2</u>
(1)	(2)	(3)	(4)	(5)

- (1) : Series name, "**ASES**" Amotech **S**ingle type **ESD** **S**uppressor series.
- (2) : Maximum continuous working voltage – Vdc, "**12**" means **12V**
- (3) : Capacitance Group, "**U**" means **U**ltra low capacitance
- (4) : Chip size, "**02**" means **0402** (1.0 x 0.5 mm)
- (5) : Typical Capacitance "**0R2**" means **0.2 pF** (typical)

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Electrical characteristics

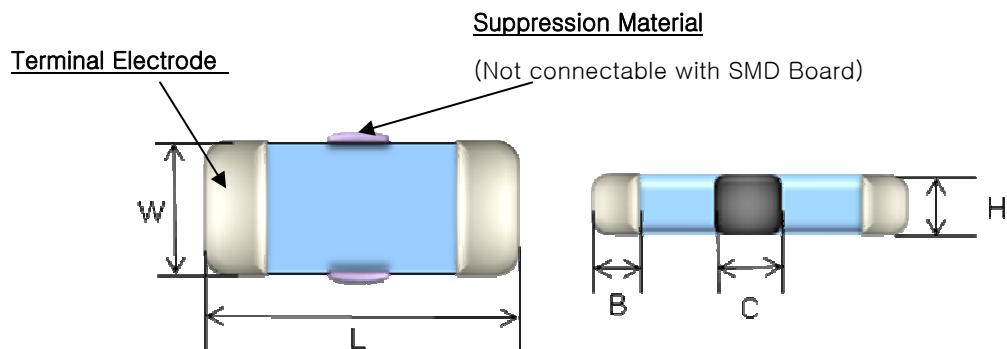
Characteristic	Value
Rated Voltage	12Vdc typ
Clamping Voltage ¹	65typ, 100max
Trigger Voltage ²	100V typ, 300max
Capacitance (@1MHz)	0.2pF typ, 0.3pF max.
Leakage Current (@12VDC)	0.1nA typ.
ESD Capability	
IEC61000-4-2 Direct Discharge	8kV typ.
IEC61000-4-2 Air Discharge	15kV typ.
ESD Pulse Withstand ¹	>1,000 typ.
Operating Temperature	-40°C to +85°C

Notes

1 Per IEC61000-4-2, Level 4 waveform (8kV direct, 30A) measured 30ns after initiation of pulse.

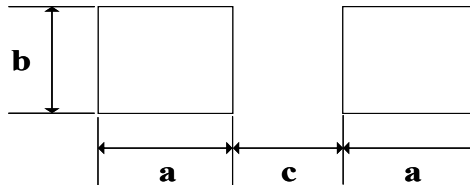
2 Trigger measurement made using Transmission Line Pulse (TLP) method

Appearance



Symbol	L	W	H	B	C
Size (mm)	1.0±0.1	0.5±0.1	0.3±0.05	0.15±0.05	0.07±0.05

Recommended Land pattern (Typical Dimensions)



Symbol	a	b	c
Size (mm)	0.4	0.6	0.64

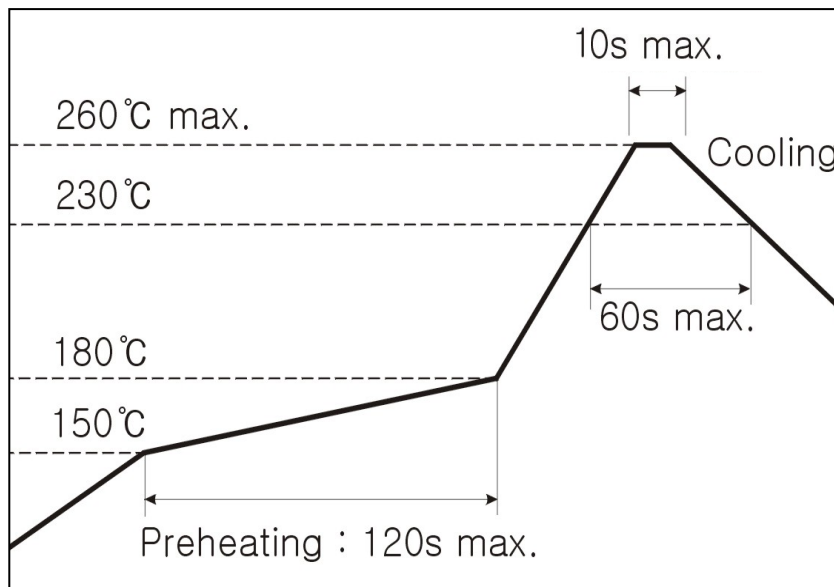
Recommended Soldering Method

1. Wave Solder

- 1-1. Reservoir Temperature: 260°C (500°F)
- 1-2. Recommended time in reservoir: ≤10 seconds.

2. Infrared Reflow

- 2-1. Temperature: 260°C
- 2-2. Time: 10 seconds maximum at peak temperature.



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ESD absorption characteristics (voltage waveform)

