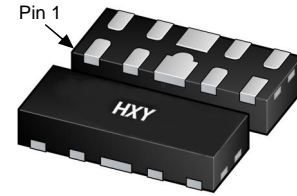




## Discription

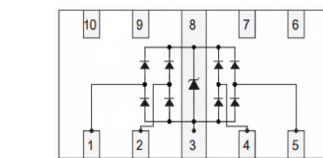
The TPD4E05U06DQAR is a 4-channel ultra low capacitance rail clam ESD protection diodes array . Each channel consists of a pair of diodes that steer positive or negative ESD current to either the positive or negative rail . A zener diode is integrated in to the array between the positive and negative 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.



uSON-10

## Features

- Solid-state silicon-avalanche technology
- Low operating and clamping voltage
- Up to four I/O Lines of Protection
- Ultra low capacitance: 0.5pF typical(I/O to I/O)
- Low Leakage
- Low operating voltage:3.3V
- Flow-Through design



Pin 1  
Circuit Diagram

## Ordering information

Product ID	Pack	Qty(PCS)
TPD4E05U06DQAR	uSON-10	3000

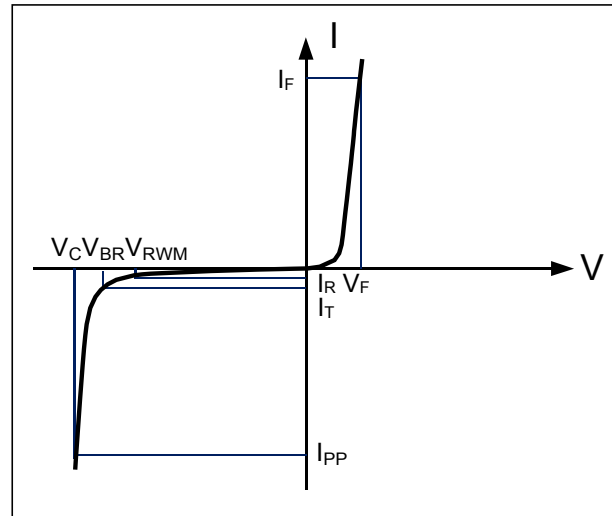
## Absolute Ratings (T<sub>amb</sub>=25°C )

Symbol	Parameter	Value	Units
P <sub>PP</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20μs)	150	W
I <sub>PP</sub>	Peak Pulse Current(8/20us)	5	A
T <sub>L</sub>	Maximum lead temperature for soldering during 10s	260	°C
T <sub>stg</sub>	Storage Temperature Range	-55 to +150	°C
T <sub>op</sub>	Operating Temperature Range	-40 to +125	°C
T <sub>j</sub>	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD)	air discharge contact discharge	±17 ±12 KV



### Electrical Parameters (T=25°C )

Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$

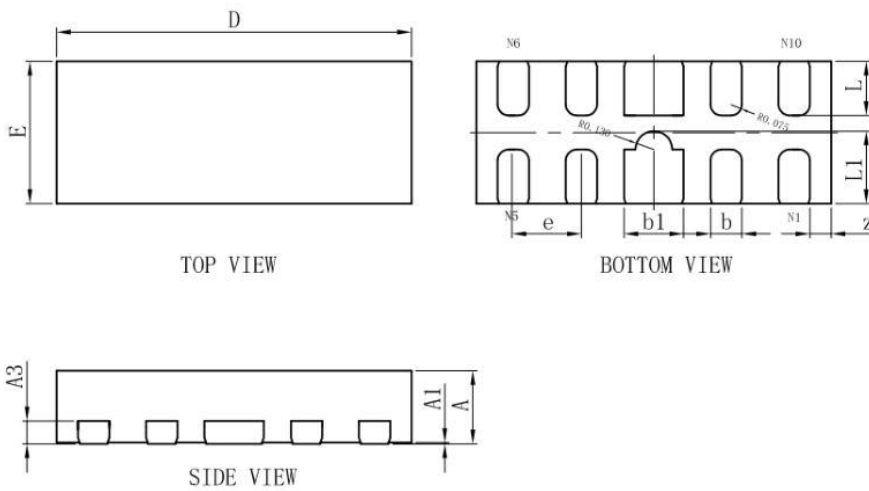


### Electrical Characteristics

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	$V_{RWM}$	Any I/O pin to ground			3.3	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$ Any I/O pin to ground	6.0			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5\text{V}$ , $T=25^\circ\text{C}$ Any I/O pin to ground			1	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{pp}=5\text{A}$ , $t_p=8/20\mu\text{s}$ Any I/O pin to ground			15	V
Junction Capacitance	$C_j$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$ I/O pin to GND			0.8	pF
		$V_R = 0\text{V}$ , $f = 1\text{MHz}$ Between I/O pins		0.3		pF

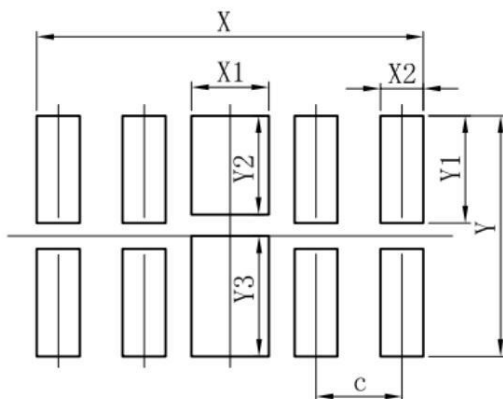


uSON-10 Package Outline Dimension



Dim	Min	Typ	Max
A	0.48	0.53	0.58
A1	0	0.02	0.05
A3	-	0.152	-
b	0.17	0.22	0.27
b1	0.37	0.42	0.47
D	2.45	2.50	2.55
e	0.45	0.50	0.55
E	0.95	1.00	1.05
L	0.33	0.38	0.43
L1	0.46	0.51	0.56
z	0.10	0.15	0.20
All Dimensions in mm			

Suggested Pad layout



	mm
c	0.5
X	2.25
X1	0.45
X2	0.25
Y	1.4
Y1	0.625
Y2	0.575
Y3	0.7



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