PS05TBUL2

Single Line TVS Diode for ESD Protection in Portable Electronics

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

ULP-2 (leadless-type)

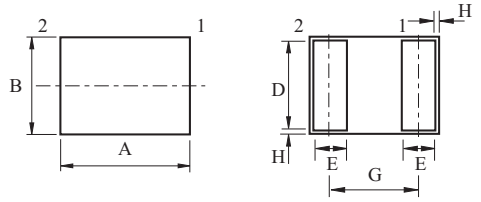
FEATURES

· Transient protection for data lines to
  - IEC61000-4-2(ESD) : Air mode ±30kV / Contact mode ±25kV
  - IEC61000-4-4(EFT) : ±50A (5/50ns)
  - IEC61000-4-5(Surge) : 4A(tp=8/20 μs)
· Low capacitance C_T = 0.5pF(Max)
· Bi-directional, symmertrical working voltage up to : V_{RWM} = ±5V
· Ultra small Size 1.0×0.6×0.4mm
· Low reverse current : 25nA typical (V_R=5V)
· Suffix U : Qualified to AEC-Q101.
  ex) PS05TBUL2-RTK/HU

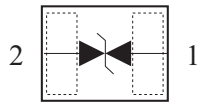
PRODUCT DESCRIPTION

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

Package dimensions (ULP-2)	Pin configurations (Bi-directional)



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



1. ANODE 2. ANODE

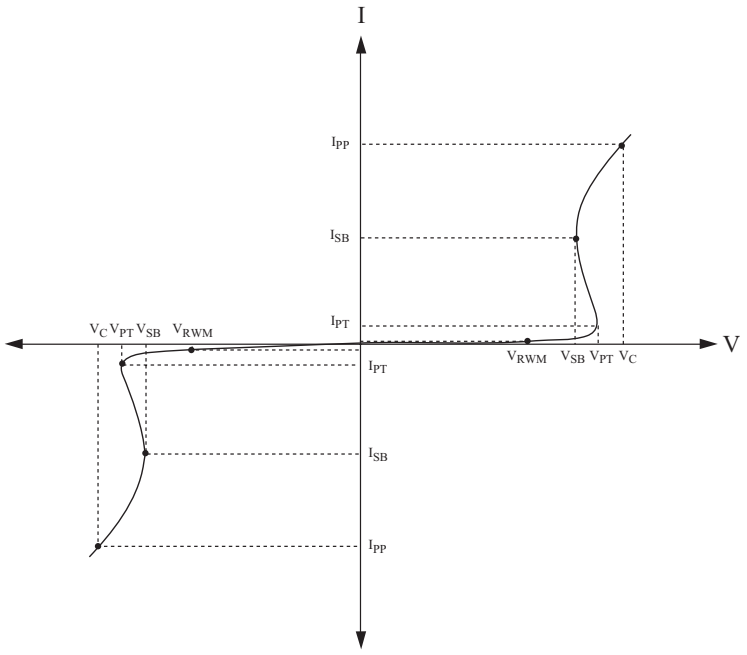
ORDERING INFORMATION

Part Number	Qty per Reel	Reel Size	Marking code
PS05TBUL2-RTK	5,000	7 inch	88
PS05TBUL2-RTL	10,000		

MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Pulse Power (tp=8/20 μs)	P_{PK}	60	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

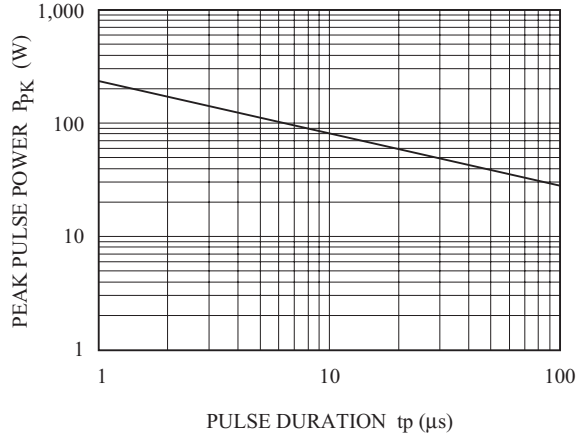


ELECTRICAL CHARACTERISTICS (Ta=25℃)

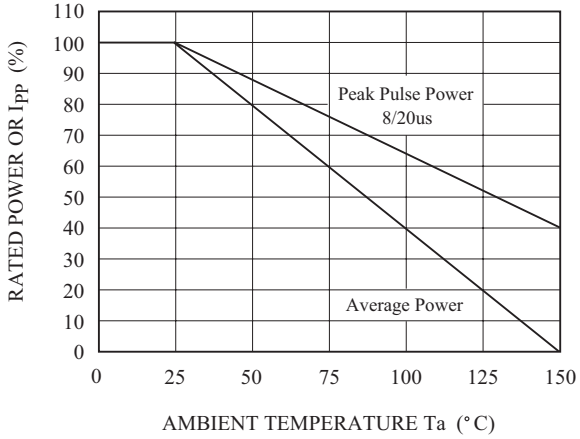
CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage	V_{RWM}	-		-	-	5	V
Reverse Leakage Current	I_R	V_{RWM}=5V		-	25	100	nA
Snab-back Voltage	V_{SB}	I_{SB}=100μA, I_{SB}=50mA		5.5	-	-	V
Punch-through Voltage	V_{PT}	I_{PT}=2 μA		6	8	10	V
Total Capacitance	C_T	V_R=0V, f=1MHz		-	0.4	0.5	pF
Clamping Voltage	V_C	I_{PP}=1A, tp=8/20 μs (IEC61000-4-5)		-	9	12	V
		I_{PP}=4A, tp=8/20 μs (IEC61000-4-5)		-	12	15	
		I_{TLP}=4A, tp=100ns		-	10	15	
		I_{TLP}=20A, tp=100ns		-	26	30	
Electrostatic Discharge	V_{ESD}	IEC61000-4-2	Air	±30	-	-	kV
			Contact	±25			

TYPICAL CHARACTERISTICS (Ta=25℃)

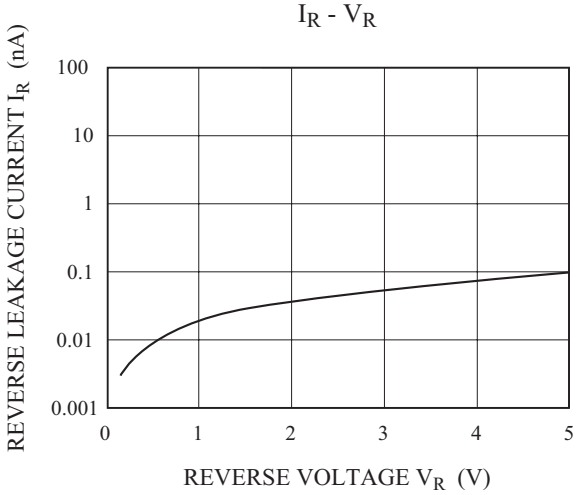
NON-REPETITIVE PEAK PULSE POWER VS. PULSE TIME



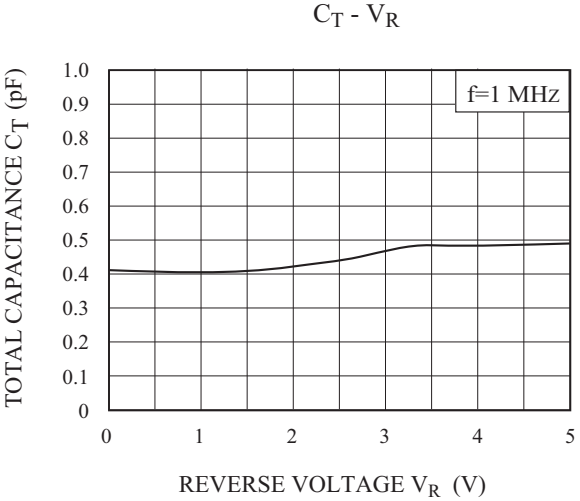
POWER DERATION CURVE



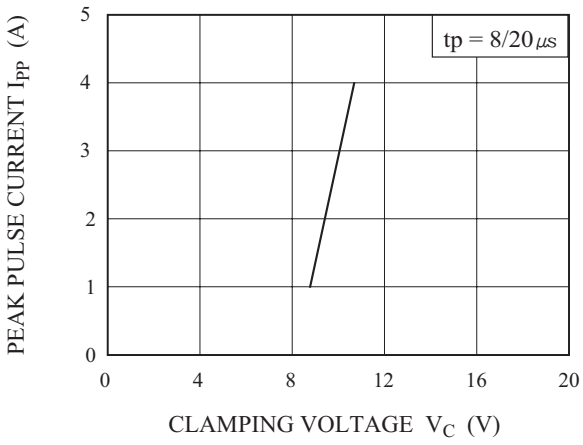
I_R - V_R



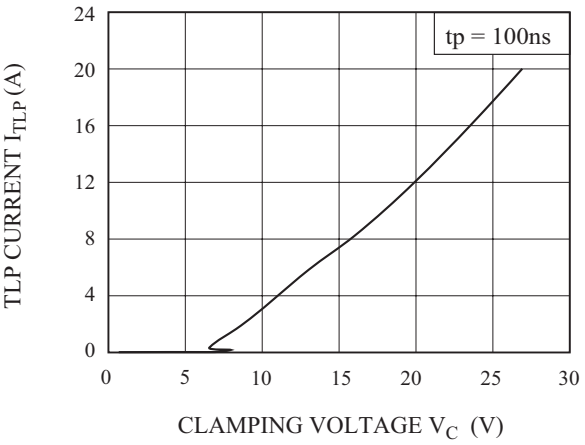
C_T - V_R



I_{PP} - V_C

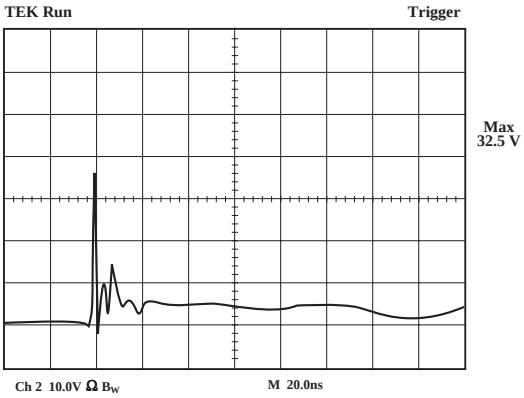


I_{TLP} - V_C



ESD Clamping

(+8 kV Contact per IEC 61000-4-2)



Note : Data is taken with a 10x attenuator

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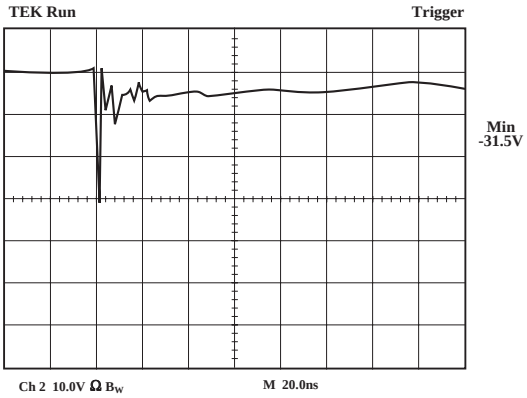

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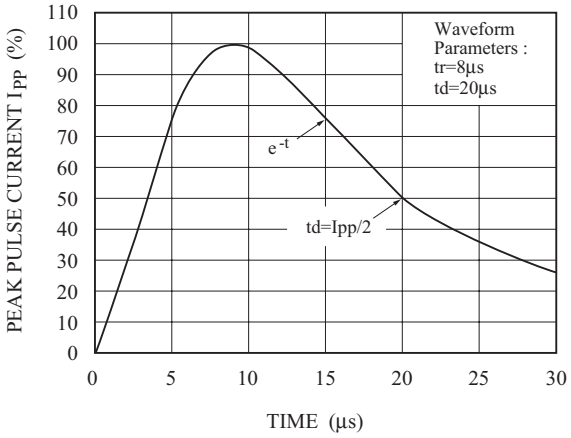
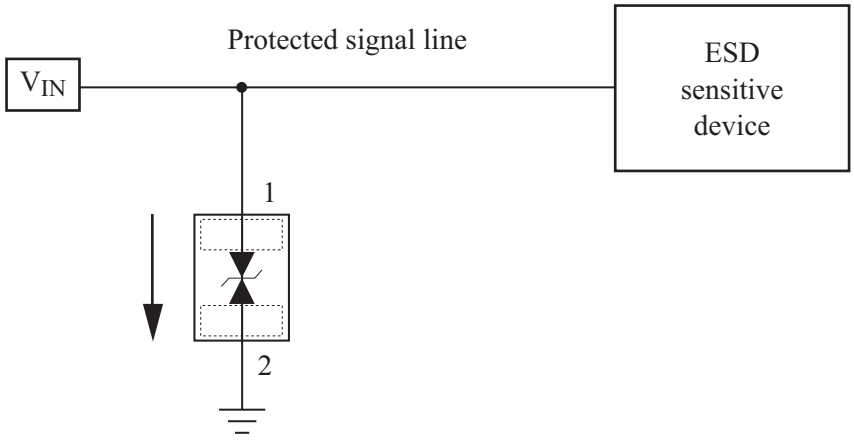
PULSE WAVEFORM



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