

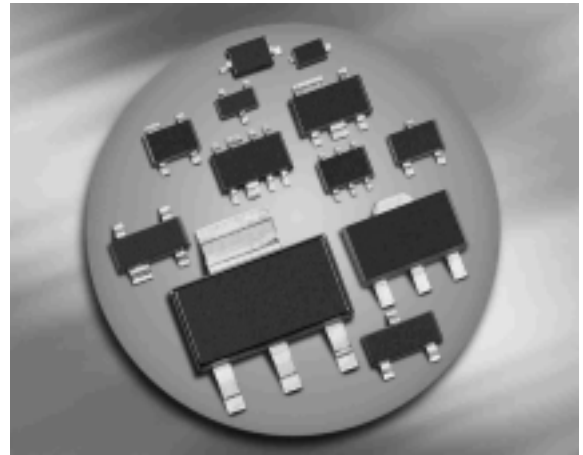


**THE DATASHEET OF
ESD5V0S5USH6327XTSA1**

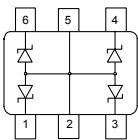
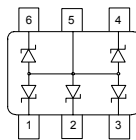


Multi-Channel TVS Diode Array

- ESD / transient protection of data and power lines in 3.3 V / 5 V application according to:
IEC61000-4-2 (ESD): ± 25 kV (contact)
IEC61000-4-4 (EFT): 40 A (5/50 ns)
IEC61000-4-5 (Lightning): 6 A (8/20 μ 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 ¹⁾	V_{ESD}	25	kV
Peak pulse current ($t_p = 8 / 20 \mu\text{s}$) ²⁾	I_{pp}	6	A
Peak pulse power ($t_p = 8 / 20 \mu\text{s}$)	P_{pk}	75	W
Operating temperature range	T_{op}	-55...125	°C
Storage temperature	T_{stg}	-65...150	

¹⁾ V_{ESD} according to IEC61000-4-2

²⁾ I_{pp} according to IEC61000-4-5

Thermal Resistance

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

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	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

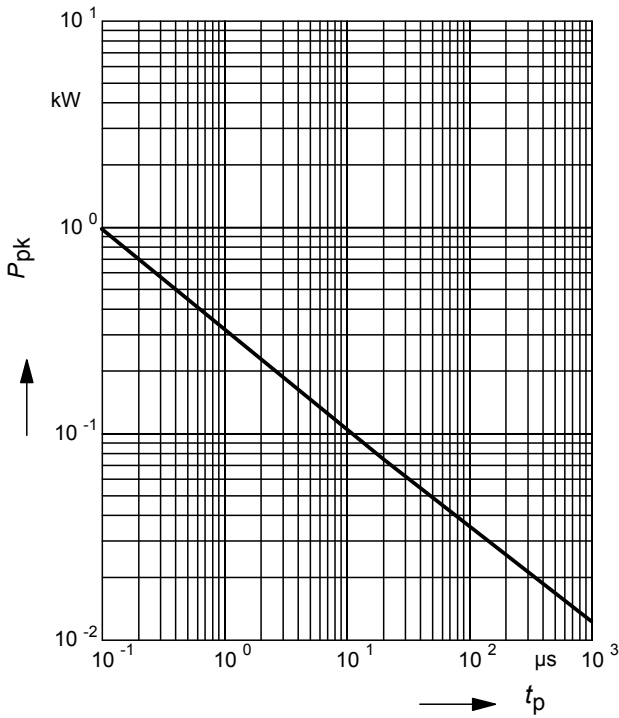
¹For calculation of R_{thJA} please refer to Application Note Thermal Resistance

² V_{ESD} according to IEC61000-4-2

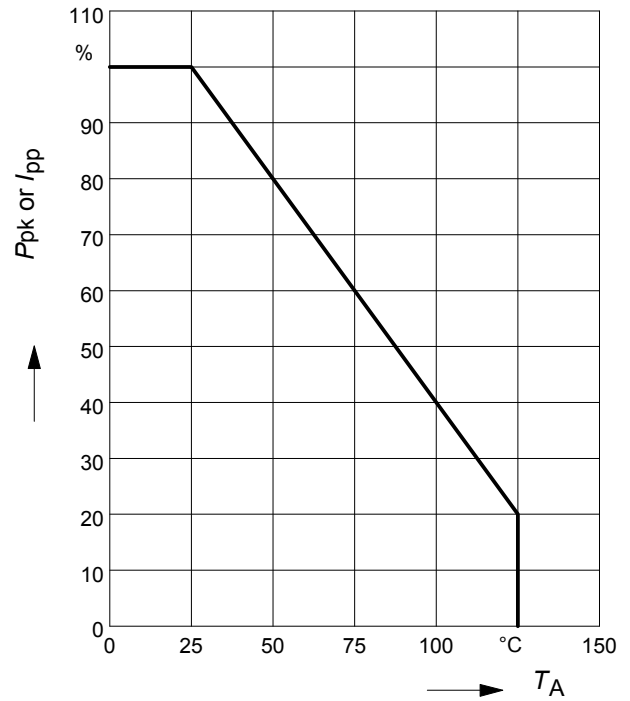
³ I_{pp} according to IEC61000-4-5

Non-repetitive peak pulse power

$P_{pk} = f(t_p)$

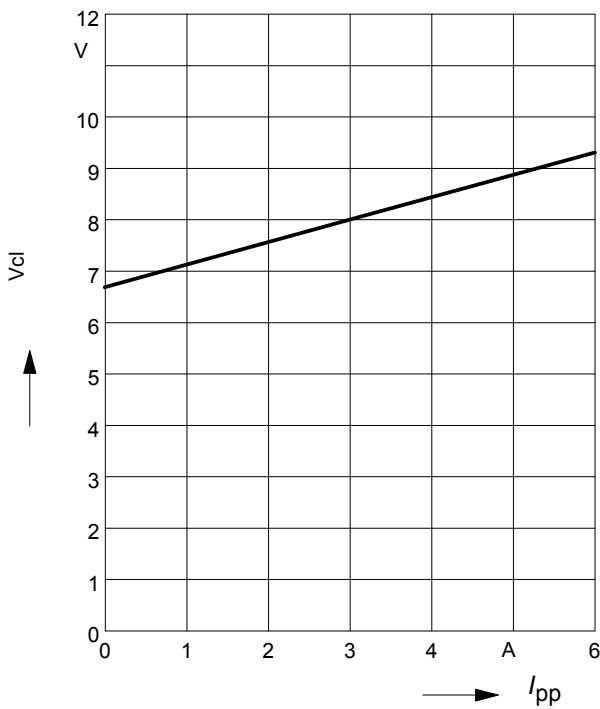


Power derating curve $P_{pk} = f(T_A)$



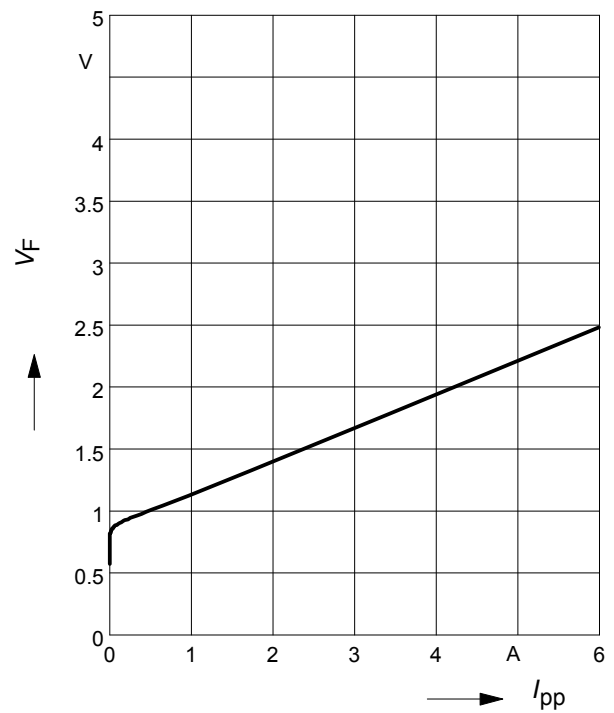
Clamping voltage, $V_{cl} = f(I_{pp})$

$t_p = 8 / 20 \mu s$



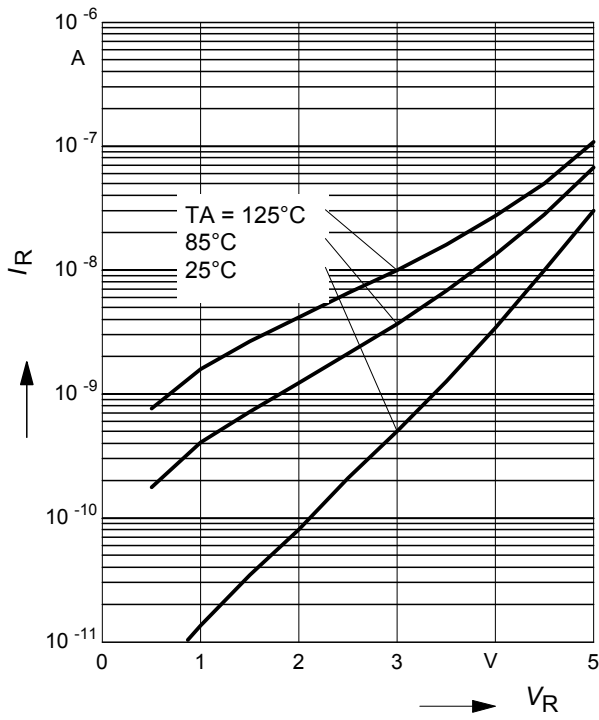
Forward voltage $V_F = f(I_{pp})$

$t_p = 8 / 20 \mu s$



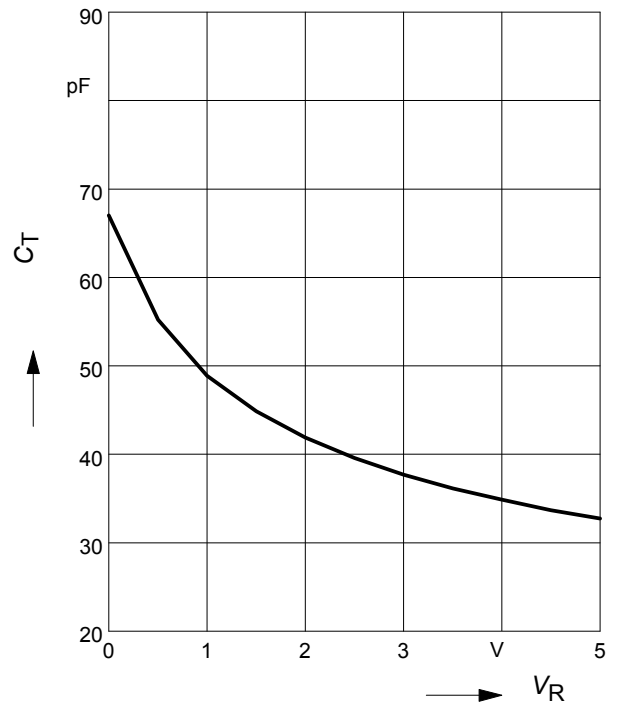
Reverse current $I_R = f(V_R)$

$T_A =$ Parameter



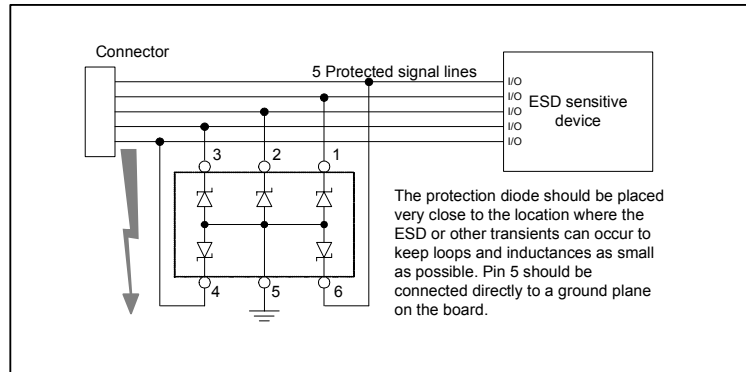
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



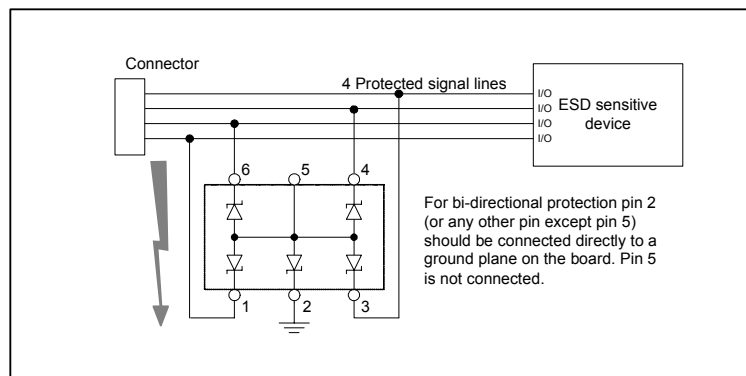
Application example ESD5V0S5US

5 channels, uni-directional



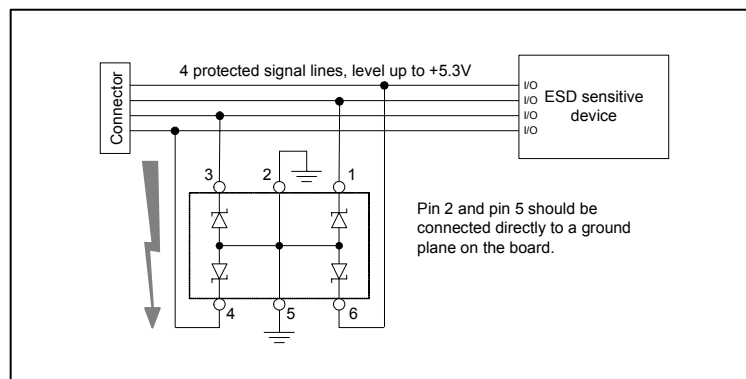
Application example ESD5V0S5US

4 channels, bi-directional

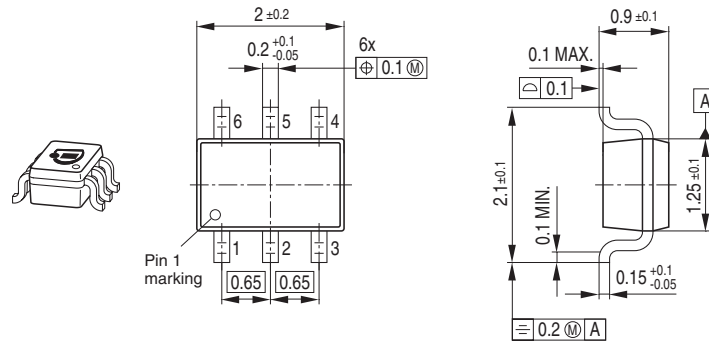


Application example ESD5V0S4US

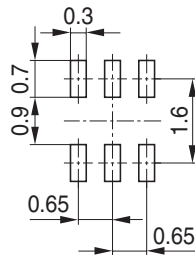
4 channels, uni-directional



Package Outline

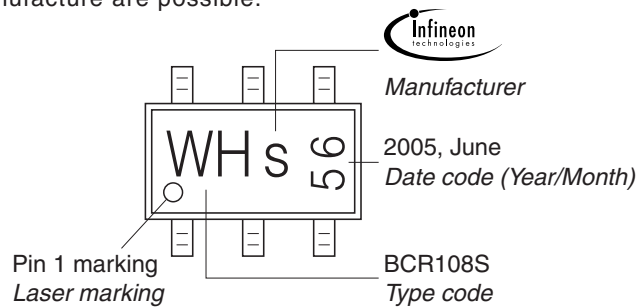


Foot Print



Marking Layout (Example)

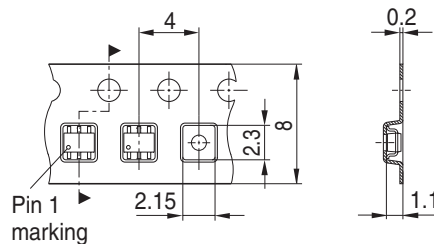
Small variations in positioning of Date code, Type code and Manufacture are possible.



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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