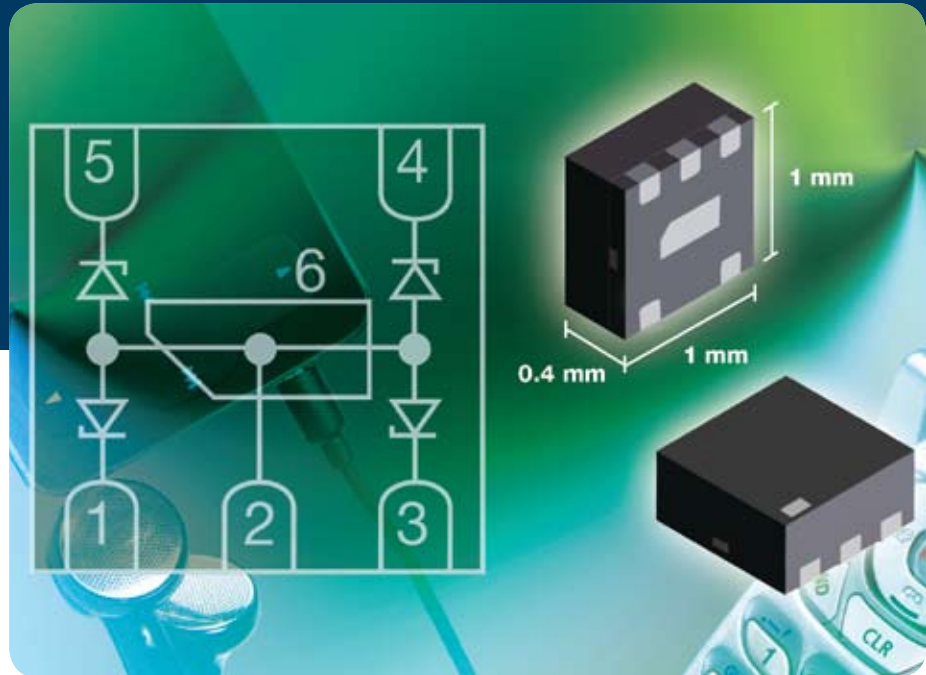




VESD05A4A-HS4 AND VESD09A4A-HS4

Quad ESD Diode Protection Arrays in
New Ultra-Compact LLP1010-5L Package



Two Quad ESD Diode Protection Arrays in New Ultra-Compact LLP1010-5L Package With 1-mm by 1-mm Footprint and Low 0.4-mm Profile for Board Space Savings

FEATURES

- Low load capacitance:
 - 12 pF for the VESD05A4A-HS4
 - 6.2 pF for the VESD09A4A-HS4
- Maximum working ranges:
 - 5 V for the VESD05A4A-HS4
 - 9 V for the VESD09A4A-HS4
- Low leakage current < 0.1 μ A
- Provide transient protection for four data lines as per IEC 61000 4 2 (ESD) at ± 15 kV (contact discharge) and ± 20 kV (air discharge)
- Environmentally friendly “green” molding compound; Lead (Pb)-free devices
- Compliant with RoHS 2002/95/EC and WEEE 2002/96/EC

KEY APPLICATIONS

- 4-line ESD data port protection in space-limited mobile electronics, such as portable gaming systems, MP3 players, and cell phones

Datasheet is available on our web site at www.vishay.com
for VESD05A4A-HS4 - <http://www.vishay.com/doc?81786>
for VESD09A4A-HS4 - <http://www.vishay.com/doc?81803>

Key Specifications:

Part Number	Working range	Capacitance	Surge current	Leakage current
VESD05A4A-HS4	5 V	12 pF	> 2.5 A	0.1 μ A at 5 V
VESD09A4A-HS4	9 V	6.2 pF	> 1.5 A	0.1 μ A at 9 V

Electrical Characteristics

Ratings at 25 °C ambient temperature, unless otherwise specified

VESD05A4A-HS4

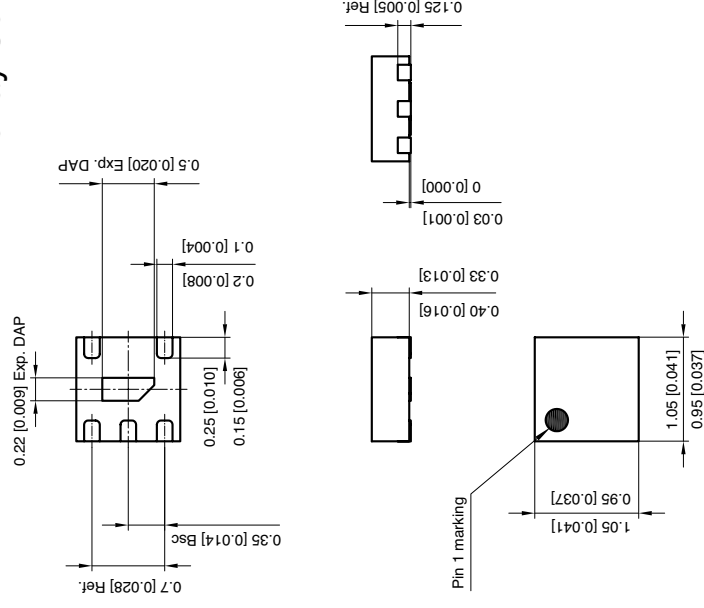
BIAs mode: each input (pin 1, 3, 4 and 5) to ground (pin 2 and/or 6)

Parameter	Test conditions/remarks	Symbol	Min.	Typ.	Max.	Unit
Protection Paths	Number of line which can be protected	N Lines			4	lines
Reverse Voltage	at $I_R = 0.1 \mu$ A	V_{RWM}	5			V
Reverse Current	at $V_R = V_{RWM} = 5$ V	I_R		< 0.01	0.1	μ A
Reverse Breakdown Voltage	at $I_R = 1$ mA	V_{BR}	6		8	V
Clamping Voltage	at $I_{pp} = 2.5$ A acc. IEC 61000-4-5	V_C			12	V
Forward Clamping Voltage	at $I_{pp} = 2.5$ A acc. IEC 61000-4-5	V_F			2.5	V
Line Capacitance	at $V_R = 0$ V; $f = 1$ MHz	C_D		12	15	pF
	at $V_R = 2.5$ V; $f = 1$ MHz	C_D		7.5	8.5	pF

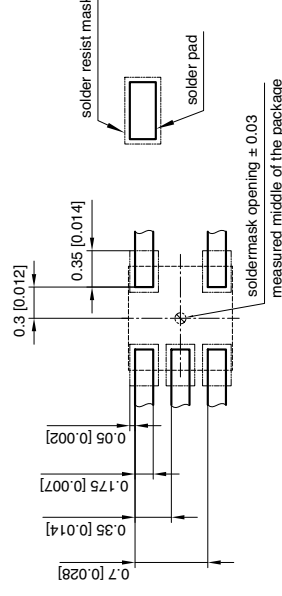
VESD09A4A-HS4

BIAs mode: each input (pin 1, 3, 4 and 5) to ground (pin 2 and/or 6)

Parameter	Test conditions/remarks	Symbol	Min.	Typ.	Max.	Unit
Protection Paths	Number of line which can be protected	N Lines			4	lines
Reverse Voltage	at $I_R = 0.1 \mu$ A	V_{RWM}	9			V
Reverse Current	at $V_R = V_{RWM} = 9$ V	I_R		< 0.01	0.1	μ A
Reverse Breakdown Voltage	at $I_R = 1$ mA	V_{BR}	11.2		13	V
Clamping Voltage	at $I_{pp} = 1.5$ A acc. IEC 61000-4-5	V_C			23	V
Forward Clamping Voltage	at $I_{pp} = 1.5$ A acc. IEC 61000-4-5	V_F			2	V
Line Capacitance	at $V_R = 0$ V; $f = 1$ MHz	C_D		6	10	pF
	at $V_R = 4.5$ V; $f = 1$ MHz	C_D		3.2	4	pF



foot print recommendation:



Revision: 27-Mar-08

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