PS03CBUL2

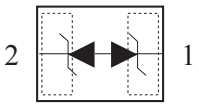
Single Line TVS Diode for ESD Protection in Portable Electronics

Protection in Portable Electronics Applications.

FEATURES

- Transient protection for data lines to
  - IEC61000-4-2(ESD) : Air mode ±30kV / Contact mode ±30kV
  - IEC61000-4-4(EFT) : 7A (tp=8/20us)
- Low capacitance C_T = 9pF(Max)
- Bi-directional, symmertrical working voltage up to : V_{RWM} = ±3.3V
- Extremely small Size 1.0×0.6×0.4mm
- Low reverse current : <10nA typical (V_{RWM}=3.3V)
- Non Suffix : ULP-2 Package ex) PS03CBUL2-RTL/H
- Suffix **U** : ULP-2 Package&Qualified to AEC-Q101 ex) PS03CBUL2-RTL/H**U**
- Suffix **R** : ULP-2(4) Package ex) PS03CBUL2-RTL/H**R**
- Suffix **UR** : ULP-2(4) Package&Qualified to AEC-Q101 ex) PS03CBUL2-RTL/H**UR**
- Suffix **P** : ULP-2(5) Package ex) PS03CBUL2-RTL/H**P**
- Suffix **UP** : ULP-2(5) Package&Qualified to AEC-Q101 ex) PS03CBUL2-RTL/H**UP**

ULP-2 (leadless-type)



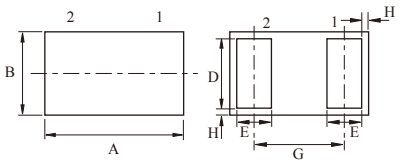
1. CATHODE 2. CATHODE

Pin configurations (Bi-directional)

PRODUCT DESCRIPTION

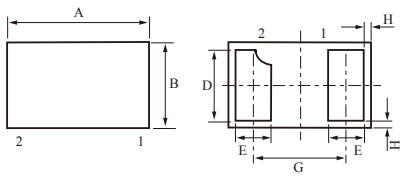
- Molding compound flammability rating : UL 94V-0
- Pb-Free, Halogen-Free, RoHs Compliant

Package dimensions (ULP-2)



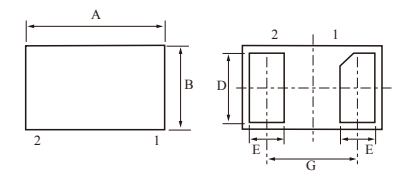
DIM	MILLIMETERS
A	1.0±0.05
B	0.6±0.05
C	0.4±0.05
C1	$0.38^{+0.02}_{-0.03}$
D	0.5±0.03
E	0.25±0.03
G	0.65±0.03
H	0.05
I	Max 0.05

Package dimensions (ULP-2(4))



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

Package dimensions (ULP-2(5))



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

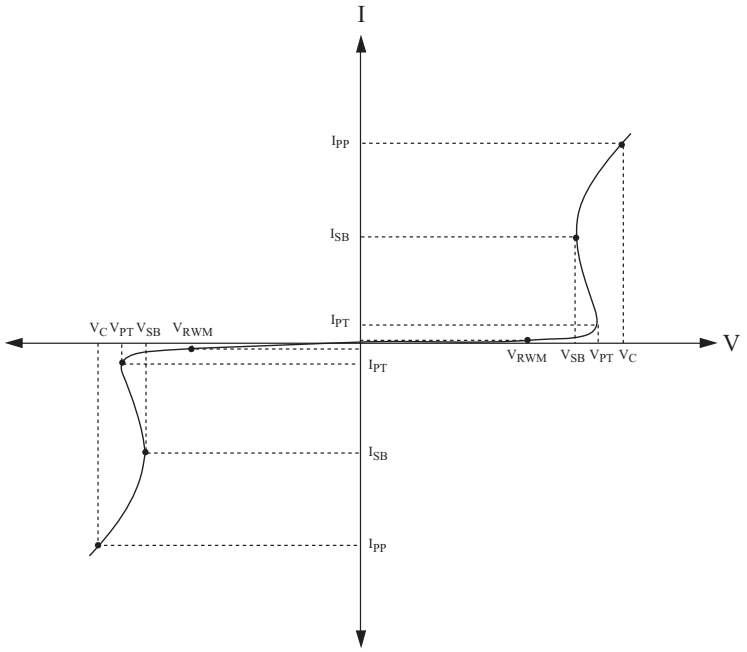
ORDERING INFORMATION

Part Number	Qty per Reel	Reel Size	Marking code
PS03CBUL2-RTL	10,000	7 inch	Z

MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Pulse Power (tp=8/20 μs)	P_{PK}	70	W
Peak Pulse Current (tp=8/20 μs)	I_{PP}	7	A
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-55 150	℃

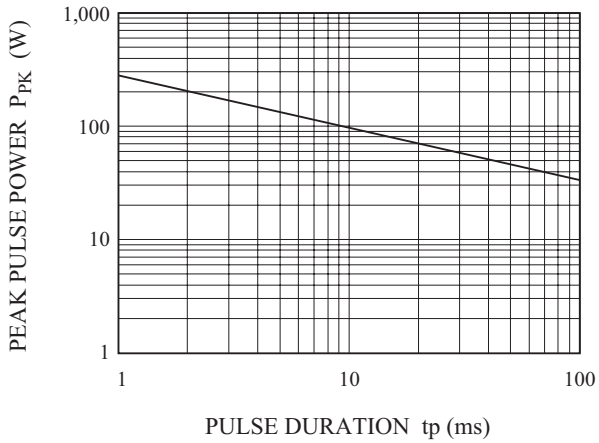
DEFINITIONS OF ELECTRICAL CHARACTERISTIC SYMBOL



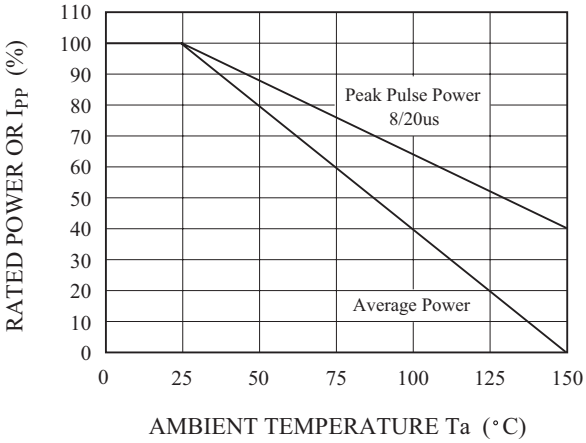
ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage	V_{RWM}	-		-	-	3.3	V
Reverse Leakage Current	I_R	V_{RWM}=3.3V		-	10	50	nA
Snap-back Voltage	V_{SB}	I_{SB}=100 μA, I_{SB}=50mA		3.4	-	-	V
Punch-through Voltage	V_{PT}	I_{PT}=2 μA		3.5	4	4.4	V
Total Capacitance	C_T	V_R=0V, f=1MHz		-	6	9	pF
Clamping Voltage	V_C	I_{PP}=1A, tp=8/20 μs		-	-	5.5	V
		I_{PP}=4A, tp=8/20 μs		-	-	7.5	
		I_{PP}=7A, tp=8/20 μs		-	-	10	
		I_{TLP}=4A, tp=100ns		-	10	15	
		I_{TLP}=24A, tp=100ns		-	12	17	
Electrostatic Discharge	V_{ESD}	IEC61000-4-2	Air	±30	-	-	kV
			Contact	±30			

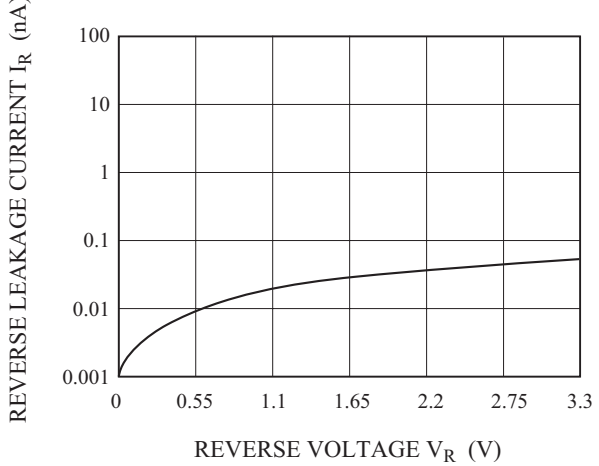
NON-REPETITIVE PEAK PULSE POWER VS. PULSE TIME



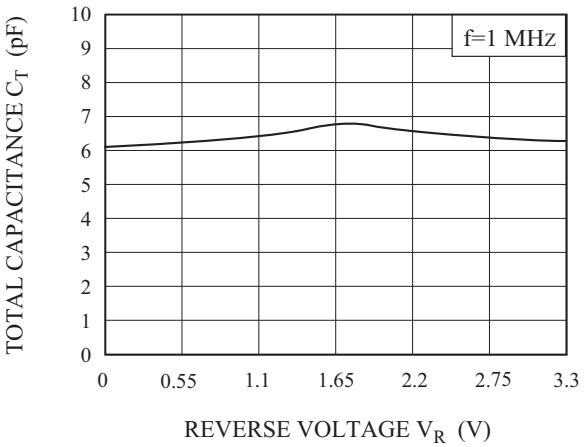
POWER DERATION CURVE



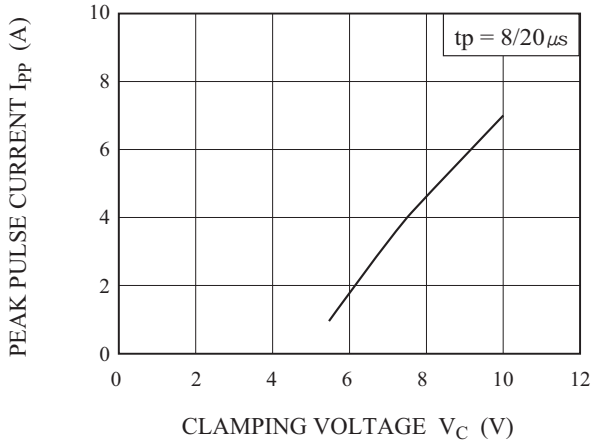
I_R - V_R



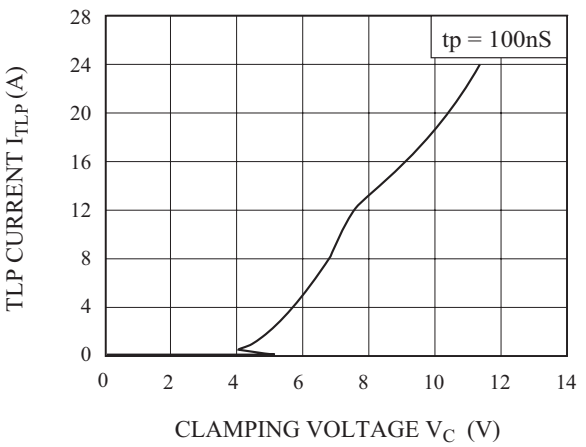
C_T - V_R



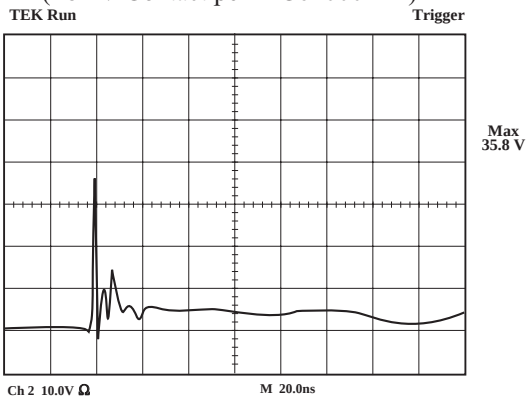
I_{PP} - V_C



I_{TLP} - V_C

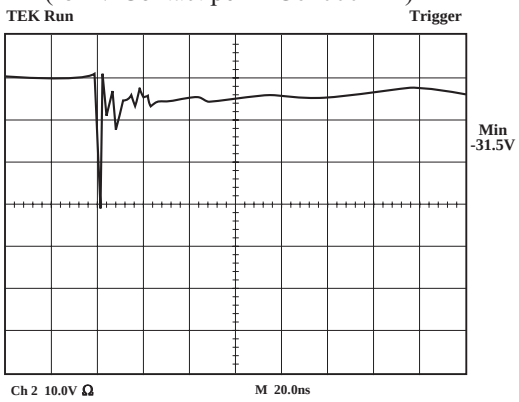


ESD Clamping
(+8 kV Contact per IEC61000-4-2)



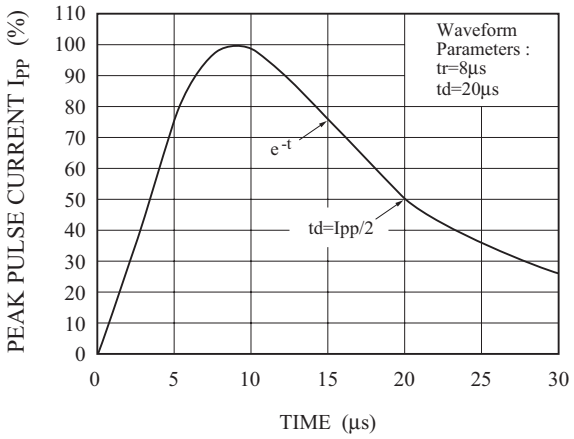
Note : Data is taken with a 10x attenuator

ESD Clamping
(-8 kV Contact per IEC61000-4-2)



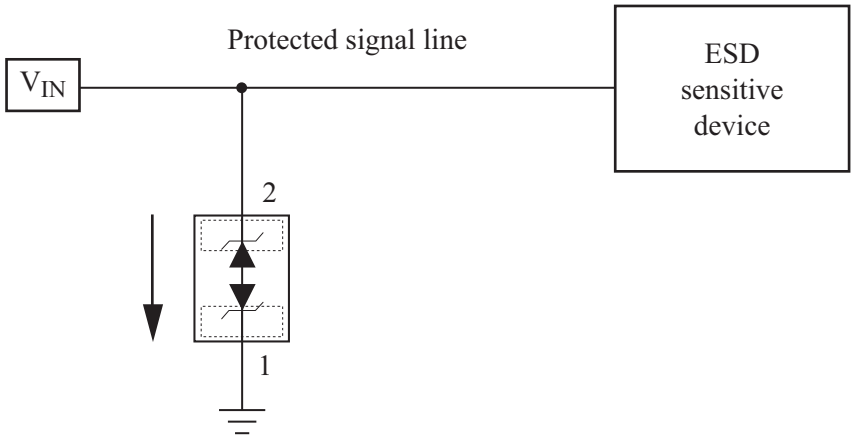
Note : Data is taken with a 10x attenuator

PULSE WAVEFORM



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