

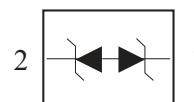
Protection in Portable Electronics Applications.

FEATURES

- Transient protection for data lines to
 - IEC 61000-4-2(ESD) : Air mode $\pm 20\text{kV}$ / Contact mode $\pm 18\text{kV}$
 - IEC 61000-4-5(Surge) : $1.5\text{A}(t_p=8/20\text{us})$
- Low capacitance $C_T = 0.3\text{pF}(\text{Max})$
- Bi-directional, symmetrical working voltage up to : $V_{RWM} = \pm 3.3\text{V}$
- Extremely small size $1.0 \times 0.6 \times 0.4\text{mm}$
- Low reverse current : $<5\text{nA}$ typical ($V_R = 3.3\text{V}$)
- Non Suffix : ULP-2 Package ex) PS03VBUL2-RTL/H
- Suffix U : ULP-2 Package& Qualified to AEC-Q101 ex) PS03VBUL2-RTL/HU
- Suffix R : ULP-2(4) Package ex) PS03VBUL2-RTL/HR
- Suffix UR : ULP-2(4) Package&Qualified to AEC-Q101 ex) PS03VBUL2-RTL/HUR
- Suffix P : ULP-2(5) Package ex) PS03VBUL2-RTL/HP
- Suffix UP : ULP-2(5) Package&Qualified to AEC-Q101 ex) PS03VBUL2-RTL/HUP



ULP-2 (leadless-type)



1. CATHODE 2. CATHODE

Pin configurations (Bi-directional)

PRODUCT DESCRIPTION

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

Package dimensions (ULP-2)	Package dimensions (ULP-2(4))	Package dimensions (ULP-2(5))																																																				
<table><tr><th>DIM</th><th>MILLIMETERS</th></tr><tr><td>A</td><td>1.0±0.05</td></tr><tr><td>B</td><td>0.6±0.05</td></tr><tr><td>C</td><td>0.4±0.05</td></tr><tr><td>C1</td><td>0.38^{+0.02}_{-0.03}</td></tr><tr><td>D</td><td>0.5±0.03</td></tr><tr><td>E</td><td>0.25±0.03</td></tr><tr><td>G</td><td>0.65±0.03</td></tr><tr><td>H</td><td>0.05</td></tr><tr><td>I</td><td>Max 0.05</td></tr></table>	DIM	MILLIMETERS	A	1.0±0.05	B	0.6±0.05	C	0.4±0.05	C1	0.38 ^{+0.02} _{-0.03}	D	0.5±0.03	E	0.25±0.03	G	0.65±0.03	H	0.05	I	Max 0.05	<table><tr><th>DIM</th><th>MILLIMETERS</th></tr><tr><td>A</td><td>1.00±0.10</td></tr><tr><td>B</td><td>0.60±0.10</td></tr><tr><td>C</td><td>0.40±0.05</td></tr><tr><td>D</td><td>0.50±0.05</td></tr><tr><td>E</td><td>0.25±0.05</td></tr><tr><td>G</td><td>Typ. 0.65</td></tr><tr><td>H</td><td>0.05±0.05</td></tr></table>	DIM	MILLIMETERS	A	1.00±0.10	B	0.60±0.10	C	0.40±0.05	D	0.50±0.05	E	0.25±0.05	G	Typ. 0.65	H	0.05±0.05	<table><tr><th>DIM</th><th>MILLIMETERS</th></tr><tr><td>A</td><td>1.00±0.05</td></tr><tr><td>B</td><td>0.60±0.05</td></tr><tr><td>C</td><td>0.50±0.05</td></tr><tr><td>D</td><td>0.50±0.03</td></tr><tr><td>E</td><td>0.25±0.03</td></tr><tr><td>G</td><td>0.65 BSC</td></tr><tr><td>I</td><td>Max 0.03</td></tr></table>	DIM	MILLIMETERS	A	1.00±0.05	B	0.60±0.05	C	0.50±0.05	D	0.50±0.03	E	0.25±0.03	G	0.65 BSC	I	Max 0.03
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ORDERING INFORMATION

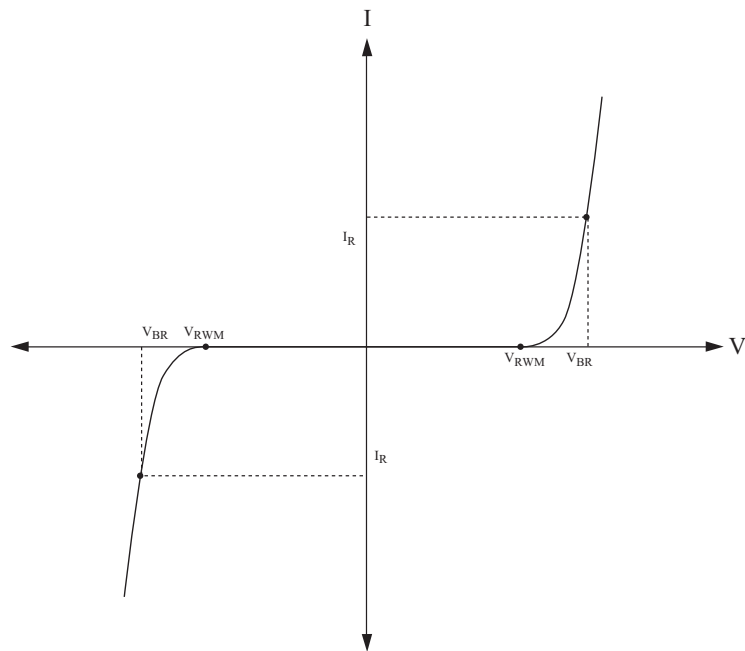
Part Number	Qty per Reel	Reel Size	Marking code
PS03VBUL2-RTL	10,000	7 inch	S

PS03VBUL2

MAXIMUM RATING (Ta=25)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Pulse Power (tp=8/20 μs)	P _{PK}	18	W
Peak Pulse Current (tp=8/20 μs)	I _{PP}	1.5	A
Junction Temperature	T _J	-55 150	
Storage Temperature	T _{stg}	-55 150	

DEFINITIONS OF ELECTRICAL CHARACTERISTIC SYMBOL

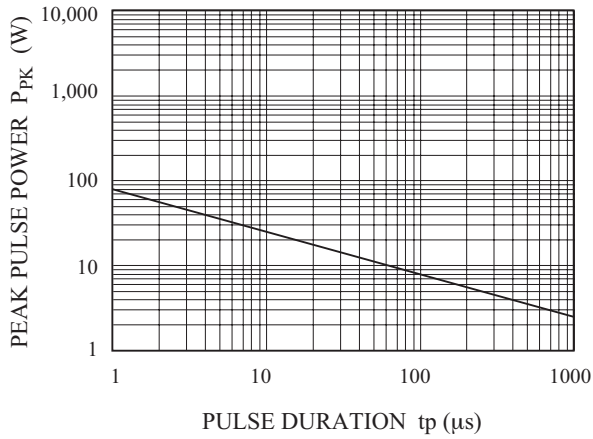


ELECTRICAL CHARACTERISTICS (Ta=25)

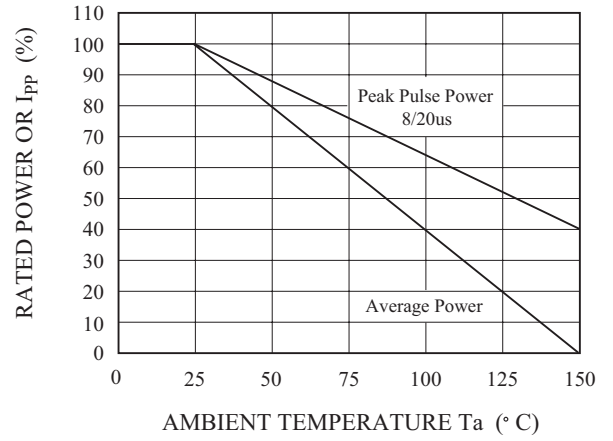
CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage	V _{RWM}	-		-	-	3.3	V
Reverse Leakage Current	I _R	V _R =3.3V		-	5	100	nA
Reverse Breakdown Voltage	V _{BR}	I _t =1mA		4.5	-	-	V
Total Capacitance	C _T	V _R =0V, f=1MHz		-	0.23	0.3	pF
Clamping Voltage	V _C	I _{pp} =1.5A, tp=8/20 μs		-	9.5	12	V
Electrostatic Discharge	V _{ESD}	IEC 61000-4-2	Air	± 20	-	-	kV
			Contact	± 18			

PS03VBUL2

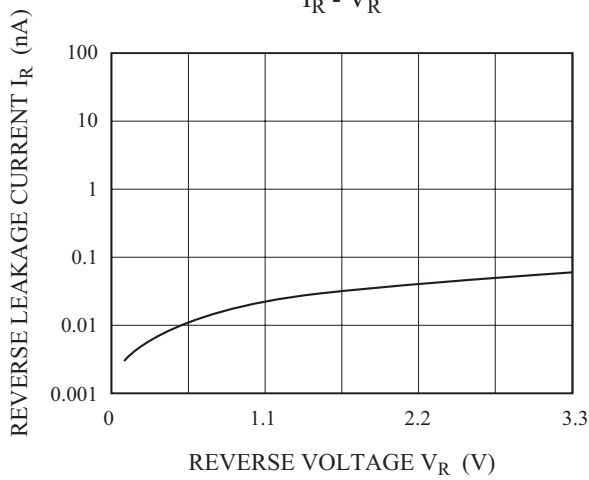
NON-REPETITIVE PEAK PULSE
POWER VS. PULSE TIME



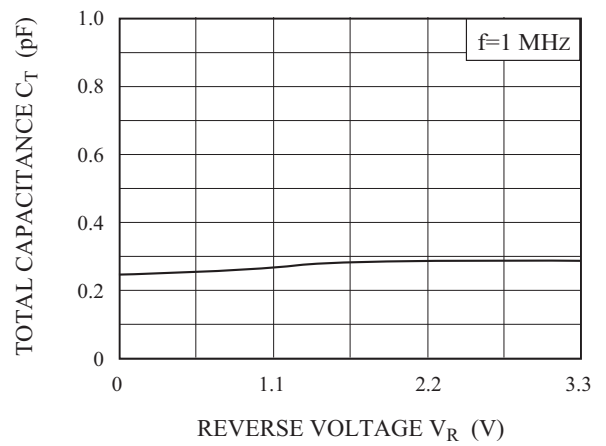
POWER DERATION CURVE



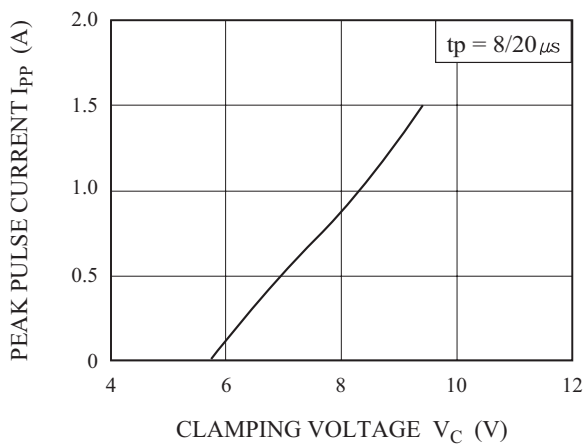
$I_R - V_R$



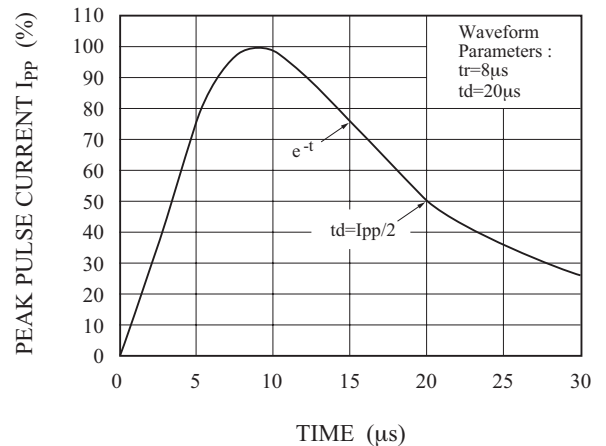
$C_T - V_R$



$I_{pp} - V_C$



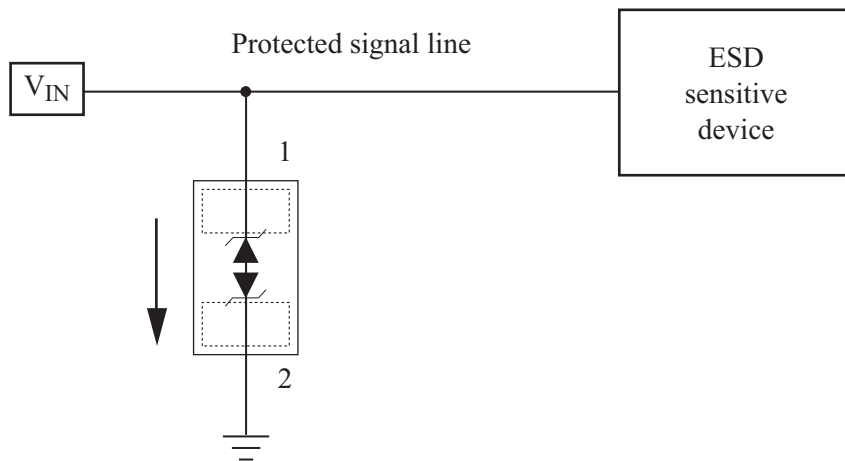
PULSE WAVEFORM



PS03VBUL2

APPLICATIONS

- USB 2.0, USB 3.0, USB 3.1
- 10/100/1000 Ethernet, DVI, HDMI, S-ATA
- MDDI Port
- LCD-Display, Camera
- GPS/FM Antennas
- LVDS
- High speed data lines



Recommended pad dimension & Marking Information

Recommended pad dimension	Marking Code
The diagram shows the recommended pad dimensions for the PS03VBUL2 device. It features two rectangular pads. The top pad has a width of 1.4 and a height of 0.6. The bottom pad has a width of 0.55 and a height of 0.6. The distance between the centers of the two pads is 0.3. The total width of the two pads is 0.85.	The marking code 'S' is shown inside a rectangular frame.