

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 x 0.32 x 0.31 mm³ (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 destop computers, peripherals





ESD8V0R1B-02LS ESD8V0R1B-02LRH



Туре	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 $T_A = 25$ °C, unless otherwise specified

Parameter	Symbol	Value	Unit
ESD discharge ¹⁾	V _{ESD}		kV
air		18	
contact		15	
Peak pulse current $(t_p = 8 / 20 \mu s)^2$	I _{pp}	1	А
Operating temperature range	Top	-55150	°C
Storage temperature	$T_{ m stg}$	-65150	

Electrical Characteristics at $T_A = 25$ °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	$V_{(BR)}$				
$I_{(BR)}$ = 1 mA, from pin 2 to 1		14.5	17	20	
$I_{(BR)}$ = 1 mA, from pin 1 to 2		8.5	11	14	
Reverse current	I _R	-	<1	50	nA
$V_{R} = 3.3 \text{ V}$					
Clamping voltage	V_{CL}				V
$I_{PP} = 1 \text{ A}, t_P = 8/20 \mu\text{s}, \text{ from pin 2 to } 1^2)$		-	23	28	
$I_{PP} = 1 \text{ A}, t_P = 8/20 \mu\text{s}, \text{ from pin1 to } 2^{2})$		-	17	22	
Line capacitance	C _T	-	4	7	pF
$V_{R} = 0 \text{ V}, f = 1 \text{ MHz}$					
Series inductance	LS				nH
ESD8V0R1B-02LS		_	0.2	_	
ESD8V0R1B-02LRH		_	0.4	_	

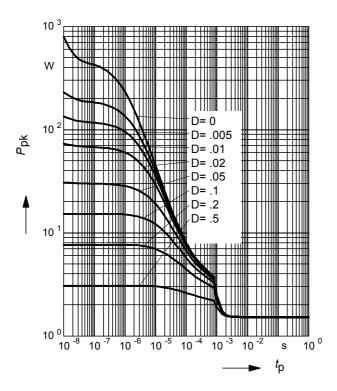
 $^{^{1}}V_{\mathrm{ESD}}$ according to IEC61000-4-2

 $^{^2}I_{\mathrm{pp}}$ according to IEC61000-4-5



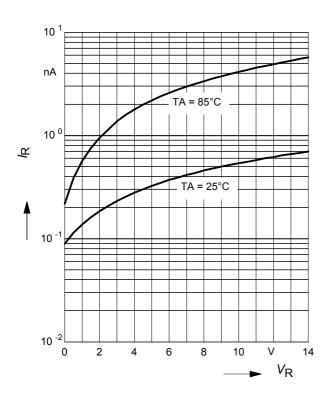
Non-repetitive peak pulse power

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

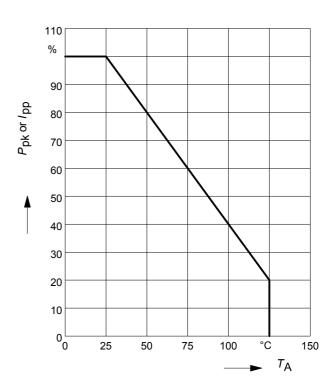


Reverse current $I_R = f(V_R)$

 T_A = Parameter

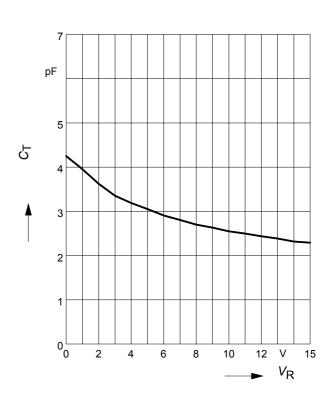


Power derating curve $P_{pk} = f(T_A)$



Diode capacitance $C_T = f(V_R)$

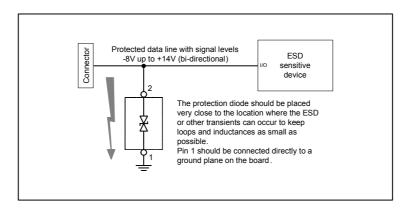
$$f = 1MHz$$





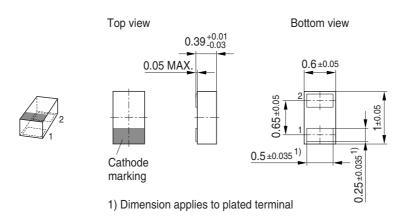
Application example ESD8V0R1B...

1 line, bi-directional



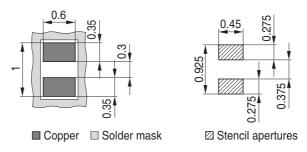


Package Outline

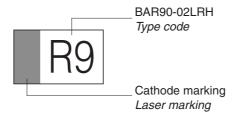


Foot Print

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

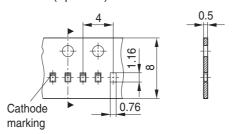


Marking Layout (Example)



Standard Packing

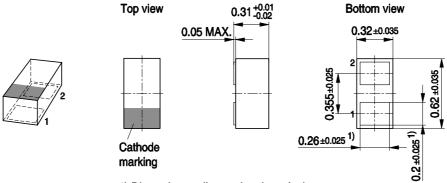
Reel ø180 mm = 15.000 Pieces/Reel Reel ø330 mm = 50.000 Pieces/Reel (optional)



5



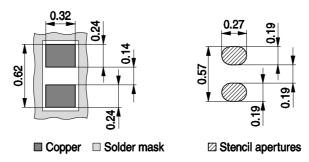
Package Outline



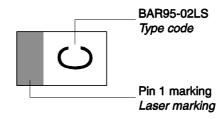
1) Dimension applies to plated terminal

Foot Print

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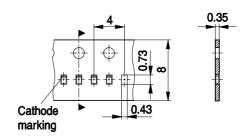


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



6



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7