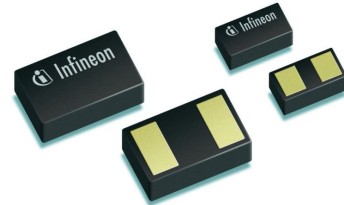
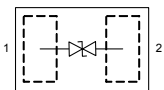


**Bi-directional Ultra Low Capacitance TVS Diode**

- ESD / transient protection of RF signal lines according to:  
IEC61000-4-2 (ESD):  $\pm 20\text{kV}$  (contact)  
IEC61000-4-4 (EFT): 40 A (5 / 50 ns)  
IEC61000-4-5 (Surge): 3 A (8 / 20  $\mu\text{s}$ )
- Extremely small form factor down to 0.62 x 0.32 x 0.31 mm<sup>3</sup>
- Very low dynamic resistance
- Max. working voltage:  $\pm 5.3\text{ V}$
- Extremely low capacitance: 0.2 pF typ.
- Very low reverse current < 1 nA typ.
- Very low series inductance down to 0.2 nH typ.
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101


**Applications**

- ESD protection of sensitive RF signal lines
- RF antenna protection, frontend module
- GPS, mobile TV, FM radio, RKE, UWB


**ESD0P2RF-02LRH**  
**ESD0P2RF-02LS**


Type	Package	Configuration	Marking
ESD0P2RF-02LRH	TSLP-2-17	1 line, bi-directional	T
ESD0P2RF-02LS	TSSLP-2-1	1 line, bi-directional	T

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

Parameter	Symbol	Value	Unit
ESD contact discharge <sup>1</sup> ), contact	$V_{\text{ESD}}$	20	kV
Peak pulse current ( $t_p = 8 / 20 \mu\text{s}$ ) <sup>2</sup> )	$I_{\text{pp}}$	3	A
Operating temperature range	$T_{\text{op}}$	-55...125	°C
Storage temperature	$T_{\text{stg}}$	-55...150	

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

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

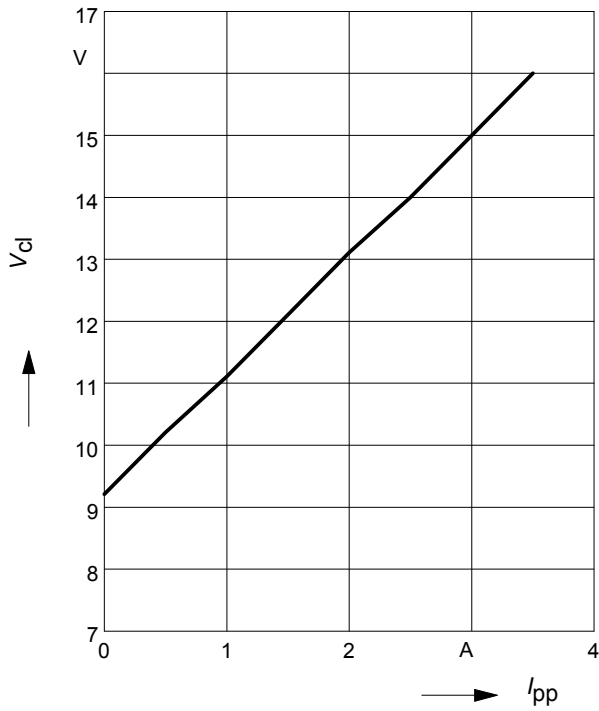
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>Characteristics -</b>					
Reverse working voltage	$V_{\text{RWM}}$	-5.3	-	5.3	V
Breakdown voltage	$V_{(\text{BR})}$				
$I_{(\text{BR})} = 1 \text{ mA}$ , from pin 2 to 1		7	-	-	
$I_{(\text{BR})} = 1 \text{ mA}$ , from pin 1 to 2		7	-	-	
Reverse current $V_R = 5.3 \text{ V}$	$I_R$	-	<1	50	nA
Clamping voltage	$V_{\text{CL}}$				V
$I_{\text{PP}} = 1 \text{ A}$ , $t_p = 8/20 \mu\text{s}$ <sup>1</sup> )		-	11	<	
$I_{\text{PP}} = 3 \text{ A}$ , $t_p = 8/20 \mu\text{s}$ <sup>1</sup> )		-	16	21	
Diode capacitance	$C_T$				pF
$V_R = 0 \text{ V}$ , $f = 1 \text{ MHz}$		-	0.23	0.4	
$V_R = 0 \text{ V}$ , $f = 1 \text{ GHz}$		-	0.2	0.4	
Dynamic resistance ( $t_p=30\text{ns}$ )	$R_D$	-	1	-	$\Omega$
Series inductance	$L_S$				nH
ESD0P2RF-02LS		-	0.2	-	
ESD0P2RF-02LRH		-	0.4	-	

<sup>1</sup> $I_{\text{pp}}$  according to IEC61000-4-5

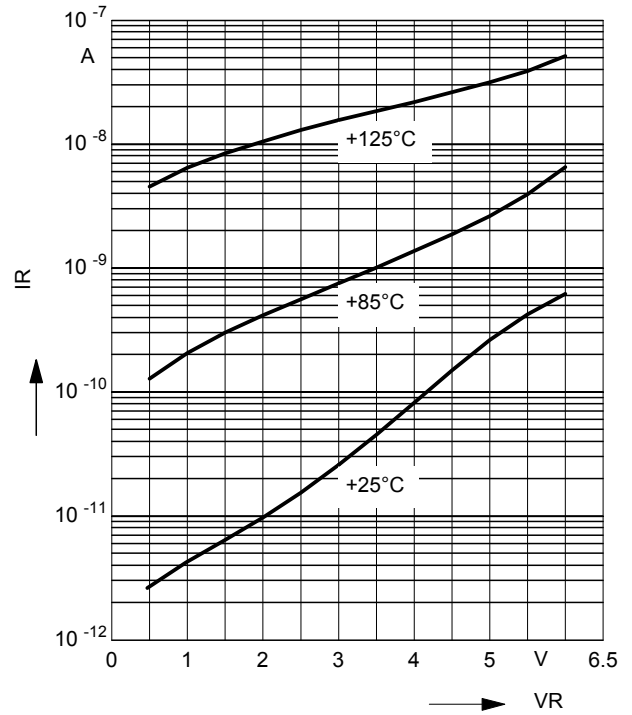
Clamping voltage,  $V_{cl} = f(I_{pp})$

$t_p = 8 / 20 \mu s$



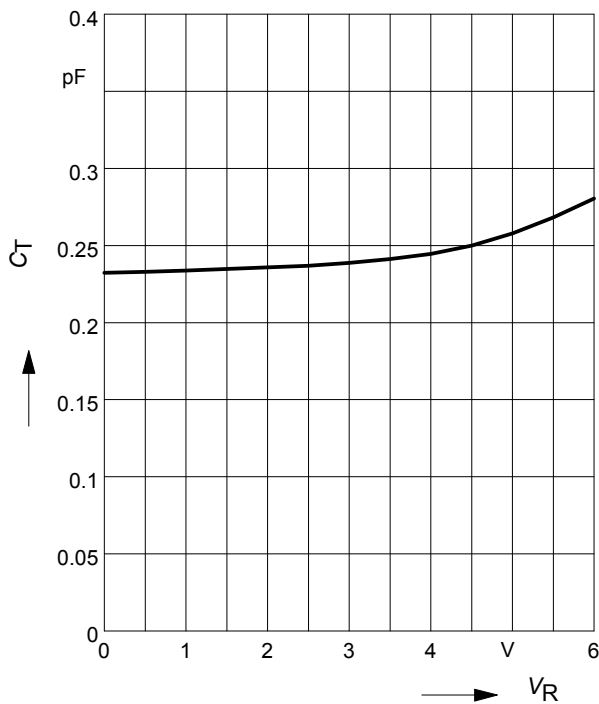
Reverse current  $I_R = f(V_R)$

$T_A = \text{Parameter}$



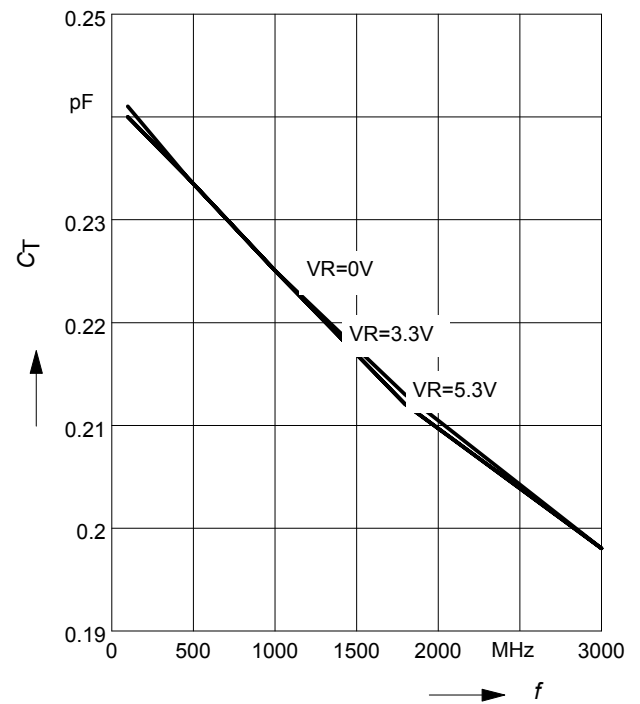
Diode capacitance  $C_T = f(V_R)$

$f = 1 \text{ MHz}$



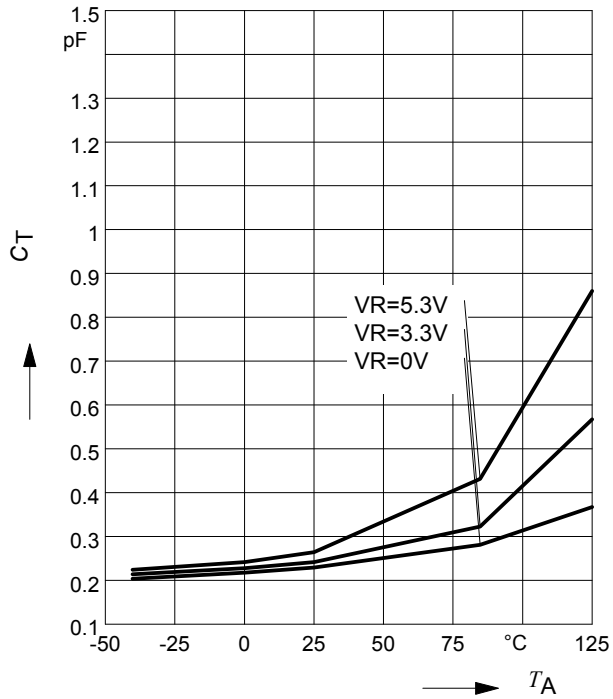
Line capacitance  $C_T = f(f)$

$V_R = \text{Parameter}$



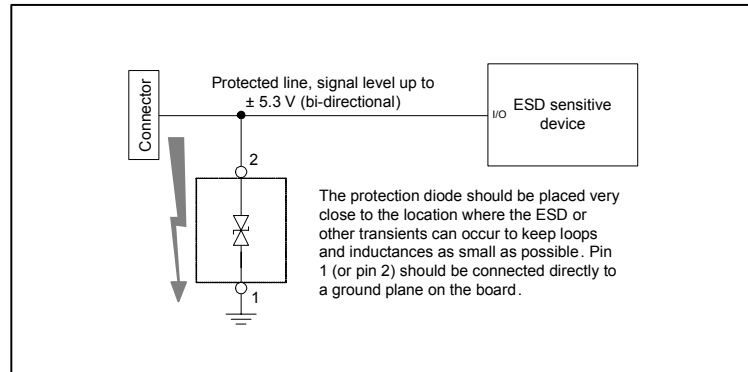
Line capacitance  $C_T = f(T_A)$

$V_R =$  Parameter,  $f = 1$  MHz

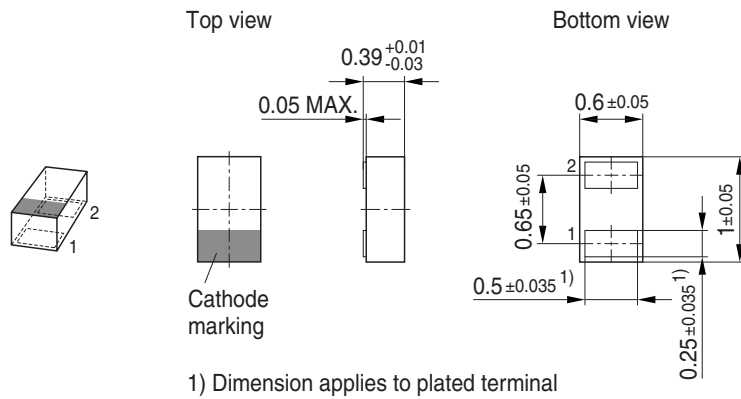


**Application example ESD0P2RF...**

1 line, bi-directional

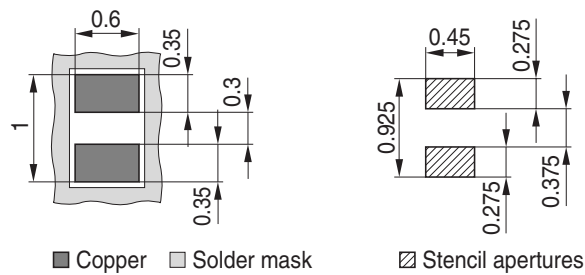


### Package Outline

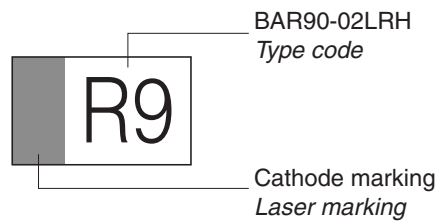


### Foot Print

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

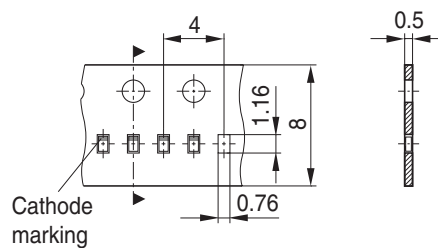


### Marking Layout (Example)

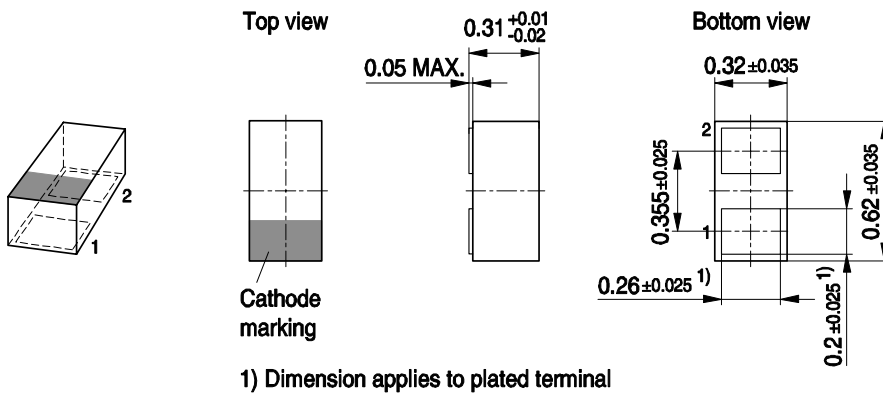


### Standard Packing

Reel  $\varnothing$ 180 mm = 15.000 Pieces/Reel  
 Reel  $\varnothing$ 330 mm = 50.000 Pieces/Reel (optional)

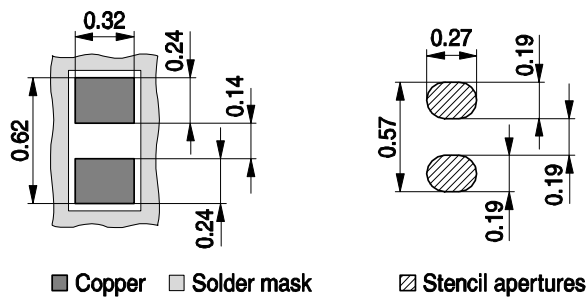


### Package Outline

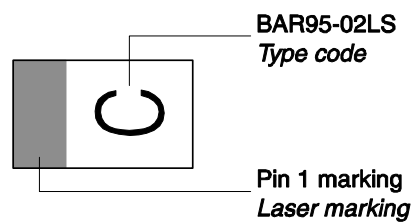


### Foot Print

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

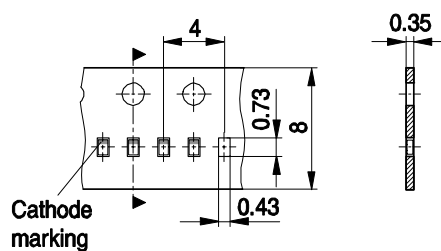


### Marking Layout (Example)



### Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



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