



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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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 / 66 W (8/20 μ s)
- Small form factor (0402 inch):
1.0 x 0.6 x 0.4 mm³
- Uni-directional, working voltage up to 5.3 V
- Ultralow clamping voltage,
protects against both positive and negative ESD strikes
- Ultralow dynamic resistance **0.27 Ω**
- Very fast response time
- Pb-free (RoHS compliant) package

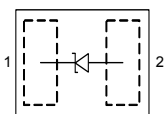


Applications

- Digital interfaces (medium speed)
- Vcc protection
- Keypad, trackball protection, camera, displays in:
mobile communications (smartphone,
camera phone & added functions e.g. mobile TV)
- Digital consumer & computer electronics:
laptops, PC, laserjet printer, photo printer, scanner
input devices (mouse, keyboard, remote control ...)
- Industrial: security systems, sensors, white goods.



ESD5V3S1U-02LRH



Type	Package	Configuration	Marking
ESD5V3S1U-02LRH	TSLP-2-17	1 line, uni-directional	E2

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

Parameter	Symbol	Value	Unit
ESD air / contact discharge ¹⁾	V_{ESD}	25 / 20	kV
Peak pulse current ($t_p = 8 / 20 \mu\text{s}$) ²⁾	I_{pp}	5.5	A
Peak pulse power ($t_p = 8 / 20 \mu\text{s}$) ²⁾	P_{pk}	66	W
Operating temperature range	T_{op}	-55...125	°C
Storage temperature	T_{stg}	-65...150	

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

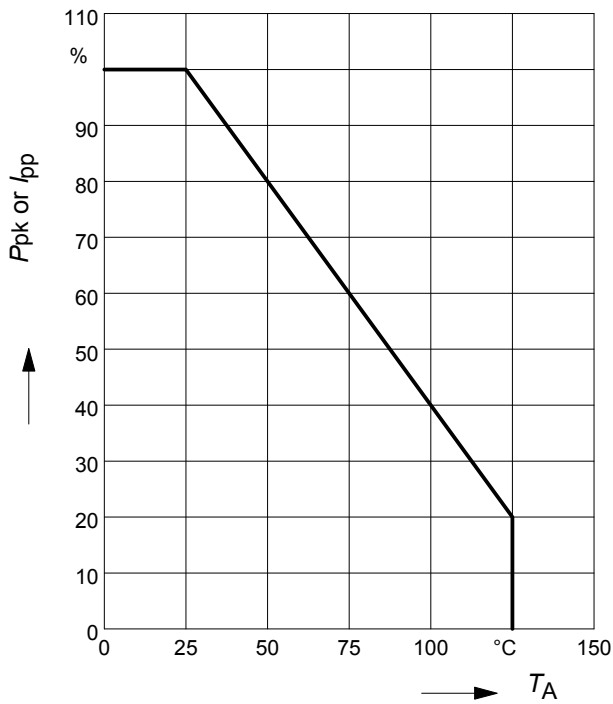
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Characteristics					
Reverse working voltage	V_{RWM}	-	-	5.3	V
Breakdown voltage $I_{\text{(BR)}} = 1 \text{ mA}$	$V_{\text{(BR)}}$	5.7	-	-	
Reverse current $V_{\text{R}} = 3.3 \text{ V}$	I_{R}	-	-	0.1	μA
Clamping voltage $I_{\text{PP}} = 1 \text{ A}, t_p = 8/20 \mu\text{s}$ ²⁾ $I_{\text{PP}} = 3.5 \text{ A}, t_p = 8/20 \mu\text{s}$ ²⁾ $I_{\text{PP}} = 5.5 \text{ A}, t_p = 8/20 \mu\text{s}$ ²⁾	V_{CL}	-	7 8 9	9 10 11	V
Forward clamping voltage $I_{\text{PP}} = 1 \text{ A}, t_p = 8/20 \mu\text{s}$ ²⁾ $I_{\text{PP}} = 3.5 \text{ A}, t_p = 8/20 \mu\text{s}$ ²⁾ $I_{\text{PP}} = 5.5 \text{ A}, t_p = 8/20 \mu\text{s}$ ²⁾	V_{FC}	-	1.2 2 2.5	2 3 3.5	
Diode capacitance $V_{\text{R}} = 0 \text{ V}, f = 1 \text{ MHz}$ $V_{\text{R}} = 2.5 \text{ V}, f = 1 \text{ MHz}$	C_{T}	-	35 20	40 -	
Dynamic resistance ³⁾ ($t_p = 30 \text{ ns}$)	R_{D}	-	0.27	-	Ω

¹⁾ V_{ESD} according to IEC61000-4-2

²⁾ I_{pp} according to IEC61000-4-5

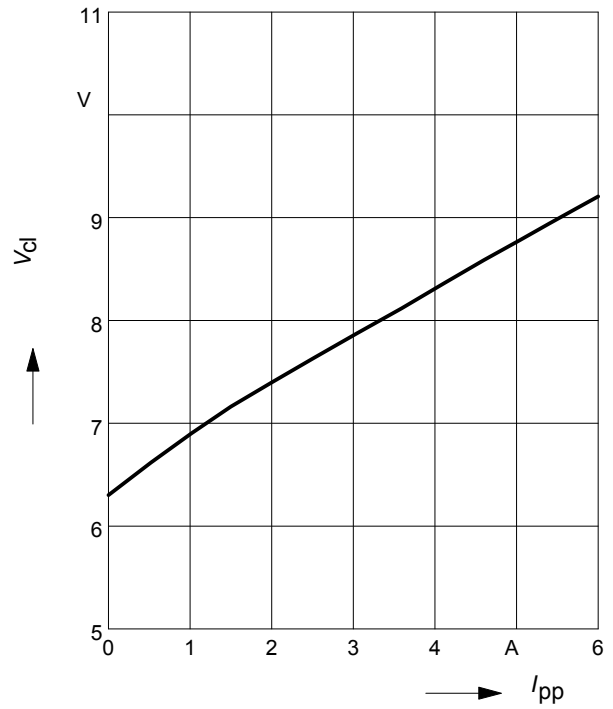
³⁾ according to TLP tests

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



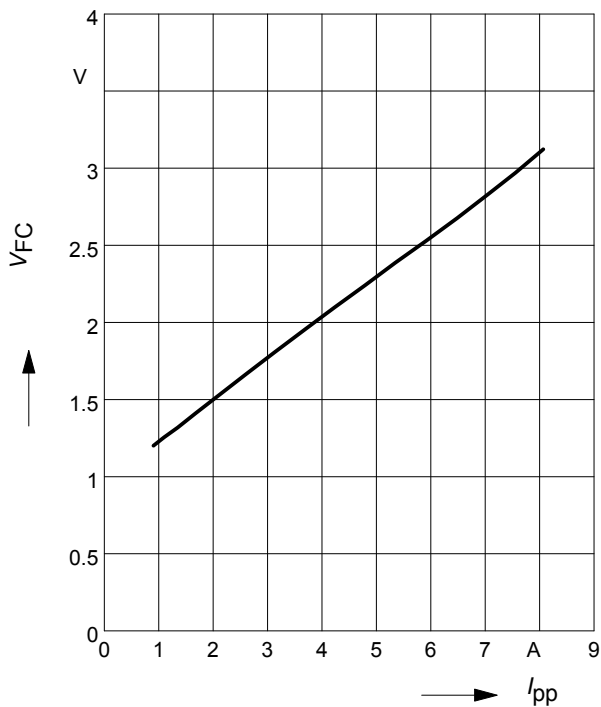
Clamping voltage, $V_{cl} = f(I_{pp})$

$t_p = 8 / 20 \mu s$



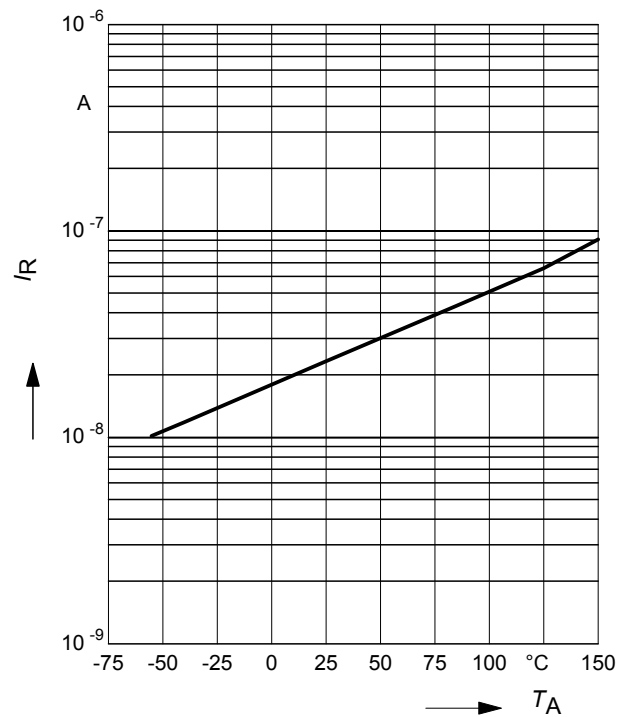
Forward clamping voltage $V_{FC} = f(I_{PP})$

$t_p = 8 / 20 \mu s$



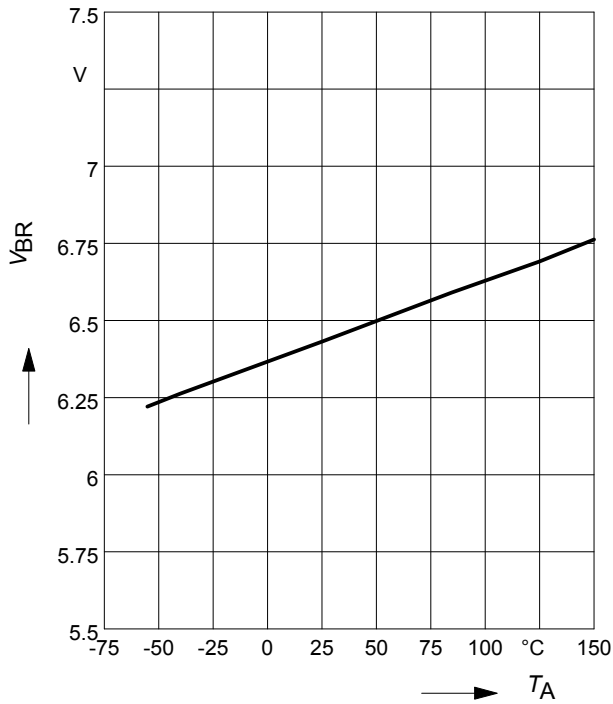
Reverse current $I_R = f(T_A)$

$V_R = 3.3 V$



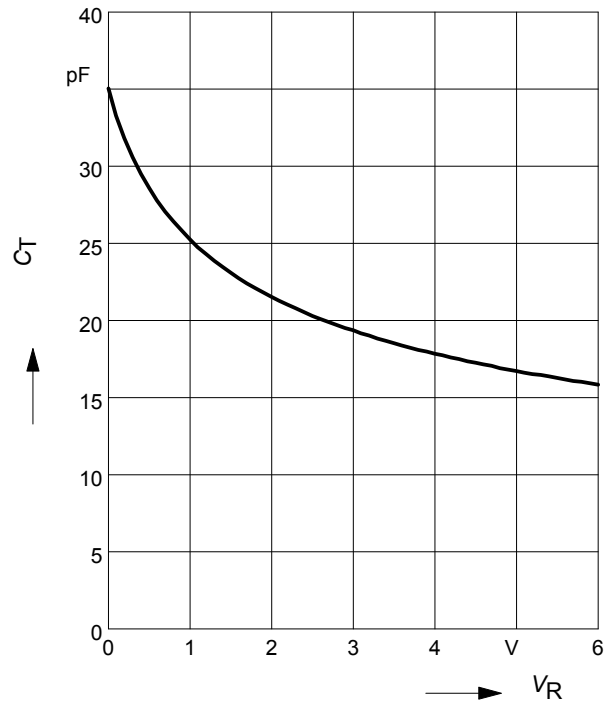
Breakdown voltage $V_{BR} = f(T_A)$

$I_R = 1 \text{ mA}$

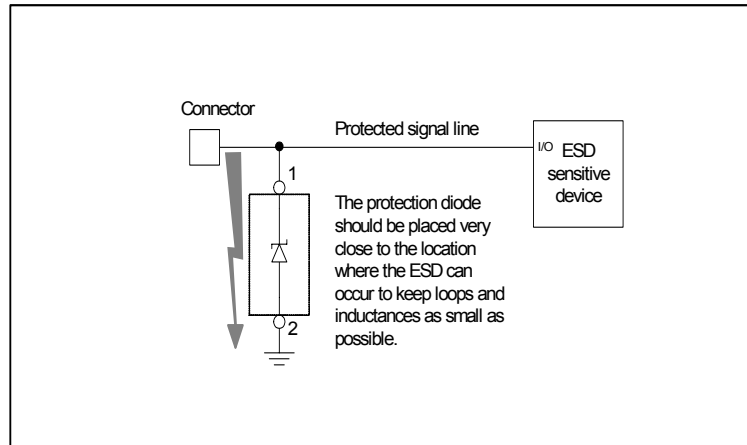


Diode capacitance $C_T = f(V_R)$

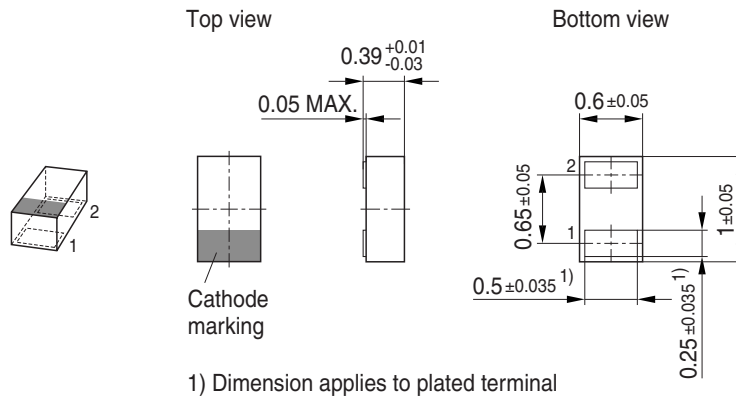
$f = 1 \text{ MHz}$



Application example
single channel, uni-directional

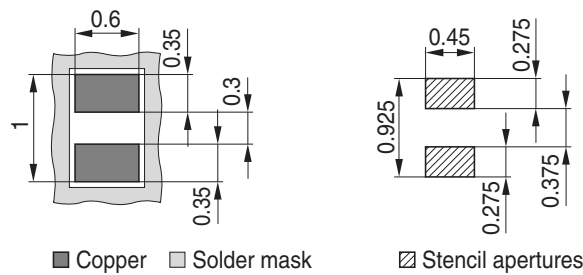


Package Outline

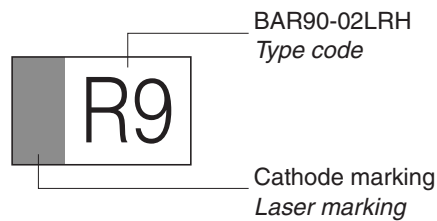


Foot Print

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

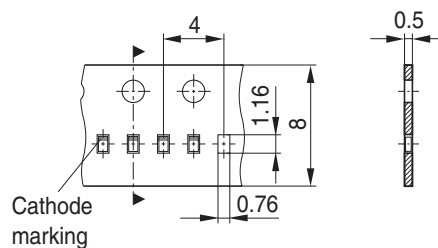


Marking Layout (Example)



Standard Packing

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



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