

ECP05CN92BL2A

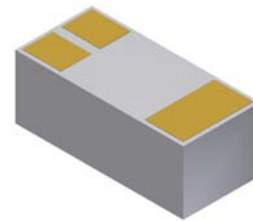
Low capacitance double bidirectional ESD protection diodes

The ECP05CN92BL2A device is characterized by their low capacitance, low operating and clamping voltages, and fast response time. This makes it ideal for use as board level protection of sensitive semiconductor components. The dual-junction common-anode design allows the user to protect two bidirectional lines.

It has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

Features

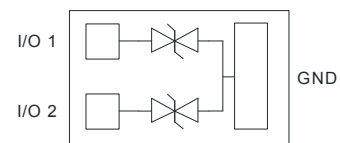
- Ultra small package(DFN1006) for use in portable electronics
- ESD protection of two lines
- Low leakage current
- Low clamping voltage
- Response Time is < 1 ns
- Working voltages :5V
- Solid-state silicon avalanche technology
- Device Meets MSL 1 Requirements
- ROHS compliant



DFN1006-3L

Main applications

- USB1.1/2.0 Data lines
- Industrial Controls
- Computers and peripherals
- Portable instrumentation
- Peripherals
- Notebook Computers
- Set-Top Box
- Projection TV
- Audio and video equipment
- Subscriber Identity Module (SIM) card protection



Ordering Information

Device	Qty per Reel	Reel Size
ECP05CN92BL2A	10000	7 Inch

Maximum ratings (Tamb=25°C Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20µs waveform)	P _{PPP}	50	Watts
Peak pulse current (tp=8/20µs waveform)	I _{PP}	3	A
ESD Rating per IEC61000-4-2:	Contact	8	KV
	Air	15	
Lead Soldering Temperature	T _L	260 (10 sec.)	°C
Operating Temperature Range	T _J	-55 ~ 150	°C
Storage Temperature Range	T _{STG}	-55 ~ 150	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

*Other voltages may be available upon request.

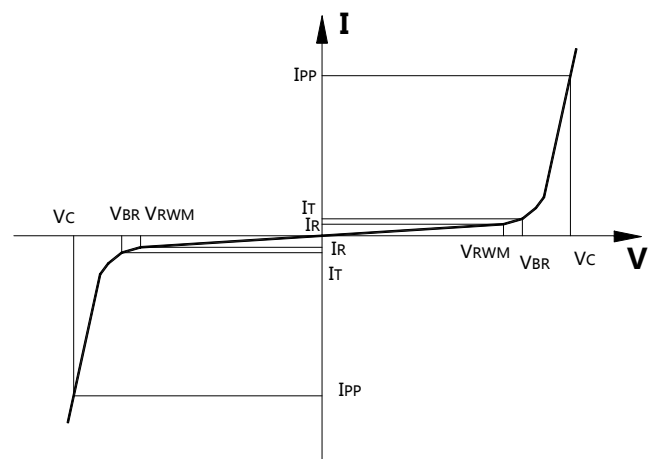
1. Non-repetitive current pulse, per Figure 1.

Electrical characteristics (Tamb=25°C Unless Otherwise Specified)

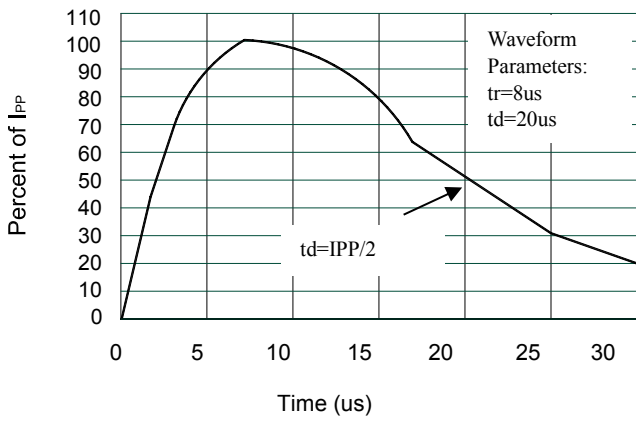
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V _{RWM}	Reverse Working Voltage	between I/O & GND pin			5.0	V
V _{BR}	Breakdown Voltage	I _T = 1mA, between I/O & GND pin	5.6		7.8	V
I _R	Reverse Leakage Current	V _{RWM} = 5V, between I/O & GND pin			1	uA
V _C	Clamping Voltage	I _{PP} = 3A, tp = 8/20µs, any I/O pin to Ground			15	V
C _J	Junction Capacitance	V _R = 0V, f = 1MHz, between I/O & GND pin		7.0	12	pF

Junction capacitance is measured in VR=0V, F=1MHz

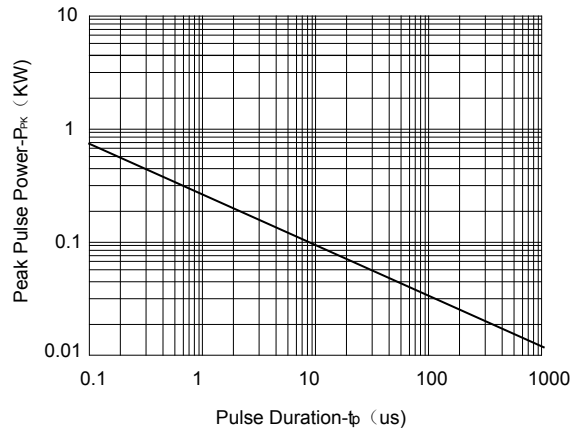
Symbol	Parameter
V _{RWM}	Working Peak Reverse Voltage
V _{BR}	Breakdown Voltage @ I _T
V _C	Clamping Voltage @ I _{PP}
I _T	Test Current
I _{RM}	Leakage current at V _{RWM}
I _{PP}	Peak pulse current
C _O	Off-state Capacitance
C _J	Junction Capacitance



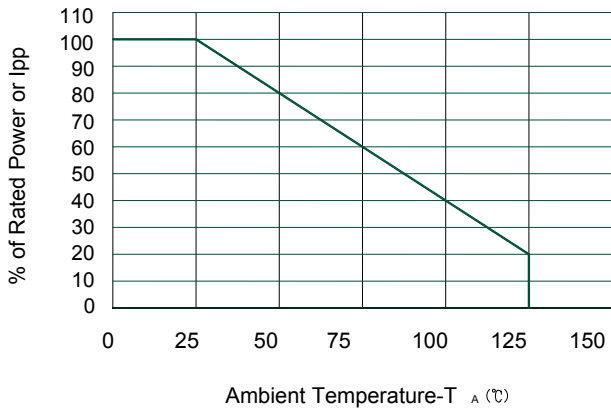
Typical electrical characterist applications



Pulse Waveform



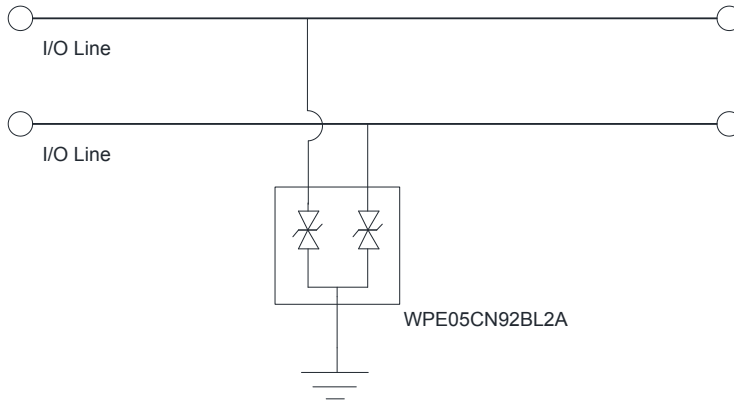
Non-Repetitive Peak Pulse Power vs. Pulse Time



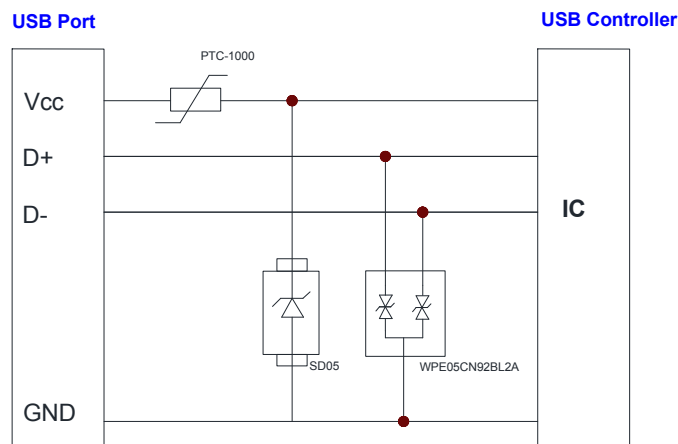
Power Derating Curve

Typical applications

The ECP05CN92BL2A is designed for the protection of up to two bidirectional data or signal lines from the damage caused by ESD and surge pulses. The device may be used on lines where the signal polarities are both, positive and negative with respect to ground.



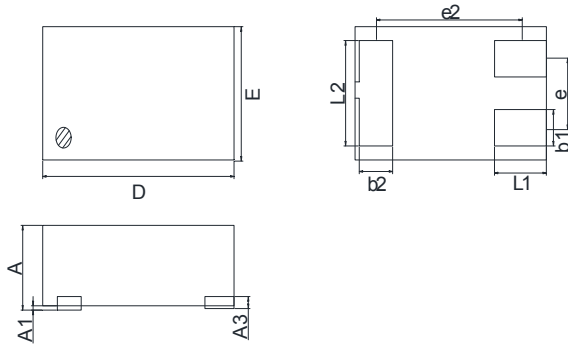
Two I/O Lines Bi-direction Protection



Two I/O Lines Bi-direction Protection

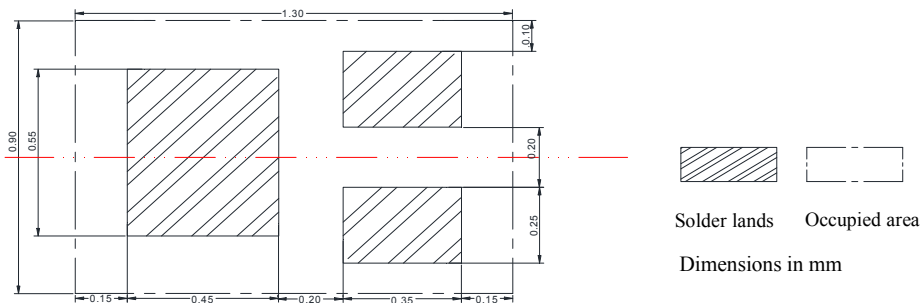
Package information

DFN1006-3L

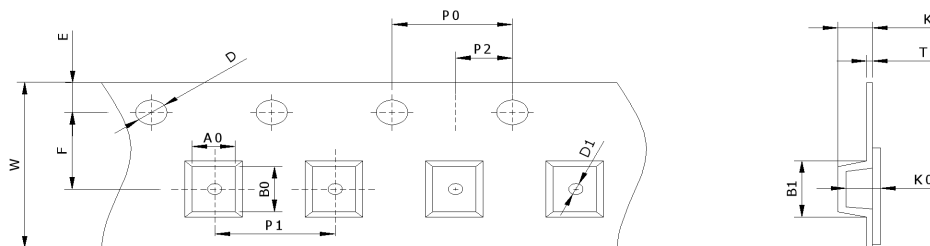


Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	0.40	0.55	0.016	0.022
A1	0.01	0.10	0.0004	0.004
A3	0.125REF		0.005REF	
D	0.95	1.05	0.037	0.041
E	0.55	0.65	0.022	0.026
b1	0.10	0.20	0.004	0.008
b2	0.20	0.30	0.008	0.012
L1	0.20	0.40	0.008	0.016
L2	0.40	0.60	0.016	0.024
e1	0.30	0.40	0.012	0.016
e2	0.675BSC		0.027BSC	

Pad Layout



FBP1006-3L Reel Dim



Package	Chip Size (mm)	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
FBP1006-3L	1.55×1.45×0.55	1.65×1.55×0.65	8mm	178mm(7")	10000	4mm	4mm
D0	D1	E	F	K	T	W	
1.5mm	0.5mm	1.75mm	3.5mm	0.50mm	0.3mm	8mm	