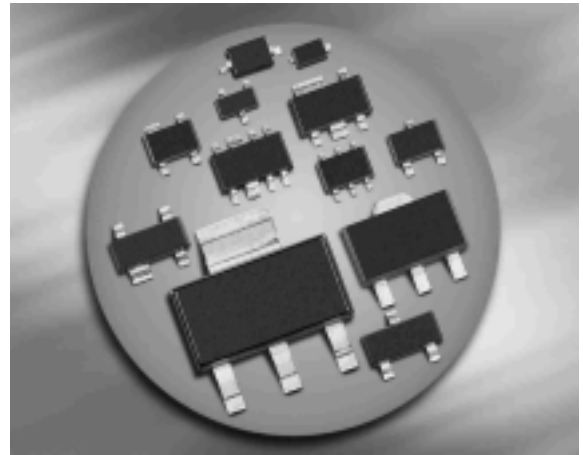
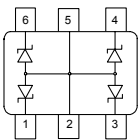
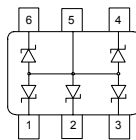


**Multi-Channel TVS Diode Array**

- ESD / transient protection of data and power lines in 3.3 V / 5 V application according to:  
IEC61000-4-2 (ESD):  $\pm 25$  kV (contact)  
IEC61000-4-4 (EFT): 40 A (5/50 ns)  
IEC61000-4-5 (Lightning): 6 A (8/20  $\mu$ s)
- Max. working voltage: 5 V (5.3 V max.)
- Low clamping voltage
- Low reverse current  $< 5 \mu$ A


**Applications**

- Mobile communication
- Consumer products (STB, MP3, DVD, DSC...)
- LCD displays, camera
- Notebooks and desktop computers, peripherals

**ESD5V0S4US**

**ESD5V0S5US**


Type	Package	Configuration	Marking
ESD5V0S4US*	SOT363	4 channel, uni-directional	E4s
ESD5V0S5US*	SOT363	5 channel, uni-directional	E5s

\* Preliminary data

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

Parameter	Symbol	Value	Unit
ESD contact discharge <sup>1)</sup>	$V_{\text{ESD}}$	25	kV
Peak pulse current ( $t_p = 8 / 20 \mu\text{s}$ ) <sup>2)</sup>	$I_{\text{pp}}$	6	A
Peak pulse power ( $t_p = 8 / 20 \mu\text{s}$ )	$P_{\text{pk}}$	75	W
Operating temperature range	$T_{\text{op}}$	-55...125	°C
Storage temperature	$T_{\text{stg}}$	-65...150	

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

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

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>1)</sup>	$R_{thJS}$	≤ tbd	W/K

**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	$V_{RWM}$	-	5	5.3	V
Breakdown voltage $I_{(BR)} = 1 \text{ mA}$	$V_{(BR)}$	5.7	6.7	7.7	
Reverse current $V_R = 5 \text{ V}$	$I_R$	-	-	5	μA
Clamping voltage $V_{ESD} = 15 \text{ kV (contact)}^2)$ $I_{PP} = 3 \text{ A, } t_p = 8/20 \text{ } \mu\text{s}^3)$ $I_{PP} = 6 \text{ A, } t_p = 8/20 \text{ } \mu\text{s}^3)$	$V_{CL}$	-	tbd 8 9.3	-	V
Diode capacitance $V_R = 0 \text{ V, } f = 1 \text{ MHz}$	$C_T$	-	70	90	pF

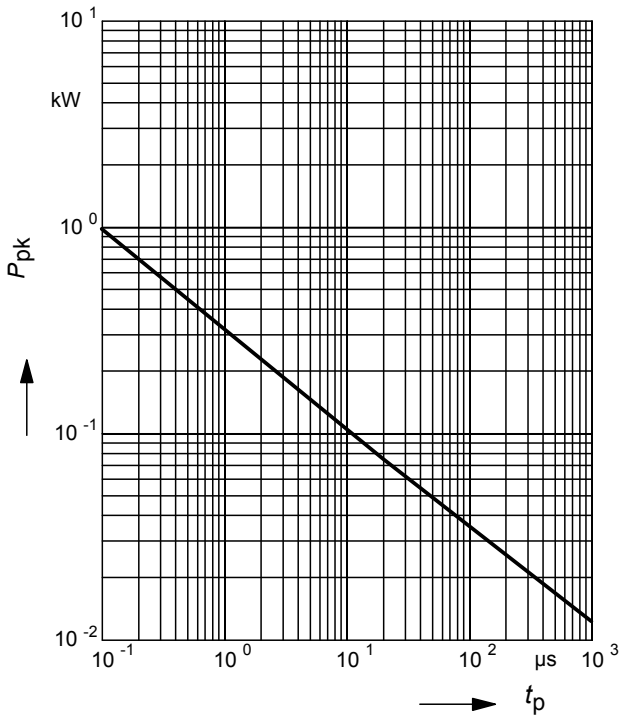
<sup>1</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

<sup>2</sup> $V_{ESD}$  according to IEC61000-4-2

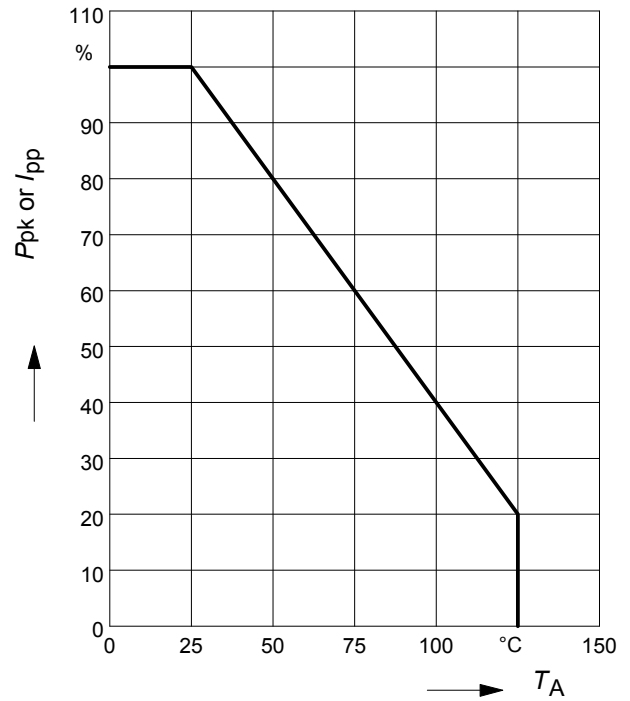
<sup>3</sup> $I_{pp}$  according to IEC61000-4-5

**Non-repetitive peak pulse power**

$P_{pk} = f(t_p)$

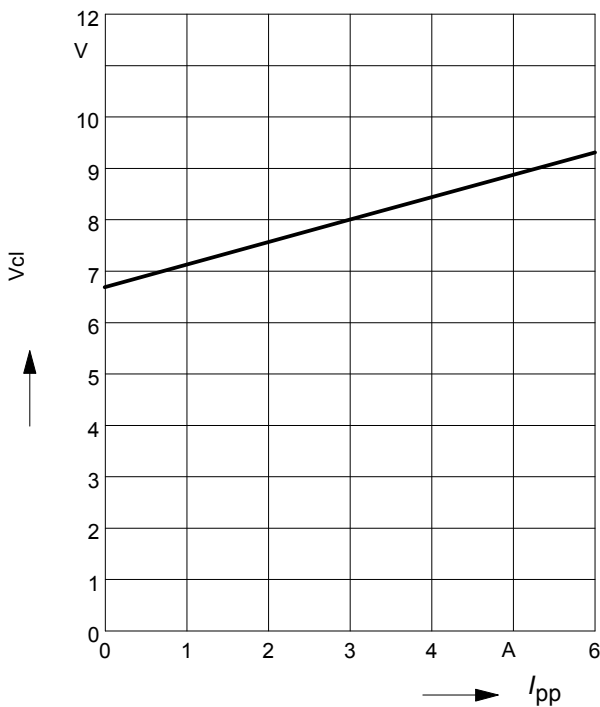


**Power derating curve  $P_{pk} = f(T_A)$**



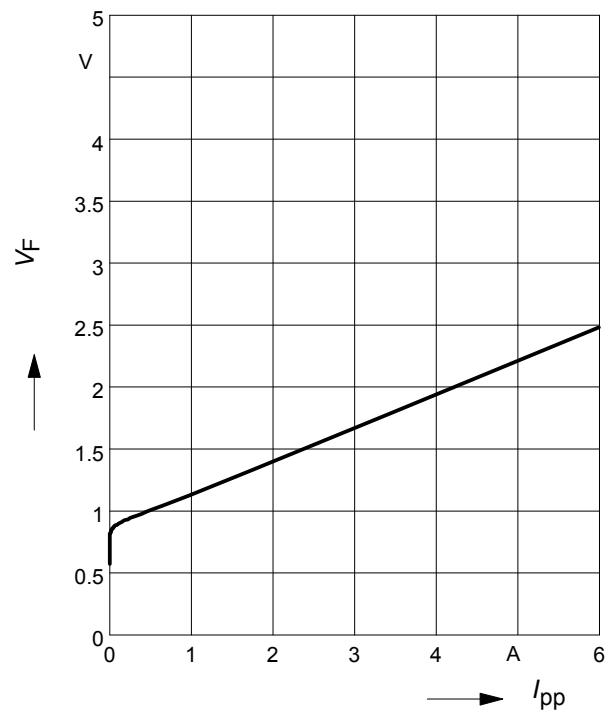
**Clamping voltage,  $V_{cl} = f(I_{pp})$**

$t_p = 8 / 20 \mu s$



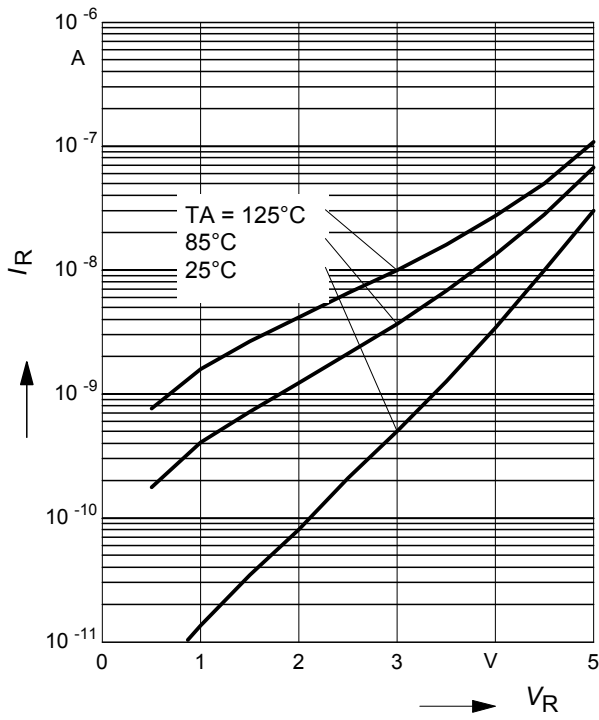
**Forward voltage  $V_F = f(I_{pp})$**

$t_p = 8 / 20 \mu s$



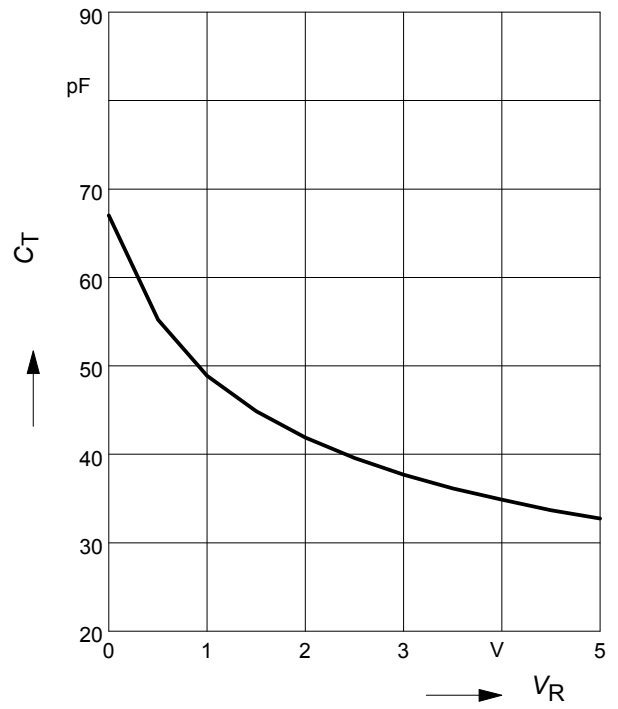
Reverse current  $I_R = f(V_R)$

$T_A =$  Parameter



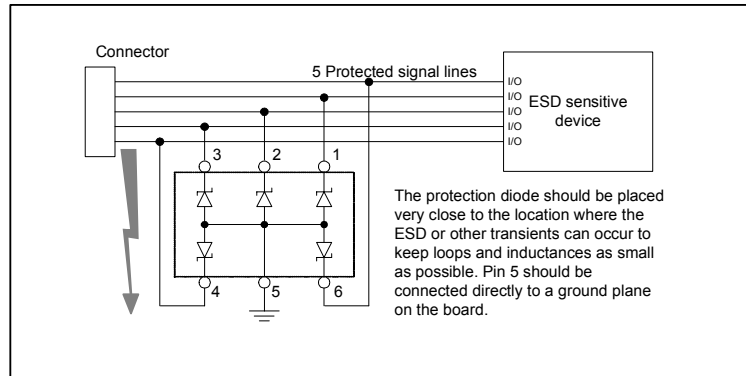
Diode capacitance  $C_T = f(V_R)$

$f = 1\text{MHz}$



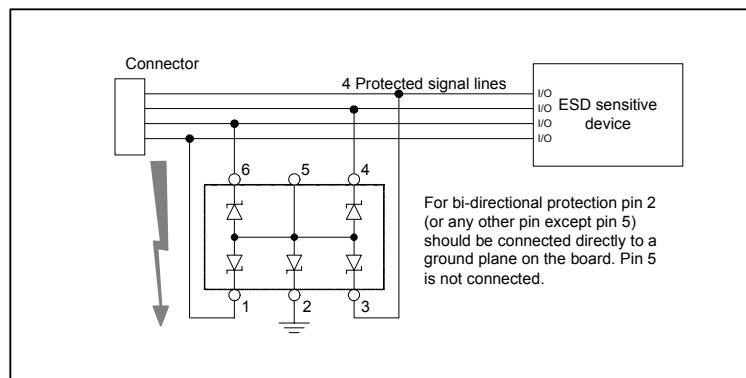
**Application example ESD5V0S5US**

5 channels, uni-directional



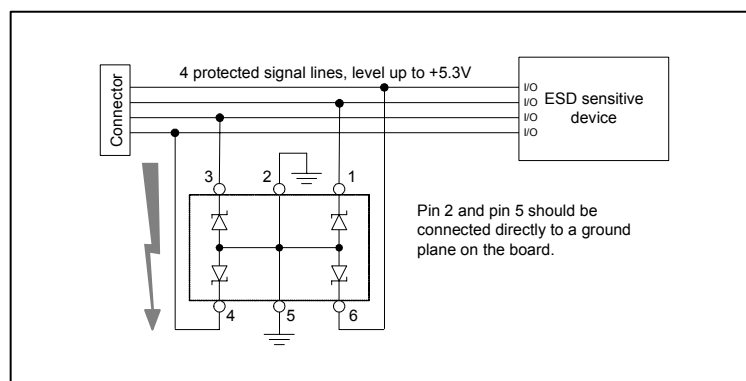
**Application example ESD5V0S5US**

4 channels, bi-directional

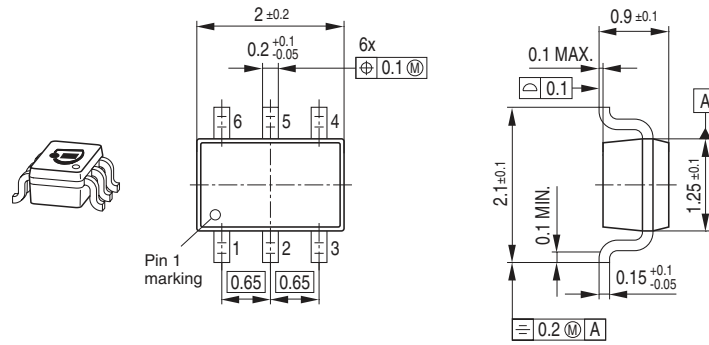


**Application example ESD5V0S4US**

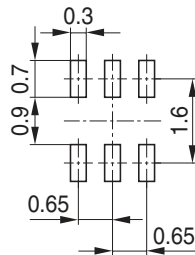
4 channels, uni-directional



Package Outline

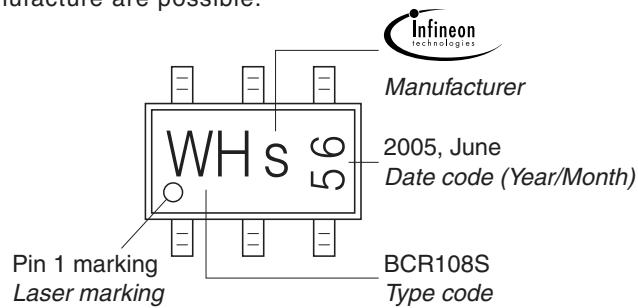


Foot Print



Marking Layout (Example)

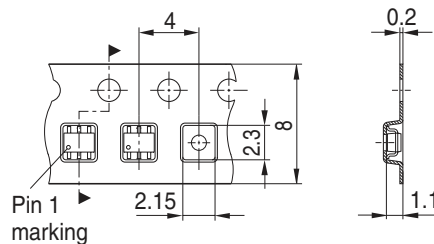
Small variations in positioning of Date code, Type code and Manufacture are possible.



Standard Packing

Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel

For symmetric types no defined Pin 1 orientation in reel.



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