

Low Capacitance TVS Diode

- ESD / transient protection of high-speed data lines up to:
IEC61000-4-2 (ESD): ± 30 kV (air / contact)
IEC61000-4-4 (EFT): 4 kV / 80 A (5/50 ns)
IEC61000-4-5 (surge): 6 A (8/20 μ s)
- Reverse working voltage: 5.3 V max.
- Very low reverse current: < 1 nA typ.
- Low capacitance: < 2 pF .
- Very low clamping voltage: 10 V typ. at positive transients, 2.5 V typ. at negative transients
- Very low series inductance down to 0.4 nH typ.
- Pb-free (RoHS compliant) package

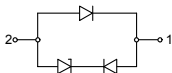


Applications

- Mobile communication
- FM antenna protection
- USB 2.0, 10/100/1000 Ethernet, Firewire, DVI,
- Consumer products (STB, MP3, DVD, DSC...)
- LCD displays, camera
- Notebooks and desktop computers, peripherals



ESD5V3L1U-02LRH



Type	Package	Configuration	Marking
ESD5V3L1U-02LRH	TSLP-2-17	1 line, uni-directional	E8

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

Parameter	Symbol	Value	Unit
ESD (air / contact) discharge ¹⁾	V_{ESD}	30	kV
Peak pulse current ($t_p = 8 / 20 \mu\text{s}$) ²⁾	I_{pp}	6	A
Operating temperature range	T_{op}	-55...125	$^\circ\text{C}$
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, from pin 1 to 2	V_{RWM}	-	-	5.3	V
Breakdown voltage $I_{\text{(BR)}} = 1 \text{ mA}$, from pin 1 to 2	$V_{\text{(BR)}}$	6	-	-	
Reverse current $V_{\text{R}} = 5.3 \text{ V}$, from pin 1 to 2	I_{R}	-	< 1	100	nA
Clamping voltage $I_{\text{PP}} = 1 \text{ A}$, $t_{\text{p}} = 8/20 \text{ }\mu\text{s}^2)$, from pin 1 to 2 $I_{\text{PP}} = 3 \text{ A}$, $t_{\text{p}} = 8/20 \text{ }\mu\text{s}^2)$, from pin 1 to 2	V_{CL}	- -	9 10	- -	V
Forward clamping voltage $I_{\text{PP}} = 1 \text{ A}$, $t_{\text{p}} = 8/20 \text{ }\mu\text{s}^2)$, from pin 2 to 1 $I_{\text{PP}} = 3 \text{ A}$, $t_{\text{p}} = 8/20 \text{ }\mu\text{s}^2)$, from pin 2 to 1	V_{FC}	- -	1.5 2.5	- -	
Line capacitance ³⁾ $V_{\text{R}} = 0 \text{ V}$, $f = 1 \text{ MHz}$ $V_{\text{R}} = 5 \text{ V}$, $f = 1 \text{ MHz}$	C_{T}	- -	1 1	2 2	
Series inductance	L_{S}	-	0.4	-	nH

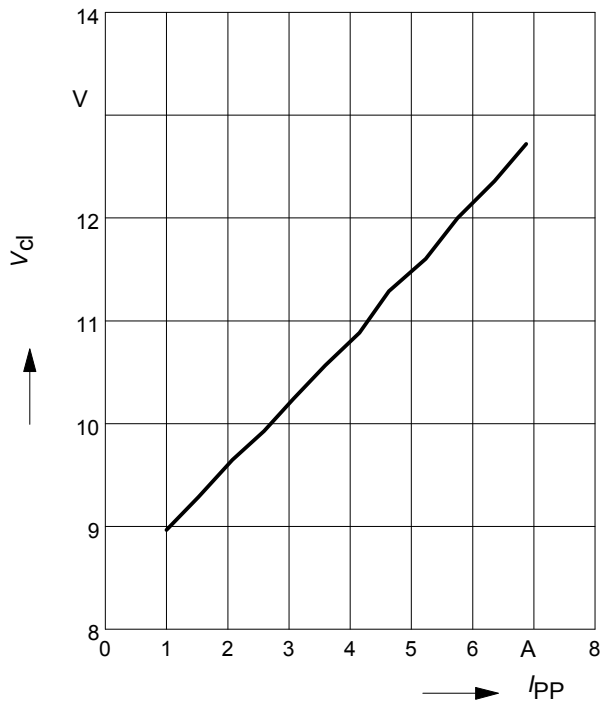
¹⁾ V_{ESD} according to IEC61000-4-2

²⁾ I_{pp} according to IEC61000-4-5

³⁾ Total capacitance line to ground

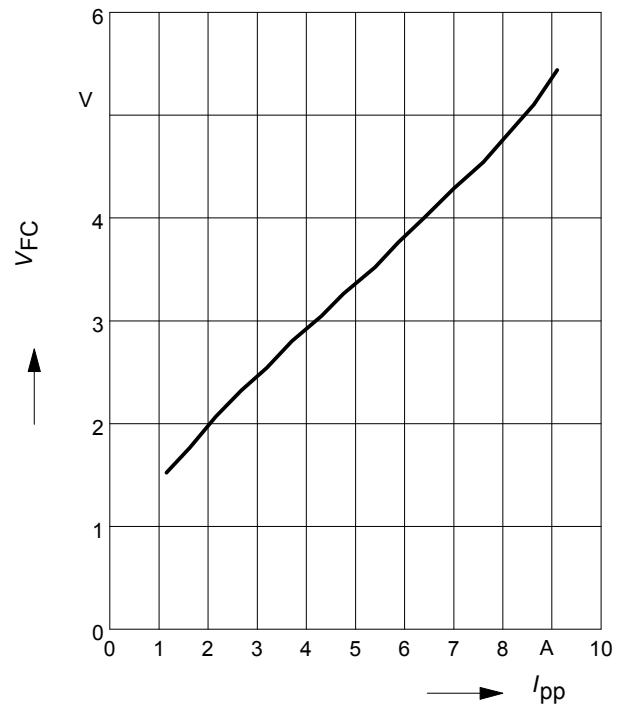
Clamping voltage, $V_{cl} = f(I_{pp})$

$t_p = 8 / 20 \mu s$, pin 1 to 2



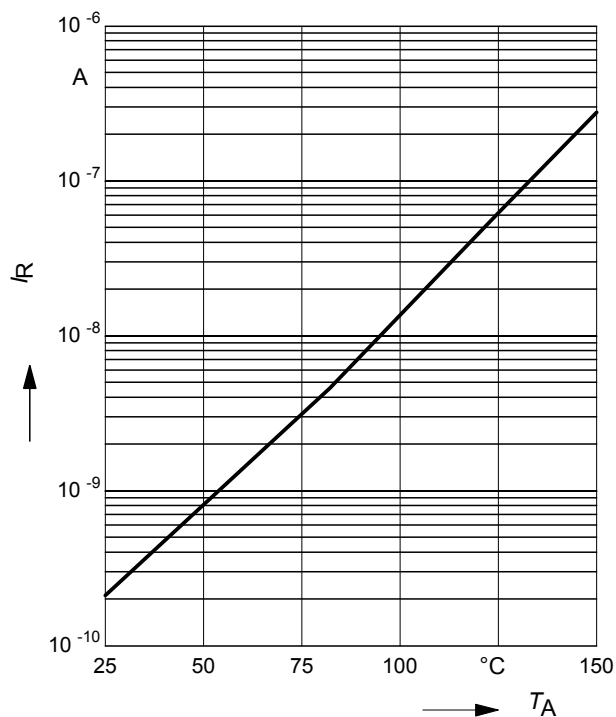
Forward clamping voltage $V_{FC} = f(I_{PP})$

$t_p = 8 / 20 \mu s$, pin 2 to 1



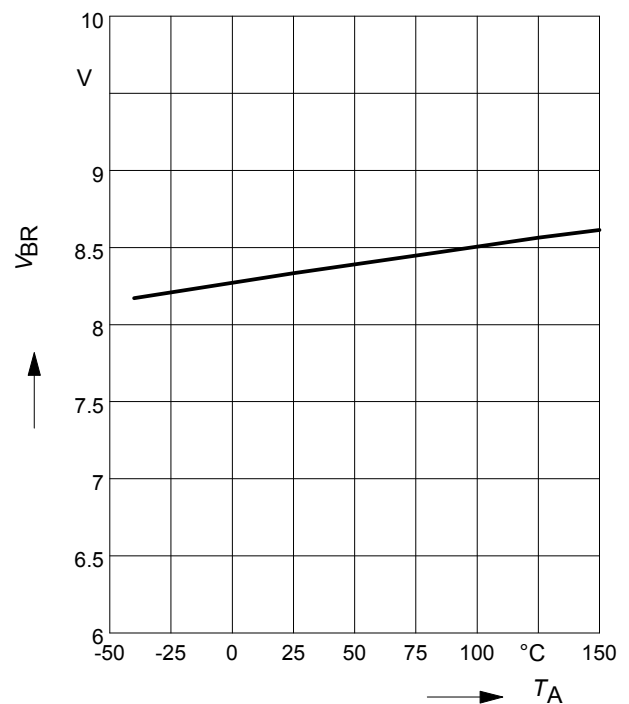
Reverse current $I_R = f(T_A)$

$V_R = 5.3V$, from pin 1 to 2



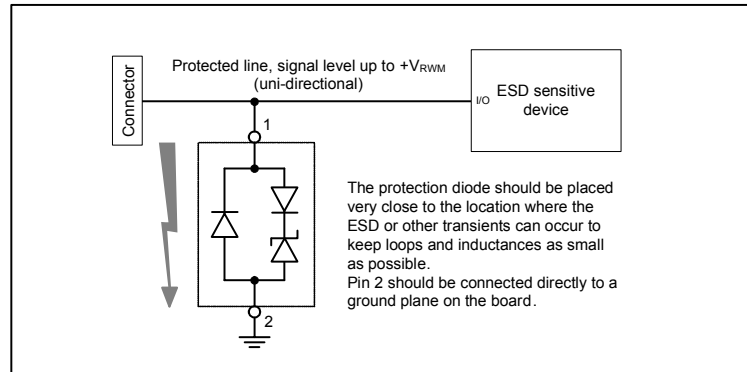
Breakdown voltage $V_{br} = f(T_A)$

$I_F = 1mA$, from pin 1 to pin 2

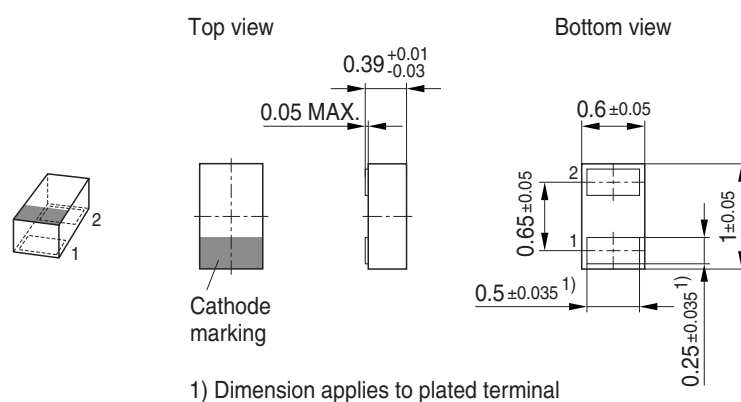


Application example ESD5V3L1U-02LRH

1-channel, uni-directional

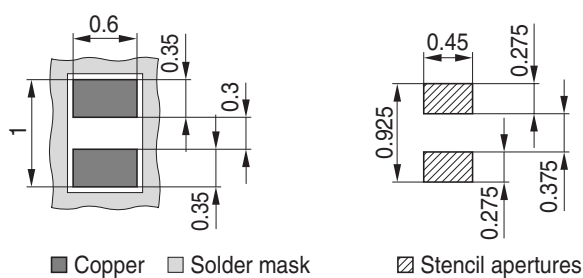


Package Outline

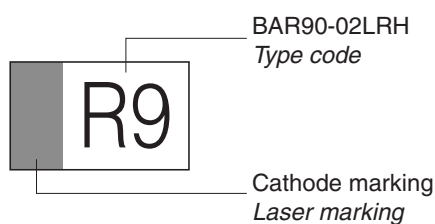


Foot Print

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



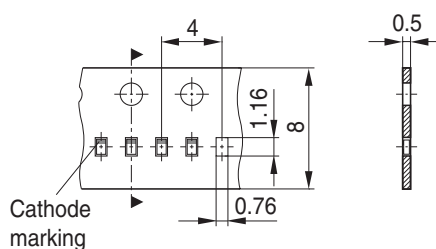
Marking Layout (Example)



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel

Reel ø330 mm = 50.000 Pieces/Reel (optional)



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