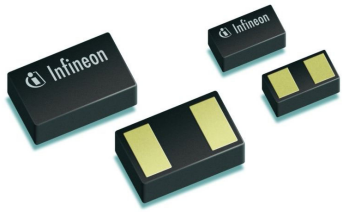
Bi-directional Low Capacitance TVS Diode



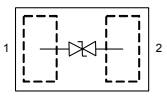
- ESD / transient protection of high-speed data lines in 3.3 / 5 / 12 V applications according to:
  IEC61000-4-2 (ESD): ±18 kV (air) ±15 kV (contact)
  IEC61000-4-4 (EFT): 40 A (5 / 50 ns)
- Extremely small form factor down to 0.62 x 0.32 x 0.31 mm³ (0201)
- Max. working voltage: –8 / +14 V
- Very low 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

AEC Qualified RoHS

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°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 µs)[2)]	I_{pp}	1	A
Operating temperature range	T_{op}	-55...150	°C
Storage temperature	T_{stg}	-65...150	

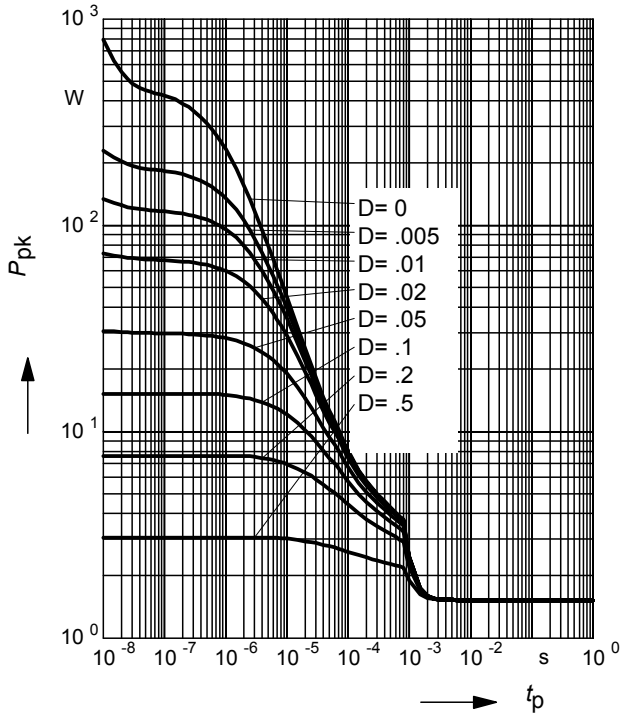
Electrical Characteristics at T_A = 25°C, unless otherwise specified

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 V					
Clamping voltage	V_{CL}				V
I_{PP} = 1 A, t_P = 8/20 µs, from pin 2 to 1[2)]		-	23	28	
I_{PP} = 1 A, t_P = 8/20 µs, from pin1 to 2[2)]		-	17	22	
Line capacitance	C_T	-	4	7	pF
V_R = 0 V, f = 1 MHz					
Series inductance	L_S				nH
ESD8V0R1B-02LS		-	0.2	-	
ESD8V0R1B-02LRH		-	0.4	-	

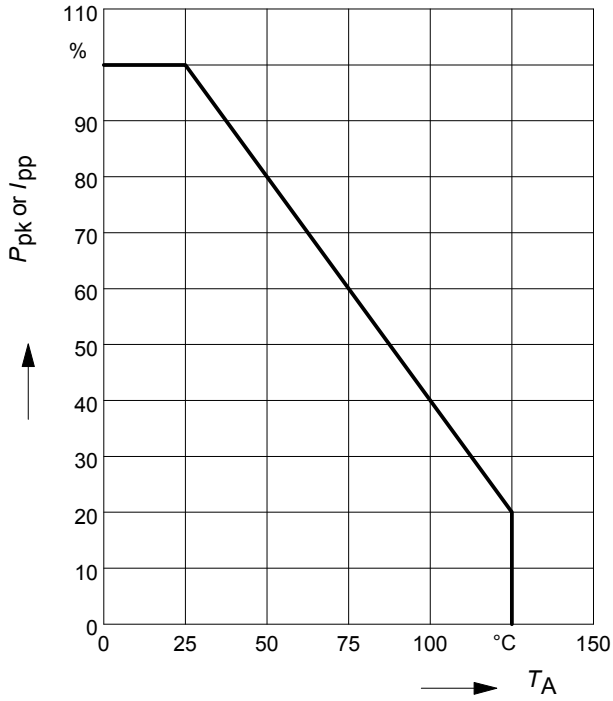
[1] V_{ESD} according to IEC61000-4-2

[2] I_{pp} according to IEC61000-4-5

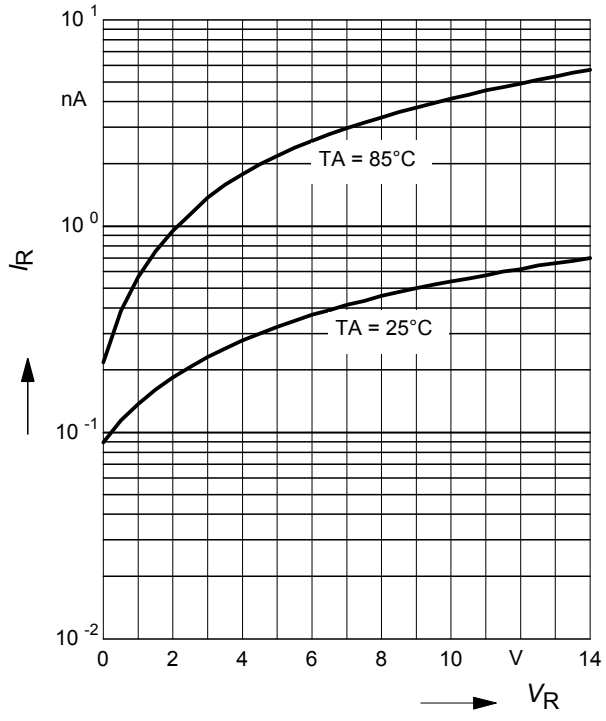
Non-repetitive peak pulse power
$P_{pk} = f(t_p)$



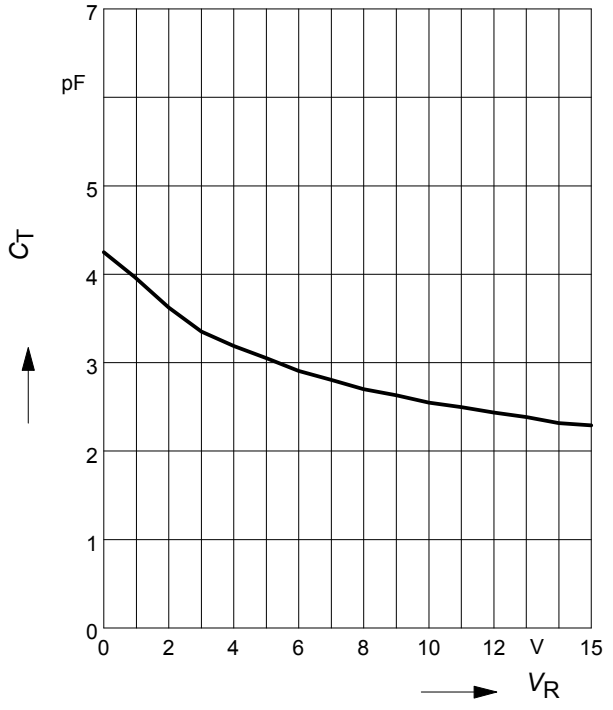
Power derating curve $P_{pk} = f(T_A)$



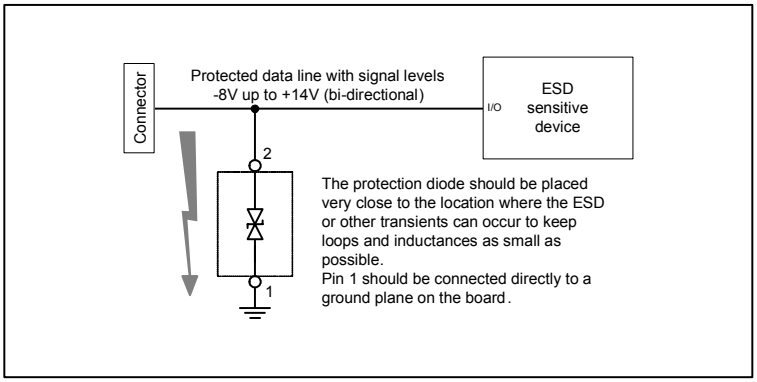
Reverse current $I_R = f(V_R)$
T_A = Parameter



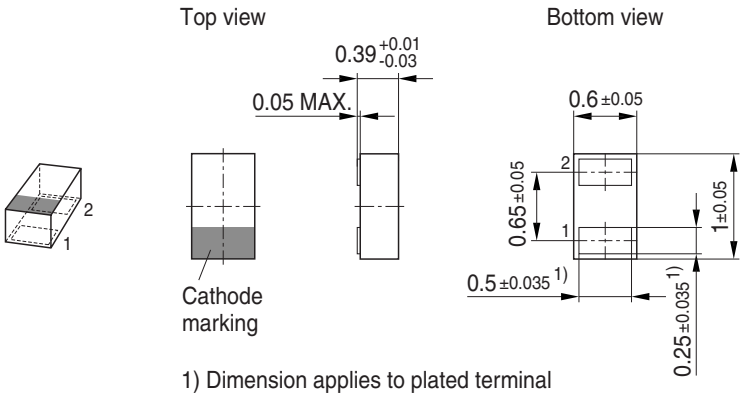
Diode capacitance $C_T = f(V_R)$
f = 1MHz



Application example ESD8V0R1B...
1 line, bi-directional



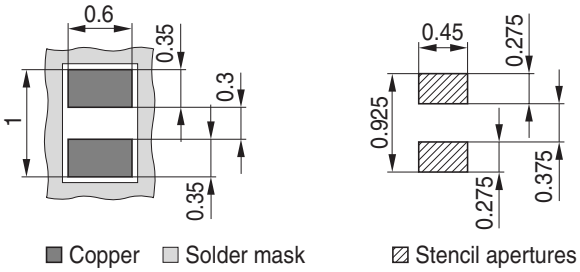
Package Outline



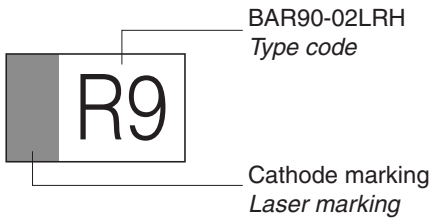
1) Dimension applies to plated terminal

Foot Print

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

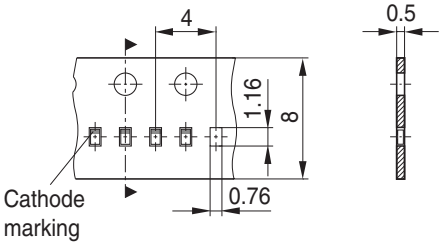


Marking Layout (Example)

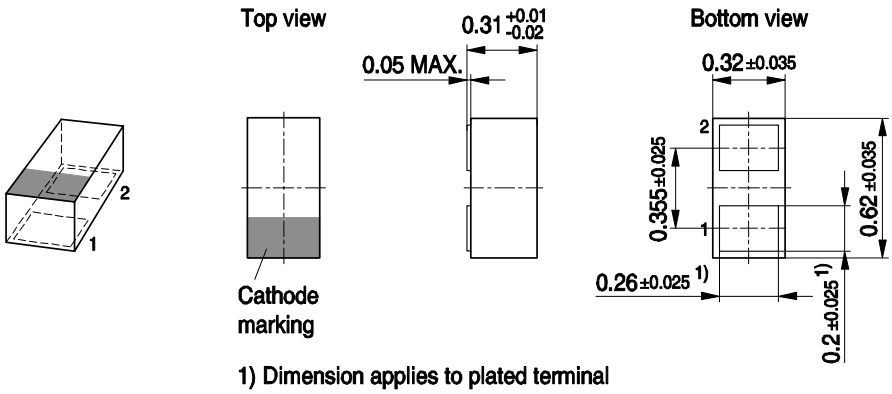


Standard Packing

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



Package Outline



1) Dimension applies to plated terminal

Foot Print

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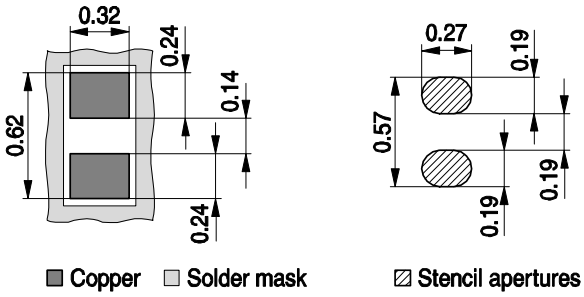
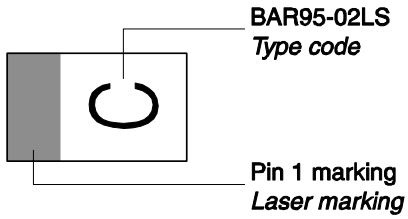
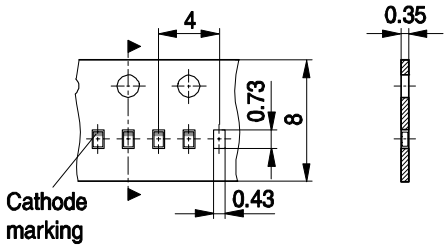


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



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