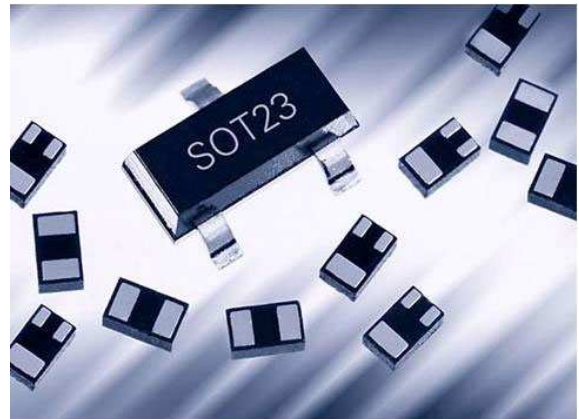


### Low Capacitance TVS Diode

- ESD / transient protection of high-speed data lines in 3.3 / 5 / 12 V applications according to:  
IEC61000-4-2 (ESD): up to  $\pm 25$  KV (contact)  
IEC61000-4-4 (EFT): 40 A (5/50 ns)  
IEC61000-4-5 (surge): up to 2.5 A (8/20  $\mu$ s)
- Smallest form factor down to 1.0 x 0.6 x 0.4 mm
- Max. working voltage: -8 / +14 V or +8 / -14 V
- Ultra low dynamic resistance down to **0.3  $\Omega$**
- Very low capacitance down to 2 pF
- Very low reverse current < 1 nA typ.
- Very low series inductance down to 0.4 nH
- Pb-free (RoHS compliant) package



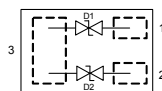
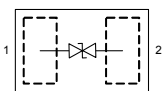
### Applications

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



**ESD8V0L1B-02EL**  
**ESD8V0L1B-02LRH**

**ESD8V0L2B-03L**



Type	Package	Configuration	Marking
ESD8V0L1B-02EL*	TSLP-2-18	1 channel, bi-directional	E7
ESD8V0L1B-02LRH	TSLP-2-17	1 channel, bi-directional	B3
ESD8V0L2B-03L	TSLP-3-1	2 channels, bi-directional	B3

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

Parameter	Symbol	Value	Unit
ESD contact discharge <sup>1)</sup>	$V_{\text{ESD}}$		kV
ESD8V0L1B...		25	
ESD8V0L2B..., between all pins		15	
Peak pulse current ( $t_p = 8 / 20 \mu\text{s}$ ) <sup>2)</sup>	$I_{\text{pp}}$		A
ESD8V0L1B...		2.5	
ESD8V0L2B...		1	
Operating temperature range	$T_{\text{op}}$	-55...125	°C
Storage temperature	$T_{\text{stg}}$	-65...150	

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

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

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

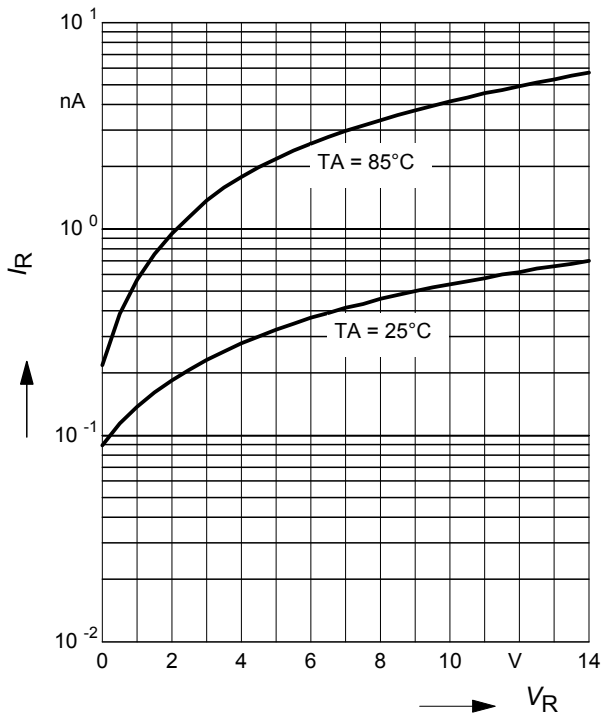
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>Characteristics</b>					
Reverse working voltage	$V_{RWM}$	-8	-	14	V
Breakdown voltage	$V_{(BR)}$				
$I_{(BR)} = 1 \text{ mA}$ , from pin 2 to 1, ESD8V0L1B...		14.5	-	-	
$I_{(BR)} = 1 \text{ mA}$ , from pin 1 to 2, ESD8V0L1B...		8.5	-	-	
$I_{(BR)} = 1 \text{ mA}$ , from pin 1/2 to 3, ESD8V0L2B...		14.5	-	-	
$I_{(BR)} = 1 \text{ mA}$ , from pin 3 to 1/2, ESD8V0L2B...		8.5	-	-	
$I_{(BR)} = 1 \text{ mA}$ , from pin 1 to 2, ESD8V0L2B...		23	-	-	
Reverse current $V_R = 3 \text{ V}$ , between all pins	$I_R$	-	< 1	50	nA
Clamping voltage (contact) <sup>1)</sup>	$V_{CL}$				V
$V_{ESD} = +15 \text{ kV}$ , from pin 1 to 2, ESD8V0L1B...		-	21	-	
$V_{ESD} = -15 \text{ kV}$ , from pin 1 to 2, ESD8V0L1B...		-	16	-	
$V_{ESD} = +15 \text{ kV}$ , from pin 1/2 to 3, ESD8V0L2B...		-	26	-	
$V_{ESD} = -15 \text{ kV}$ , from pin 1/2 to 3, ESD8V0L2B...		-	20	-	
Line capacitance <sup>2)</sup>	$C_T$				pF
$V_R = 0 \text{ V}$ , $f = 1 \text{ MHz}$ , ESD8V0L1B...		-	8.5	13	
$V_R = 0 \text{ V}$ , $f = 1 \text{ MHz}$ , ESD8V0L2B..., from pin 1/2 to 3		-	4	7	
from pin 1 to 2, pin 3 is not connected		-	2	4	
Dynamic resistance ( $t_p=30\text{ns}$ )	$R_D$				$\Omega$
ESD8V0L1B...		-	0.3	-	
ESD8V0L2B...		-	0.6	-	

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

<sup>2)</sup>Total capacitance line to ground

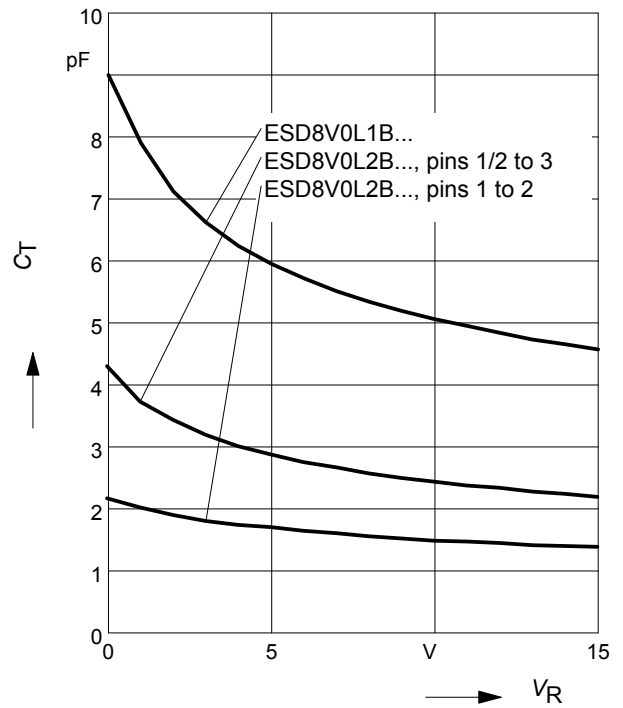
Reverse current  $I_R = f(V_R)$

$T_A =$  Parameter



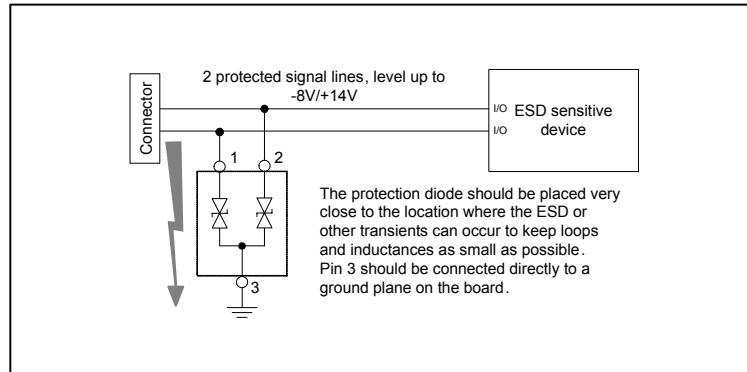
Diode capacitance  $C_T = f(V_R)$

$f = 1\text{MHz}$



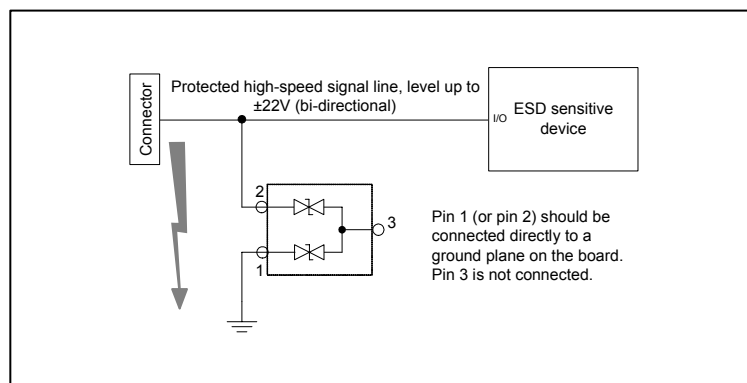
**Application example ESD8V0L2B...**

2 channels, bi-directional



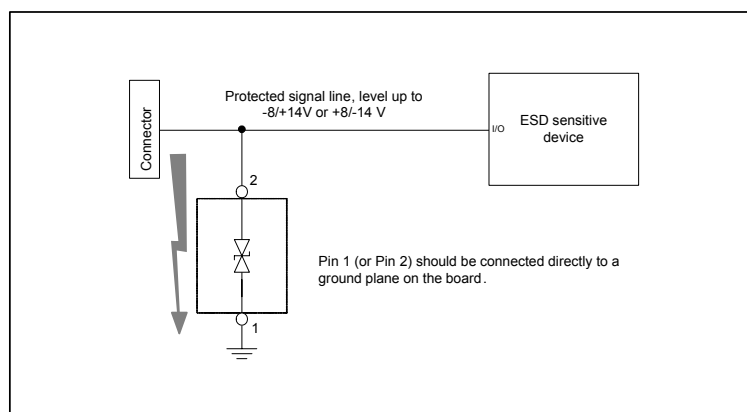
**Application example ESD8V0L2B...**

1 high-speed channel, bi-directional

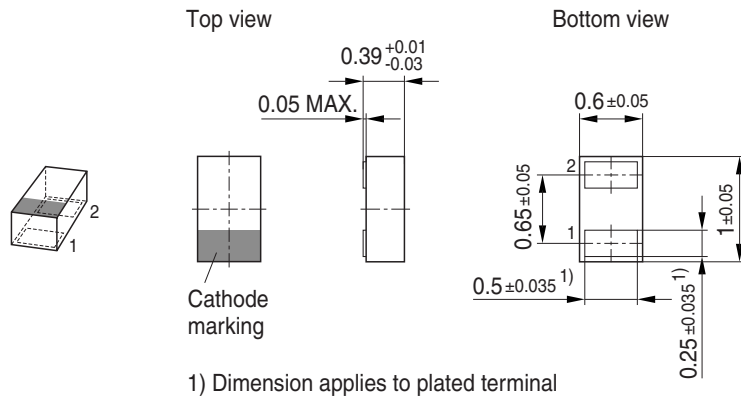


**Application example ESD8V0L1B...**

1 channel, bi-directional

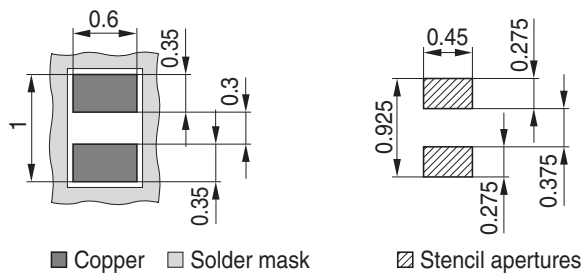


### Package Outline

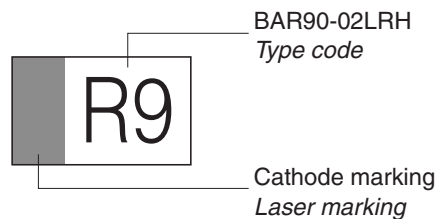


### Foot Print

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

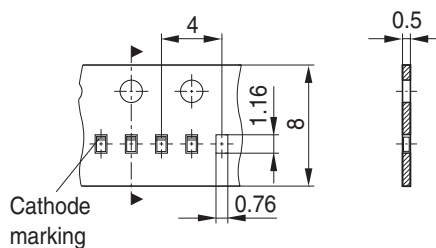


### Marking Layout (Example)

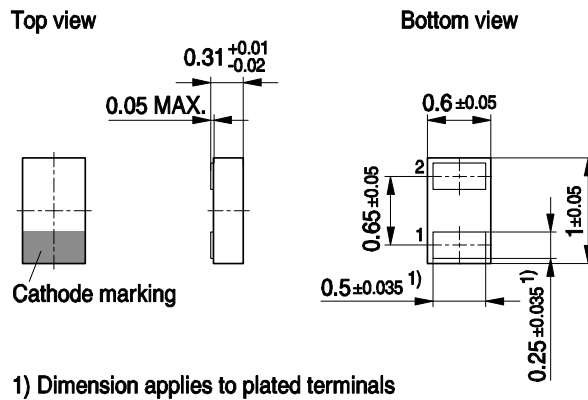


### Standard Packing

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

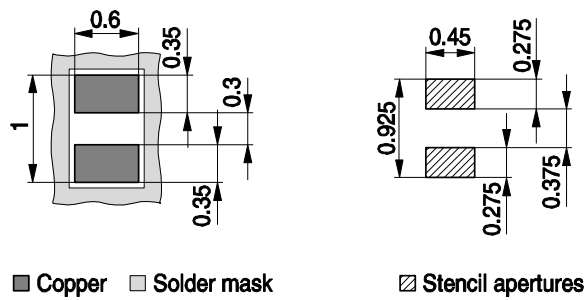


### Package Outline

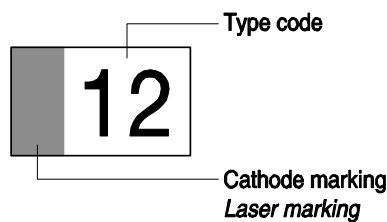


### Foot Print

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

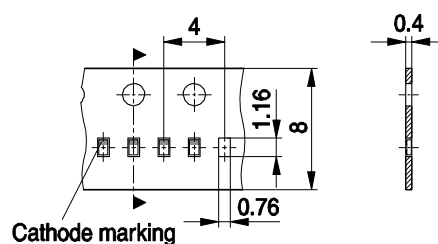


### Marking Layout

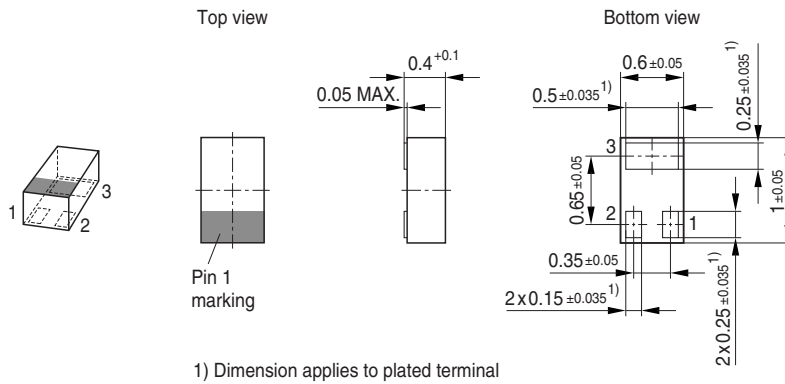


### Standard Packing

Reel  $\varnothing$ 330 mm = 15.000 Pieces/Reel

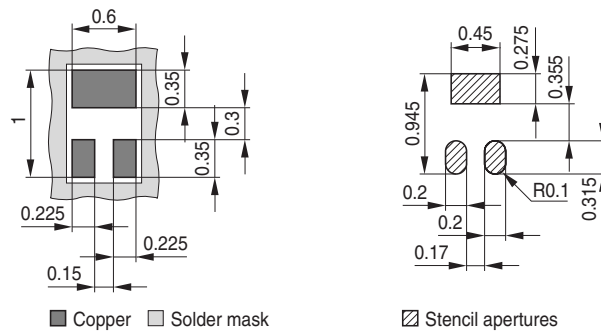


### Package Outline

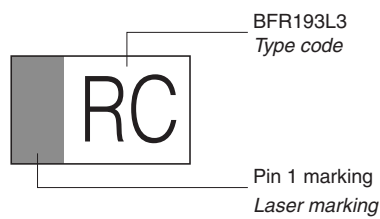


### Foot Print

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

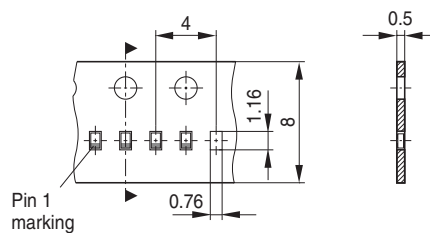


### Marking Layout (Example)



### Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel





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