PS05TSUL2

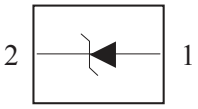
Single Line TVS Diode for ESD Protection in Portable Electronics

Ultra Low capacitance & Low Clamping Voltage
Uni-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㎲)
- Low capacitance C_T = 0.9pF(Max)
- Uni-directional, symmertrical working voltage up to : V_{RWM} = 5V
- Ultra small Size 1.0 × 0.6 × 0.5mm
- Low reverse current : <25nA typical (V_R=5V)
- Non Suffix : ULP-2(1) Package ex) PS05TSUL2-RTL/H
- Suffix **U** : ULP-2(1) Package&Qualified to AEC-Q101 ex) PS05TSUL2-RTL/H**U**
- Suffix **R** : ULP-2(4) Package ex) PS05TSUL2-RTL/H**R**
- Suffix **UR** : ULP-2(4) Package&Qualified to AEC-Q101 ex) PS05TSUL2-RTL/H**UR**
- Suffix **P** : ULP-2(5) Package ex) PS05TSUL2-RTL/H**P**
- Suffix **UP** : ULP-2(5) Package&Qualified to AEC-Q101 ex) PS05TSUL2-RTL/H**UP**

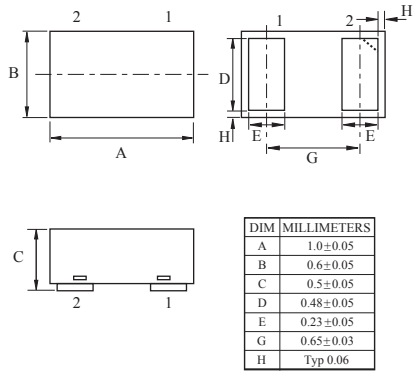
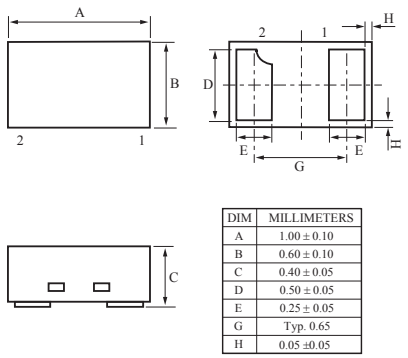
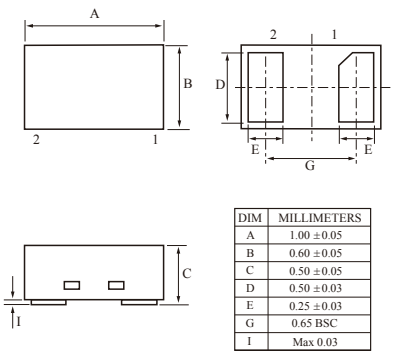


1. ANODE 2. CATHODE

Pin configurations (Uni-directional)

PRODUCT DESCRIPTION

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

Package dimensions (ULP-2(1))	Package dimensions (ULP-2(4))	Package dimensions (ULP-2(5))
		

DIM	MILLIMETERS
A	1.0±0.05
B	0.6±0.05
C	0.5±0.05
D	0.48±0.05
E	0.23±0.05
G	0.65±0.03
H	Typ 0.06

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

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

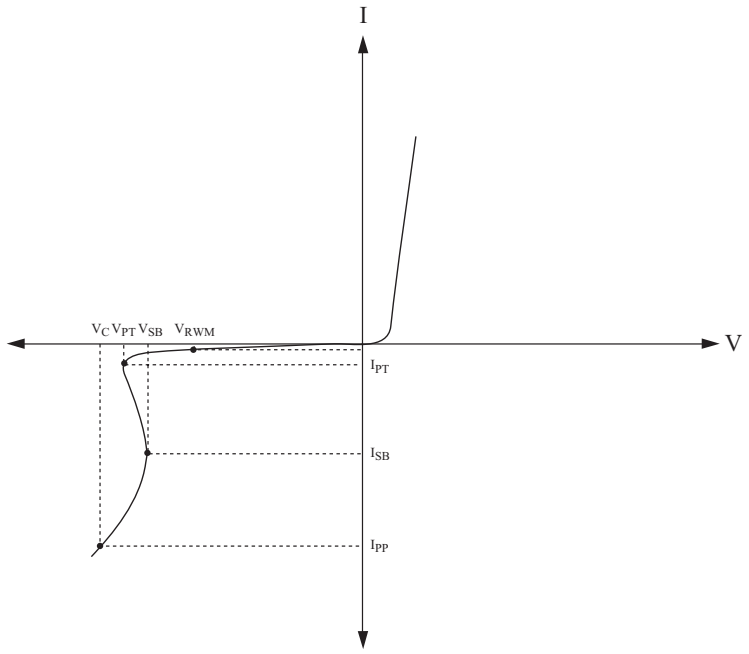
ORDERING INFORMATION

Part Number	Qty per Reel	Reel Size	Marking code
PS05TSUL2-RTL	10,000	7 inch	S2

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

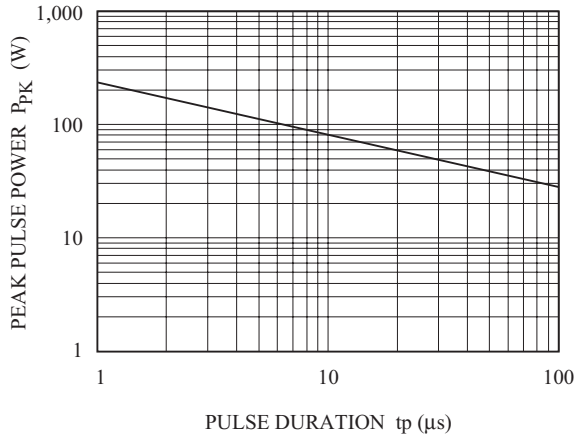


ELECTRICAL CHARACTERISTICS (Ta=25℃)

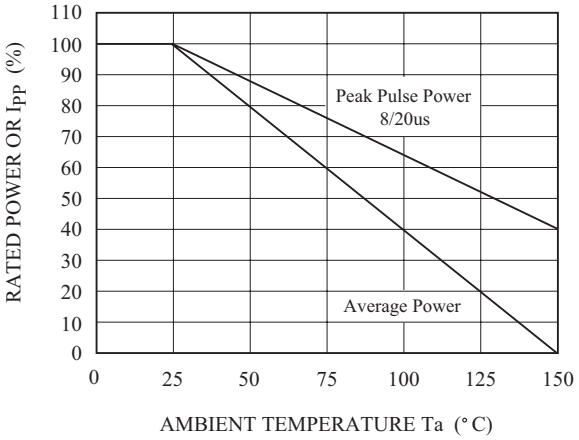
CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage	V_{RWM}	-		-	-	5	V
Reverse Leakage Current	I_R	V_{RWM}=5V		-	25	100	nA
Snab-back Voltage	V_{SB}	I_{SB}=120mA		5.5	-	-	V
Punch-through Voltage	V_{PT}	I_{PT}=2μA		6	8	10	V
Total Capacitance	C_T	V_R=0V, f=1MHz		-	0.75	0.9	pF
Clamping Voltage	V_C	I_{PP}=1A, tp=8/20μs (IEC61000-4-		-	9	12	V
		I_{PP}=4A, tp=8/20μs (IEC61000-4-		-	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℃)

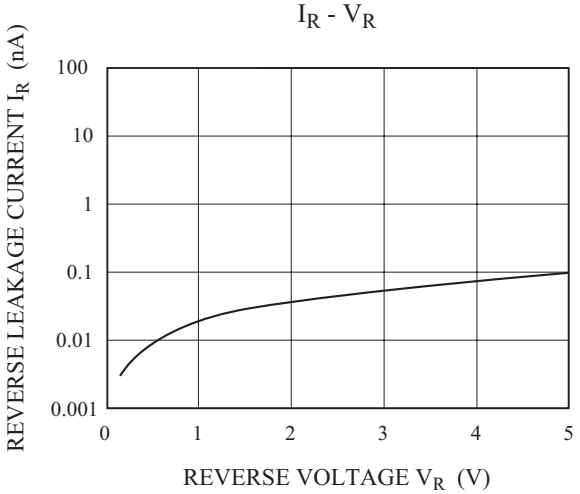
NON-REPETITIVE PEAK PULSE POWER VS. PULSE TIME



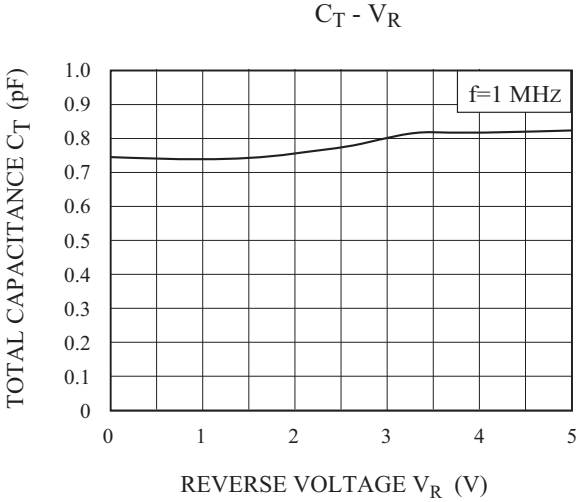
POWER DERATION CURVE



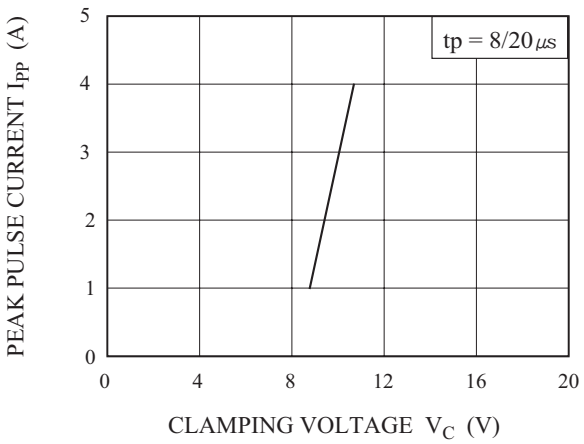
I_R - V_R



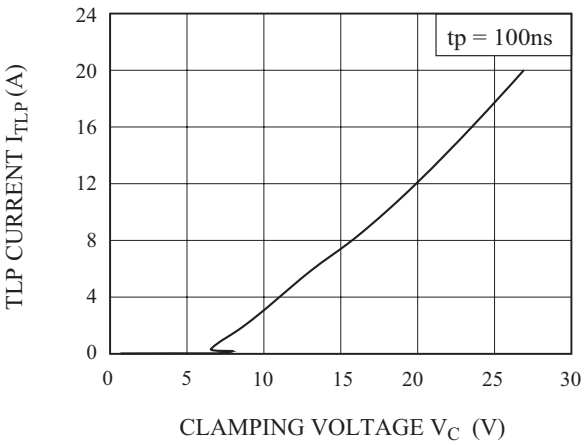
C_T - V_R



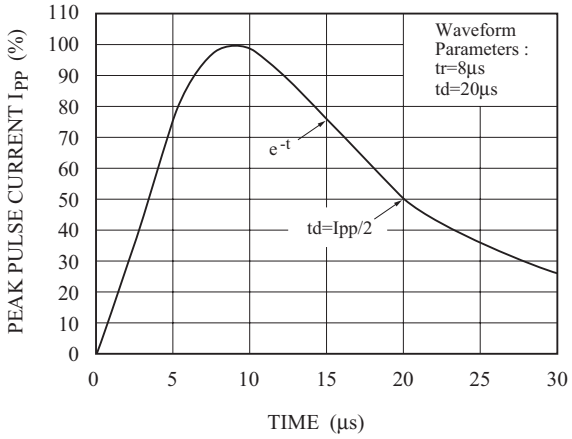
I_{PP} - V_C



I_{TLP} - V_C

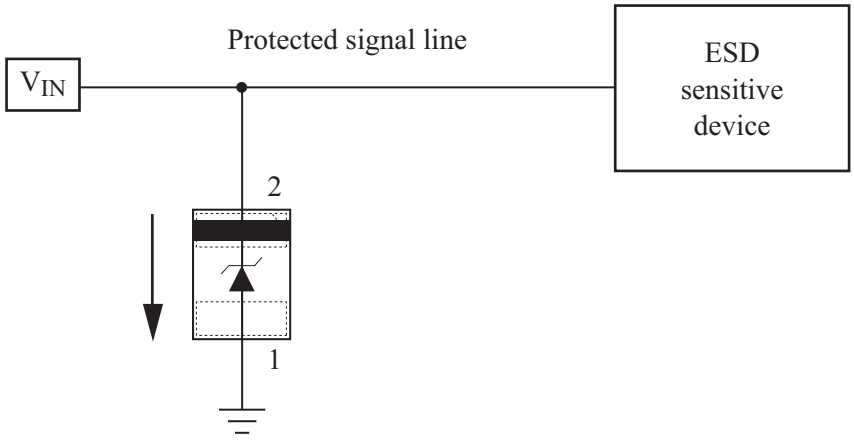


PULSE WAVEFORM



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