

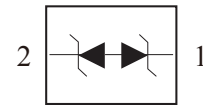
Protection in Portable Electronics Applications.

FEATURES

- Transient protection for data lines to
 - IEC61000-4-2(ESD) : Air mode $\pm 30\text{kV}$ / Contact mode $\pm 30\text{kV}$
 - IEC61000-4-4(EFT) : 80A (tp=5/50ns)
 - IEC61000-4-5(Surge) : 6A(tp=8/20us)
- Low capacitance $C_T = 9\text{pF}(\text{Max})$
- Bi-directional, symmetrical working voltage up to : $V_{RWM} = \pm 5\text{V}$
- Extremely small Size $1.0 \times 0.6 \times 0.4\text{mm}$
- Low reverse current : $<10\text{nA}$ typical ($V_{RWM}=5\text{V}$)
- 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><tr><th>DIM</th><th>MILLIMETERS</th></tr><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^{+0.02}_{-0.03}</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></table>	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	<table><tr><th>DIM</th><th>MILLIMETERS</th></tr><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></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><tr><th>DIM</th><th>MILLIMETERS</th></tr><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></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
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																																																					
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

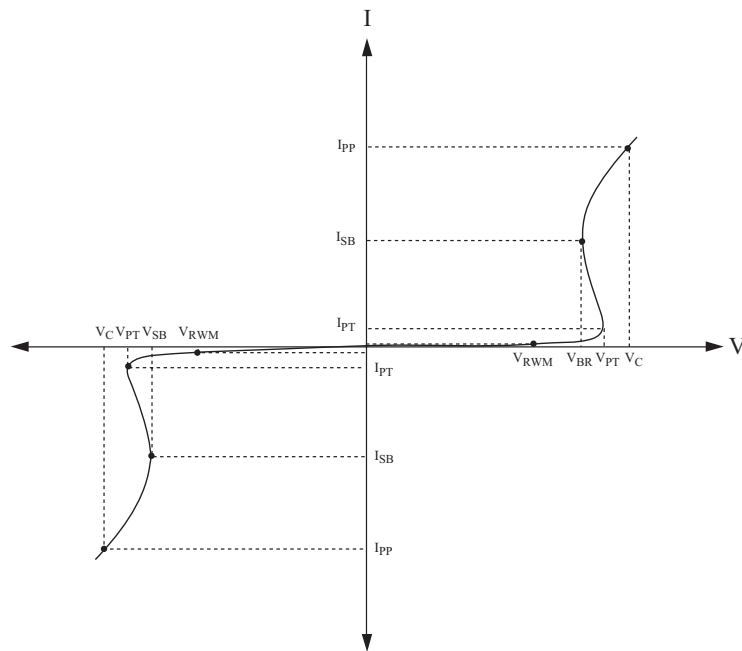
Part Number	Qty per Reel	Reel Size	Marking code
PS05CBUL2-RTL	10,000	7 inch	ZZ

PS05CBUL2

MAXIMUM RATING (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Pulse Power (tp=8/20 μs)	P _{PK}	75	W
Peak Pulse Current (tp=8/20 μs)	I _{PP}	6	A
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55 150	°C

DEFINITIONS OF ELECTRICAL CHARACTERISTIC SYMBOL

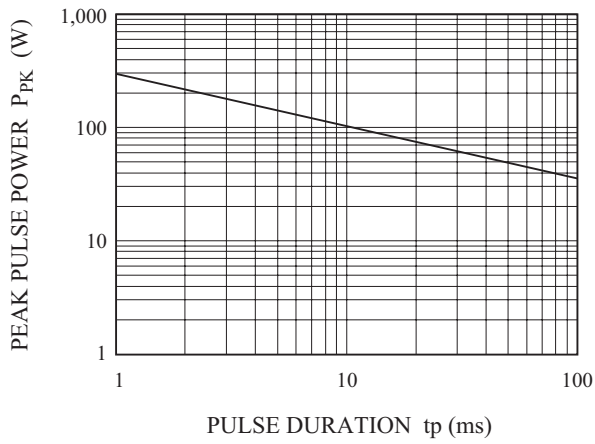


ELECTRICAL CHARACTERISTICS (Ta=25°C)

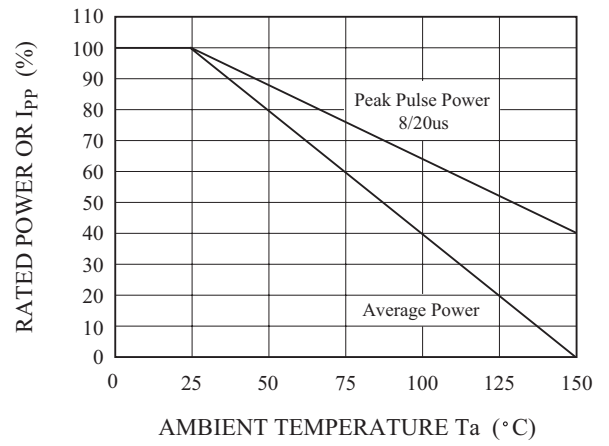
CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage	V _{RWM}	-		-	-	5	V
Punch-through Voltage	V _{PT}	I _{PT} =2 μA		6	8.2	9.5	V
Snap-back Voltage	V _{SB}	I _{SB} =100 μA, I _{SB} =50mA		5.8	-	-	V
Reverse Leakage Current	I _R	V _{RWM} =5V		-	10	50	nA
Total Capacitance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

PS05CBUL2

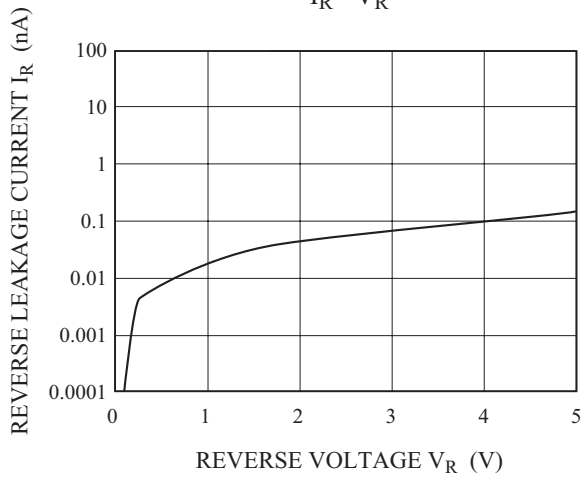
NON-REPETITIVE PEAK PULSE
POWER VS. PULSE TIME



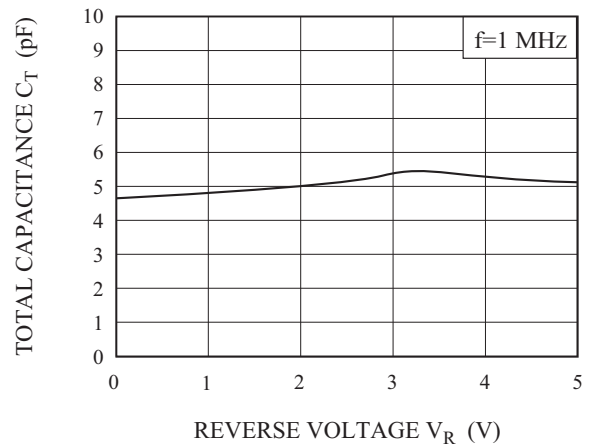
POWER DERATION CURVE



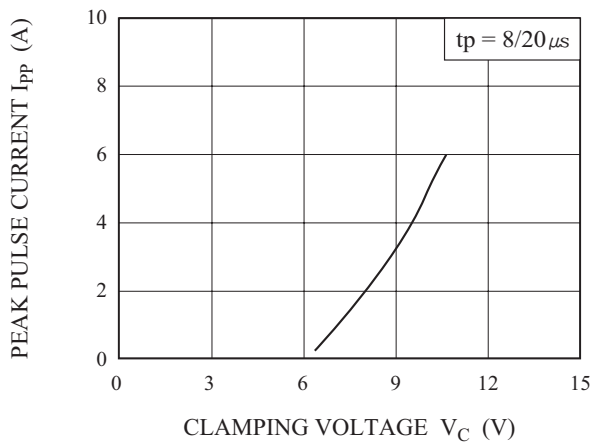
$I_R - V_R$



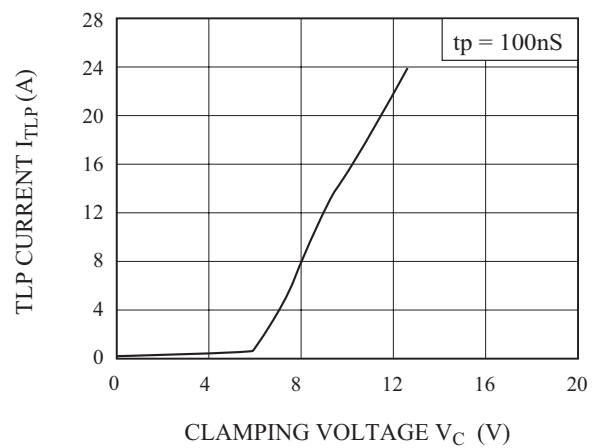
$C_T - V_R$



$I_{PP} - V_C$

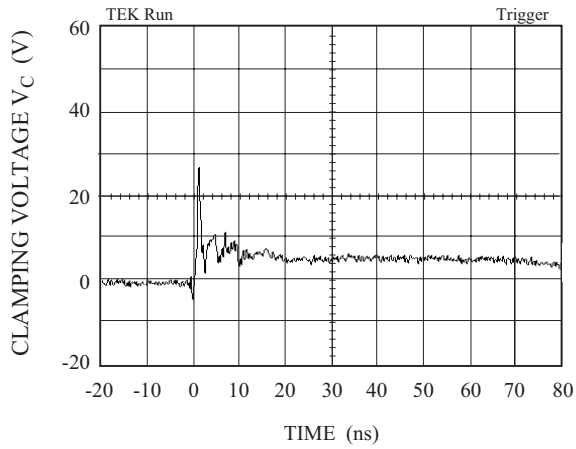


$I_{TLP} - V_C$



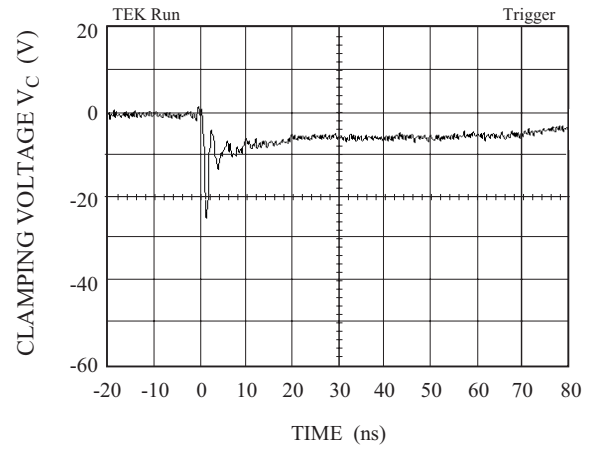
PS05CBUL2

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



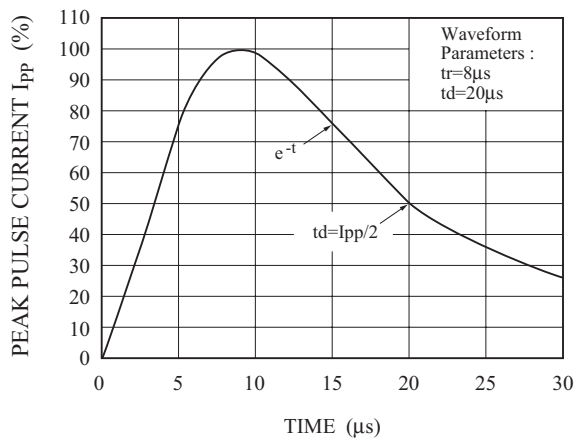
Note : Data is taken with a 10x attenuator

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



Note : Data is taken with a 10x attenuator

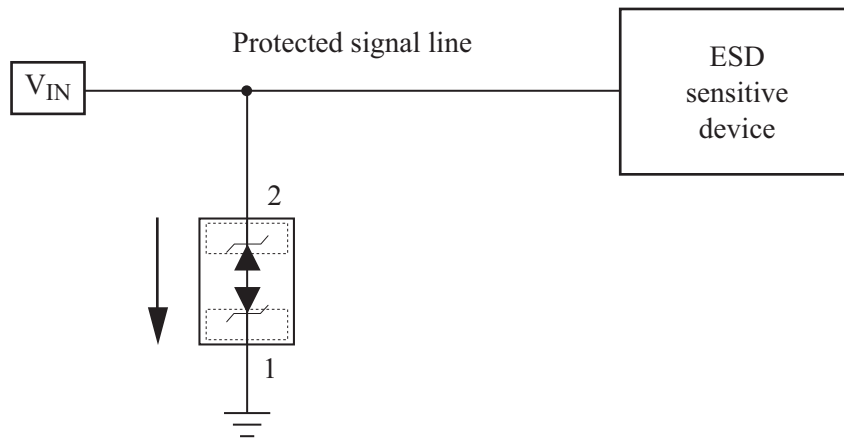
PULSE WAVEFORM



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
The diagram shows the recommended pad dimensions for the device. It consists of two rectangular pads. The total width of the two pads is 1.4. The width of each individual pad is 0.55. The height of each pad is 0.6. The distance between the inner edges of the two pads is 0.3. The total width including the spacing is 0.85.	The diagram shows the marking code 'ZZ' on a rectangular pad. The pad has terminals labeled '2' on the left and '1' on the right.