PS03TBUL2

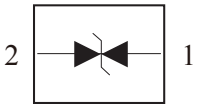
Single Line TVS Diode for ESD Protection in Portable Electronics

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 ±30kV / Contact mode ± 20kV
  - IEC61000-4-4(EFT) : ±50A (5/50ns)
  - IEC61000-4-5(Surge) : 4A (tp=8/20us)
- Low capacitance C_T = 0.5pF(Max)
- Bi-directional, symmertrical working voltage up to : V_{RWM} = ±3.5V
- Extremely small Size 1.0×0.6×0.4mm
- Low reverse current : <10nA typical (V_{RWM}=5V)
- Non Suffix : ULP-2 Package ex) PS03TBUL2-RTL/H
- Suffix **U** : ULP-2 Package&Qualified to AEC-Q101 ex) PS03TBUL2-RTL/H**U**
- Suffix **R** : ULP-2(4) Package ex) PS03TBUL2-RTL/H**R**
- Suffix **UR** : ULP-2(4) Package&Qualified to AEC-Q101 ex) PS03TBUL2-RTL/H**UR**
- Suffix **P** : ULP-2(5) Package ex) PS03TBUL2-RTL/H**P**
- Suffix **UP** : ULP-2(5) Package&Qualified to AEC-Q101 ex) PS03TBUL2-RTL/H**UP**
- Suffix **J** : ULP-2(6) Package ex) PS03TBUL2-RTL/H**J**
- Suffix **UJ** : ULP-2(6) Package&Qualified to AEC-Q101 ex) PS03TBUL2-RTL/H**UJ**

ULP-2 (leadless-type)

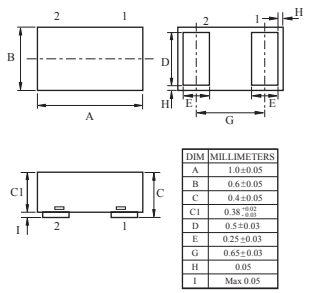
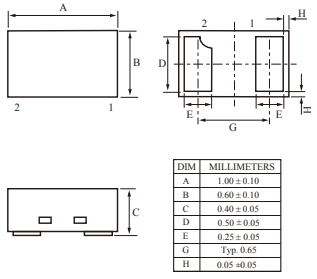
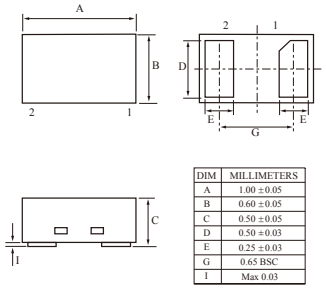
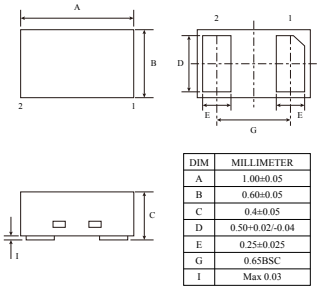


1. ANODE 2. ANODE

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))	Package dimensions (ULP-2(6))
			

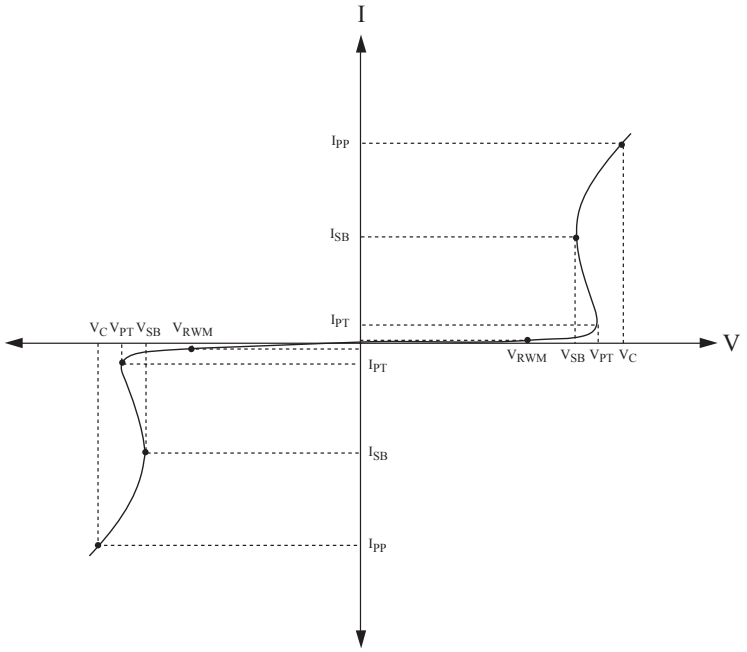
ORDERING INFORMATION

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

MAXIMUM RATING (Ta=25℃)

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	℃
Storage Temperature	T_{stg}	-55 ~ 150	℃

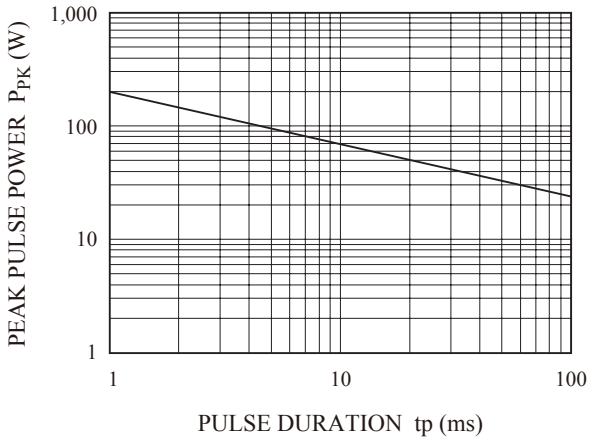
DEFINITIONS OF ELECTRICAL CHARACTERISTIC SYMBOL



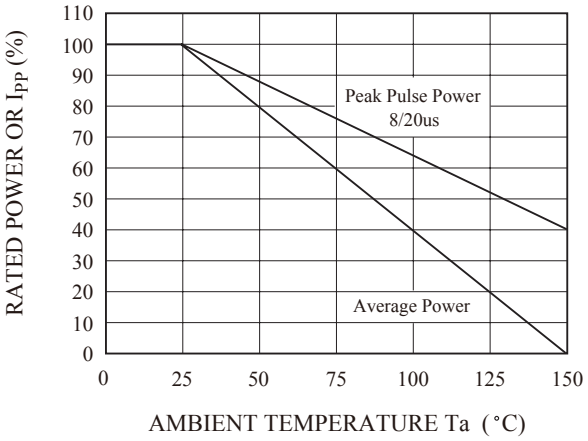
ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage	V_{RWM}	-		-	-	3.5	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			

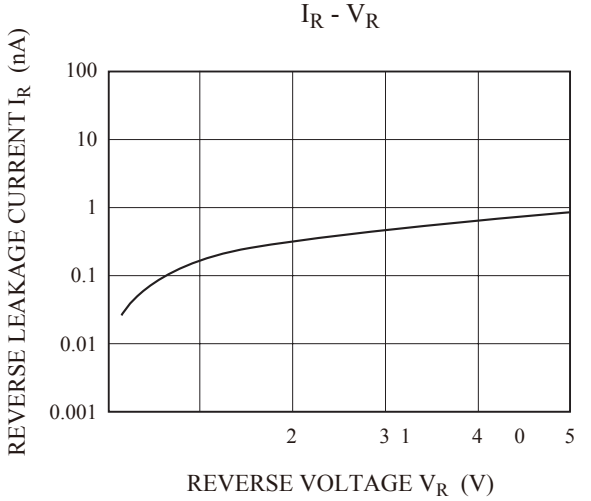
NON-REPETITIVE PEAK PULSE POWER VS. PULSE TIME



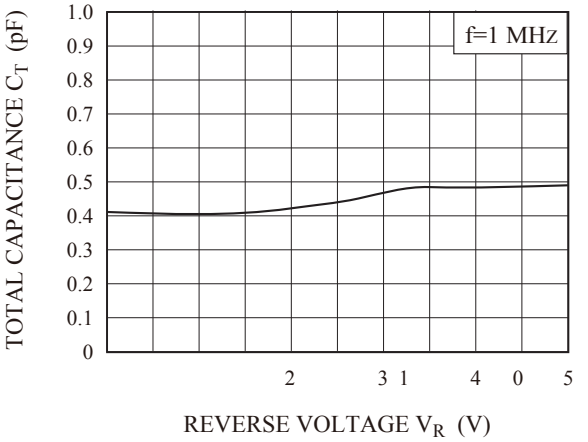
POWER DERATION CURVE



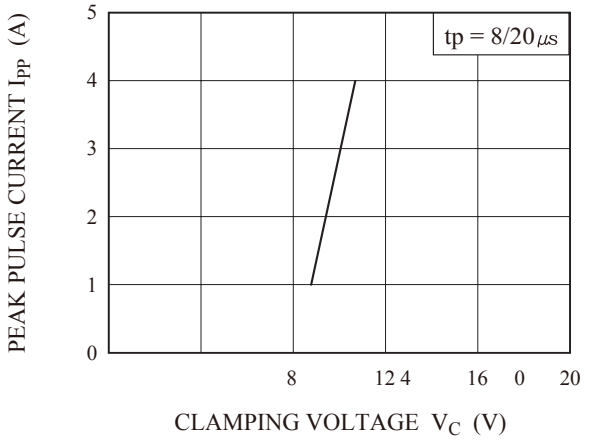
I_R - V_R



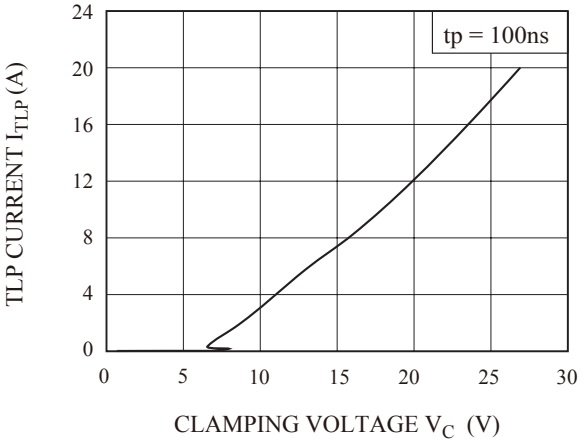
C_T - V_R



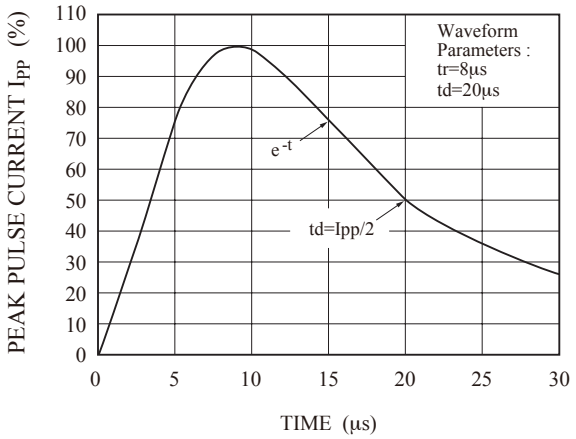
I_{PP} - V_C



I_{TLP} - V_C

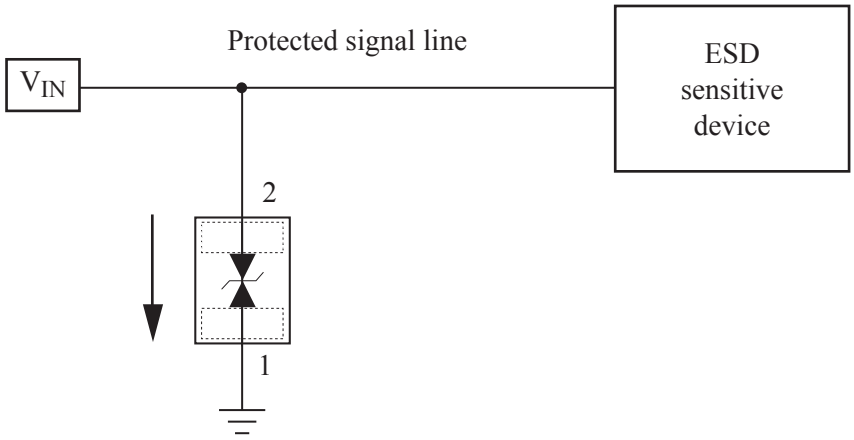


PULSE WAVEFORM



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