

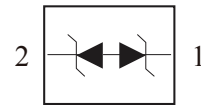
### Protection in Portable Electronics Applications.

#### FEATURES

- Transient protection for data lines to
  - IEC61000-4-2(ESD) : Air mode  $\pm 30kV$  / Contact mode  $\pm 30kV$
  - IEC61000-4-4(EFT) : 80A (tp=5/50ns)
  - IEC61000-4-5(Surge) : 6A(tp=8/20us)
- Low capacitance  $C_T = 9pF(\text{Max})$
- Bi-directional, symmetrical working voltage up to :  $V_{RWM} = \pm 5V$
- Extremely small Size  $1.0 \times 0.6 \times 0.4mm$
- Low reverse current :  $<10nA$  typical ( $V_{RWM}=5V$ )
- Non Suffix : ULP-2 Package    ex) PS05CBUL2 -RTL/H
- Suffix U : ULP-2 Package& Qualified to AEC-Q101    ex) PS05CBUL2 -RTL/HU
- Suffix R : ULP-2(4) Package    ex) PS05CBUL2 -RTL/HR
- Suffix UR : ULP-2(4) Package&Qualified to AEC-Q101    ex) PS05CBUL2 -RTL/HUR
- Suffix P : ULP-2(5) Package    ex) PS05CBUL2 -RTL/HP
- Suffix UP : ULP-2(5) Package&Qualified to AEC-Q101    ex) PS05CBUL2 -RTL/HUP



ULP-2 (leadless-type)



1. CATHODE    2. CATHODE

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))																																																				
<table border="1"> <thead> <tr> <th>DIM</th> <th>MILLIMETERS</th> </tr> </thead> <tbody> <tr><td>A</td><td>1.0±0.05</td></tr> <tr><td>B</td><td>0.6±0.05</td></tr> <tr><td>C</td><td>0.4±0.05</td></tr> <tr><td>C1</td><td>0.38<sup>+0.02</sup></td></tr> <tr><td>D</td><td>0.5±0.03</td></tr> <tr><td>E</td><td>0.25±0.03</td></tr> <tr><td>G</td><td>0.65±0.03</td></tr> <tr><td>H</td><td>0.05</td></tr> <tr><td>I</td><td>Max 0.05</td></tr> </tbody> </table>	DIM	MILLIMETERS	A	1.0±0.05	B	0.6±0.05	C	0.4±0.05	C1	0.38 <sup>+0.02</sup>	D	0.5±0.03	E	0.25±0.03	G	0.65±0.03	H	0.05	I	Max 0.05	<table border="1"> <thead> <tr> <th>DIM</th> <th>MILLIMETERS</th> </tr> </thead> <tbody> <tr><td>A</td><td>1.00±0.10</td></tr> <tr><td>B</td><td>0.60±0.10</td></tr> <tr><td>C</td><td>0.40±0.05</td></tr> <tr><td>D</td><td>0.50±0.05</td></tr> <tr><td>E</td><td>0.25±0.05</td></tr> <tr><td>G</td><td>Typ. 0.65</td></tr> <tr><td>H</td><td>0.05±0.05</td></tr> </tbody> </table>	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	<table border="1"> <thead> <tr> <th>DIM</th> <th>MILLIMETERS</th> </tr> </thead> <tbody> <tr><td>A</td><td>1.00±0.05</td></tr> <tr><td>B</td><td>0.60±0.05</td></tr> <tr><td>C</td><td>0.50±0.05</td></tr> <tr><td>D</td><td>0.50±0.03</td></tr> <tr><td>E</td><td>0.25±0.03</td></tr> <tr><td>G</td><td>0.65 BSC</td></tr> <tr><td>I</td><td>Max 0.03</td></tr> </tbody> </table>	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
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#### ORDERING INFORMATION

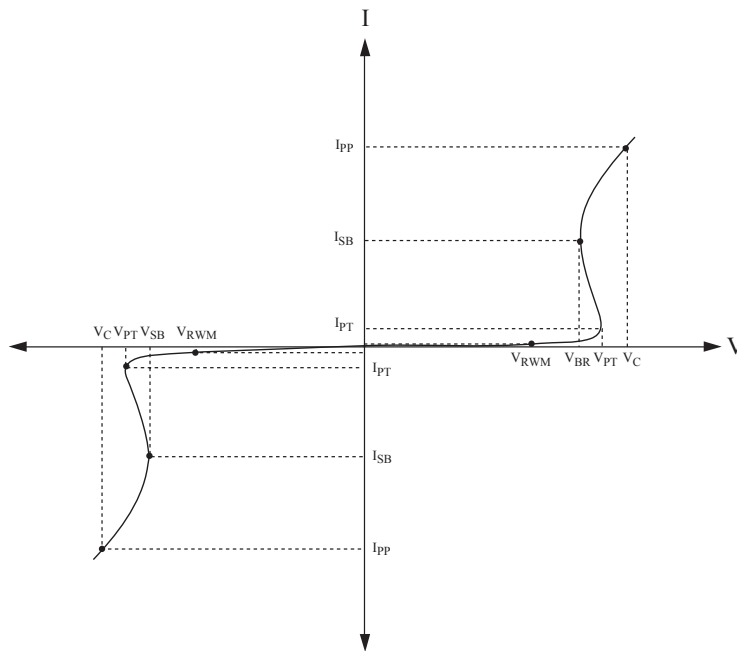
Part Number	Qty per Reel	Reel Size	Marking code
PS05CBUL2-RTL	10,000	7 inch	ZZ

# PS05CBUL2

## MAXIMUM RATING (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Pulse Power (tp=8/20μs)	P <sub>PK</sub>	75	W
Peak Pulse Current (tp=8/20μs)	I <sub>PP</sub>	6	A
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55~150	°C

## DEFINITIONS OF ELECTRICAL CHARACTERISTIC SYMBOL

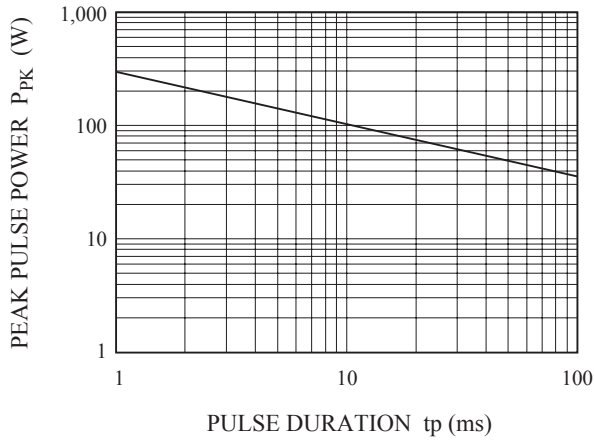


## ELECTRICAL CHARACTERISTICS (Ta=25°C)

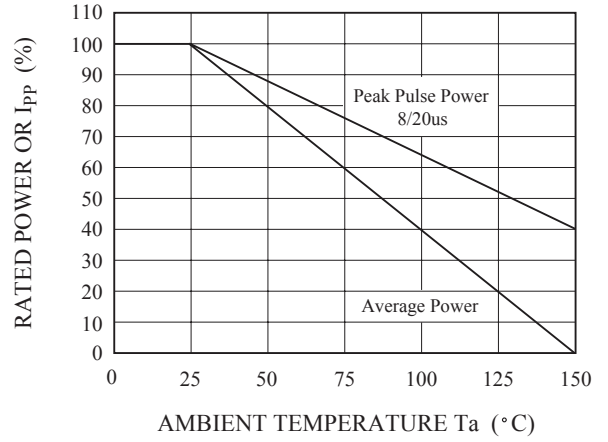
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage	V <sub>RWM</sub>	-	-	-	5	V
Punch-through Voltage	V <sub>PT</sub>	I <sub>PT</sub> =2μA	6	8.2	9.5	V
Snap-back Voltage	V <sub>SB</sub>	I <sub>SB</sub> =100μA, I <sub>SB</sub> =50mA	5.8	-	-	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>RWM</sub> =5V	-	10	50	nA
Total Capacitance	C <sub>T</sub>	V <sub>R</sub> =0V, f=1MHz	-	6	9	pF
Clamping Voltage	V <sub>C</sub>	I <sub>pp</sub> =1A, tp=8/20μs	-	-	8	V
		I <sub>pp</sub> =6A, tp=8/20μs	-	-	12.5	
		I <sub>TLF</sub> =4A, tp=100ns	-	7	12	V
		I <sub>TLF</sub> =24A, tp=100ns	-	12	17	
Electrostatic Discharge	V <sub>ESD</sub>	IEC61000-4-2	Air	±30	-	kV
			Contact	±30	-	

# PS05CBUL2

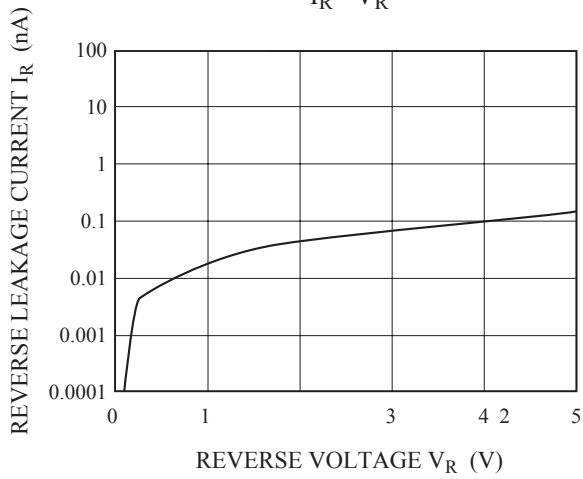
NON-REPETITIVE PEAK PULSE  
POWER VS. PULSE TIME



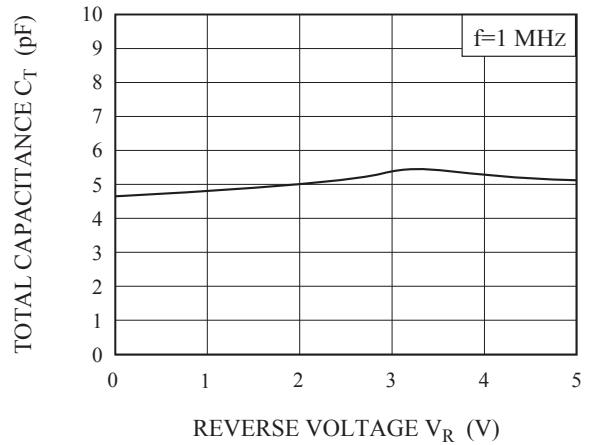
POWER DERATION CURVE



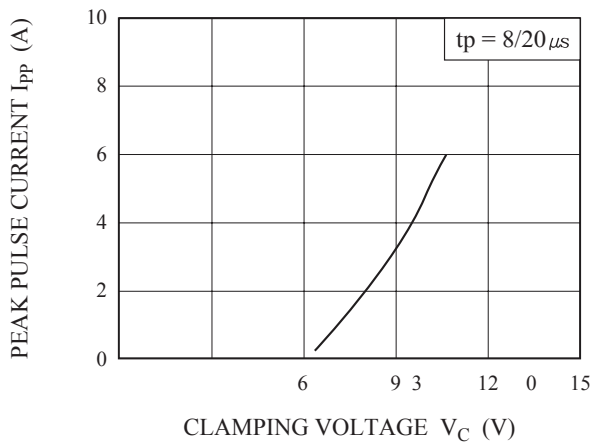
$I_R - V_R$



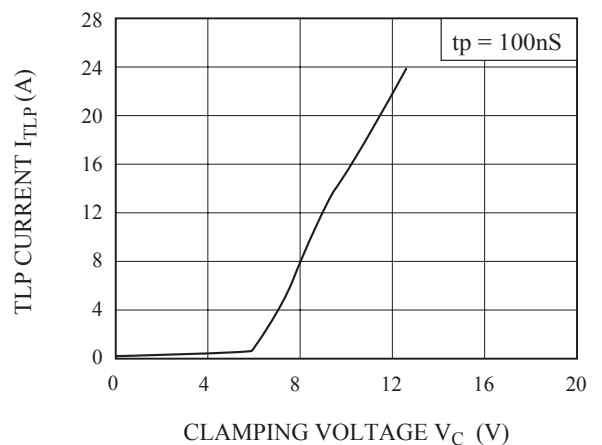
$C_T - V_R$



$I_{pp} - V_C$

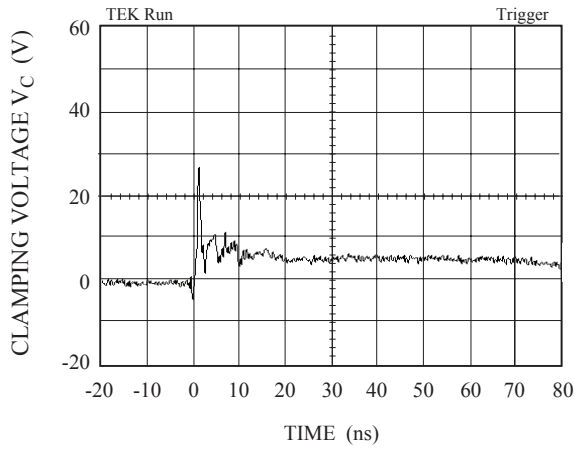


$I_{TLP} - V_C$



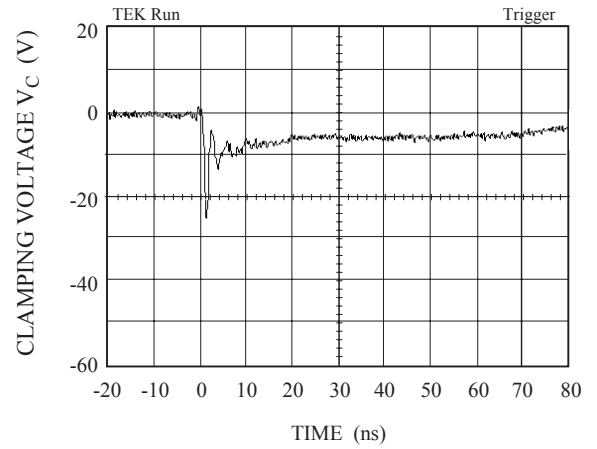
# PS05CBUL2

ESD Clamping  
(+8 kV Contact per IEC61000-4-2)



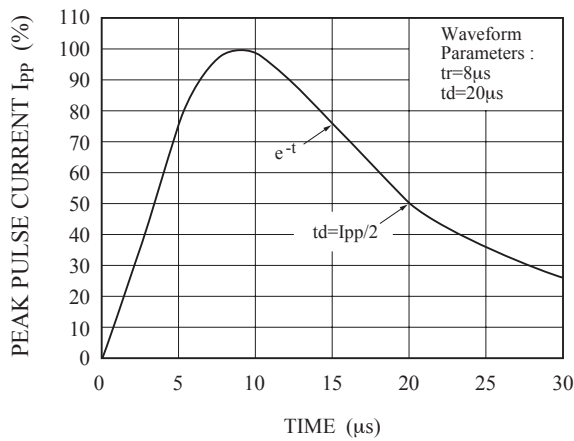
Note : Data is taken with a 10x attenuator

ESD Clamping  
(-8 kV Contact per IEC61000-4-2)



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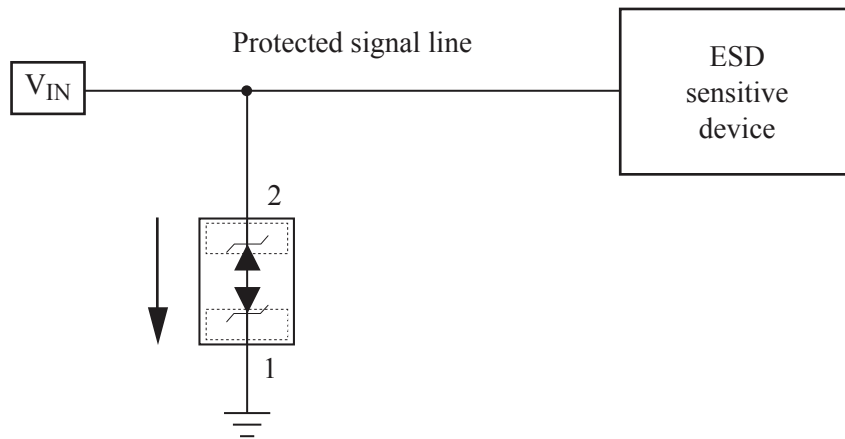
PULSE WAVEFORM



# PS05CBUL2

## 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