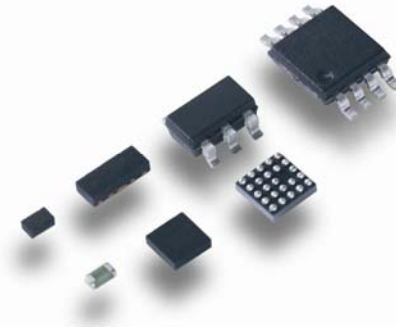


- Murata's new line of ESD devices are ideal for today's high speed data lines. The products are manufactured to function in compliance with IEC 61000-4-2 Level 4 (8kV Contact and 15kV Air Discharge).
- Ultra low capacitance (0.05pF typical) is achieved with our ceramic version. The ceramic product also provides Bi-directional operation and is RoHS compliant, Halogen free, and Lead free.
- A capacitance as low as 0.25pF can be provided with our silicon versions. These versions are available in single or multi-channel configurations and offer very low trigger and clamping voltages.
- Fast response time (<1ns)
- Application Examples:
 - HDMI 1.3, USB 2.0/3.0, IEEE 1394b
 - Cell Phones, Computers and peripherals
 - A/V Equipment, STB, DVD, HDTV, etc.
 - Antenna Ports



Product Line-Up

# of Channels	Part number	Capacitance (pF - typical)	Breakdown Voltage (V)**		L x W (mm)	T (mm max)	Appearance (not to scale)
			Min.	Max.			
1	LXES15AAA1-100	0.05			1.0 x 0.5	0.33	
	LXES1UBBB1-008	0.50	7	10	1.0 x 0.6	0.6	
	LXES1UBAB1-007		18.7		1.0 x 0.6	0.6	
	LXES1UBAA1-096*	7.50	5.8		1.0 x 0.6	0.55	
2	LXES1TBBB2-004	0.55	6	9	1.6 x 1.6	0.55	
	LXES1TBAA2-013		6	9			
4	LXES1TBAA4-005	1.30	6	9	1.6 x 1.6	0.6	
	LXES2SBAA4-016	0.55	6	9	2.9 x 2.8	1.45	
	LXES2SBBB4-026	1.00	6	9			
	LXES2TBCC4-028	0.50	6	10	2.5 x 1.0	0.6	
6	LXES4XBAA6-027	0.25	6	10	4.9 x 3.0	1.1	
	LXESEABAA6-046	0.27	6		4.1 x 2.0	0.4	
4 w/EMI Filter	LXES1WCAA4-038*	27	6		1.6 x 1.1	0.65	
8 w/EMI Filter	LXES3YCAA8-039*	27	6		3.2 x 1.1	0.65	
10 w/EMI Filter	LXES2QCAAA-040*	28	6		2.0 x 2.0	0.67	

*In Development

**at 1mA

Part Numbering System

LXES 15 A AA 1 -100

Murata ESD Series

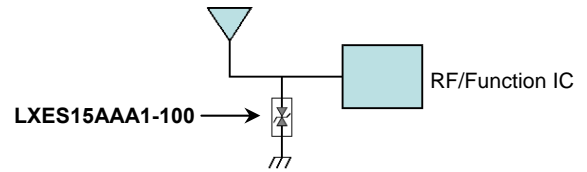
Size Code	Size (mm)
03	0.6 x 0.3
15	1.0 x 0.5
1U	1.0 x 0.6
1T	1.6 x 1.6
2T	2.5 x 1.0
2S	2.9 x 2.8
EA	4.1 x 2.0
4X	4.9 x 3.0
1W	1.6 x 1.1
3Y	3.2 x 1.1
2Q	2.0 x 2.0

Material
A = Ceramic
B = Si-based
C = Si-based with integral EMI filter (in development)

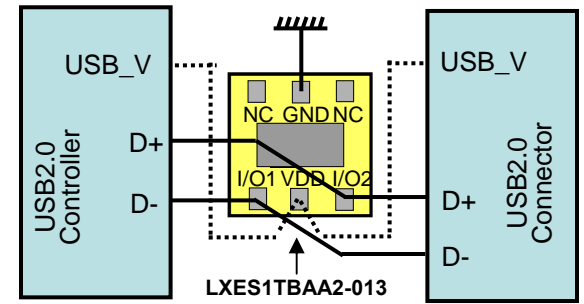
Control Code
of Channels
Serial Number

Application Examples

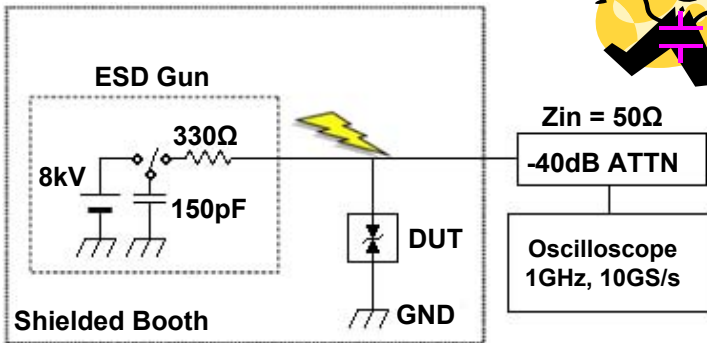
Antenna Port Protection



USB2.0 Single Port Protection



ESD Test Measurement System



The human body can function as a capacitor with a capacitance of 70 to 150pF. Under the correct relative humidity conditions, the human body can build up a charge as high as 35kV. Most of us have experienced this by touching a metal surface on a cold winter day after having walked across a carpeted floor. The diagram below demonstrates how the addition of an ESD protection device can help protect electronic equipment against the electrostatic discharge.

IEC61000-4-2 ESD 8kV Direct Contact resultant Waveforms

