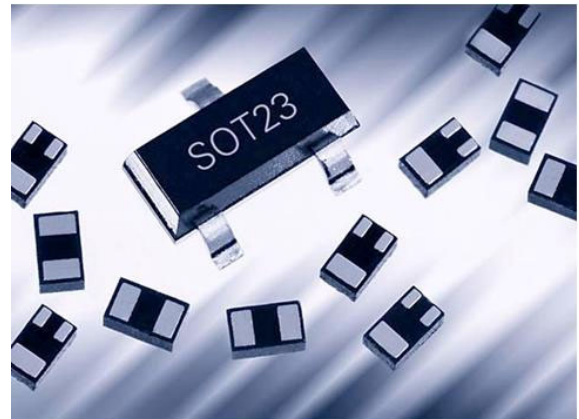


**Ultra-Low Capacitance ESD Diode Array**

- ESD / transient protection of high-speed data lines exceeding  
IEC61000-4-2 (ESD): 20 kV (air / contact)  
IEC61000-4-4 (EFT): 40 A (5/50 ns)  
IEC61000-4-5 (surge): 3 A (8/20 µs)
- Max. working voltage: 5.3 V
- Extremely low capacitance: down to 0.2 pF
- Very low clamping voltage: 12 V typ.
- Extremely low forward clamping voltage: 4 V typ.
- Very low reverse current: < 1 nA typ.
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101

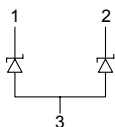


**Applications**

- USB 2.0, 10/100/1000 Ethernet, FireWire, DVI  
HDMI, S-ATA
- Mobile communication
- Consumer products (STB, MP3; DVD, DSC...)
- LCD displays, camera
- Notebooks and desktop computers, peripherals



**ESD5V3U2U-03F**  
**ESD5V3U2U-03LRH**



Type	Package	Configuration	Marking
ESD5V3U2U-03F	TSFP-3	2 lines, uni-directional*	Z1
ESD5V3U2U-03LRH	TSLP-3-7	2 lines, uni-directional*	Z1

\* or 1 line, bi-directional between pins 1 and 2, if pin 3 is not connected

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

Parameter	Symbol	Value	Unit
ESD contact/ air discharge <sup>1)</sup>	$V_{\text{ESD}}$	20	kV
Peak pulse current ( $t_p = 8 / 20 \mu\text{s}$ ) <sup>2)</sup>	$I_{\text{pp}}$	3	A
Operating temperature range	$T_{\text{op}}$	-40...125	°C
Storage temperature	$T_{\text{stg}}$	-65...150	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>Characteristics</b>					
Reverse working voltage	$V_{\text{RWM}}$	-	-	5.3	V
Breakdown voltage $I_{\text{(BR)}} = 1 \text{ mA}$ , from pin 1 to 3	$V_{\text{(BR)}}$	6	-	-	
Reverse current $V_{\text{R}} = 5.3 \text{ V}$ , from pin 1 to 3	$I_{\text{R}}$	-	< 1	50	nA
Clamping voltage $I_{\text{PP}} = 1 \text{ A}$ , $t_p = 8/20\mu\text{s}^2)$ , from 1/2 to 3 $I_{\text{PP}} = 3 \text{ A}$ , $t_p = 8/20\mu\text{s}^2)$ , from 1/2 to 3	$V_{\text{CL}}$	-	10	13	V
		-	12	15	
Forward clamping voltage $I_{\text{PP}} = 1 \text{ A}$ , $t_p = 8/20\mu\text{s}^2)$ , from 3 to 1/2 $I_{\text{PP}} = 3 \text{ A}$ , $t_p = 8/20\mu\text{s}^2)$ , from 3 to 1/2	$V_{\text{FC}}$	-	2	4	
		-	4	6	
Line capacitance, $V_{\text{R}} = 0 \text{ V}$ , $f = 1 \text{ MHz}$ from pin 1/2 to 3 <sup>3)</sup>	$C_{\text{T}}$	-	0.4	0.6	pF
from pin 1 to 2, pin 3 not connected		-	0.2	0.4	

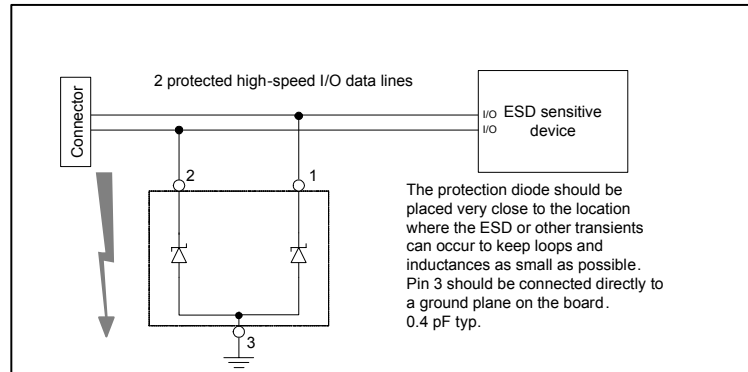
<sup>1)</sup> $V_{\text{ESD}}$  according to IEC61000-4-2

<sup>2)</sup> $I_{\text{pp}}$  according to IEC61000-4-5

<sup>3)</sup>Total capacitance line to ground

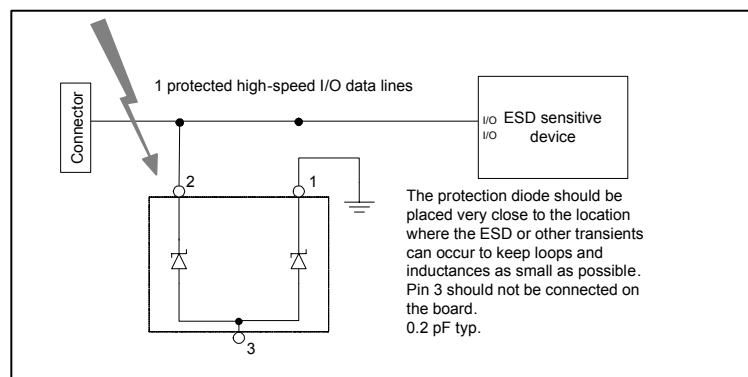
**Application example ESD5V3U2U...**

2 lines, uni-directional

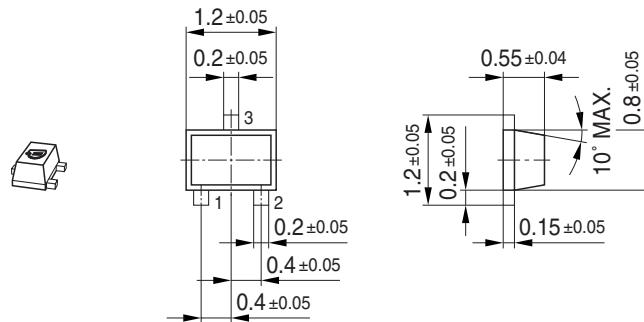


**Application example ESD5V3U2U...**

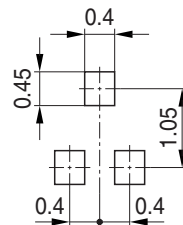
1 line, bi-directional



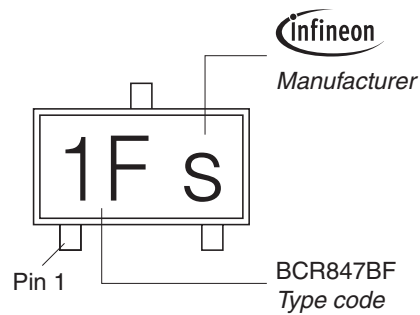
Package Outline



Foot Print

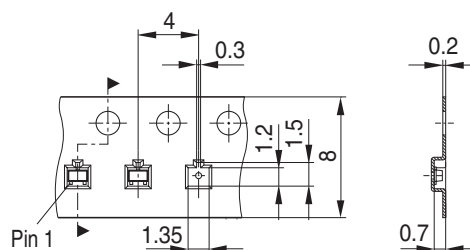


Marking Layout (Example)

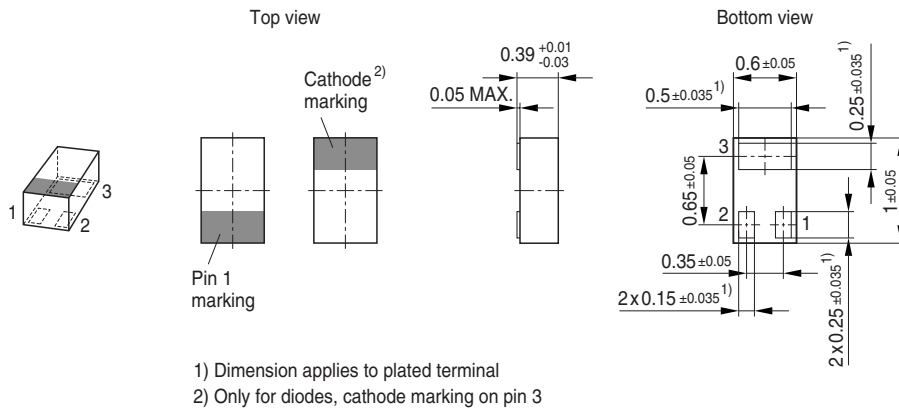


Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø330 mm = 10.000 Pieces/Reel

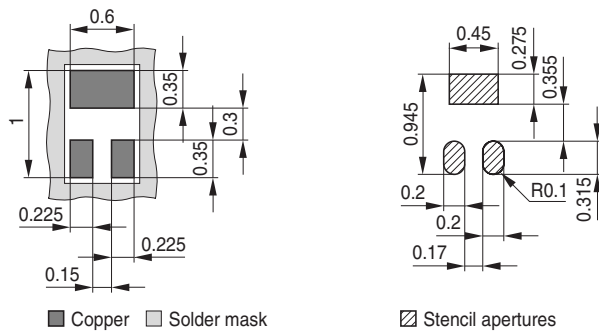


### Package Outline



### Foot Print

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

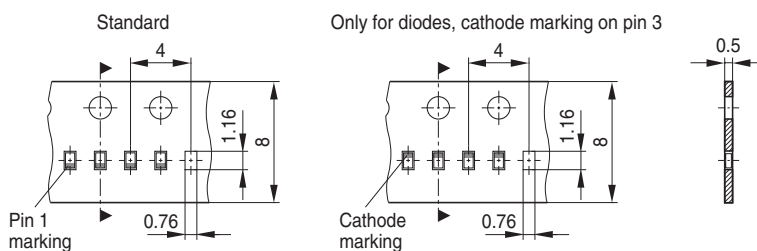


### Marking Layout



### Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



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