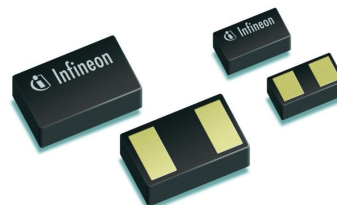


## Bi-directional Low Capacitance TVS Diode

- 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

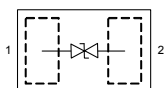


## Applications

- 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>	$V_{\text{ESD}}$		kV
air		18	
contact		15	
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	$^\circ\text{C}$
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**

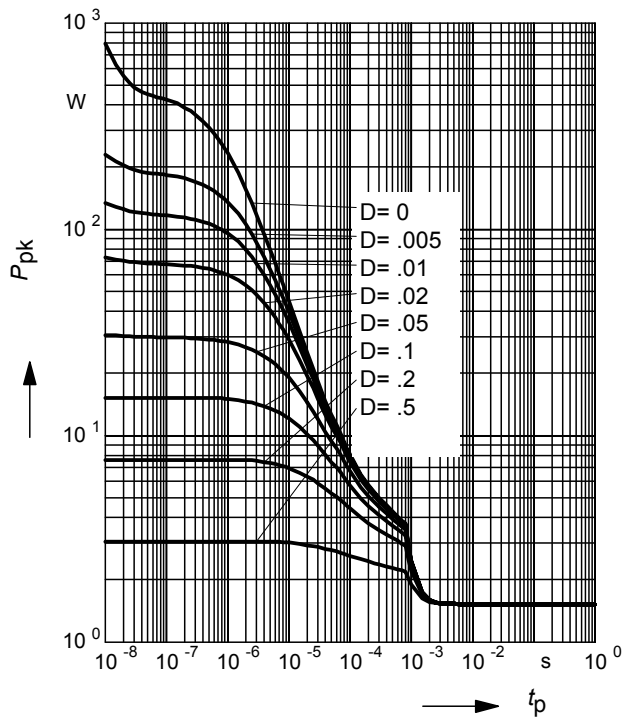
Reverse working voltage, from pin 2 to 1	$V_{\text{RWM}}$	-8	-	14	V
Breakdown voltage	$V_{(\text{BR})}$				
$I_{(\text{BR})} = 1 \text{ mA}$ , from pin 2 to 1		14.5	17	20	
$I_{(\text{BR})} = 1 \text{ mA}$ , from pin 1 to 2		8.5	11	14	
Reverse current $V_R = 3.3 \text{ V}$	$I_R$	-	<1	50	nA
Clamping voltage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

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

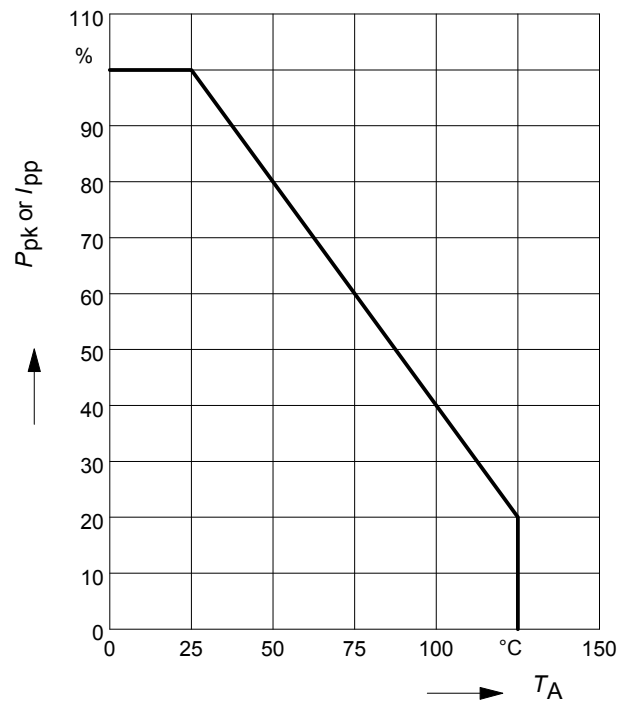
<sup>2)</sup>  $I_{\text{pp}}$  according to IEC61000-4-5

### Non-repetitive peak pulse power

$$P_{pk} = f(t_p)$$

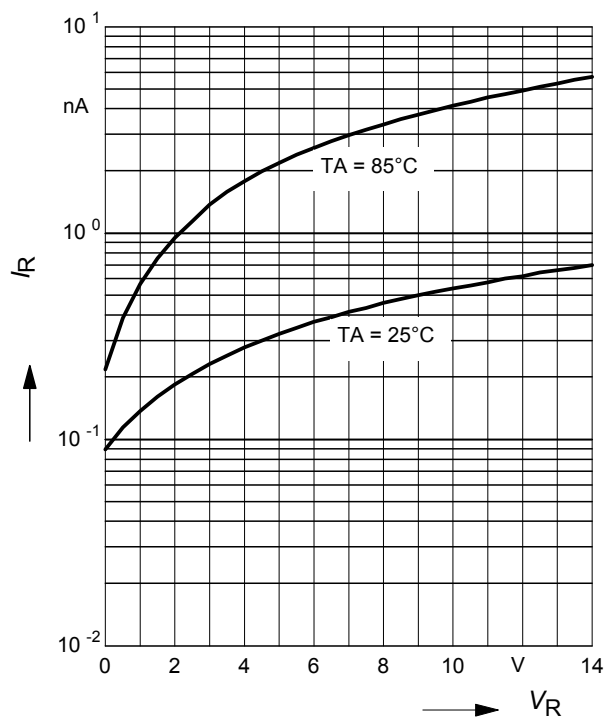


### Power derating curve $P_{pk} = f(T_A)$



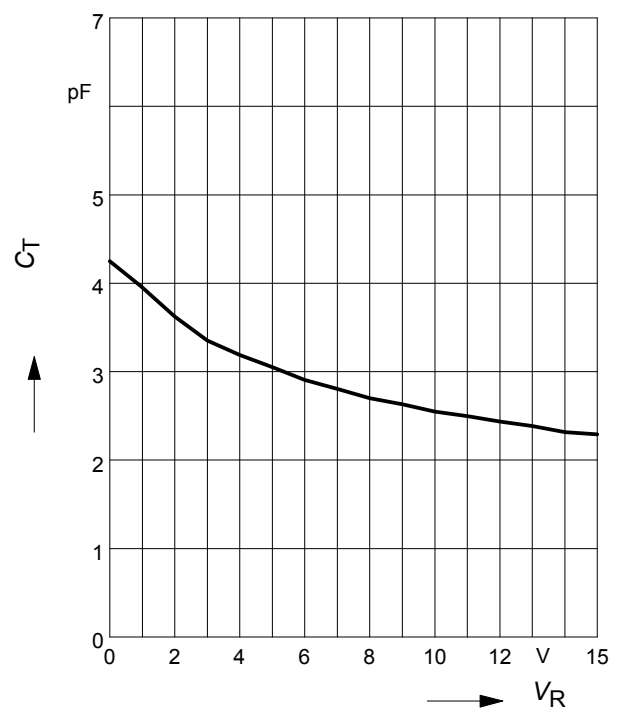
### Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$



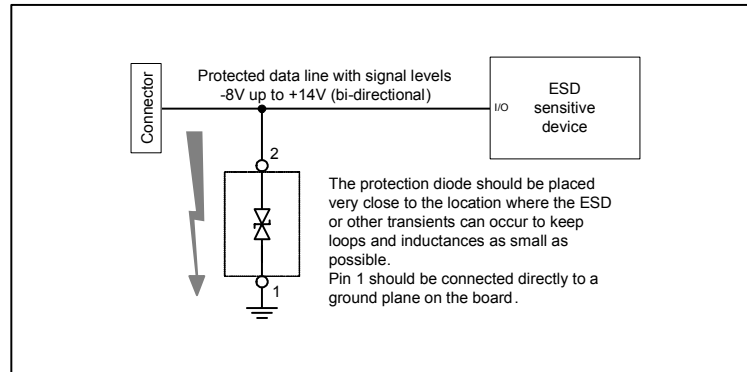
### Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$

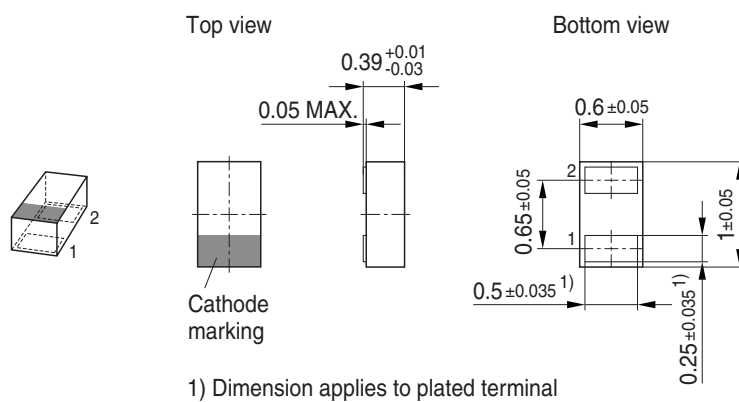


## Application example ESD8V0R1B...

1 line, bi-directional

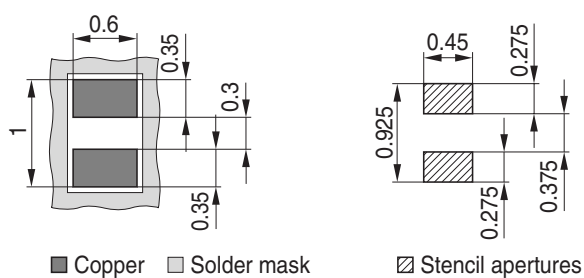


## Package Outline

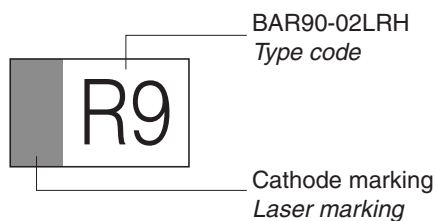


## Foot Print

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



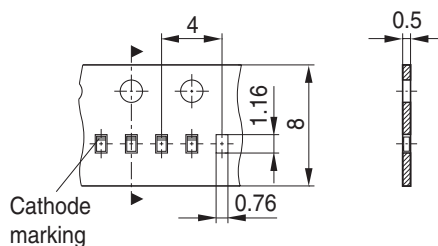
## Marking Layout (Example)



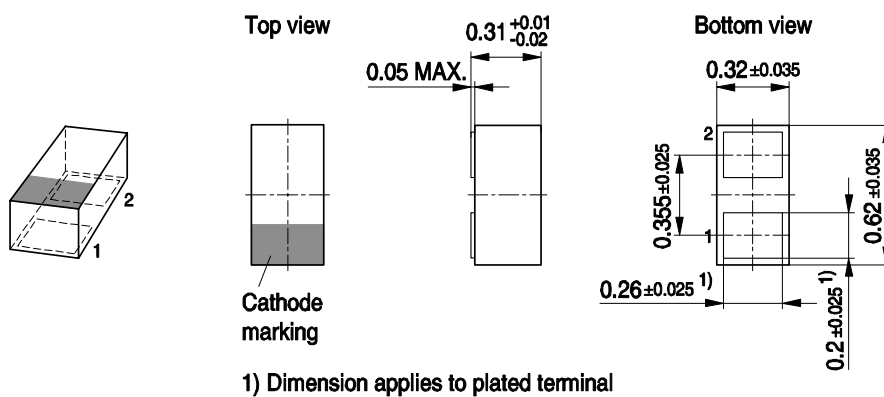
## Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel

Reel ø330 mm = 50.000 Pieces/Reel (optional)

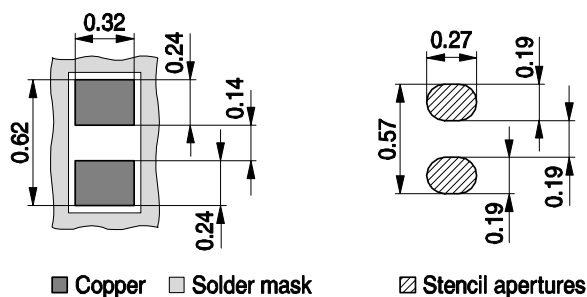


## Package Outline

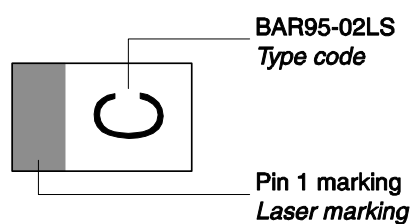


## Foot Print

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

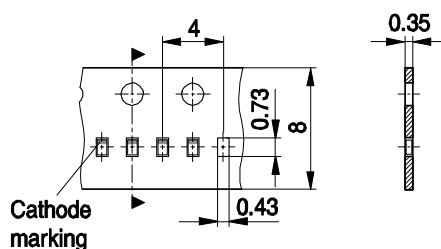


## Marking Layout (Example)



## Standard Packing

Reel  $\varnothing$ 180 mm = 15.000 Pieces/Reel



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