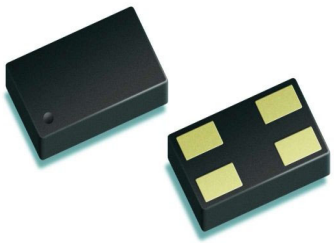
RF ESD Protection Diodes



- ESD protection of RF antenna / interfaces or ultra high speed data lines acc. to:
  IEC61000-4-2 (ESD): ± 15 KV (air / contact)
  IEC61000-4-4 (EPT): 40 A (5/50 ns)
  IEC61000-4-5 (surge): 5 A (8/20 µs)
- Very low line capacitance: 0.4 pF @ 1 GHz (0.2 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 mm³
- Pb-free (RoHS compliant) package

Applications in anti-parallel configuration

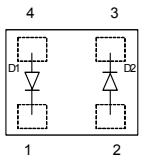
- For low RF signal levels without superimposed DC voltage: e.g. GPS, XM-Radio, Sirius, DVB, DMB, DAB, Remote Keyless Entry

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

RoHS

ESD0P4RFL



Type	Package	Configuration	Marking
ESD0P4RFL	TSLP-4-7	anti-parallel	E4

Maximum Ratings at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
ESD contact discharge[1)]	V_{ESD}	15	kV
Peak pulse current (t_p = 8 / 20 µs)[2)]	I_{pp}	5	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[3)]	V_{RWM}	-	-	50	V
Reverse current[3)] V_R = 50 V	I_R	-	20	100	nA
Forward clamping voltage[2)] I_{PP} = 5 A	V_{FC}	-	6	9	V
Diode capacitance[4)] V_R = 0 V, f = 1 GHz	C_T	-	0.4	-	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.

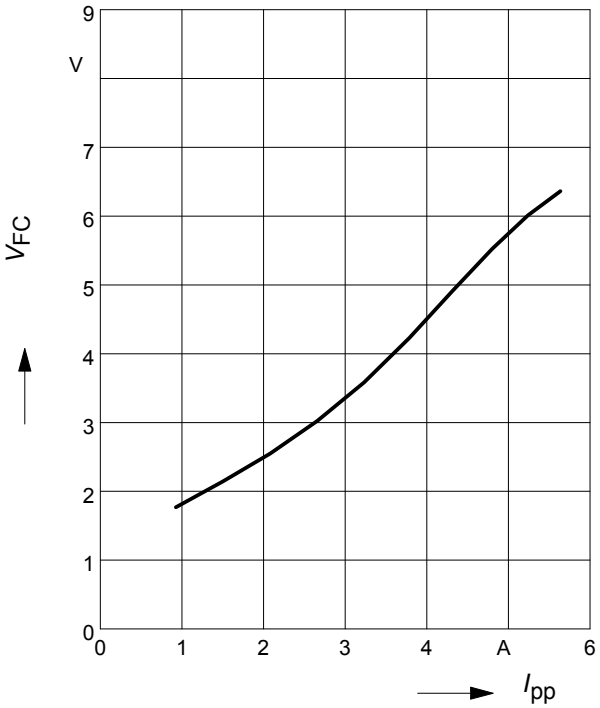
[2] I_{pp} according to IEC61000-4-5, only valid in anti-parallel or rail-to-rail connection.
Please refer to the application examples.

[3] Only valid in rail-to-rail configuration with $V_{CC} \leq V_{RWM}$

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

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

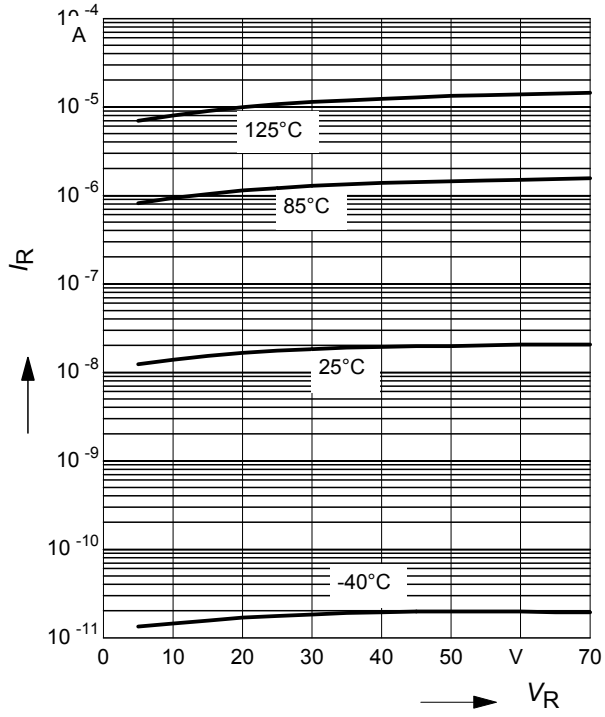
t_p = 8 / 20 µs



Reverse current $I_R = f(V_R)$

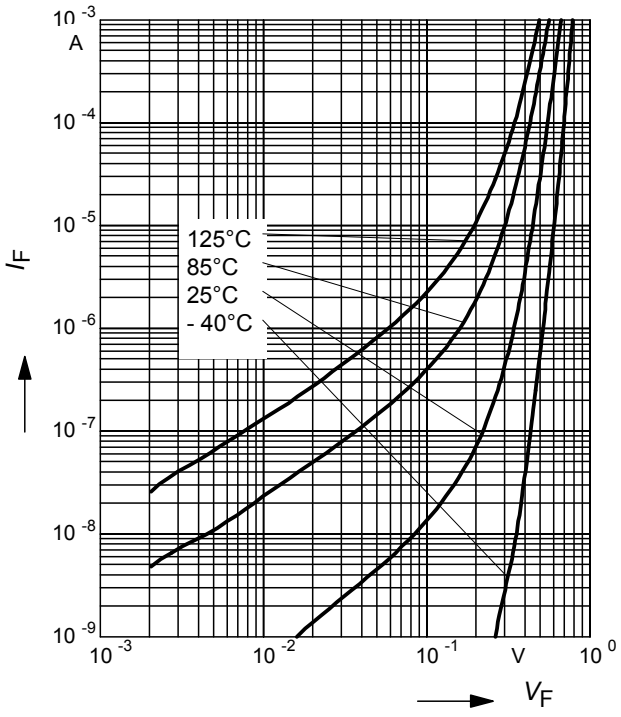
T_A = Parameter

leakage in rail-to-rail configuration



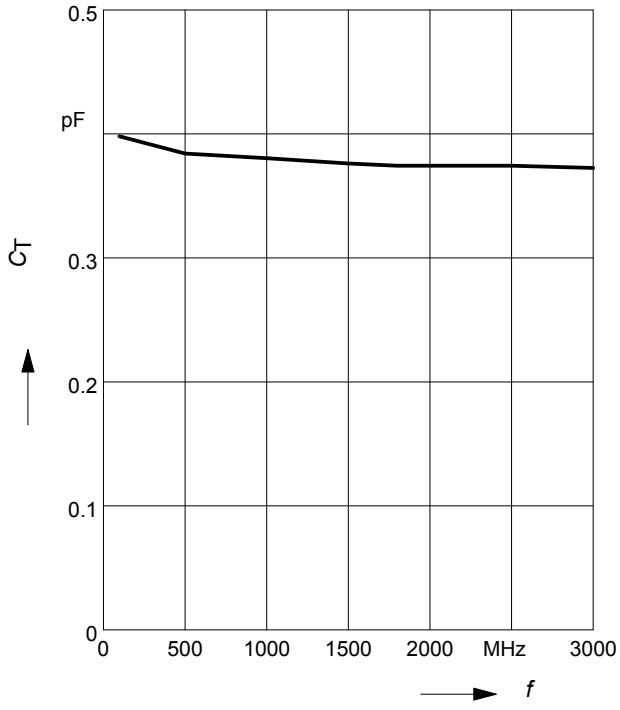
Forward current $I_F = f(V_F)$

leakage in anti-parallel configuration



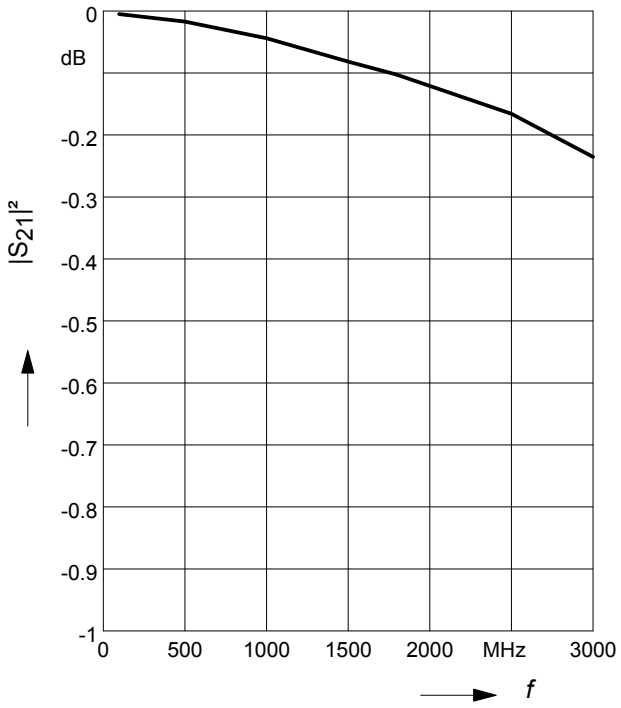
Line capacitance $C_T = f$ (f)

V_R = 0 V



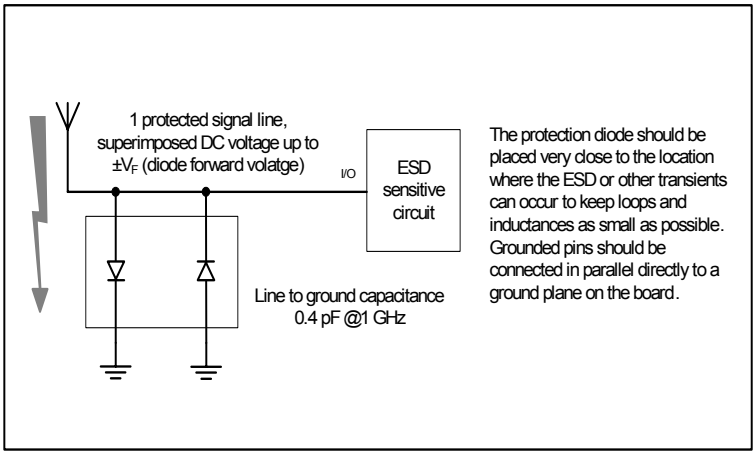
Insertion loss $I_L = -|S_{21}|^2 = f(f)$

V_R = 0 V, Z = 50 Ω



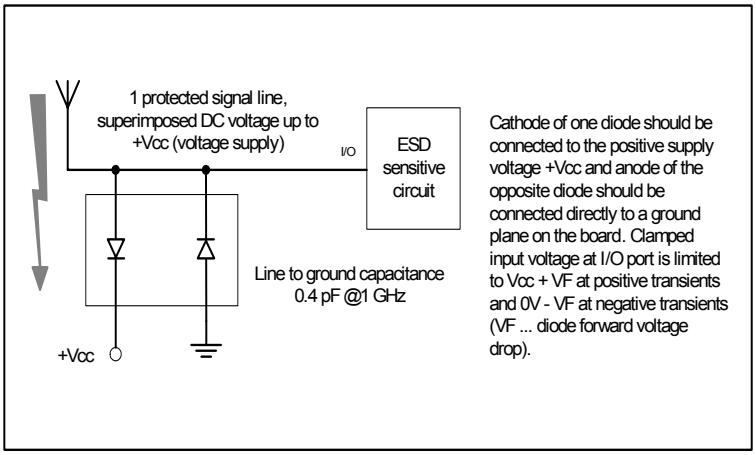
1. Application example ESD0P4RFL

1 RF signal channel, anti-parallel configuration

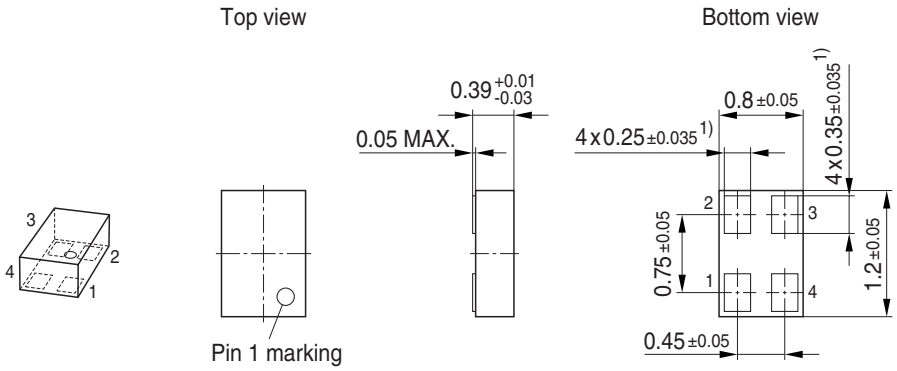


2. Application example ESD0P4RFL

1 RF signal channel, rail-to-rail configuration



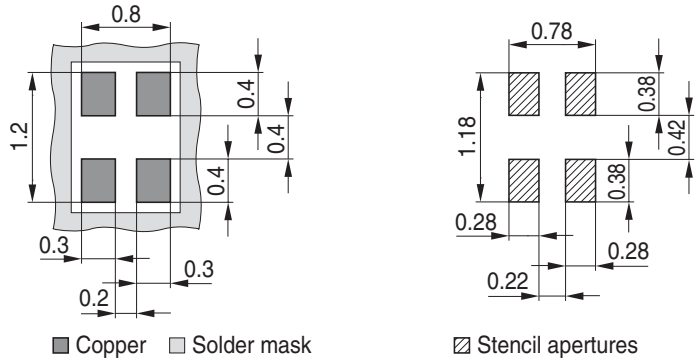
Package Outline



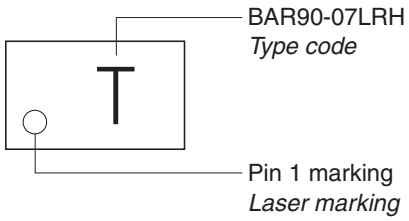
1) Dimension applies to plated terminal

Foot Print

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

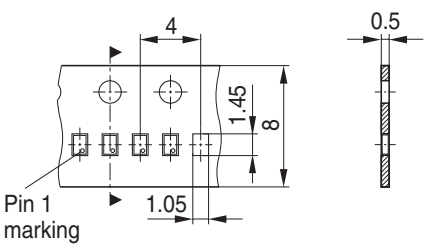


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



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