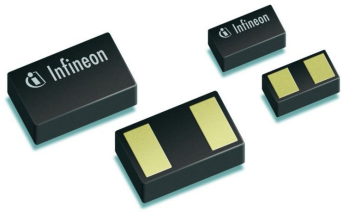
Bi-directional Ultra Low Capacitance TVS Diode



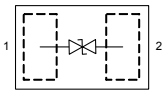
- ESD / transient protection of RF signal lines according to:
  IEC61000-4-2 (ESD): ±20kV (contact)
  IEC61000-4-4 (EFT): 40 A (5 / 50 ns)
  IEC61000-4-5 (Surge): 3 A (8 / 20 µs)
- Extremely small form factor down to 0.62 x 0.32 x 0.31 mm³
- Very low dynamic resistance
- Max. working voltage: ±5.3 V
- 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

AEC Qualified RoHS

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°C, unless otherwise specified

Parameter	Symbol	Value	Unit
ESD contact discharge[1)], contact	V_{ESD}	20	kV
Peak pulse current (t_p = 8 / 20 µs)[2)]	I_{pp}	3	A
Operating temperature range	T_{op}	-55...125	°C
Storage temperature	T_{stg}	-55...150	

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

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

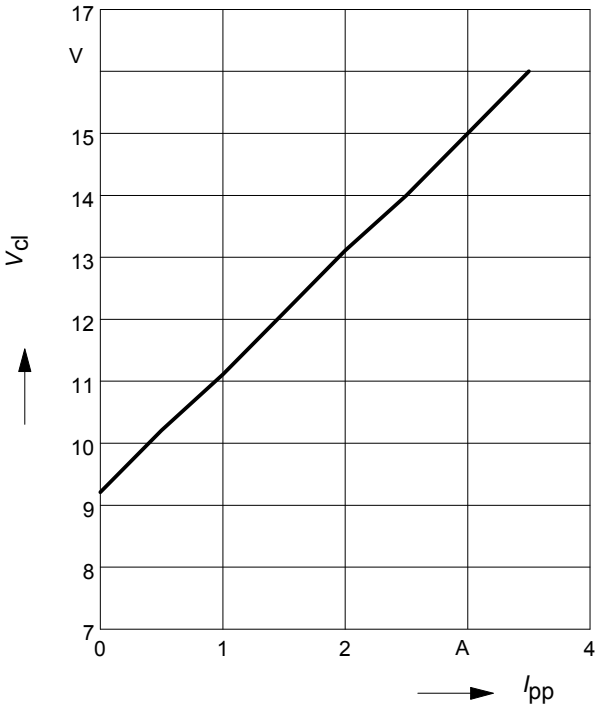
Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Characteristics -					
Reverse working voltage	V_{RWM}	-5.3	-	5.3	V
Breakdown voltage	$V_{(BR)}$				
$I_{(BR)}$ = 1 mA, from pin 2 to 1		7	-	-	
$I_{(BR)}$ = 1 mA, from pin 1 to 2		7	-	-	
Reverse current	I_R	-	<1	50	nA
V_R = 5.3 V					
Clamping voltage	V_{CL}				V
I_{PP} = 1 A, t_p = 8/20 µs[1)]		-	11	17	
I_{PP} = 3 A, t_p = 8/20 µs[1)]		-	15	21	
Diode capacitance	C_T				pF
V_R = 0 V, f = 1 MHz		-	0.23	0.4	
V_R = 0 V, f = 1 GHz		-	0.2	0.4	
Dynamic resistance (tp=30ns)	R_D	-	1	-	Ω
Series inductance	L_S				nH
ESD0P2RF-02LS		-	0.2	-	
ESD0P2RF-02LRH		-	0.4	-	

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

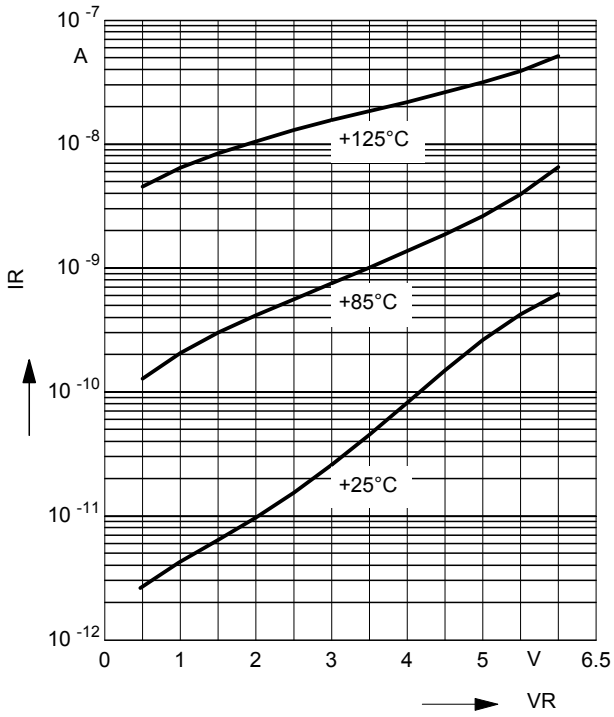
Clamping voltage, $V_{cl} = f(I_{pp})$

t_p = 8 / 20 µs



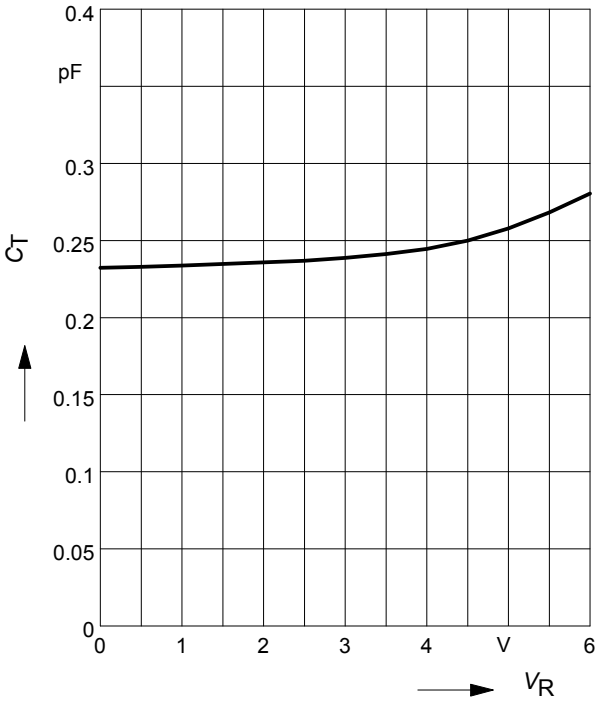
Reverse current $I_R = f(V_R)$

T_A = Parameter



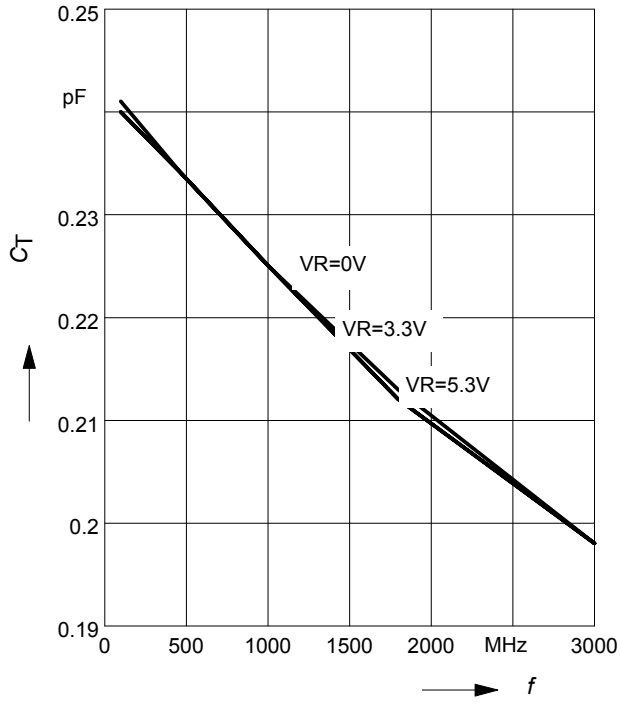
Diode capacitance $C_T = f(V_R)$

f = 1MHz



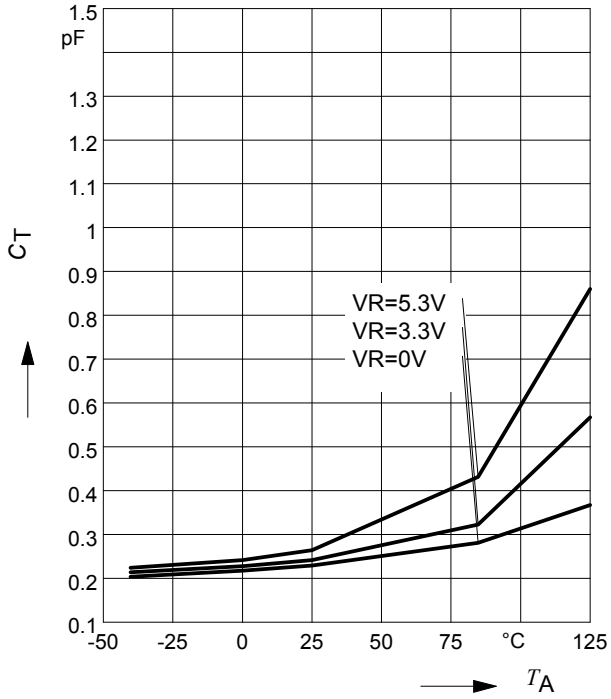
Line capacitance $C_T = f$ (f)

V_R = Parameter

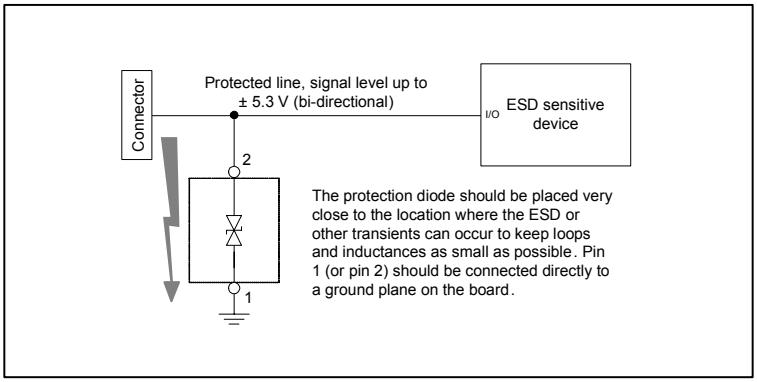


Line capacitance $C_T = f(T_A)$

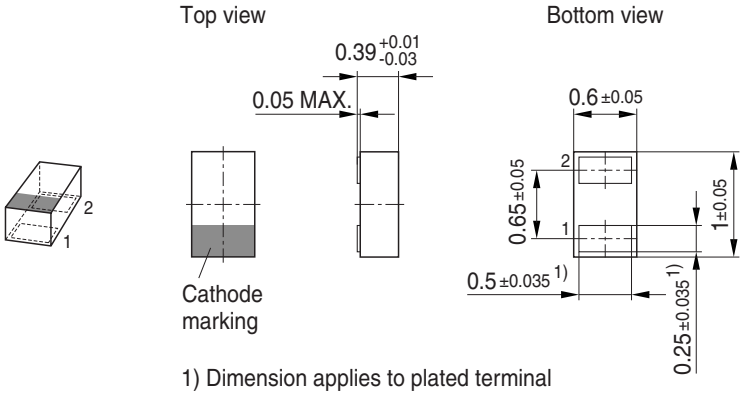
V_R = Parameter, f = 1 MHz



Application example ESD0P2RF...
1 line, bi-directional



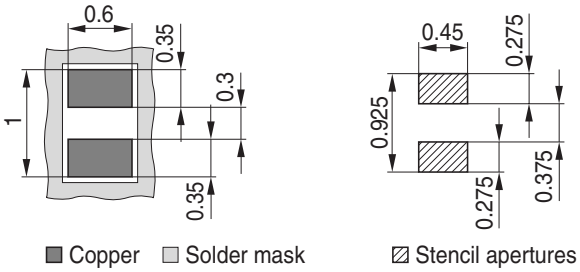
Package Outline



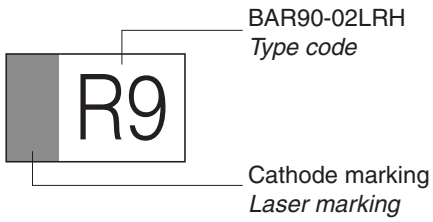
1) Dimension applies to plated terminal

Foot Print

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

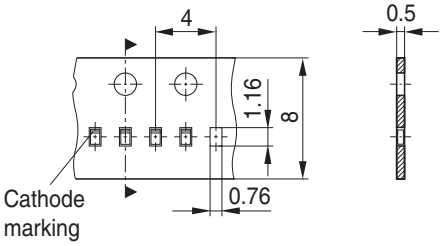


Marking Layout (Example)



Standard Packing

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



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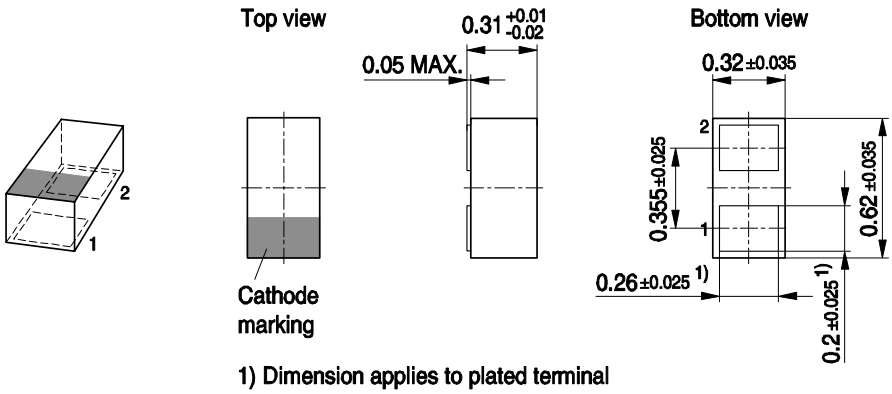

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Foot Print

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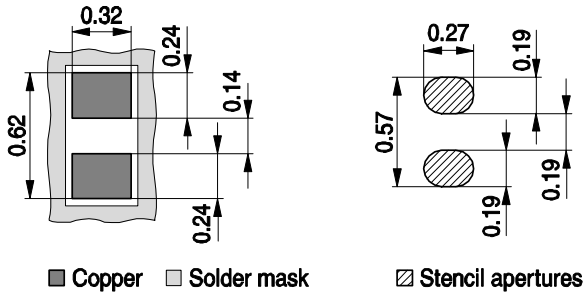
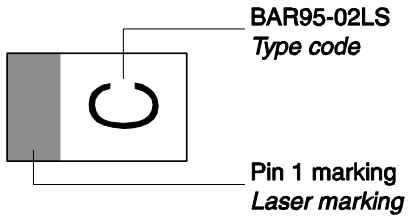


Marking Layout (Example)



Standard Packing

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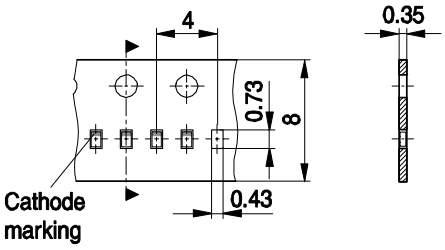

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