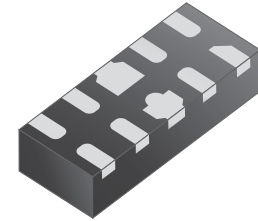


Ultra Low capacitance & Low Clamping Voltage Uni-directional ESD / Transient Protection Diodes

FEATURES

- Transient protection for data lines to
 - IEC61000-4-2(ESD) : Air mode $\pm 30\text{kV}$ / Contact mode $\pm 25\text{kV}$
 - IEC61000-4-5(Surge) : $5\text{A}(t_p=8/20 \mu\text{s})$
- Low capacitance $C_T = 1.0\text{pF}(\text{Max.})$ Any I/O pin to ground
- Uni-directional working voltage up to : $V_{RWM} = 5\text{V}$
- Ultra small Size $2.5 \times 1.0 \times 0.58\text{mm}$
- Suffix U : Qualified to AEC-Q101.

ex)PS05SVU10-RTK/HU



ULP-10 (leadless-type)

PRODUCT DESCRIPTION

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

Package dimensions (ULP-10)	Pin configurations (Uni-directional)																																																																											
<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">DIM</th> <th colspan="3">MILLIMETERS</th> </tr> <tr> <th>MIN</th> <th>NOM</th> <th>MAX</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>0.45</td> <td>0.50</td> <td>0.55</td> </tr> <tr> <td>A1</td> <td>-</td> <td>0.02</td> <td>0.05</td> </tr> <tr> <td>b</td> <td>0.15</td> <td>0.20</td> <td>0.25</td> </tr> <tr> <td>b1</td> <td>0.35</td> <td>0.40</td> <td>0.45</td> </tr> <tr> <td>b2</td> <td>0.20</td> <td>0.25</td> <td>0.30</td> </tr> <tr> <td>c</td> <td>0.10</td> <td>0.15</td> <td>0.20</td> </tr> <tr> <td>D</td> <td>2.45</td> <td>2.50</td> <td>2.55</td> </tr> <tr> <td>e</td> <td colspan="3">0.50 BSC</td> </tr> <tr> <td>Nd</td> <td colspan="3">2.00 BSC</td> </tr> <tr> <td>E</td> <td>0.95</td> <td>1.00</td> <td>1.05</td> </tr> <tr> <td>L</td> <td>0.35</td> <td>0.40</td> <td>0.45</td> </tr> <tr> <td>L1</td> <td colspan="3">0.075 REF</td> </tr> <tr> <td>L2</td> <td colspan="3">0.05 REF</td> </tr> <tr> <td>h</td> <td>0.08</td> <td>0.12</td> <td>0.15</td> </tr> <tr> <td>R</td> <td>0.05</td> <td>0.10</td> <td>0.15</td> </tr> </tbody> </table>	DIM	MILLIMETERS			MIN	NOM	MAX	A	0.45	0.50	0.55	A1	-	0.02	0.05	b	0.15	0.20	0.25	b1	0.35	0.40	0.45	b2	0.20	0.25	0.30	c	0.10	0.15	0.20	D	2.45	2.50	2.55	e	0.50 BSC			Nd	2.00 BSC			E	0.95	1.00	1.05	L	0.35	0.40	0.45	L1	0.075 REF			L2	0.05 REF			h	0.08	0.12	0.15	R	0.05	0.10	0.15	<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th>Pin</th> <th>Identification</th> </tr> </thead> <tbody> <tr> <td>1,2,4,5</td> <td>Input Lines</td> </tr> <tr> <td>6,7,9,10</td> <td>Output Lines (No Internal Connection)</td> </tr> <tr> <td>3,8</td> <td>GND</td> </tr> </tbody> </table>	Pin	Identification	1,2,4,5	Input Lines	6,7,9,10	Output Lines (No Internal Connection)	3,8	GND
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ORDERING INFORMATION

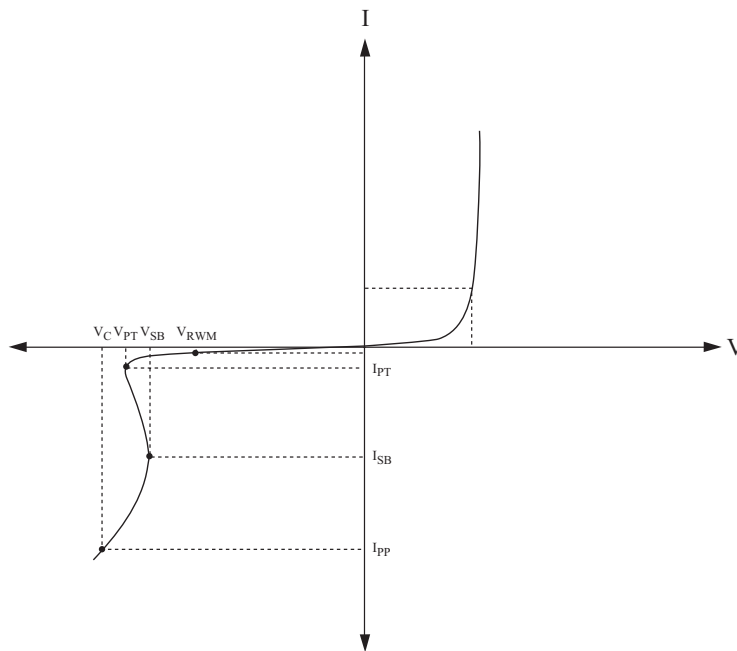
Part Number	Qty per Reel	Reel Size	Marking code
PS05SVU10-RTK	3,000	7 inch	05SU

PS05SVU10

MAXIMUM RATING (Ta=25)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Pulse Power (tp=8/20 μs)	P _{PK}	80	W
Peak Pulse Current (tp=8/20 μs)	I _{PP}	5	A
Junction Temperature	T _J	150	
Storage Temperature	T _{STG}	-55 150	

DEFINITIONS OF ELECTRICAL CHARACTERISTIC SYMBOL

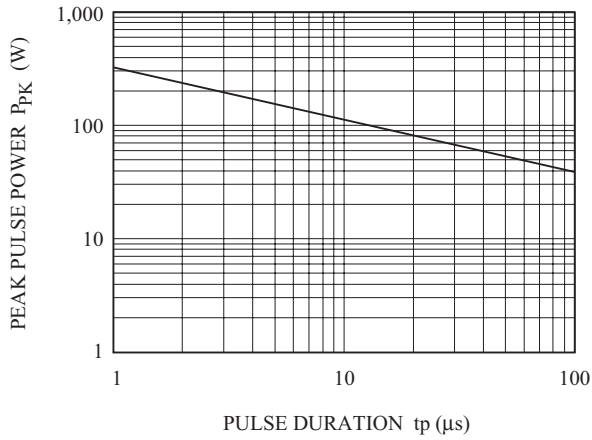


ELECTRICAL CHARACTERISTICS (Ta=25)

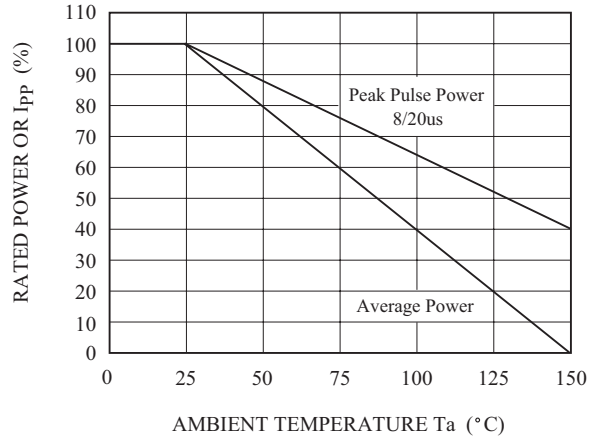
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage	V _{RWM}	Any I/O pin to ground	-	-	5	V
Reverse Leakage Current	I _R	V _{RWM} =5V	-	-	300	nA
Snap-back Voltage	V _{SB}	I _{SB} =100 μA, 50mA	5.5	-	-	V
Punch-through Voltage	V _{PT}	I _{PT} =2 μA	6	-	-	V
Clamping Voltage	V _C	I _{PP} =1A, tp=8/20 μs Any I/O pin to ground	-	9	12	V
		I _{PP} =5A, tp=8/20 μs Any I/O pin to ground	-	13	16	
Total Capacitance	C _T	V _R =0V, f=1MHz Between I/O pins	-	0.3	0.5	pF
		V _R =0V, f=1MHz Any I/O pin to ground	-	-	1.0	
Electrostatic Discharge	V _{ESD}	IEC61000-4-2	Air	± 30	-	kV
			Contact	± 25	-	

PS05SVU10

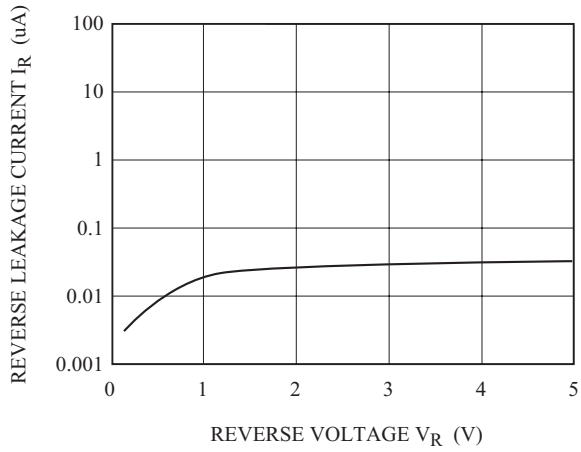
NON-REPETITIVE PEAK PULSE
POWER VS. PULSE TIME



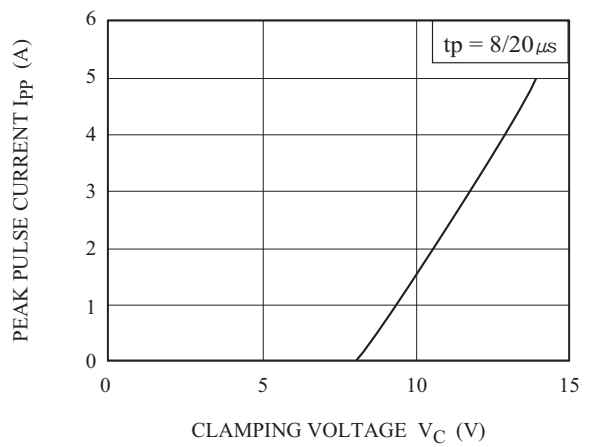
POWER DERATION CURVE



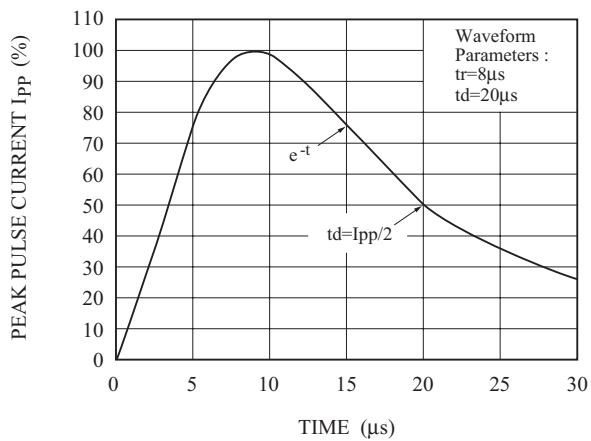
$I_R - V_R$ (I/O to GND)



$I_{pp} - V_C$ (I/O to GND)



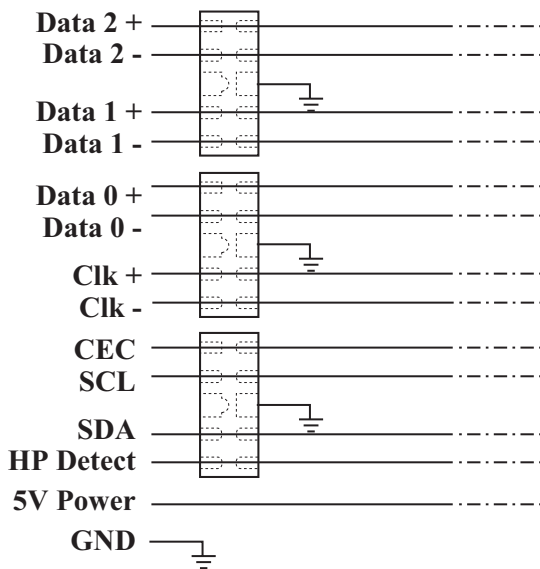
PULSE WAVEFORM



PS05SVU10

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
- SIM / SD



Recommended pad dimension & Marking Information

Recommended pad dimension	Marking Code
<p>The diagram illustrates the recommended pad dimensions for the component. Key dimensions are: <ul style="list-style-type: none"> Pad width: 0.50 Pad spacing: 0.20 Pad length: 0.20 Pad pitch: 1.00 Pad offset: 0.40 Pad height: 0.675 Pad thickness: 1.55 </p>	<p>The diagram shows the marking code on the component. The code is 05SU (Mark) and 01 (Weekly No.).</p>