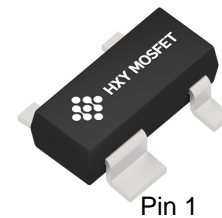


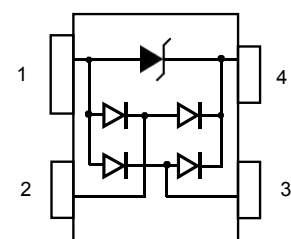


## Discription

The HSR05TCT is a 2-channel ultra low capacitance rail clamp ESD protection diodes array. Each channel consists of a pair of ESD diodes that steer positive or negative ESD current to either the positive or negative rail. A zener diode is integrated in to the array between the positive and negative supply rails. In the typical applications, the negative rail pin (assigned as GND) is connected with system ground. The Positive ESD current is steered to the ground through an ESD diode and Zener diode and the positive ESD voltage is clamped to the zener voltage.



SOT-143



Circuit Diagram

## Features

- 100 W Peak Power per Line ( $t_p = 8/20\mu s$ )
- SOT-143 package
- Unidirectional configurations
- Protects 2 I/O Ports & Power Supply
- Low Capacitance: 0.8pF
- Low clamping voltage
- RoHS Compliant in Lead-Free Versions
- Transient protection for data lines to IEC 61000-4-2(ESD)  $\pm 30KV$ (air)  $\pm 30KV$ (contact); IEC61000-4-4(EFT) 40A (5/50ns)

## Ordering Information

Product ID	Pack	Qty(PCS)
HSR05TCT	SOT-143	3000

## Absolute Ratings ( $T_{amb}=25^{\circ}C$ )

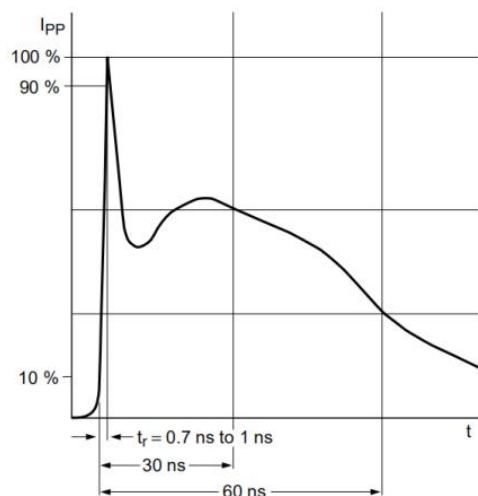
Symbol	Parameter	Value	Units
$P_{PP}$	Peak Pulse Power ( $t_p = 8/20\mu s$ )	100	W
$T_L$	Maximum lead temperature for soldering during 10s	260	$^{\circ}C$
$T_{stg}$	Storage Temperature Range	-55 to +150	$^{\circ}C$
$T_{op}$	Operating Temperature Range	-40 to +125	$^{\circ}C$
$T_j$	Maximum junction temperature	150	$^{\circ}C$
	IEC61000-4-2 (ESD)	air discharge contact discharge	$\pm 30$ $\pm 30$ KV



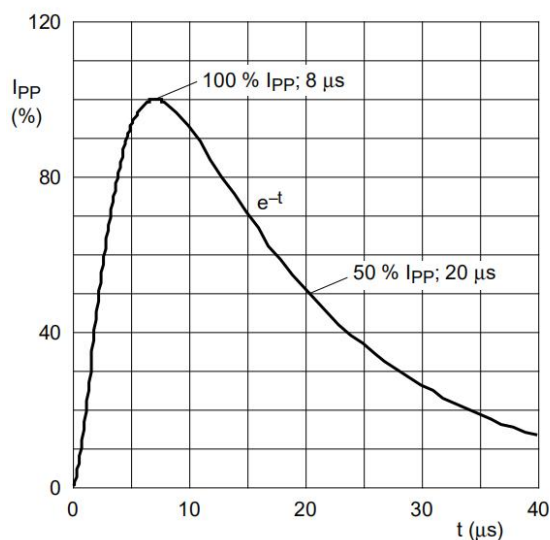
## Electrical Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				5	V
Reverse Breakdown Voltage	$V_{BR}$	$I_t = 1\text{mA}$	6		8.5	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5.0\text{V}$ , $T = 25^\circ\text{C}$			1	$\mu\text{A}$
Clamping Voltage(I/O-GND)	$V_C$	$I_{PP} = 1\text{A}$ , $t_P = 8/20\mu\text{s}$			14.0	V
Clamping Voltage(VDD-GND)	$V_C$	$I_{PP} = 9\text{A}$ , $t_P = 8/20\mu\text{s}$			14.0	V
Capacitance Between IO and GND	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		0.4	0.45	pF
Capacitance Between IO and I/O	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		0.8	0.9	pF

## Typical Characteristics



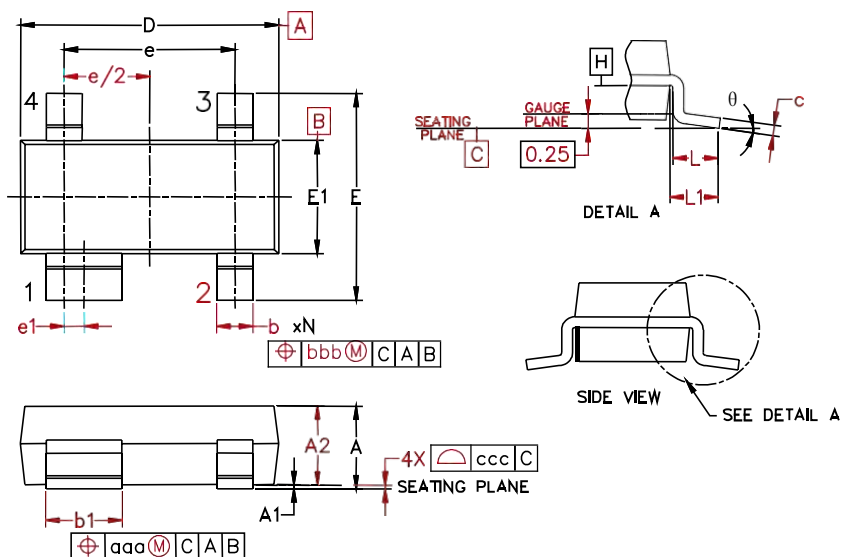
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform( 8/20 $\mu\text{s}$  pulse)



## Package Mechanical Data



Symbol	Inches			Millimeters		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.031	-	0.048	0.80	-	1.22
A1	0.000	-	0.008	0.013	-	0.15
A2	0.020	0.035	0.042	0.75	0.90	1.07
b	0.011	-	0.020	0.30	-	0.51
b1	0.029	-	0.037	0.76	-	0.94
c	0.003	-	0.008	0.08	-	0.20
D	0.110	0.114	0.120	2.80	2.90	3.04
E	0.082	0.093	0.104	2.10	2.37	2.64
E1	0.047	0.051	0.055	1.20	1.30	1.40
e	0.075			1.92 BSC		
e1	0.008			0.20 BSC		
L	0.015	0.020	0.024	0.40	0.50	0.60
L1	(0.021)			(0.54)		
N	4			4		
θ	0°	-	8°	0°	-	8°
aaa	0.006			0.15		
bbb	0.008			0.20		
ccc	0.004			0.10		



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