

RF ESD Protection Diodes

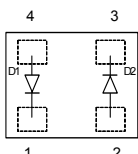
- ESD protection of RF antenna / interfaces or ultra high speed data lines acc. to:
IEC61000-4-2 (ESD): ± 20 kV (air / contact)
IEC61000-4-4 (EFT): 40 A (5/50 ns)
IEC61000-4-5 (surge): 10 A (8/20 μ s)
- Very low line capacitance: 0.8 pF @ 1 GHz
(0.4 pF per diode)
- Ultra low series inductance: 0.4 nH per diode
- Very low clamping voltage
- Ultra small leadless package 1.2 x 0.8 x 0.39 mm
- Pb-free (RoHS compliant) package


Applications in anti-parallel configuration

- For low RF signal levels without superimposed DC voltage: e.g. GPS, XM-Radio, Sirius, DVB, DMB, DAB, Remote Keyless Entry

Applications in rail-to-rail configuration

- For high RF signal levels or low RF signal levels with superimposed DC voltage: e.g. HDMI, S-ATA, Gbit Ethernet
- For more technical details on ESD and Antenna protection please refer to Application Note No.103 on www.infineon.com/tvsdiodes


ESD0P8RFL


Type	Package	Configuration	Marking
ESD0P8RFL	TSLP-4-7	anti-parallel	E8

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

Parameter	Symbol	Value	Unit
ESD contact discharge ¹⁾	V_{ESD}	20	kV
Peak pulse current ($t_p = 8 / 20 \mu\text{s}$) ²⁾	I_{pp}	10	A
Operating temperature range	T_{op}	-55...150	°C
Storage temperature	T_{stg}	-65...150	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Characteristics -					
Reverse working voltage ³⁾	V_{RWM}	-	-	50	V
Reverse current ³⁾ $V_R = 50 \text{ V}$	I_R	-	-	100	nA
Forward clamping voltage ²⁾ $I_{\text{pp}} = 10 \text{ A}$	V_{FC}	-	12	15	V
Line capacitance ⁴⁾ $V_R = 0 \text{ V}, f = 1 \text{ GHz}$	C_T	-	0.8	-	pF
Series inductance (per diode)	L_S	-	0.4	-	nH

¹⁾ V_{ESD} according to IEC61000-4-2, only valid in anti-parallel or rail-to-rail connection.

Please refer to the application examples.

²⁾ I_{pp} according to IEC61000-4-5, only valid in anti-parallel or rail-to-rail connection.

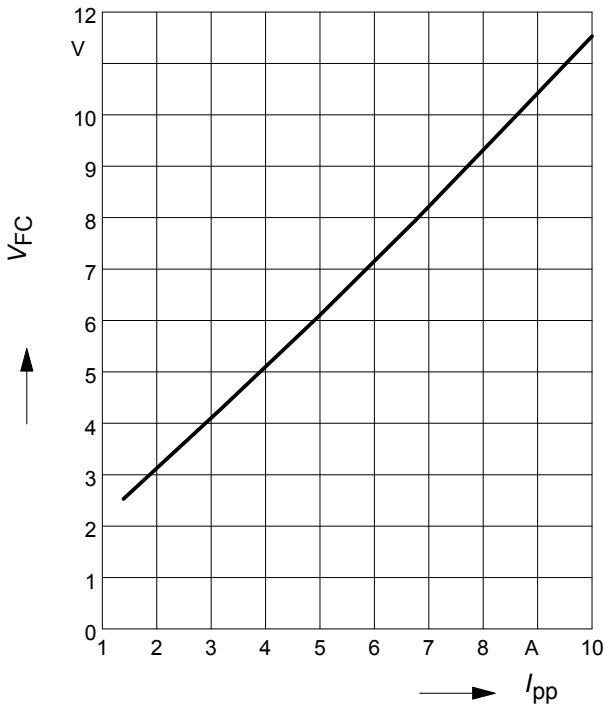
Please refer to the application examples.

³⁾Only valid in rail-to-rail configuration with $V_{\text{CC}} \geq V_{\text{RWM}}$

⁴⁾Total capacitance line to ground (2 diodes in parallel)

Forward clamping voltage $V_{FC} = f(I_{PP})$

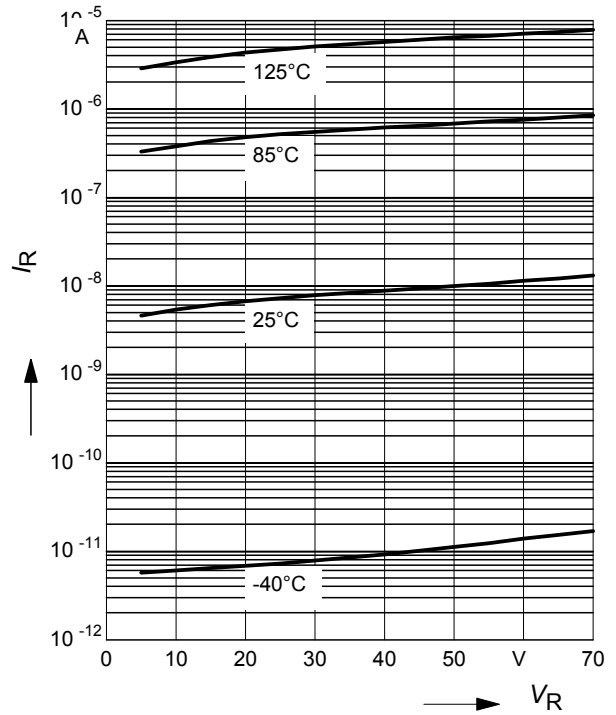
$t_p = 8 / 20 \mu s$



Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$

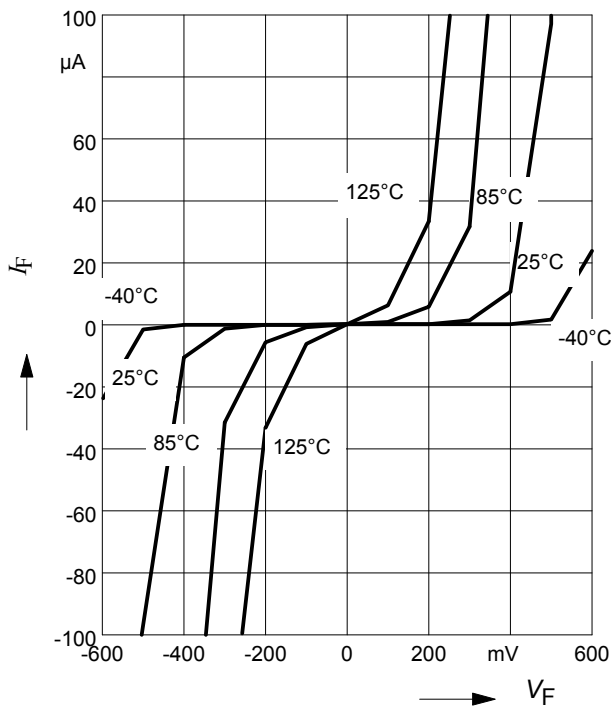
leakage in rail-to-rail configuration



Forward current $I_F = f(V_F)$

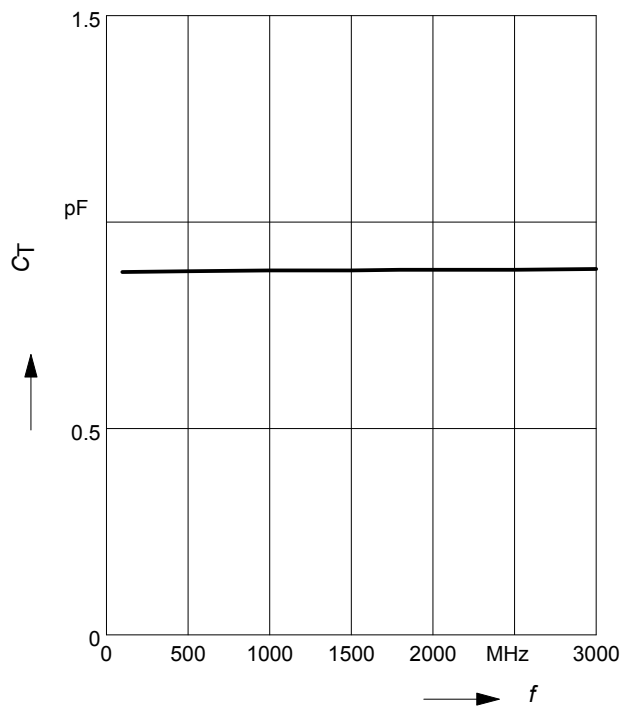
$T_A = \text{Parameter}$

leakage in anti-parallel configuration



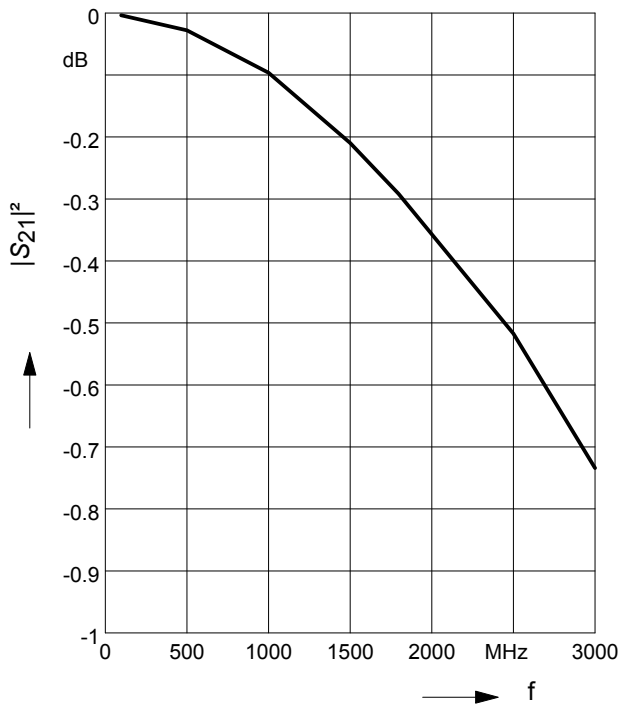
Line capacitance $C_T = f(f)$

$V_R = 0 V$



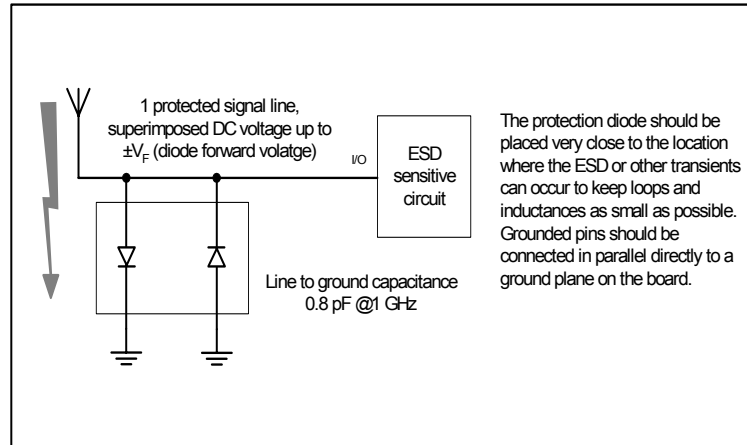
Insertion loss $I_L = -|S_{21}|^2 = f(f)$

$V_R = 0 \text{ V}, Z = 50 \Omega$



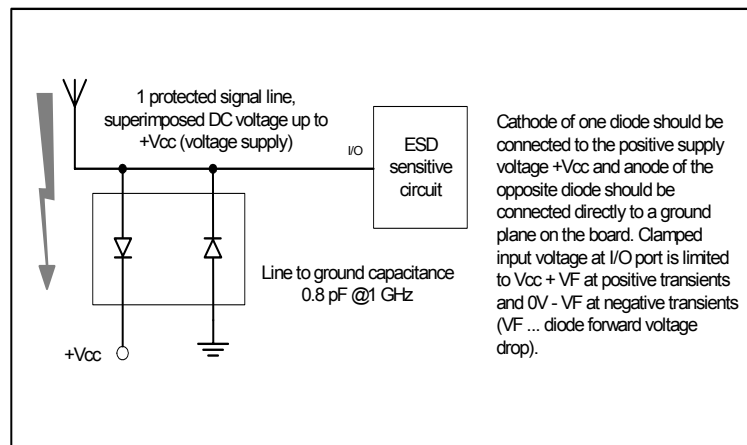
1. Application example

1 RF signal channel, anti-parallel configuration, please refer also to Application Note No.103

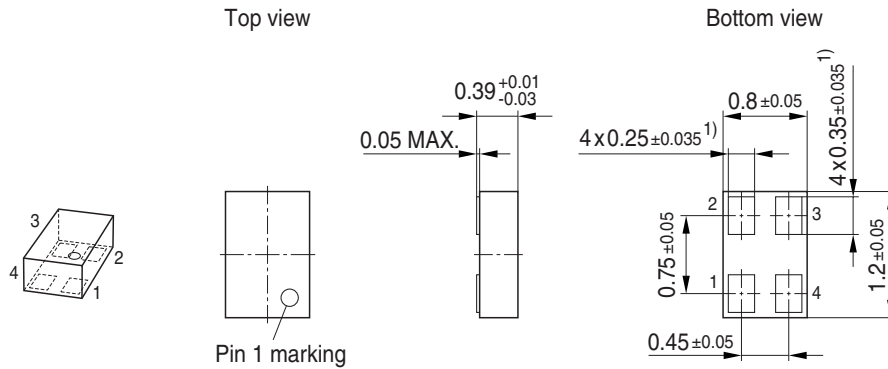


2. Application example

1 RF signal channel, rail-to-rail configuration



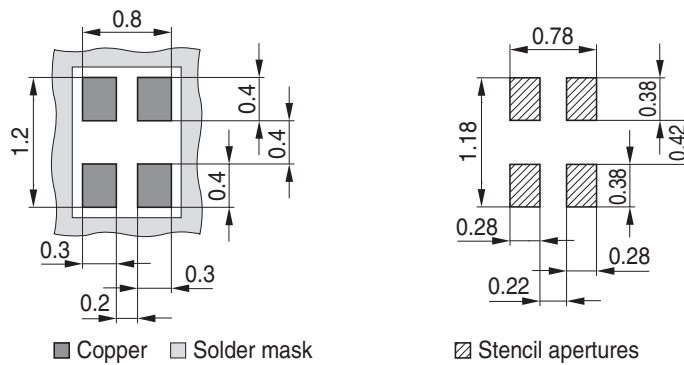
Package Outline



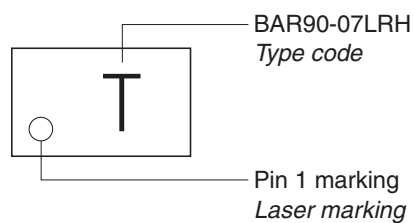
1) Dimension applies to plated terminal

Foot Print

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

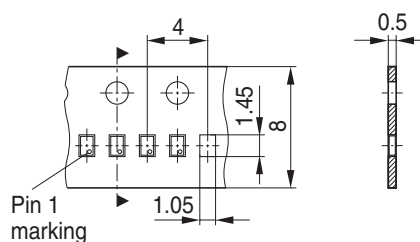


Marking Layout (Example)



Standard Packing

Reel \varnothing 180 mm = 15.000 Pieces/Reel



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