



8-channel ESD/TVS Protection Diode in Chip Scale Packaging (CSP)

**Features**

- 8 channels ESD protection at 15KV per IEC61000
- 10-bump Chip Scale Package (CSP) 1.9mm x 1.3mm
- Chip layout enables easy PCB layout
- RoHS Compliant in Lead-Free Versions
- Complies with the following standards:
  - IEC 61000-4-2 (ESD) Air-15kv, Contact-8kv
  - IEC 61000-4-4 (EFT) (5/50ns)
  - IEC 61000-4-5 (Surge) (8/20µs)

**Applications**

- Cellular Handsets
- PDA
- Mp3 Players
- PC & Notebooks
- Printers
- Digital Cameras

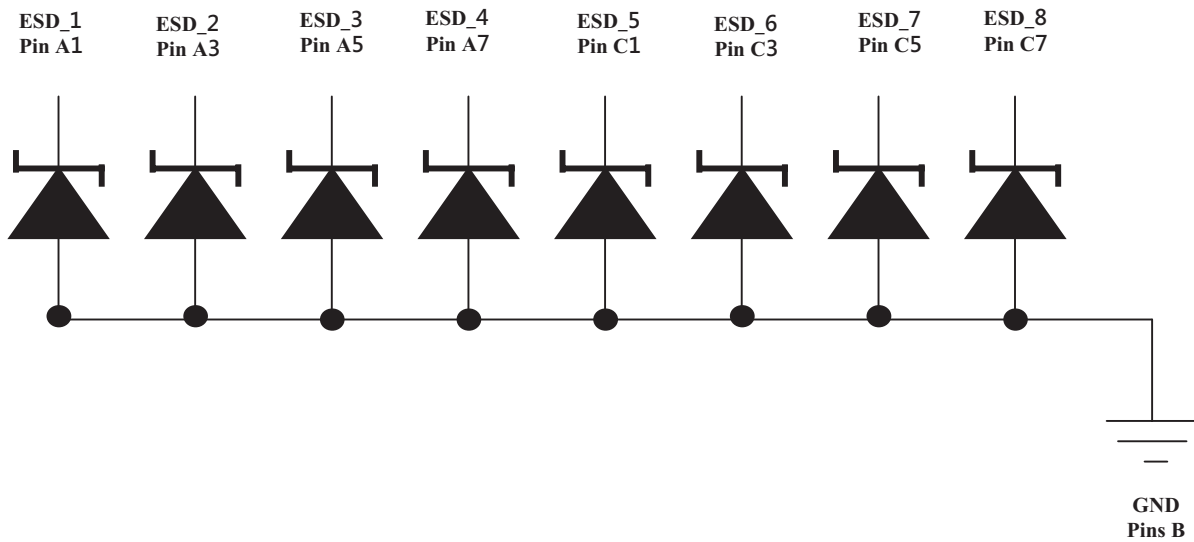
**Product Description**

The B10CSP05B Diode Array consists of 8 robust ESD protection devices. Housed in miniature CSP format this product is ideal suited for portable devices with SIM card slots.

| ELECTRICAL CHARACTERISTICS   |         |         |       |
|--|---------|---------|-------|
| Parameter  | Min.    | Typical | Max.  |
| Stand-off Voltage @ I = 10uA   | -       | 6V      | -     |
| Signal Voltage, Positive Clamp @ I <sub>LOAD</sub> = 10mA                                | 5.6V    | 6.8V    | 9V    |
| Signal Voltage, Negative Clamp @ I <sub>LOAD</sub> = -10mA                               | -1.5V   | -0.8V   | -0.4V |
| In-system ESD Withstand Voltage, Human Body Model, MIL-STD-883, Method 3015              | ± 15 KV | -       | -     |
| In-system ESD Withstand Voltage, Contact Discharge per IEC, 61000-4-2                    | ± 10 KV | -       | -     |
| Clamping Voltage during ESD Discharge MIL-STD-883 (Method 3015), 8kV Positive Transients | -       | -       | +12V  |
| Clamping Voltage during ESD Discharge MIL-STD-883 (Method 3015), 8kV Negative Transients | -       | -       | -7V   |
| Cut-off frequency ZSOURCE = 50W, ZLOAD = 50W, R = 100W, C = 20pF                         | -       | 77MHz   | -     |
| Cut-off frequency ZSOURCE = 50W, ZLOAD = 50W, R = 47W, C = 20pF                          | -       | 85MHz   | -     |

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## Schematic & CSP pin-out



## DEVICE CHARACTERISTICS

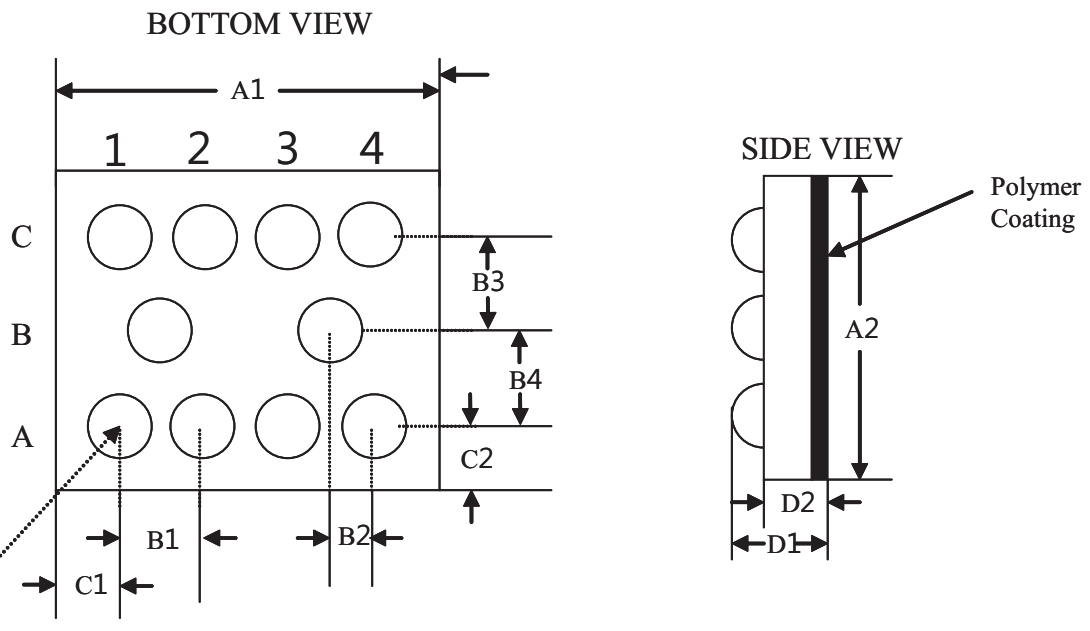
### MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

| PARAMETER                            | VALUE          | UNITS |
|--------------------------------------|----------------|-------|
| Operating Temperature                | -40°C to 85°C  | °C    |
| Storage Temperature                  | -55°C to 150°C | °C    |
| Soldering Temperature for 10 seconds | 265            | °C    |

### Ordering Part Number

| PAR T NUMBER | DESCR IPTION             | DEVICE MAR KING CODE |
|--------------|--------------------------|----------------------|
| B10CSP05B    | Lead-free RoHS Compliant | 1402                 |

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0.30 DIA.  
63/37 Sn/Pb Eutectic or  
96.8/2.6/0.6 Sn/Ag/Cu (Lead-Free) SOLDER BUMPS

| PACKAGE DIMENSIONS                 |             |       |       |        |        |        |
|------------------------------------|-------------|-------|-------|--------|--------|--------|
| PACKAGE                            | CUSTOM CSP  |       |       |        |        |        |
| BUMPS                              | 10          |       |       |        |        |        |
| DIM                                | MILLIMETERS |       |       | INCHES |        |        |
|                                    | Min         | Nom   | Max   | Min    | Nom    | Max    |
| A1                                 | 1.915       | 1.960 | 2.005 | 0.0754 | 0.0772 | 0.0789 |
| A2                                 | 1.285       | 1.330 | 1.375 | 0.0506 | 0.0524 | 0.0541 |
| B1                                 | 0.495       | 0.500 | 0.505 | 0.0195 | 0.0197 | 0.0199 |
| B2                                 | 0.245       | 0.250 | 0.255 | 0.0096 | 0.0098 | 0.0100 |
| B3                                 | 0.430       | 0.435 | 0.440 | 0.0169 | 0.0171 | 0.0173 |
| B4                                 | 0.430       | 0.435 | 0.440 | 0.0169 | 0.0171 | 0.0173 |
| C1                                 | 0.180       | 0.230 | 0.280 | 0.0071 | 0.0091 | 0.0110 |
| C2                                 | 0.180       | 0.230 | 0.280 | 0.0071 | 0.0910 | 0.0110 |
| D1                                 | 0.575       | 0.644 | 0.714 | 0.0226 | 0.0254 | 0.0281 |
| D2                                 | 0.368       | 0.419 | 0.470 | 0.0145 | 0.0165 | 0.0185 |
| # per tape and reel                | 3500 pieces |       |       |        |        |        |
| Controlling dimension: millimeters |             |       |       |        |        |        |