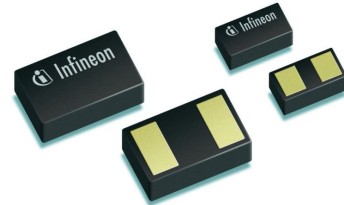
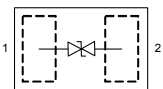


**Bi-directional Low Capacitance TVS Diode**

- ESD / transient protection of high-speed data lines in 3.3 / 5 / 12 V applications according to:  
IEC61000-4-2 (ESD):  $\pm 18$  kV (air)  $\pm 15$  kV (contact)  
IEC61000-4-4 (EFT): 40 A (5 / 50 ns)
- Extremely small form factor down to  $0.62 \times 0.32 \times 0.31$  mm<sup>3</sup> (0201)
- Max. working voltage:  $-8$  /  $+14$  V
- Very low reverse current  $< 1$  nA typ.
- Very low series inductance down to 0.2 nH typ.
- Low capacitance of 4 pF typ.
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101


**Applications**

- USB 2.0, 10/100 Ethernet, Firewire, DVI
- Mobile communication
- Consumer products (STB, MP3, DVD, DSC...)
- LCD displays, camera
- Notebooks and desktop computers, peripherals


**ESD8V0R1B-02LS**  
**ESD8V0R1B-02LRH**


| Type            | Package   | Configuration          | Marking |
|-----------------|-----------|------------------------|---------|
| ESD8V0R1B-02LRH | TSLP-2-17 | 1 line, bi-directional | E       |
| ESD8V0R1B-02LS  | TSSLP-2-1 | 1 line, bi-directional | E       |

**Maximum Ratings** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

| Parameter   | Symbol           | Value     | Unit |
|---|------------------|-----------|------|
| ESD discharge <sup>1)</sup><br>air<br>contact                   | $V_{\text{ESD}}$ | 18<br>15  | kV   |
| Peak pulse current ( $t_p = 8 / 20 \mu\text{s}$ ) <sup>2)</sup> | $I_{\text{pp}}$  | 1         | A    |
| Operating temperature range                                     | $T_{\text{op}}$  | -55...150 | °C   |
| Storage temperature   | $T_{\text{stg}}$ | -65...150 |      |

**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

| Parameter | Symbol | Values |      |      | Unit |
|-----------|--------|--------|------|------|------|
|           |        | min.   | typ. | max. |      |

**Characteristics**

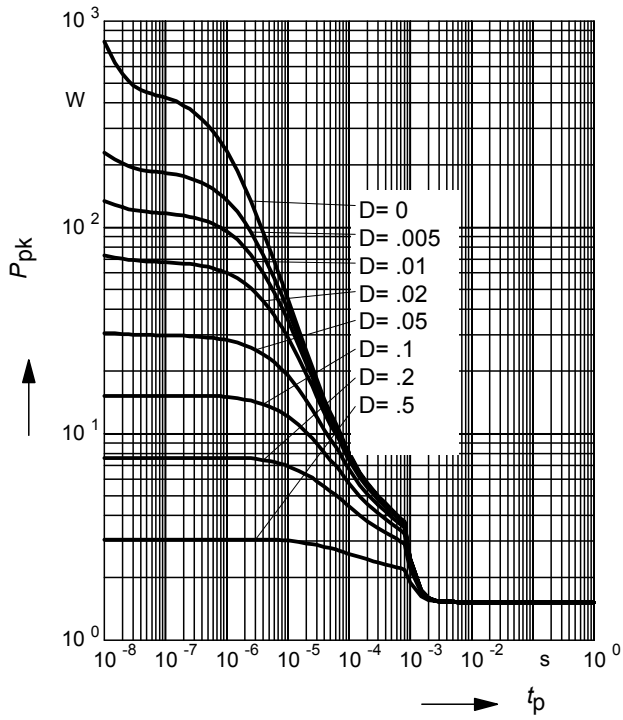
|   |                   |             |            |          |    |
|---|-------------------|-------------|------------|----------|----|
| Reverse working voltage, from pin 2 to 1  | $V_{\text{RWM}}$  | -8          | -          | 14       | V  |
| Breakdown voltage<br>$I_{(\text{BR})} = 1 \text{ mA}$ , from pin 2 to 1<br>$I_{(\text{BR})} = 1 \text{ mA}$ , from pin 1 to 2   | $V_{(\text{BR})}$ | 14.5<br>8.5 | 17<br>11   | 20<br>14 |    |
| Reverse current<br>$V_R = 3.3 \text{ V}$  | $I_R$             | -           | <1         | 50       | nA |
| Clamping voltage<br>$I_{\text{PP}} = 1 \text{ A}$ , $t_p = 8/20 \mu\text{s}$ , from pin 2 to 1 <sup>2)</sup><br>$I_{\text{PP}} = 1 \text{ A}$ , $t_p = 8/20 \mu\text{s}$ , from pin1 to 2 <sup>2)</sup> | $V_{\text{CL}}$   | -<br>-      | 23<br>17   | 28<br>22 | V  |
| Line capacitance<br>$V_R = 0 \text{ V}$ , $f = 1 \text{ MHz}$   | $C_T$             | -           | 4          | 7        |    |
| Series inductance<br>ESD8V0R1B-02LS<br>ESD8V0R1B-02LRH  | $L_S$             | -<br>-      | 0.2<br>0.4 | -<br>-   | nH |

<sup>1)</sup>  $V_{\text{ESD}}$  according to IEC61000-4-2

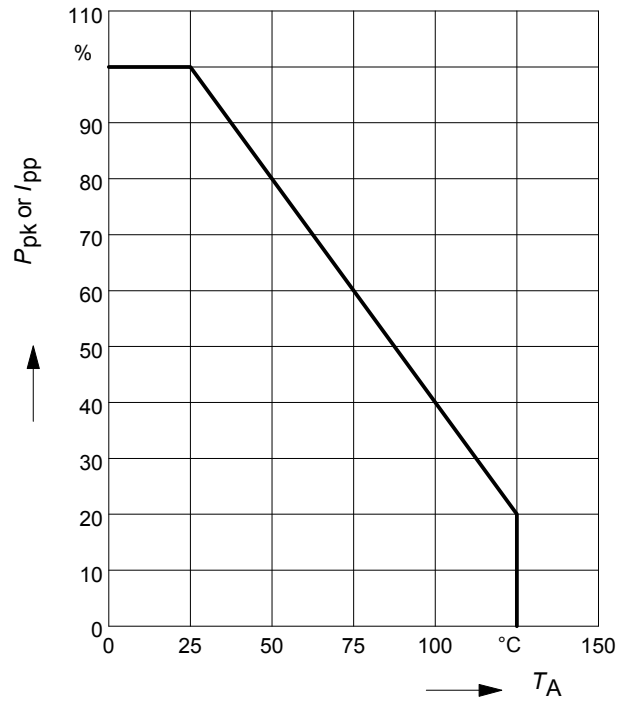
<sup>2)</sup>  $I_{\text{pp}}$  according to IEC61000-4-5

**Non-repetitive peak pulse power**

$P_{pk} = f(t_p)$

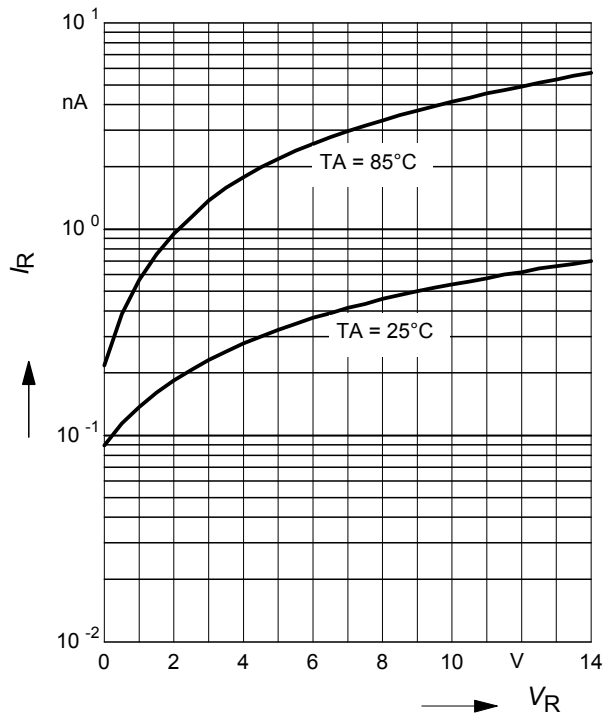


**Power derating curve  $P_{pk} = f(T_A)$**



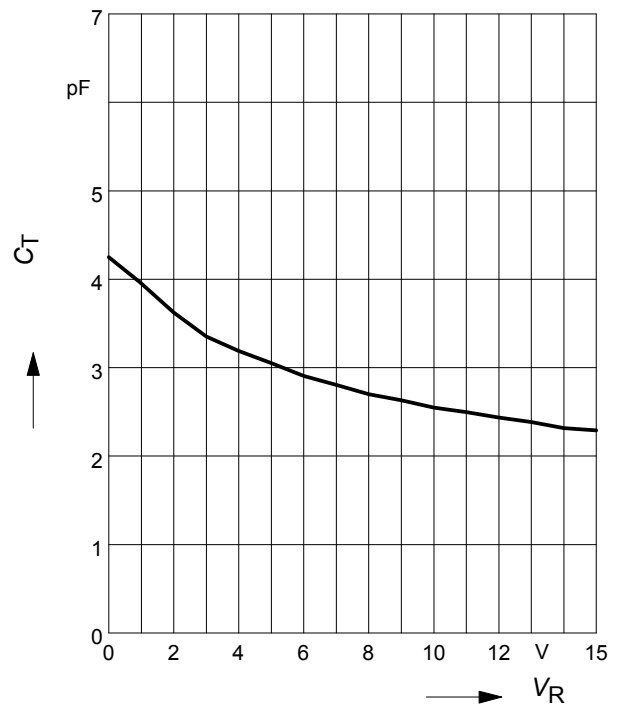
**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$



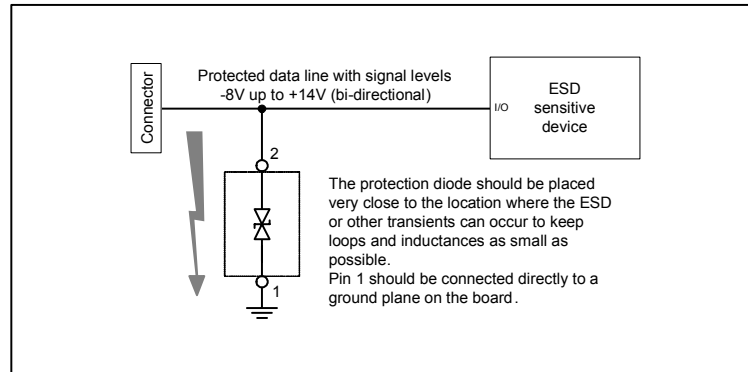
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$

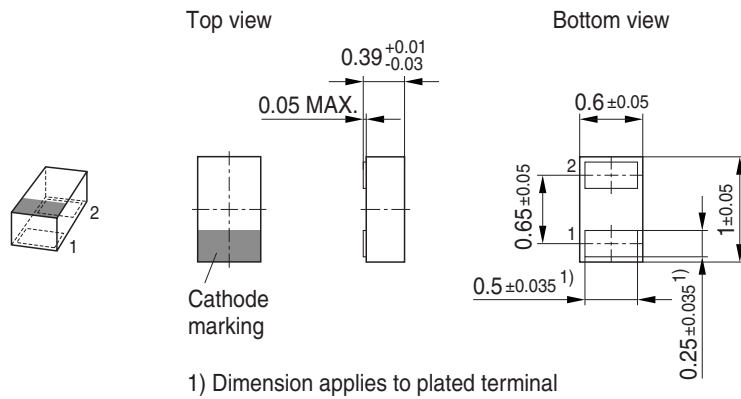


**Application example ESD8V0R1B...**

1 line, bi-directional

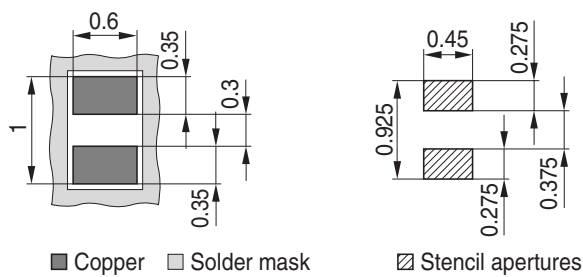


### Package Outline

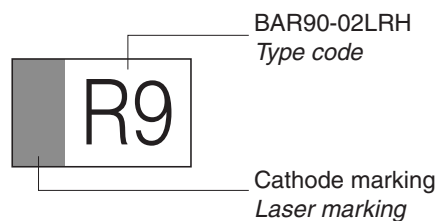


### Foot Print

For board assembly information please refer to Infineon website "Packages"

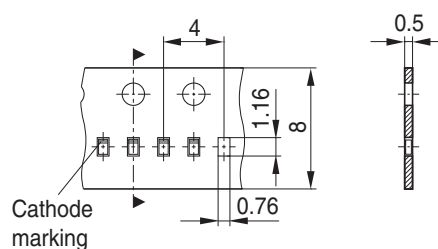


### Marking Layout (Example)

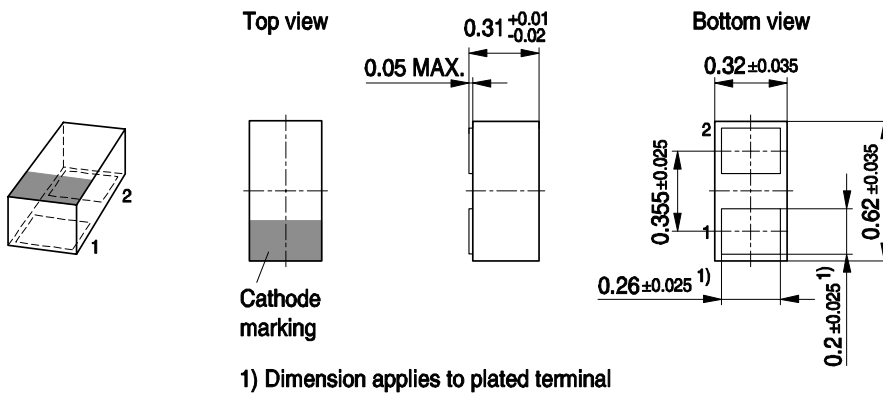


### Standard Packing

Reel  $\varnothing$ 180 mm = 15.000 Pieces/Reel  
 Reel  $\varnothing$ 330 mm = 50.000 Pieces/Reel (optional)

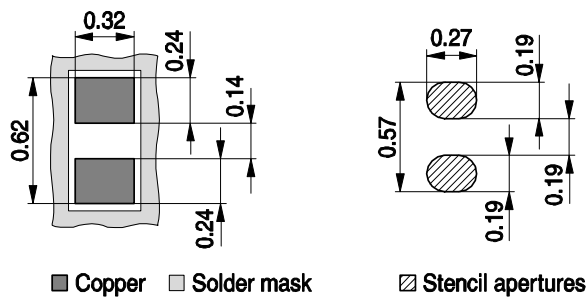


### Package Outline

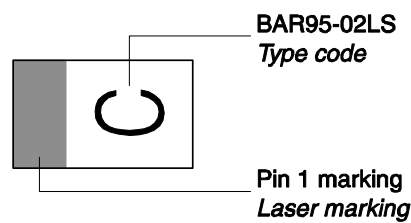


### Foot Print

For board assembly information please refer to Infineon website "Packages"

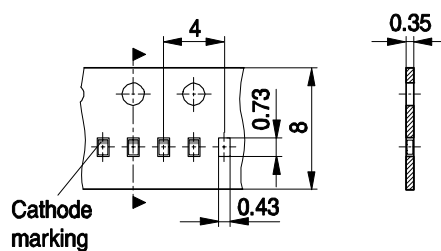


### Marking Layout (Example)



### Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



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