ESD PROTECTION ARRAY, 8 CHANNEL, CHIP SCALE PACKAGE

Features

- 8 transient voltage suppressors in a single chip scale wafer level package.
- Compact Chip Scale Package (CSP) format saves board space and ease layout in space critical applications compared to discrete solutions and traditional wire bonded packages.
- In-system Electro Static Discharge (ESD) protection to 20kV contact discharge per IEC 61000-4-2 international standard.
- PACDN2408C features back-to-back zener protection for AC signals.

Applications

- ESD protection of cellular phones, PDA, internet appliances and PC ports.
- Protection of interface ports or IC pins which are exposed to high levels of ESD.
- PACDN2408C can be used for ESD protection of set-top box R,L,V ports.

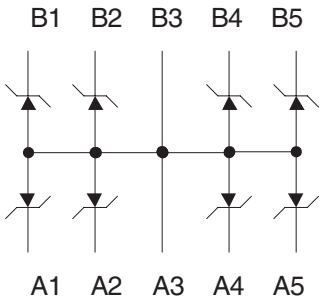
Product Description

The PACDN1408C and PACDN2408C are transient voltage suppressor arrays that provide a very high level of protection for sensitive electronic components that may be subjected to ESD. The back-to-back zener connections of the PACDN2408C provides ESD protection in cases where nodes with AC signals are present.

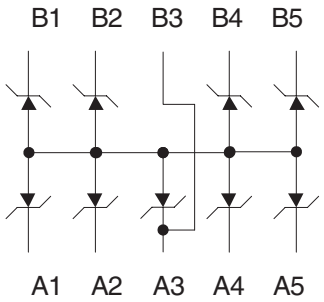
These devices are designed and characterized to safely dissipate ESD strikes at levels well beyond the maximum requirements set forth in the IEC 61000-4-2 international standard (Level 4, 8kV contact discharge). All I/Os are rated at 20kV using the IEC 61000-4-2 contact discharge method. Using the MIL-STD-883D (Method 3015) specification for Human Body Model (HBM) ESD, all pins are protected for contact discharges to greater than 30kV.

The Chip Scale Package format of these devices enable extremely small footprints that are necessary in portable electronics such as cellular phones, PDAs, internet appliances and PCs. The large solder bumps allow for standard attachment to laminate boards without the use of underfill.

SCHEMATIC DIAGRAMS



PACDN1408C



PACDN2408C

STANDARD PART ORDERING INFORMATION

Package		Ordering Part Number	
Style	**Bumps**	**Tape & Reel**	**Part Marking**
Chip Scale	10	PACDN1408C/R	
Chip Scale	10	PACDN2408C/R	

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C1130600

PACDN1408C SPECIFICATIONS (At 25°C unless specified otherwise)				
	Min	**Typ**	**Max**	**Unit**
Reverse Stand-off Voltage, I = 10µA	5.5			V
Signal Clamp Voltage:				
Positive Clamp, 10mA	5.6	6.6	8.0	V
Negative Clamp, 10mA	−1.2	−0.8	−0.4	V
In-system ESD withstand voltage*:				
Human Body Model (MIL-STD-883D, method 3015		±30		kV
IEC 61000-4-2, contact discharge method		±25		kV
Clamping voltage during ESD discharge Positive		12		V
MIL-STD-883D (Method 3015), 8kV Negative		−8		V
Capacitance at 2.5V dc, 1MHz		30		pF
Temperature Range:				
Operating	−40		85	°C
Storage	−65		150	

* ESD applied between channel pin and ground, one at a time. All other channels are open. All GND pins grounded. This parameter is guaranteed by design and characterization.

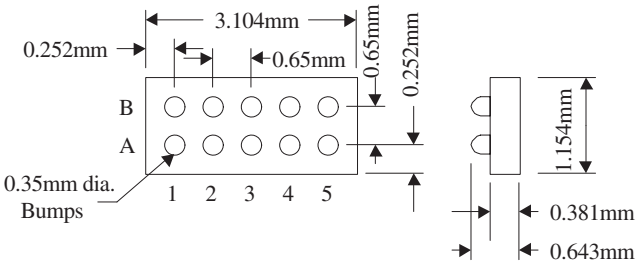
'GND' in this document refers to the lower supply voltage.

PACDN2408C SPECIFICATIONS (At 25°C unless specified otherwise)				
	Min	**Typ**	**Max**	**Unit**
Reverse Stand-off Voltage, I = 10µA	±5.9			V
Signal Clamp Voltage:				
Positive Clamp, 10mA	6.0	7.6	9.2	V
Negative Clamp, 10mA	−9.2	−7.6	−6.0	V
In-system ESD withstand voltage*:				
Human Body Model (MIL-STD-883D, method 3015		±30		kV
IEC 61000-4-2, contact discharge method		±18		kV
Clamping voltage during ESD discharge Positive		14		V
MIL-STD-883D (Method 3015), 8kV Negative		−14		V
Capacitance at 2.5V dc, 1MHz		30		pF
Temperature Range:				
Operating	−40		85	°C
Storage	−65		150	

* ESD applied between channel pin and common, one at a time. All other channels are open. This parameter is guaranteed by design and characterization.

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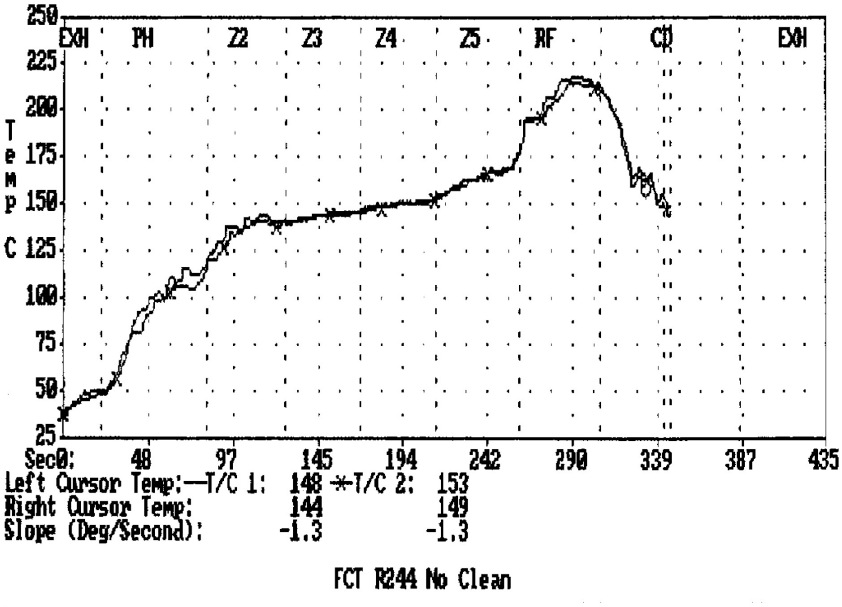
Package Diagram



Pin Orientation

Both parts are symmetrical, and do not require orientation to pin-1 found in conventional semiconductors. The part may rotated 180° without affecting operation.

PRINTED CIRCUIT BOARD RECOMENDATIONS	
Pad Size on PCB	0.300mm
Pad Shape	Round
Pad Definition	Non Solder Mask Defined Pads (NSMD)
Solder Mask Opening	0.350mm
Solder Stencil Thickness	0.152mm
Solder Stencil Aperture Opening	0.360mm (sq.)
Solder Flux Ratio	50/50
Solder Paste	No Clean
Bond Trace Finish	OSP (Entek Cu Plus 106A)



Typical Solder Reflow Thermal Profile (No Clean Flux)

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