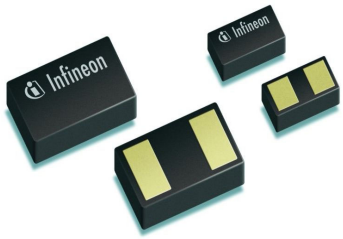
Silicon TVS Diode



- ESD / transient protection of data and power lines
  in low voltage applications according to:
  IEC61000-4-2 (ESD): ± 25 kV (air) 20 kV (contact)
  IEC61000-4-4 (EFT): 50 A / 2.5 kV (5/50 ns)
  IEC61000-4-5 (surge): 5.5 A / 80 W (8/20 µs)
- Small form factor (0402 inch):
  1.0 x 0.6 x 0.4 mm^3
- Bi-directional, symmetrical
  working voltage up to ± 5.3 V
- Ultralow and symmetric clamping voltage
- Ultralow dynamic resistance **0.4 Ω**
- Very fast response time
- Pb-free (RoHS compliant) package

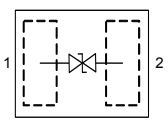
Applications

Recommended to protect audio lines /
microphone lines / speaker and
headset systems in:

- Mobile phones
- Mobile TV
- Set top boxes
- MP3 players
- Minidisc players
- Portable entertainment electronics

RoHS

ESD5V3S1B-02LRH



Type	Package	Configuration	Marking
ESD5V3S1B-02LRH	TSLP-2-17	1 line, bi-directional	E1

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

Parameter	Symbol	Value	Unit
ESD air / contact discharge[1)]	V_{ESD}	25 / 20	kV
Peak pulse current (t_p = 8 / 20 µs)[2)]	I_{pp}	5.5	A
Peak pulse power (t_p = 8 / 20 µs[2)]	P_{pk}	80	W
Operating temperature range	T_{op}	-55...125	°C
Storage temperature	T_{stg}	-65...150	

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

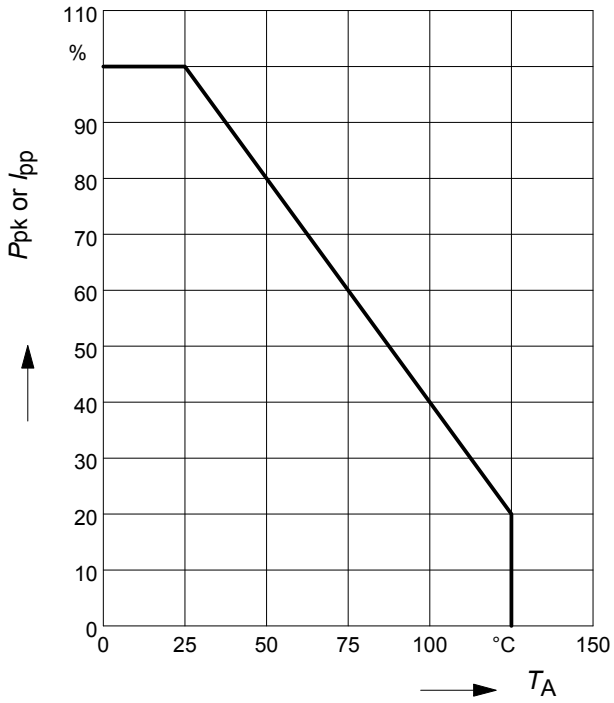
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Characteristics					
Reverse working voltage	V_{RWM}	-5.3	-	5.3	V
Breakdown voltage $I_{(BR)}$ = 1 mA	$V_{(BR)}$	6	-	-	
Reverse current V_R = 3.3 V	I_R	-	-	0.1	µA
Clamping voltage	V_{CL}				V
I_{PP} = 1 A, t_p = 8/20 µs[2)]		-	8	10	
I_{PP} = 3.5 A, t_p = 8/20 µs[2)]		-	10	12	
I_{PP} = 5.5 A, t_p = 8/20 µs[2)]		-	11	13	
Diode capacitance	C_T				pF
V_R = 0 V, f = 1 MHz		-	17.5	20	
V_R = 2.5 V, f = 1 MHz		-	14.5	-	
Dynamic resistance[3)] (t_p = 30 ns)	R_D	-	0.4	-	Ω

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

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

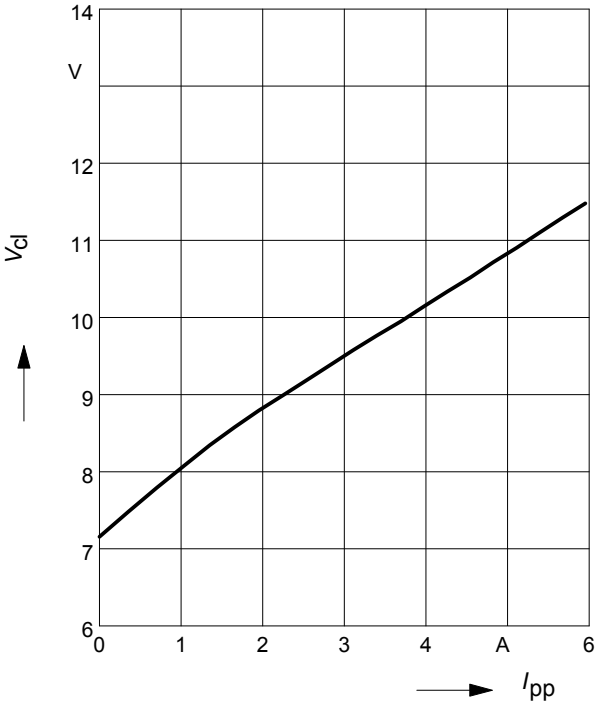
[3] according to TLP tests

Power derating curve $P_{pk} = f(T_A)$



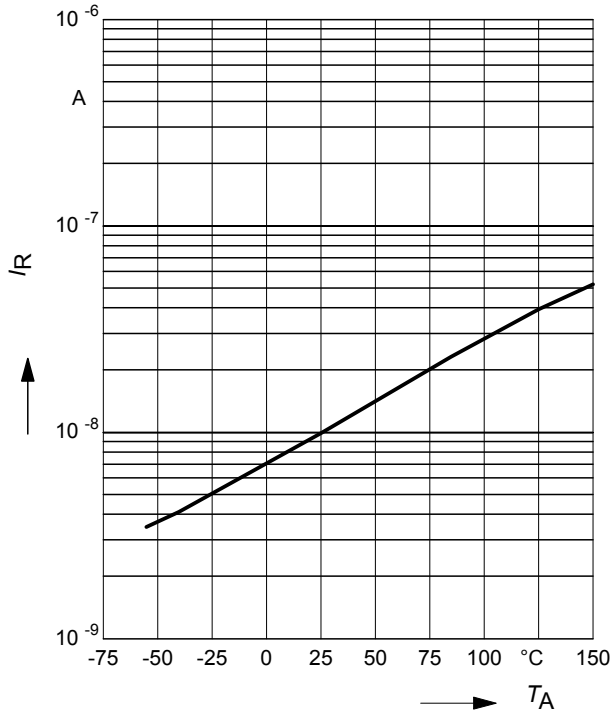
Clamping voltage, $V_{cl} = f(I_{pp})$

t_p = 8 / 20 µs



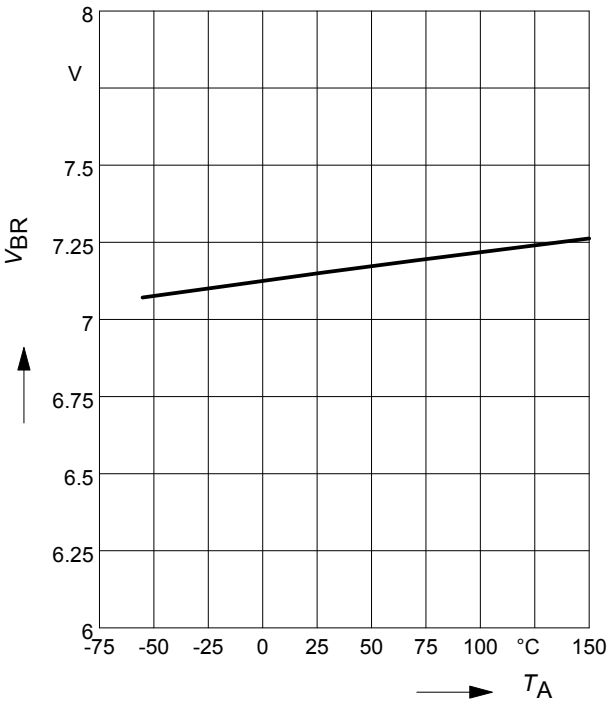
Reverse current $I_R = f(T_A)$

V_R = 3.3 V



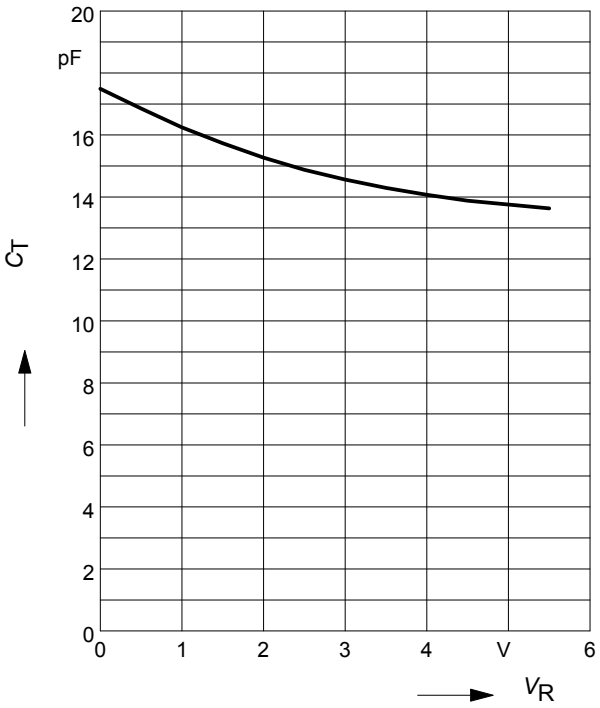
Breakdown voltage $V_{BR} = f(T_A)$

I_R = 1 mA



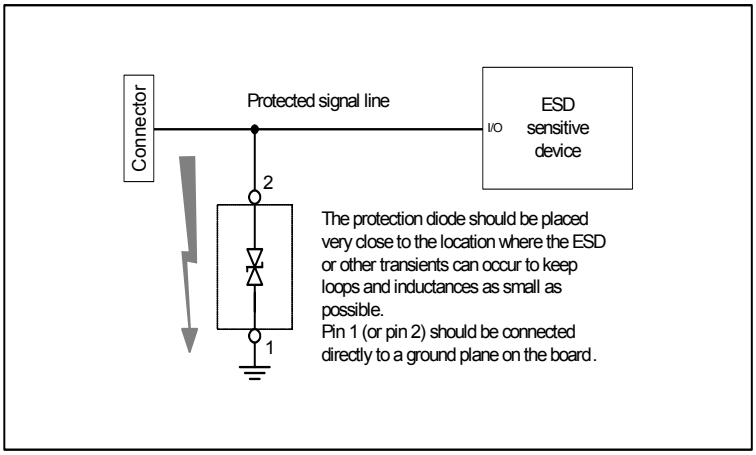
Diode capacitance $C_T = f(V_R)$

f = 1MHz

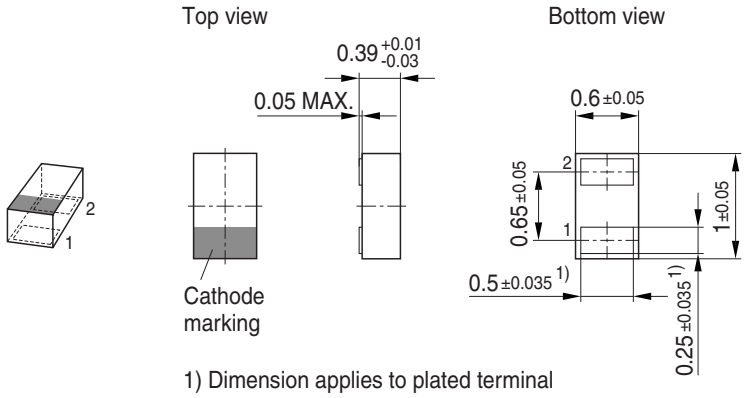


Application example

single channel, bi-directional



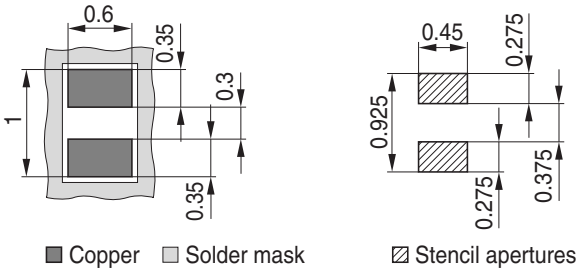
Package Outline



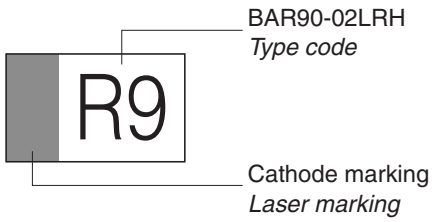
1) Dimension applies to plated terminal

Foot Print

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

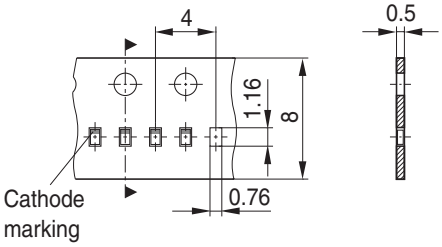


Marking Layout (Example)



Standard Packing

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



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