

Ultra Low capacitance & Low Clamping Voltage

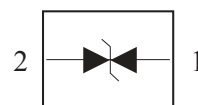
Bi-directional ESD / Transient Protection Diodes

FEATURES

- Transient protection for data lines to
 - IEC61000-4-2(ESD) : Air mode $\pm 30\text{kV}$ / Contact mode $\pm 20\text{kV}$
 - IEC61000-4-4(EFT) : $\pm 50\text{A}$ (5/50ns)
 - IEC61000-4-5(Surge) : 4A ($t_p=8/20\mu\text{s}$)
- Low capacitance $C_T = 0.5\text{pF}(\text{Max})$
- Bi-directional, symmetrical working voltage up to : $V_{RWM} = \pm 3.5\text{V}$
- Extremely small Size $1.0 \times 0.6 \times 0.4\text{mm}$
- Low reverse current : $<10\text{nA}$ typical ($V_{RWM}=5\text{V}$)
- Non Suffix : ULP-2 Package ex) PS03TBUL2-RTL/H
- Suffix U : ULP-2 Package&Qualified to AEC-Q101 ex) PS03TBUL2-RTL/HU
- Suffix R : ULP-2(4) Package ex) PS03TBUL2-RTL/HR
- Suffix UR : ULP-2(4) Package&Qualified to AEC-Q101 ex) PS03TBUL2-RTL/HUR
- Suffix P : ULP-2(5) Package ex) PS03TBUL2-RTL/HP
- Suffix UP : ULP-2(5) Package&Qualified to AEC-Q101 ex) PS03TBUL2-RTL/HUP



ULP-2 (leadless-type)



1. ANODE 2. ANODE

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))																																																				
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ORDERING INFORMATION

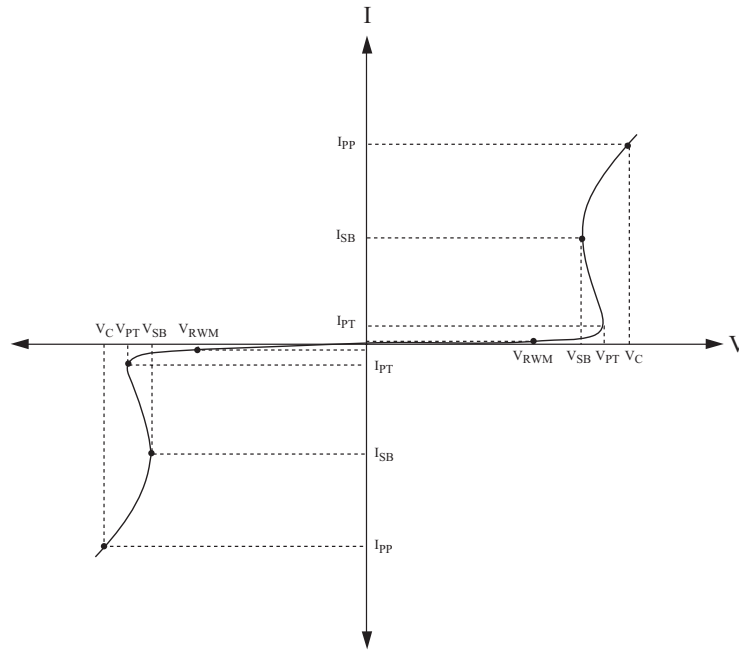
Part Number	Qty per Reel	Reel Size	Marking code
PS03TBUL2-RTL	10,000	7 inch	8

PS03TBUL2

MAXIMUM RATING (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Pulse Power (tp=8/20 μs)	P _{PK}	50	W
Peak Pulse Current (tp=8/20 μs)	I _{PP}	4	A
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55 150	°C

DEFINITIONS OF ELECTRICAL CHARACTERISTIC SYMBOL

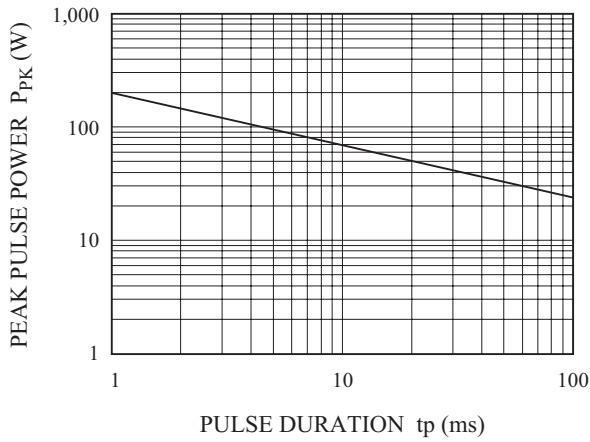


ELECTRICAL CHARACTERISTICS (Ta=25°C)

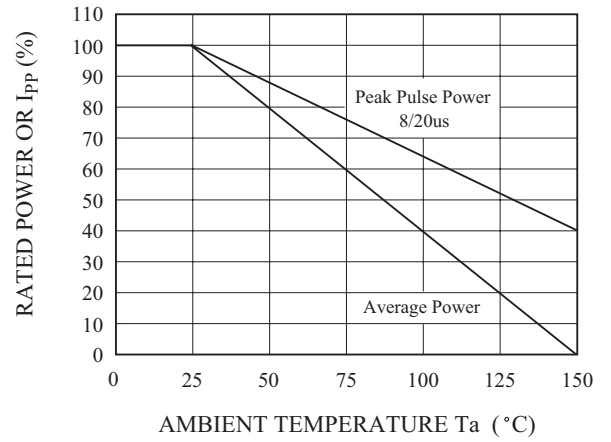
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage	V _{RWM}	-	-	-	3.5	V
Reverse Leakage Current	I _R	V _{RWM} =3.5V	-	1	50	nA
Snap-back Voltage	V _{SB}	-	4	-	-	V
Punch-through Voltage	V _{PT}	I _{PT} =2 μA	4.5	6.72	9	V
Total Capacitance	C _T	V _R =0V, f=1MHz	-	0.4	0.5	pF
Clamping Voltage	V _C	I _{PP} =1A, tp=8/20 μs (IEC61000-4-5)	-	9	11	V
		I _{PP} =4A, tp=8/20 μs (IEC61000-4-5)	-	10.7	13	
		I _{TLP} =4A, tp=100 μs	-	10	14	
		I _{TLP} =20A, tp=100 μs	-	24	28	
Electrostatic Discharge	V _{ESD}	IEC61000-4-2	Air	±30	-	kV
			Contact	±20	-	

PS03TBUL2

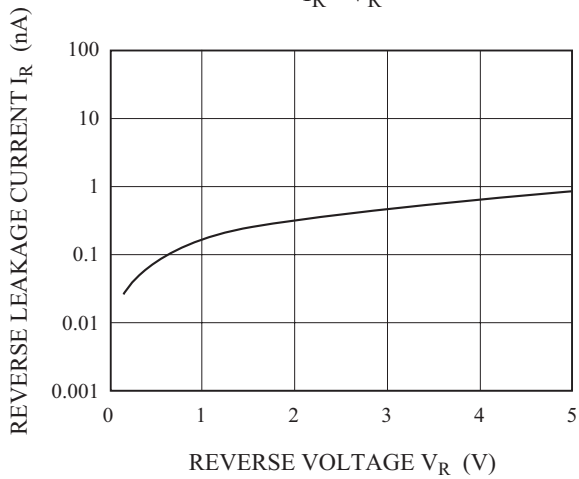
NON-REPETITIVE PEAK PULSE
POWER VS. PULSE TIME



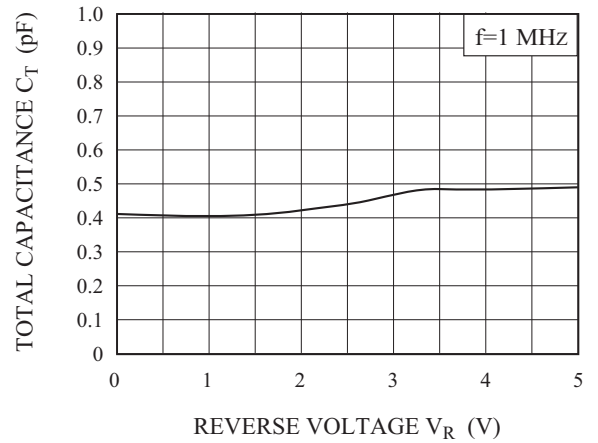
POWER DERATION CURVE



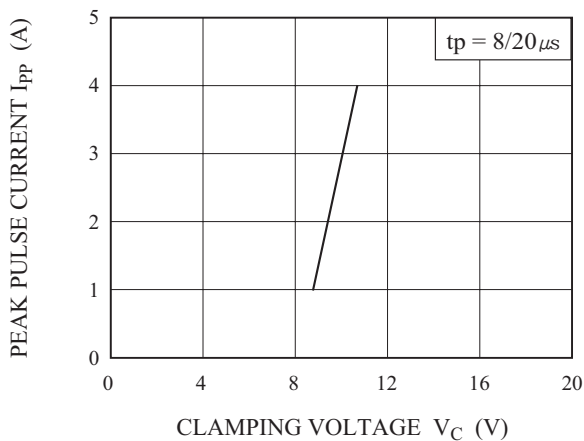
$I_R - V_R$



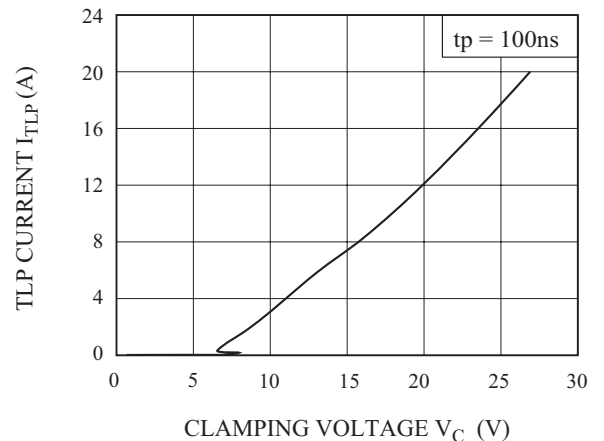
$C_T - V_R$



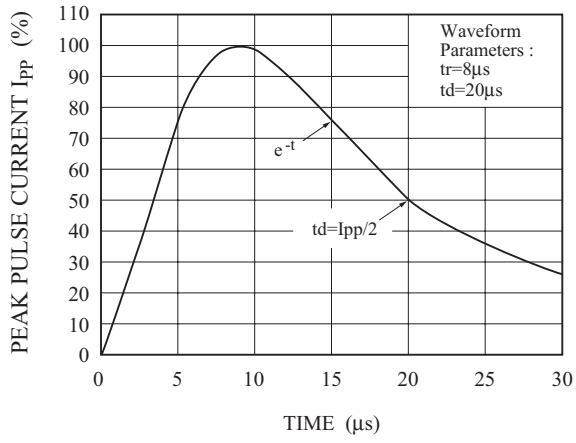
$I_{PP} - V_C$



$I_{TLP} - V_C$



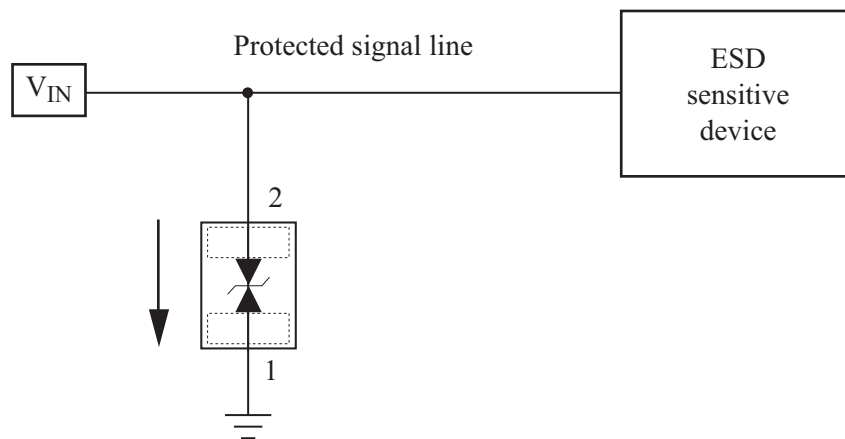
PULSE WAVEFORM



PS03TBUL2

APPLICATIONS

- USB 2.0, 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 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 diagram shows a rectangle with the number '8' in the center. The left terminal is labeled '2' and the right terminal is labeled '1'.