PS05DBUL2

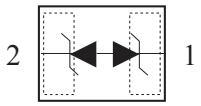
Single Line TVS Diode for ESD Protection in Portable Electronics

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

FEATURES

ULP-2 (leadless-type)

- Transient protection for data lines to
  - IEC61000-4-2(ESD) : Air mode ± 30kV / Contact mode ± 30kV
  - IEC61000-4-5(Surge) : 12A(tp=8/20us)
- Low capacitance C_T = 25pF(Max)
- Bi-directional, symmertrical working voltage up to : V_{RWM} = ± 5V
- Ultra small Size 1.0× 0.6 ×0.4mm
- Non Suffix : ULP-2 Package ex) PS05DBUL2-RTL/H
- Suffix **U** : ULP-2 Package&Qualified to AEC-Q101 ex) PS05DBUL2-RTL/H**U**
- Suffix **R** : ULP-2(4) Package ex) PS05DBUL2-RTL/H**R**
- Suffix **UR** : ULP-2(4) Package&Qualified to AEC-Q101 ex) PS05DBUL2-RTL/H**UR**
- Suffix **P** : ULP-2(5) Package ex) PS05DBUL2-RTL/H**P**
- Suffix **UP** : ULP-2(5) Package&Qualified to AEC-Q101 ex) PS05DBUL2-RTL/H**UP**



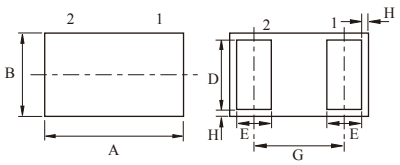
1. ANODE 2. ANODE

Pin configurations (Bi-directional)

PRODUCT DESCRIPTION

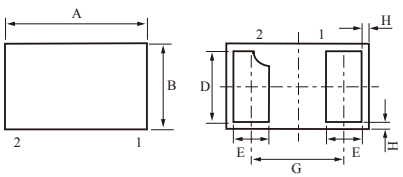
- Molding compound flammability rating : UL 94V-0
- Pb-Free, Halogen-Free, RoHs Compliant

Package dimensions (ULP-2)



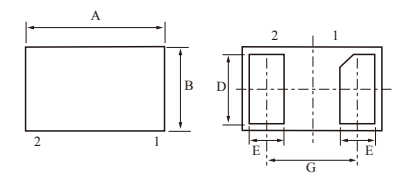
DIM	MILLIMETERS
A	1.0±0.05
B	0.6±0.05
C	0.4±0.05
C1	$0.38^{+0.02}_{-0.03}$
D	0.5±0.03
E	0.25±0.03
G	0.65±0.03
H	0.05
I	Max 0.05

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

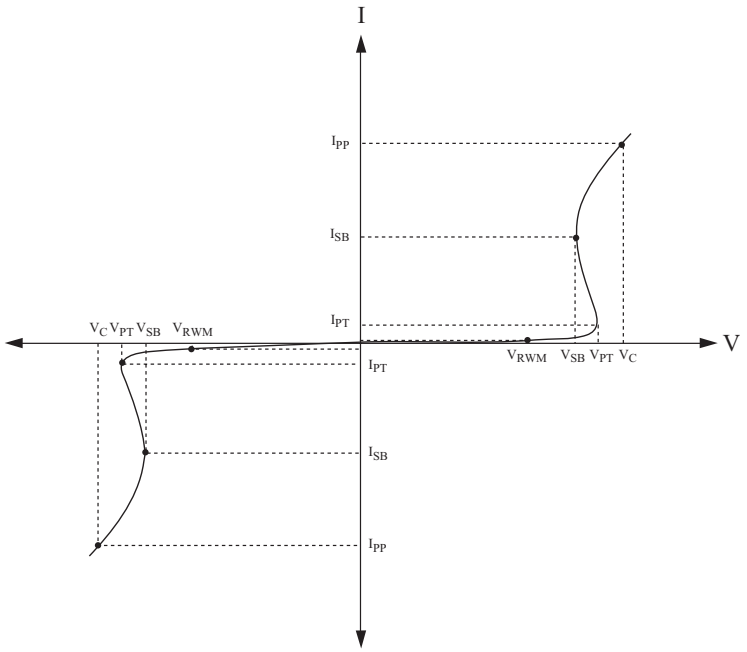
ORDERING INFORMATION

Part Number	Qty per Reel	Reel Size	Marking code
PS05DBUL2-RTL	10,000	7 inch	H

MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Pulse Power (tp=8/20 μs)	P_{PK}	200	W
Peak Pulse Current (tp=8/20 μs)	I_{PP}	12	A
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 150	℃

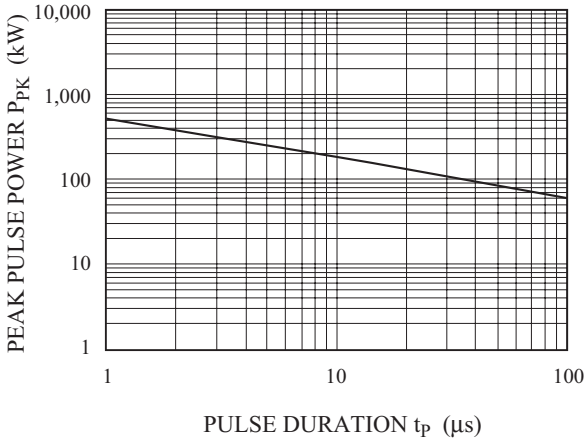
DEFINITIONS OF ELECTRICAL CHARACTERISTIC SYMBOL



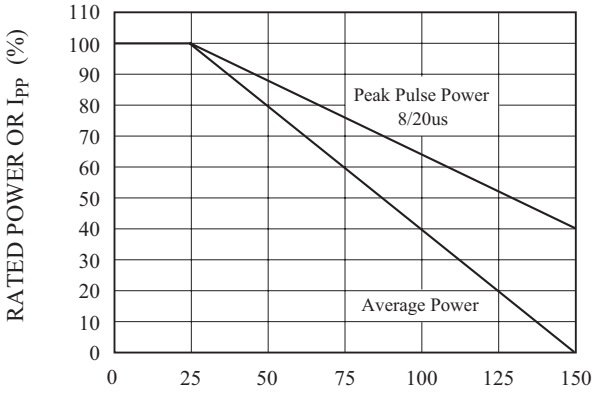
ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage	V_{RWM}	-		-	-	5	V
Punch-through Voltage	V_{PT}	I_{PT}=2 μA		6	-	-	V
Snap-back Voltage	V_{SB}	I_{SB}=100 μA, I_{SB}=50mA		5.8	-	-	V
Reverse Leakage Current	I_R	V_{RWM}=5V		-	-	0.1	μA
Total Capacitance	C_T	V_R=0V, f=1MHz		-	-	25	pF
Clamping Voltage	V_C	I_{PP}=1A, tp=8/20 μs (IEC61000-4-5)		-	7	10	V
		I_{PP}=12A, tp=8/20 μs (IEC61000-4-5)		-	12	17	
Electrostatic Discharge	V_{ESD}	IEC61000-4-2	Air	±30	-	-	kV
			Contact	±30			

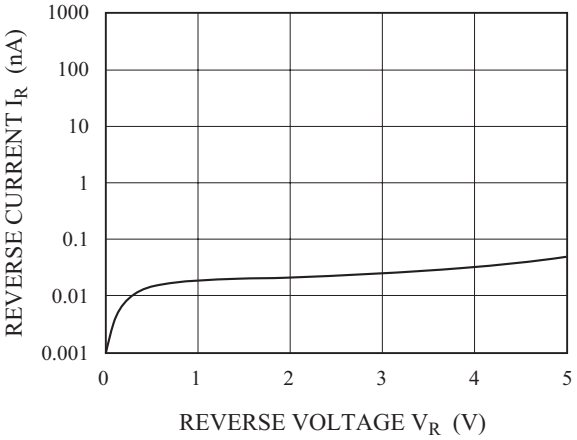
NON-REPETITIVE PEAK PULSE POWER VS. PULSE TIME



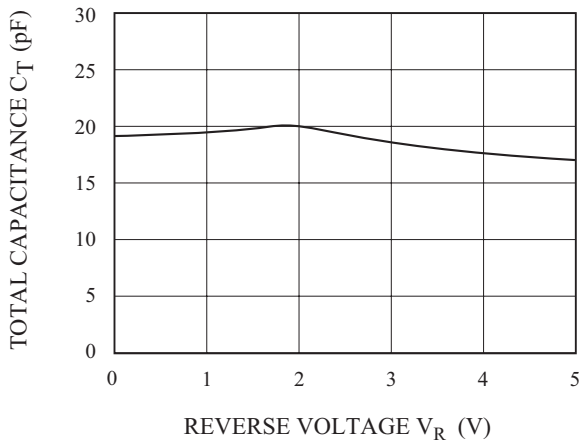
POWER DERATION CURVE



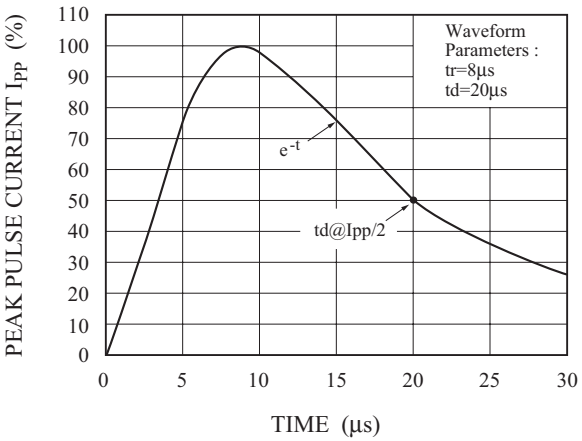
I_R - V_R



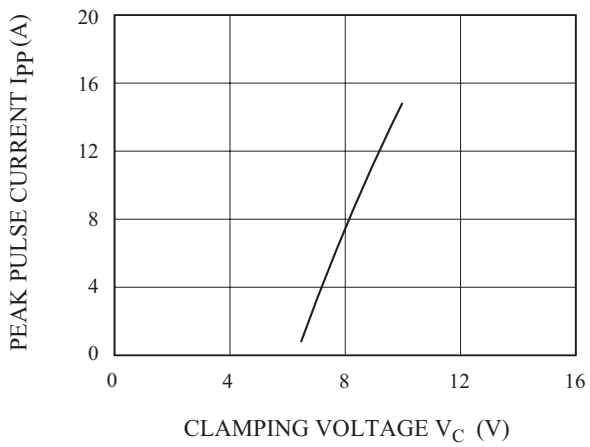
C_T - V_R



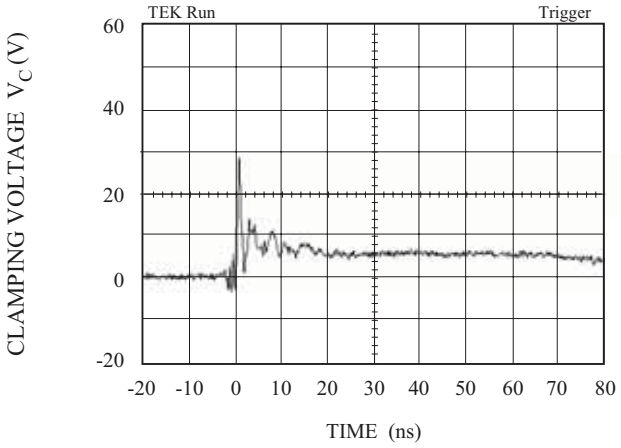
PULSE WAVEFORM



I_{PP} - V_C

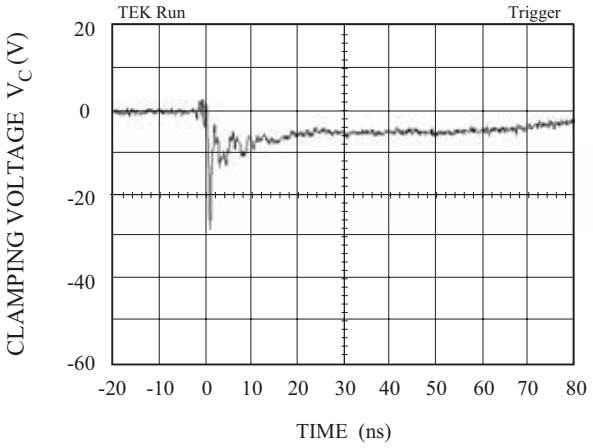


ESD Clamping
(+8 kV Contact per IEC 61000-4-2)



Note : Data is taken with a 10x attenuator

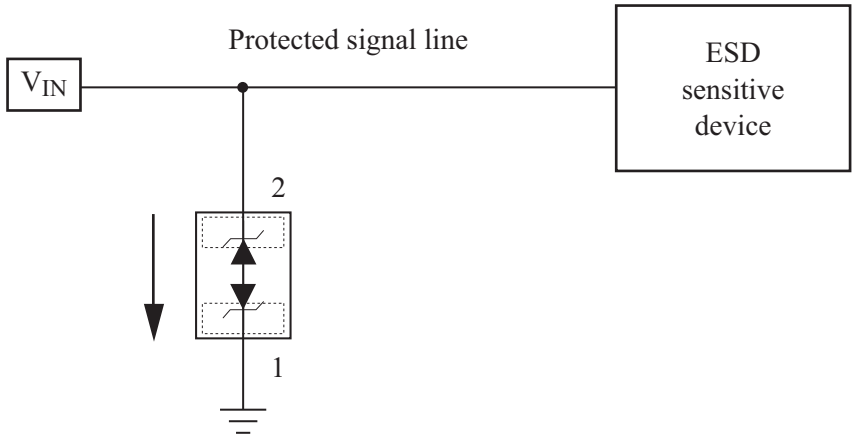
ESD Clamping
(-8 kV Contact per IEC 61000-4-2)



Note : Data is taken with a 10x attenuator

APPLICATIONS

- Audio and Video equipment
- Portable electronics
- Cellular handsets and accessories
- LCD-Display, Camera



Recommended pad dimension & Marking Information

Recommended pad dimension	Marking Code