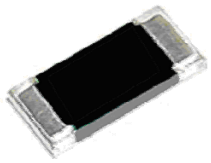
ESD / ESDU Series

Low and Ultra Low Capacitance ESD Suppressor

Stackpole Electronics, Inc.
Resistive Product Solutions

Features:

- Very quick response time (< 1nS)
- ESDU series has ultra-low capacitance < 0.05pF
- Lower cost ESD series has capacitance <0.2pF
- Ultra low leakage current (< 1nA)
- No Signal Distortion
- RoHS compliant



Applications:

- High speed data ports (USB 2.0, IEEE1394)
- Notebook PC's, cell phones, PDA's
- Digital cameras, printers, scanners
- Plasma display panels, LCD TVs, HDTV's

Electrical Specifications

Type	Package Size	Continuous Operating Voltage (Max)	ESD Capability (1)	Trigger Voltage (Typical) (2)	Clamping Voltage (Typical)	Capacitance (3)	Leakage Current (Typical)	Response Time	ESD Pulse Withstand (Typical) (4)
ESD(U)02A3V3R17V	0402	3.3 VDC	Direct Discharge: 8kV Air Discharge: 15kV	150 V	17 V	ESD Series < 0.2pF	< 1 nA	< 1nS	> 1000 pulses
ESD(U)03A3V3R17V	0603								
ESD(U)02A3V3R25V	0402			250 V	25 V				
ESD(U)03A3V3R25V	0603								
ESD(U)02A5V5R17V	0402	5.5 VDC		150 V	17 V				
ESD(U)03A5V5R17V	0603								
ESD(U)02A5V5R25V	0402			250 V	25 V				
ESD(U)03A5V5R25V	0603								
ESD(U)02A12VR25V	0402	12 VDC		250 V	25 V	ESD Series < 0.05pF			
ESD(U)03A12VR25V	0603								
ESD(U)02A24VR25V	0402	24 VDC							
ESD(U)03A24VR25V	0603								

1. ESD capability meets the requirements of IEC 61000-4-2.
2. Trigger measurement made using Transmission Line Pulse Method.
3. Capacitance measured from 1MHz - 1.8GHz.
4. Under IEC 61000-4-2 level 4 (8kV contact discharge, 15kV air discharge).

Mechanical Specifications

Type / Code	Body Length	Body Width	Body Height	Top Termination	Bottom Termination	Unit
ESD(U)02 (0402)	0.039 ± 0.004 1.00 ± 0.10	0.020 ± 0.002 0.50 ± 0.05	0.014 ± 0.002 0.35 ± 0.05	0.008 ± 0.004 0.20 ± 0.10	0.010 ± 0.004 0.25 ± 0.10	inches mm
ESD(U)03 (0603)	0.061 ± 0.004 1.55 ± 0.1	0.031 ± 0.004 0.8 ± 0.1	0.018 ± 0.004 0.45 ± 0.1	0.012 ± 0.008 0.3 ± 0.2	0.012 ± 0.008 0.3 ± 0.2	inches mm

Performance Characteristics		
Test	Test Method	Acceptable Parameter
Operating Temperature	-55C to 125C	Leakage Current < 1uA
Full Load Voltage	1000 hours at 25C	
Bending	3mm deflection	
Resistance to Solder Heat	MIL-STD-202 Method 210 260 ± 5C for 10 ± 1 sec	
Moisture Resistance	MIL-STD-883 Method 1004.7 85% RH, 85C for 1000 hrs	
Thermal Shock	MIL-STD-202 Method 107 5 cycles from -55C to 125C	
Solderability	MIL-STD-202 Method 208 245 ± 5C, 2 ± 0.5sec dwell, Sn96.5/Ag3.0/Cu0.5 solder	95% coverage

How to Order

1	2	3	4	5	6	7	8	9	10	11	12	13
E	S	D	0	2	A	3	V	3	R	1	7	V

Product Series	
ESD	Low Capacitance <0.2pF
ESDU	Ultra Low Capacitance <0.05pF

Code	Size
02	0402
03	0603

Tolerance	
Code	Description
A	Suitable for IEC 61000-4-2

Operating Voltage	
Code	Voltage
3V3	3.3V
5V5	5.5V
12V	12V
24V	24V

Packaging			
Code	Description	Sizes	Quantity
R	Tape & Reel	0402	10,000
		0603	5,000

Clamping Voltage	
Code	Voltage
17V	17V
25V	25V