

### Ultra Low capacitance & Low Clamping Voltage Uni-directional ESD / Transient Protection Diodes

#### FEATURES

- Transient protection for data lines to
  - IEC61000-4-2(ESD) : Air mode  $\pm 15\text{kV}$  / Contact mode  $\pm 12\text{kV}$
  - IEC61000-4-4(EFT) :  $\pm 40\text{A}$  (5/50ns)
  - IEC61000-4-5(Surge) :  $4\text{A}$ (tp=8/20  $\mu\text{s}$ )
- Low capacitance  $C_T = 1.0\text{pF}$ (Max) Any I/O pin to ground
- Uni-directional working voltage up to :  $V_{RWM} = 5\text{V}$
- Small Size  $2.0 \times 1.25 \times 0.9\text{mm}$
- Suffix U : Qualified to AEC-Q101.

ex) PS05RVUS6-RTK/HU



US6 (lead-type)

#### PRODUCT DESCRIPTION

- Molding compound flammability rating : UL 94V-0
- Pb-Free, Halogen-Free, RoHs Compliant

Package dimensions (US6)	Pin configurations (Uni-directional)																												
<table border="1"> <thead> <tr> <th>DIM</th> <th>MILLIMETERS</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2.00±0.20</td> </tr> <tr> <td>A1</td> <td>1.3±0.1</td> </tr> <tr> <td>B</td> <td>2.1±0.1</td> </tr> <tr> <td>B1</td> <td>1.25±0.1</td> </tr> <tr> <td>C</td> <td>0.65</td> </tr> <tr> <td>D</td> <td>0.2+0.10/-0.05</td> </tr> <tr> <td>G</td> <td>0-0.1</td> </tr> <tr> <td>H</td> <td>0.9±0.1</td> </tr> <tr> <td>T</td> <td>0.15+0.1/-0.05</td> </tr> </tbody> </table>	DIM	MILLIMETERS	A	2.00±0.20	A1	1.3±0.1	B	2.1±0.1	B1	1.25±0.1	C	0.65	D	0.2+0.10/-0.05	G	0-0.1	H	0.9±0.1	T	0.15+0.1/-0.05	<table border="1"> <thead> <tr> <th>Pin</th> <th>Identification</th> </tr> </thead> <tbody> <tr> <td>1,3,4,6</td> <td>Input Lines / Output Lines</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> <tr> <td>5</td> <td>Vcc</td> </tr> </tbody> </table>	Pin	Identification	1,3,4,6	Input Lines / Output Lines	2	GND	5	Vcc
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#### ORDERING INFORMATION

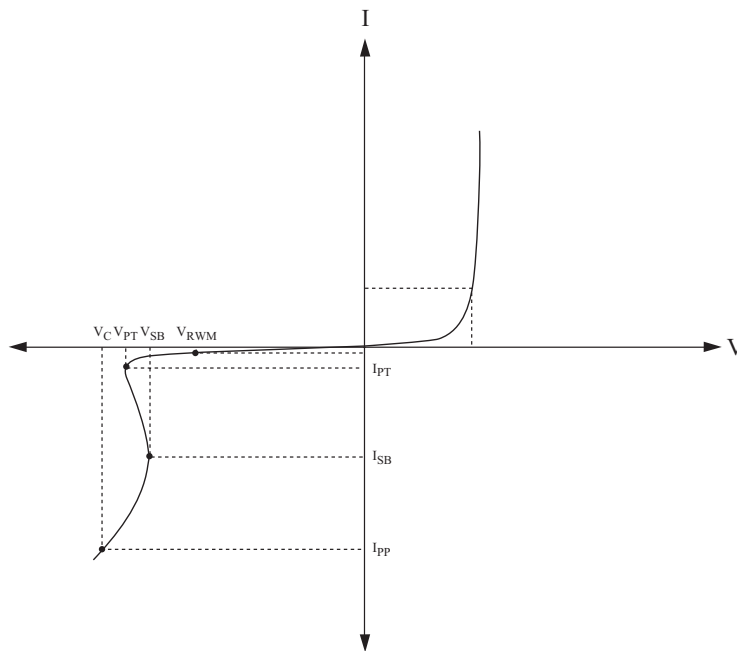
Part Number	Qty per Reel	Reel Size	Marking code
PS05RVUS6-RTK	3,000	7 inch	RV
PS05RVUS6-RTH	3,000		

# PS05RVUS6

## MAXIMUM RATING (Ta=25 )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Pulse Power (tp=8/20 μs)	P <sub>PK</sub>	80	W
Peak Pulse Current (tp=8/20 μs)	I <sub>PP</sub>	4	A
Junction Temperature	T <sub>J</sub>	150	
Storage Temperature	T <sub>STG</sub>	-55 150	

## DEFINITIONS OF ELECTRICAL CHARACTERISTIC SYMBOL

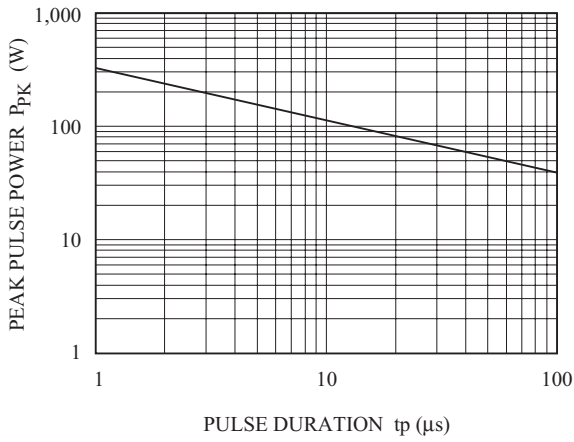


## ELECTRICAL CHARACTERISTICS (Ta=25 )

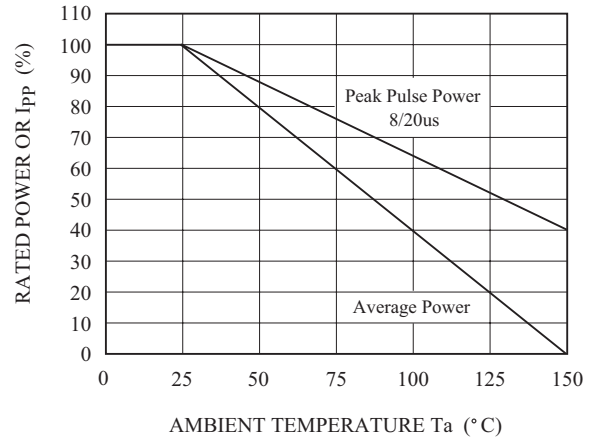
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage	V <sub>RWM</sub>	-	-	-	5	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>RWM</sub> =5V	-	-	0.3	μA
Snap-back Voltage	V <sub>SB</sub>	I <sub>SB</sub> =100 μA, 50mA	5.5	-	-	V
Punch-through Voltage	V <sub>PT</sub>	I <sub>PT</sub> =2 μA	6	-	-	V
Total Capacitance	C <sub>T</sub>	V <sub>R</sub> =0V, f=1MHz Between I/O pins	-	-	0.5	pF
		V <sub>R</sub> =0V, f=1MHz Any I/O pin to ground	-	-	1.0	
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> =1A, tp=8/20 μs (IEC61000-4-5)	-	10	15	V
		I <sub>PP</sub> =4A, tp=8/20 μs (IEC61000-4-5)	-	15	20	
Electrostatic Discharge	V <sub>ESD</sub>	IEC61000-4-2	Air	± 15	-	kV
			Contact	± 12	-	

# PS05RVUS6

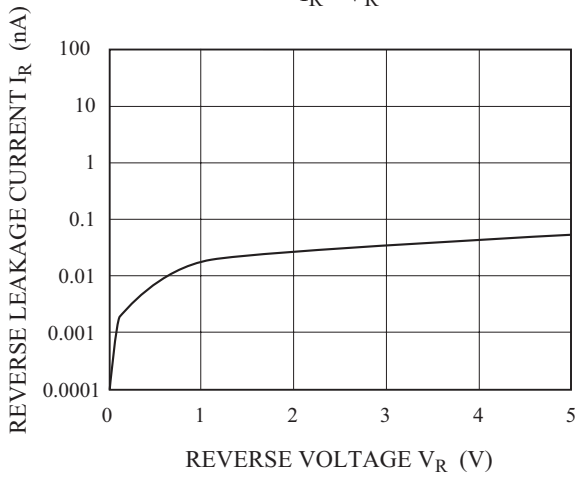
NON-REPETITIVE PEAK PULSE  
POWER VS. PULSE TIME



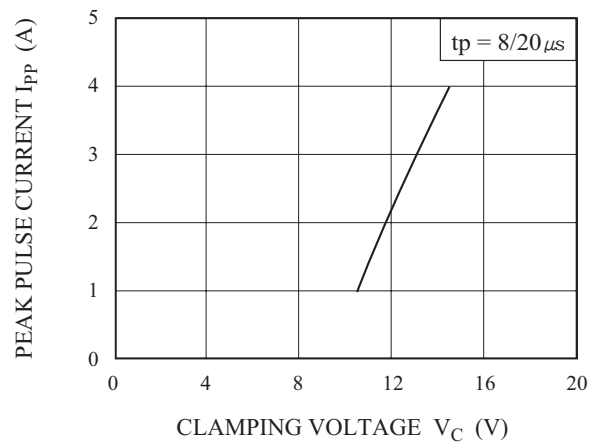
POWER DERATION CURVE



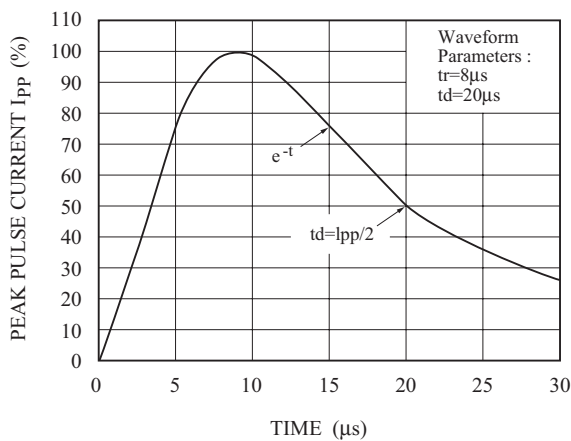
$I_R - V_R$



$V_C - I_{pp}$



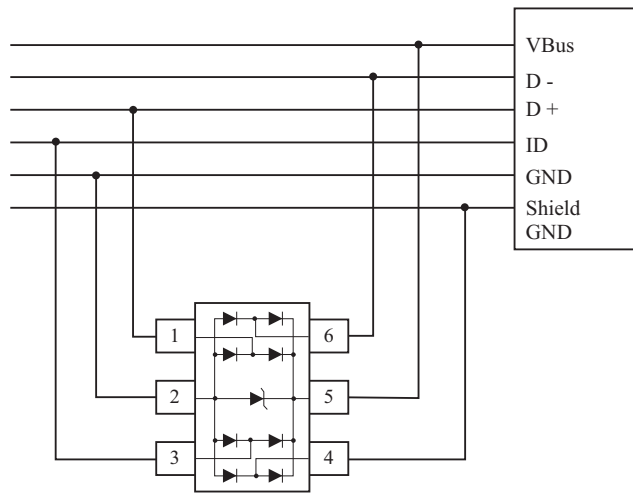
PULSE WAVEFORM



# PS05RVUS6

## APPLICATIONS

- USB 2.0, 10/100/1000 Ethernet, DVI, HDMI, S-ATA
- Mobile Display Digital Interface (MDDI)
- LCD-Display, Camera
- GPS / FM Antennas
- Low Voltage Differential Signaling (LVDS)
- High speed data lines
- USB 3.0



## Recommended pad dimension & Marking Information

Recommended pad dimension	Marking Code