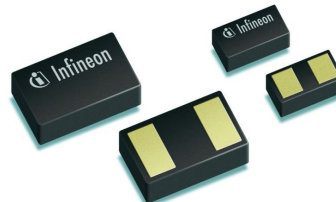


Bi-directional Low Capacitance TVS Diode

- ESD / transient protection of high-speed data lines in 3.3 / 5 / 12 V applications according to:
IEC61000-4-2 (ESD): ± 18 kV (air) ± 15 kV (contact)
IEC61000-4-4 (EFT): 40 A (5 / 50 ns)
- Extremely small form factor down to $0.62 \times 0.32 \times 0.31 \text{ mm}^3$ (0201)
- Max. working voltage: $-8 / +14 \text{ V}$
- Very low reverse current $< 1 \text{ nA typ.}$
- 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

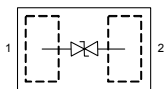


Applications

- 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 ¹⁾	V_{ESD}		kV
air		18	
contact		15	
Peak pulse current ($t_p = 8 / 20 \mu\text{s}$) ²⁾	I_{pp}	1	A
Operating temperature range	T_{op}	-55...150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65...150	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

Characteristics

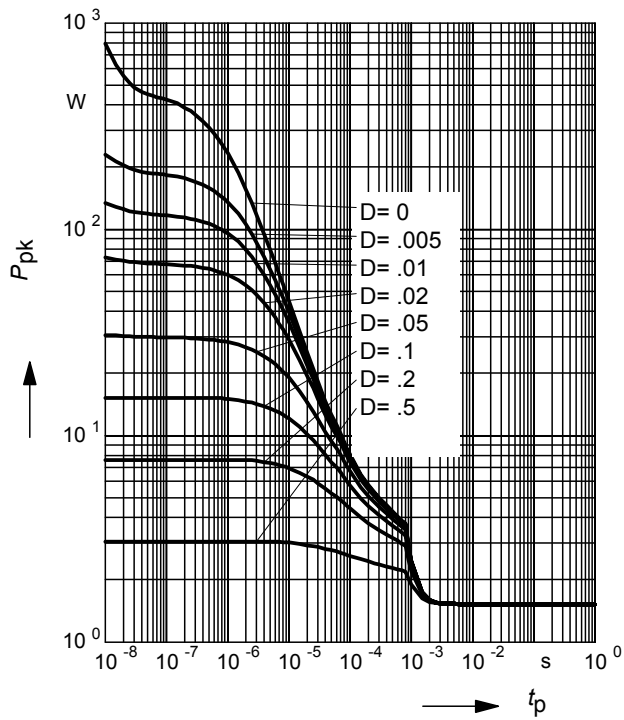
Reverse working voltage, from pin 2 to 1	V_{RWM}	-8	-	14	V
Breakdown voltage	$V_{(\text{BR})}$				
$I_{(\text{BR})} = 1 \text{ mA}$, from pin 2 to 1		14.5	17	20	
$I_{(\text{BR})} = 1 \text{ mA}$, from pin 1 to 2		8.5	11	14	
Reverse current $V_R = 3.3 \text{ V}$	I_R	-	<1	50	nA
Clamping voltage	V_{CL}				V
$I_{\text{PP}} = 1 \text{ A}$, $t_p = 8/20 \mu\text{s}$, from pin 2 to 1 ²⁾		-	23	28	
$I_{\text{PP}} = 1 \text{ A}$, $t_p = 8/20 \mu\text{s}$, from pin1 to 2 ²⁾		-	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	-	

¹⁾ V_{ESD} according to IEC61000-4-2

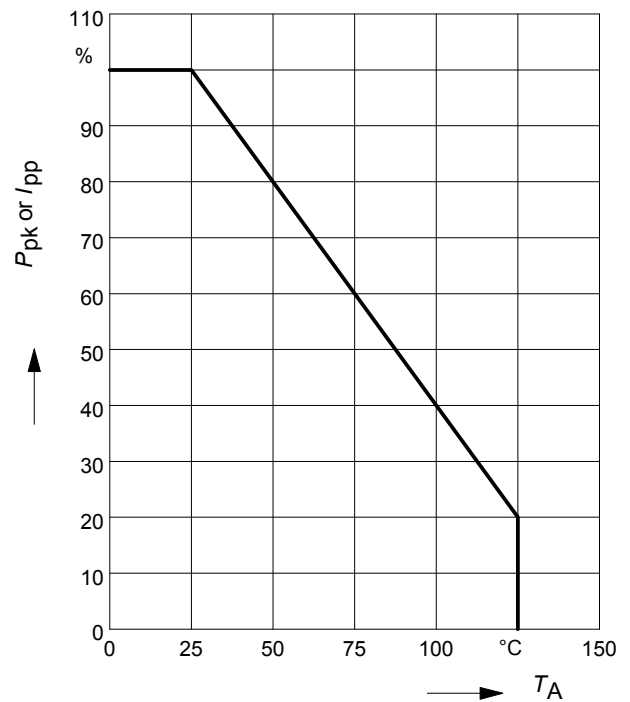
²⁾ I_{pp} according to IEC61000-4-5

Non-repetitive peak pulse power

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

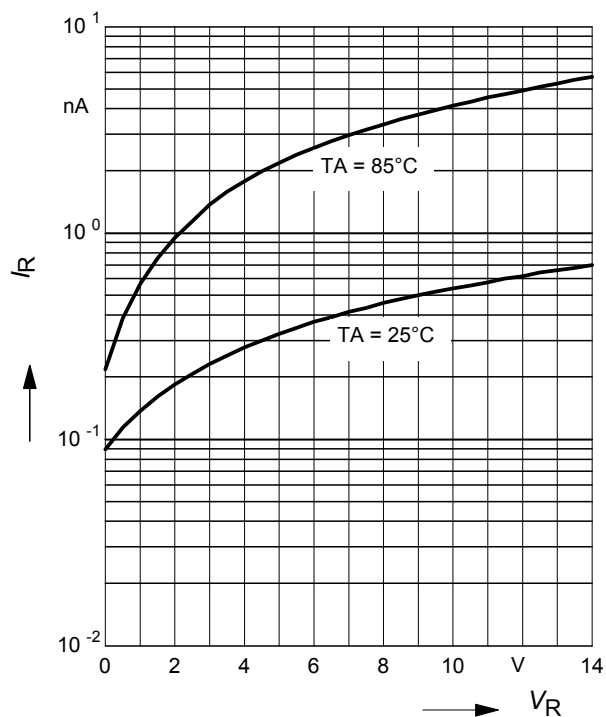


Power derating curve $P_{pk} = f(T_A)$



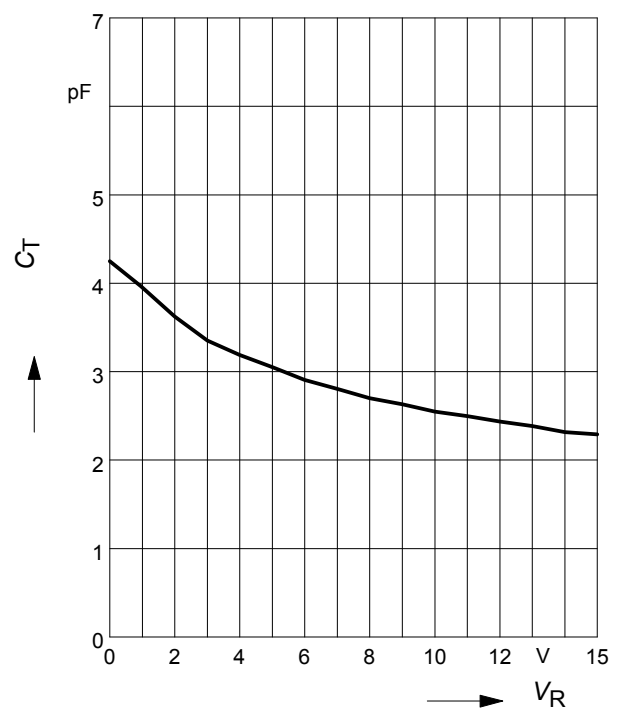
Reverse current $I_R = f(V_R)$

T_A = Parameter



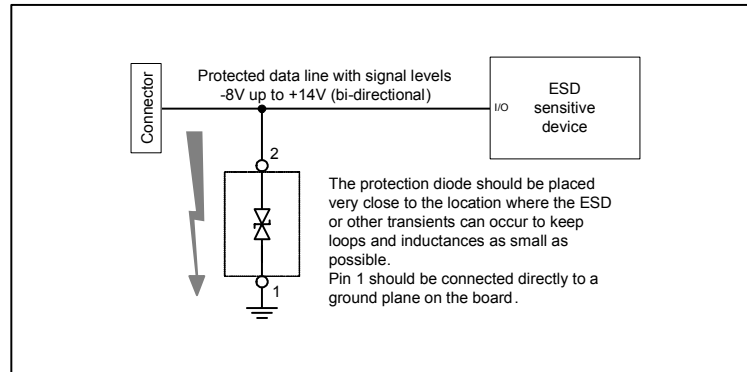
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$

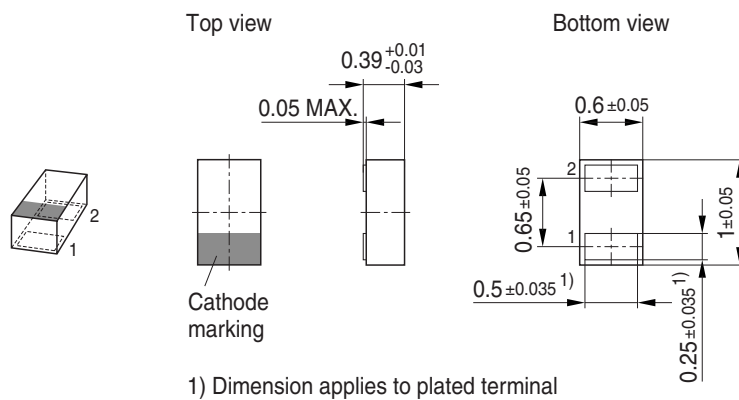


Application example ESD8V0R1B...

1 line, bi-directional

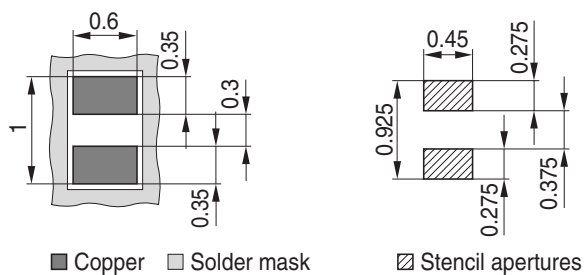


Package Outline

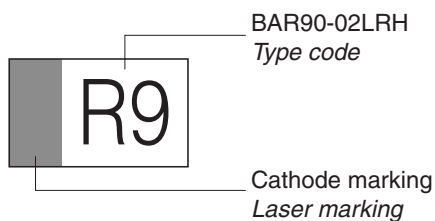


Foot Print

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



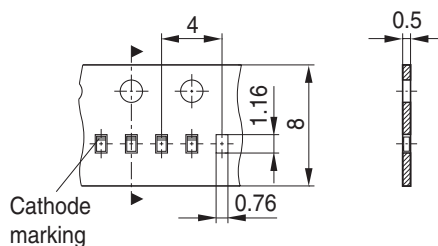
Marking Layout (Example)



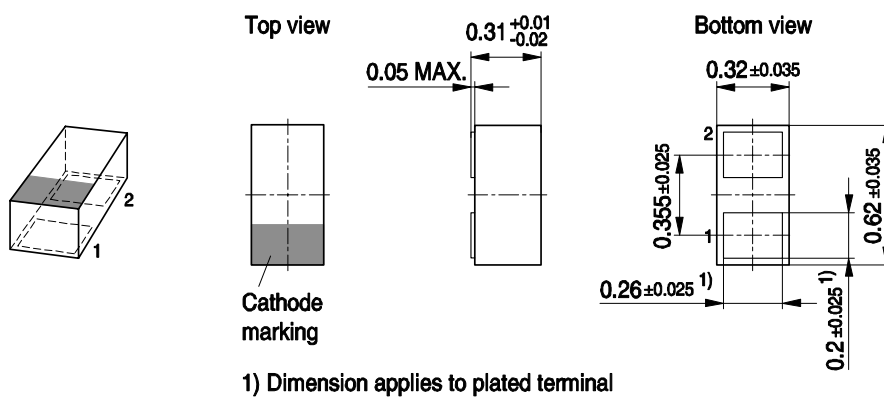
Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel

Reel ø330 mm = 50.000 Pieces/Reel (optional)

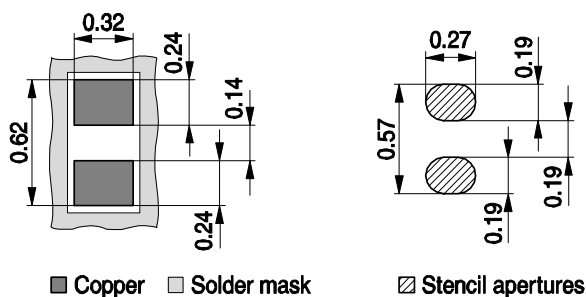


Package Outline

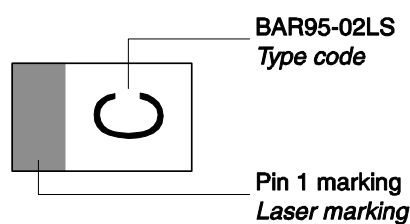


Foot Print

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

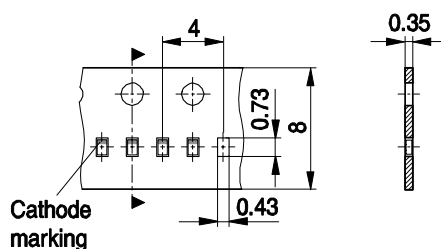


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



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