

Ultra Low capacitance & Low Clamping Voltage

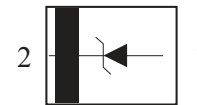
Uni-directional ESD / Transient Protection Diodes

FEATURES

- Transient protection for data lines to
 - IEC61000-4-2(ESD) : Air mode $\pm 30\text{kV}$ / Contact mode $\pm 25\text{kV}$
 - IEC61000-4-4(EFT) : $\pm 50\text{A}$ (5/50ns)
 - IEC61000-4-5(Surge) : $4\text{A}(t_p=8/20\mu\text{s})$
- Low capacitance $C_T = 0.9\text{pF}(\text{Max})$
- Uni-directional, symmetrical working voltage up to : $V_{RWM} = 5\text{V}$
- Ultra small Size $1.0 \times 0.6 \times 0.4\text{mm}$
- Low reverse current : $<25\text{nA}$ typical ($V_R=5\text{V}$)
- Non Suffix : ULP-2(2) Package ex) PS05TSUL2A-RTL/H
- Suffix U : ULP-2(2) Package&Qualified to AEC-Q101 ex) PS05TSUL2A-RTL/HU
- Suffix R : ULP-2(4) Package ex) PS05TSUL2A-RTL/HR
- Suffix UR : ULP-2(4) Package&Qualified to AEC-Q101 ex) PS05TSUL2A-RTL/HUR
- Suffix P : ULP-2(5) Package ex) PS05TSUL2A-RTL/HP
- Suffix UP : ULP-2(5) Package&Qualified to AEC-Q101 ex) PS05TSUL2A-RTL/HUP



ULP-2 (leadless-type)



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(2))	Package dimensions (ULP-2(4))	Package dimensions (ULP-2(5))																																																
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ORDERING INFORMATION

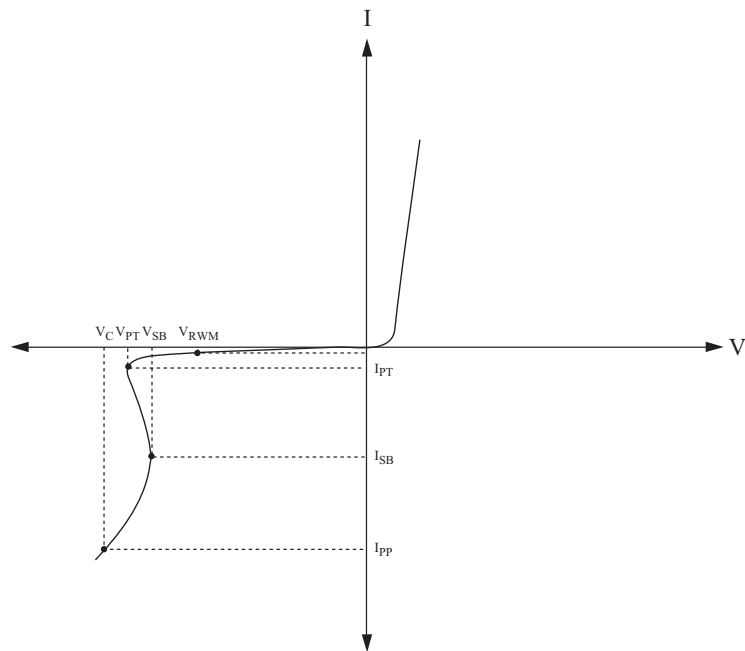
Part Number	Qty per Reel	Reel Size	Marking code
PS05TSUL2A-RTL	10,000	7 inch	S2

PS05TSUL2A

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



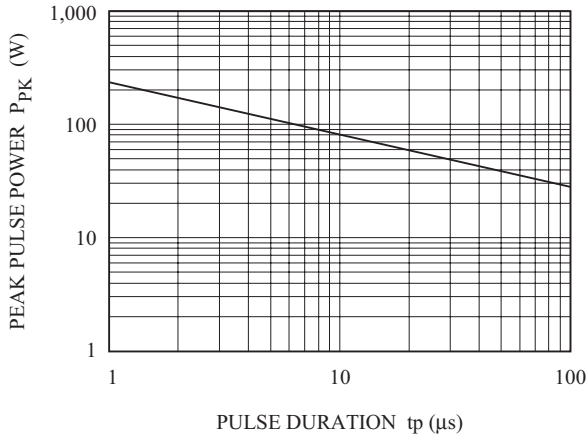
ELECTRICAL CHARACTERISTICS (Ta=25)

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
Snap-back Voltage	V _{SB}	I _{SB} =120mA	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	-	0.75	0.9	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 _{TLF} =4A, tp=100ns	-	10	15	
		I _{TLF} =20A, tp=100ns	-	26	30	
Electrostatic Discharge	V _{ESD}	IEC61000-4-2	Air	± 30	-	kV
			Contact	± 25	-	

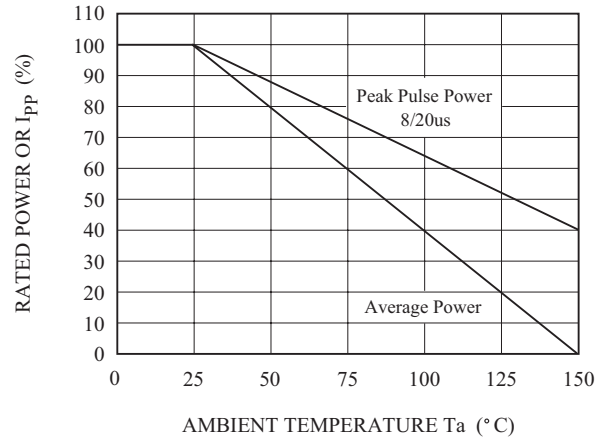
PS05TSUL2A

TYPICAL CHARACTERISTICS (Ta=25 °C)

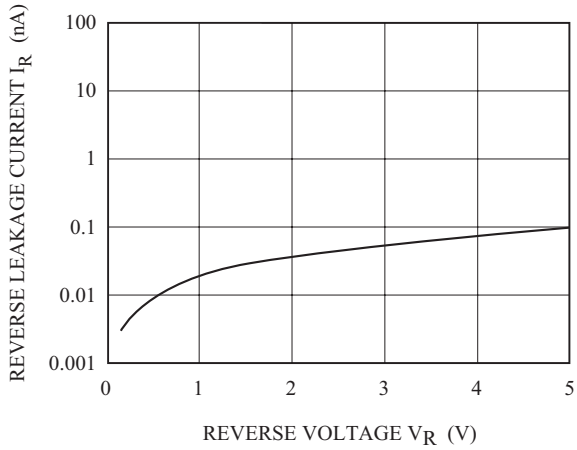
NON-REPETITIVE PEAK PULSE
POWER VS. PULSE TIME



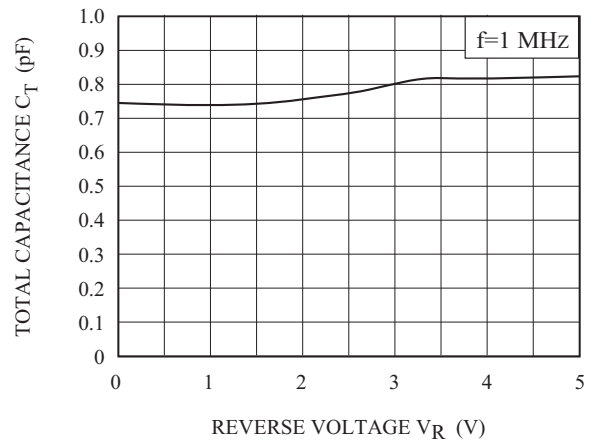
POWER DERATION CURVE



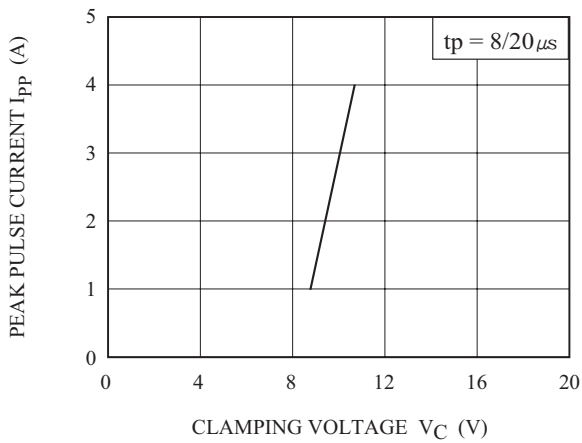
$I_R - V_R$



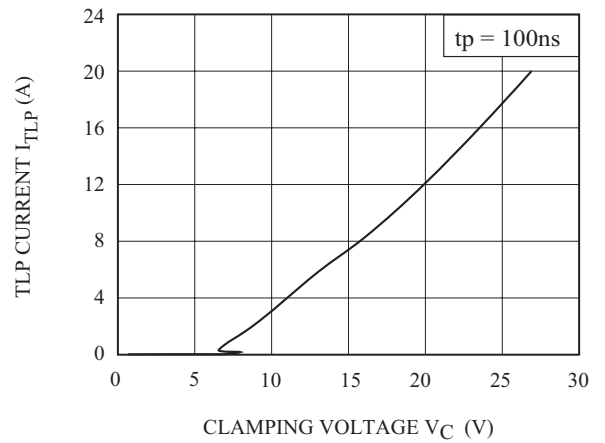
$C_T - V_R$



$I_{PP} - V_C$

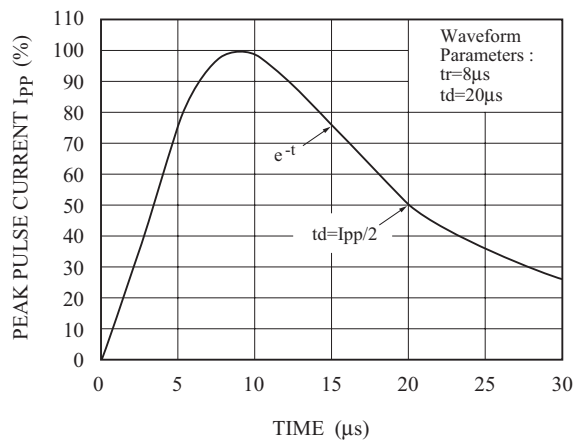


$I_{TLP} - V_C$



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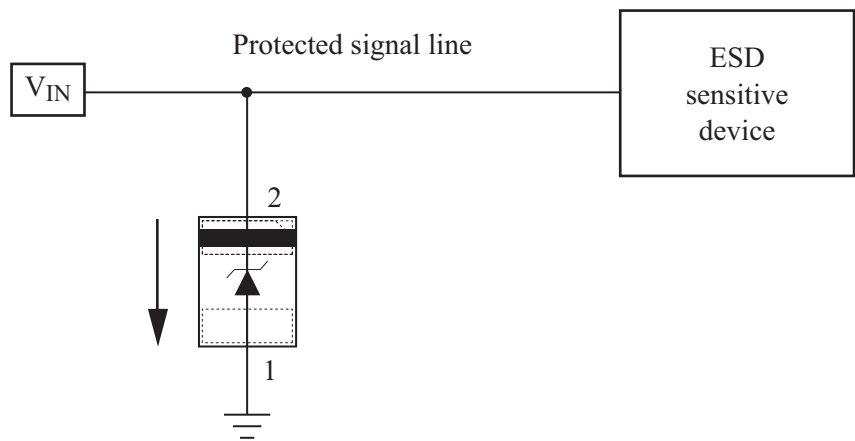
PULSE WAVEFORM



PS05TSUL2A

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