

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 μs)

- 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



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





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

Parameter	Symbol	Value	Unit
ESD (air / contact) discharge ¹⁾	V _{ESD}	30	kV
Peak pulse current $(t_p = 8 / 20 \mu s)^2$	I _{pp}	6	Α
Operating temperature range	T_{op}	-55125	°C
Storage temperature	$T_{\rm stg}$	-65150	

Electrical Characteristics at $T_{\Delta} = 25^{\circ}$ 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	$V_{(BR)}$	6	-	-	
$I_{(BR)} = 1 \text{ mA}$, from pin 1 to 2					
Reverse current	I _R	-	< 1	100	nA
V_{R} = 5.3 V, from pin 1 to 2					
Clamping voltage	V_{CL}				V
I_{PP} = 1 A, t_p = 8/20 µs ²⁾ , from pin 1 to 2		-	9	-	
$I_{PP} = 3 \text{ A}, t_p = 8/20 \mu\text{s}^{2)}$, from pin 1 to 2		-	10	-	
Forward clamping voltage	V_{FC}				
I_{PP} = 1 A, t_{p} = 8/20 µs ²⁾ , from pin 2 to 1		-	1.5	-	
$I_{PP} = 3 \text{ A}, t_p = 8/20 \mu\text{s}^{2)}$, from pin 2 to 1		-	2.5	-	
Line capacitance ³⁾	C _T				pF
$V_{R} = 0 \text{ V}, f = 1 \text{ MHz}$		_	1	2	
$V_{R} = 5 \text{ V}, f = 1 \text{ MHz}$		-	1	2	
Series inductance	LS	-	0.4	-	nH

 $^{^{1}}V_{\text{ESD}}$ according to IEC61000-4-2

 $^{^2}I_{\rm pp}$ according to IEC61000-4-5

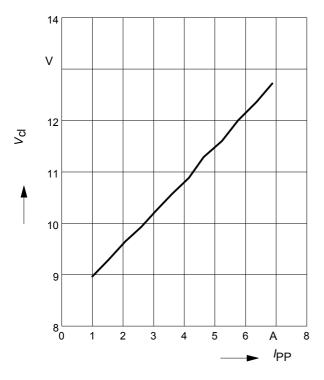
³Total capacitance line to ground





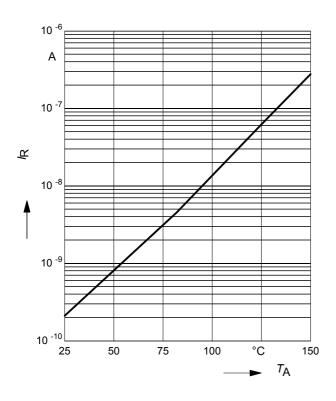
Clamping voltage, $V_{cl} = f(I_{pp})$

 $t_{\rm p}$ = 8 / 20 µs, pin 1 to 2



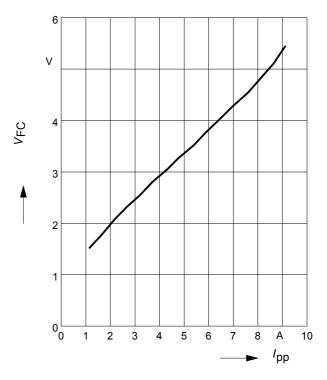
Reverse current $I_R = f(T_A)$

 V_{R} = 5.3V, from pin 1 to 2



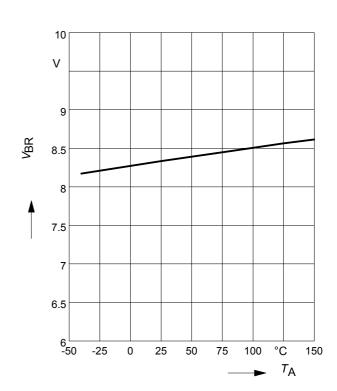
Forward clamping voltage $V_{FC} = f(I_{PP})$

 $t_{\rm p}$ = 8 / 20 µs, pin 2 to 1



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

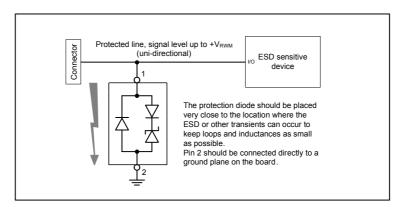
 I_{F} = 1mA, from pin 1 to pin 2





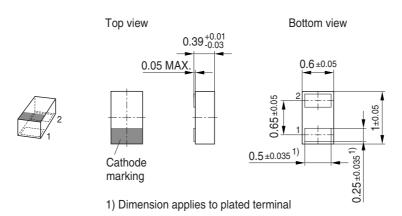
Application example ESD5V3L1U-02LRH

1-channel, uni-directional



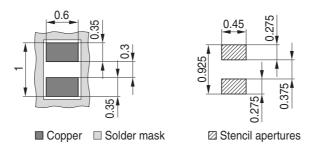


Package Outline

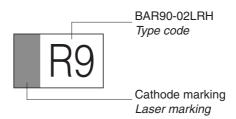


Foot Print

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

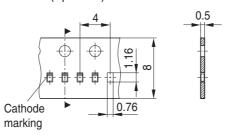


Marking Layout (Example)



Standard Packing

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





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