

## ECPLC0524P3

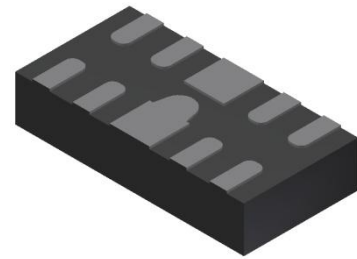
Ultra Low Capacitance Array for ESD Protection

The ECPLC0524P3 provides a typical line to line capacitance of 0.2pF between I/O pins and low insertion loss up to 3GHz providing greater signal integrity making it ideally suited for HDMI applications, such as Digital TVs, DVD players, Computing, set-top boxes and MDDI applications in mobile computing devices.

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

### Features

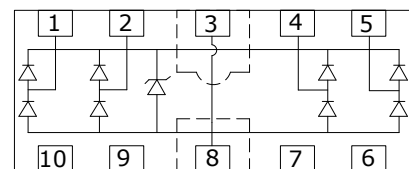
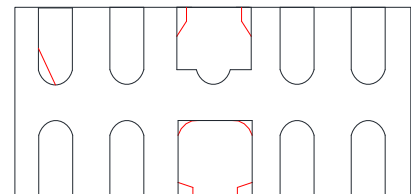
- Protects two or four I/O lines
- Low capacitance:0.2pf Typical between I/O channel
- Working voltages : 5V
- Low leakage current
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- Solid-state silicon avalanche technology
- ROHS compliant



### Main applications

- High Definition Multi-Media Interface (HDMI1.3/1.4/2.0)
- Digital Visual Interface (DVI)
- Display Port Interface
- Serial ATA
- PCI Express
- USB 1.1/2.0/3.0/3.1/OTG
- IEEE 1394 Firewire Ports
- Projection TV Monitors and Flat Panel Displays
- Notebook Computers
- Set Top Box
- Projection TV

**DFN2510**



### Protection solution to meet

- IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 5A (8/20µs)

### Ordering Information

Device	Qty per Reel	Reel Size
ECPLC0524P3	3000	7 Inch

Maximum ratings (Tamb=25°C Unless Otherwise Specified)			
Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20µs waveform)	P <sub>PPP</sub>	100	Watts
Peak Pulse Current(tp=8/20µs waveform)	I <sub>PP</sub>	5	A
ESD Rating per IEC61000-4-2:	Contact	8	KV
	Air	15	
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C
Operating Temperature Range	T <sub>J</sub>	-55 ~ 150	°C
Storage Temperature Range	T <sub>STG</sub>	-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.

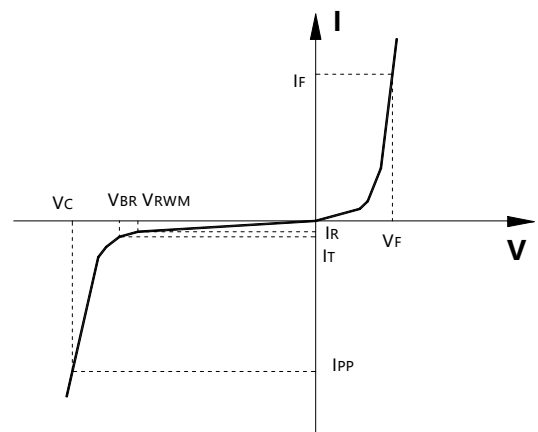
\*Other voltages may be available upon request.

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

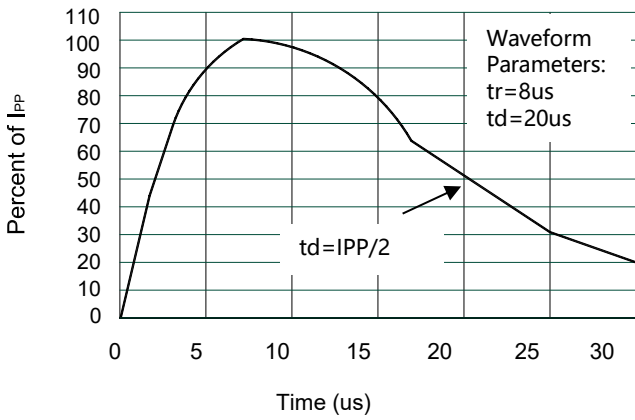
Electrical characteristics ( Tamb=25°C Unless Otherwise Specified)						
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V <sub>RWM</sub>	Reverse Working Voltage	Any I/O to Ground			5.0	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA, Any I/O to Ground	6.0			V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> = 5V, Any I/O to Ground			1	µA
V <sub>F</sub>	Diode Forward Voltage	I <sub>F</sub> = 15mA		0.85	1.2	V
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> = 1A, tp =8/20µs, any I/O pin to Ground			9.8	V
		I <sub>PP</sub> = 5A, tp =8/20µs, any I/O pin to Ground		13	18	V
R <sub>dyn</sub>	dynamic resistance	positive transient(8/20us) negative transient(8/20us)		0.625 0.7		Ω
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> = 0V, f = 1MHz, between I/O pins		0.20		pF
		V <sub>R</sub> = 0V, f = 1MHz, any I/O pin to Ground		0.5	0.65	pF

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

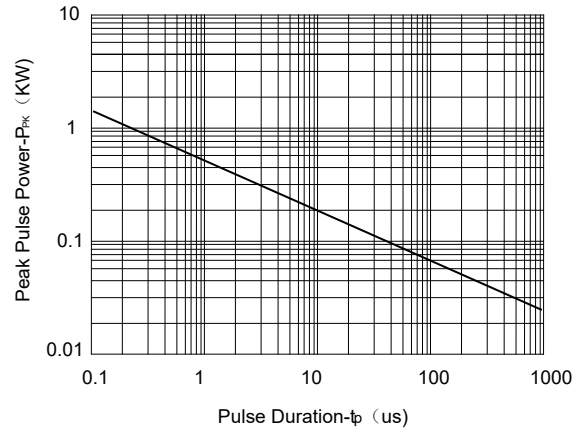
Symbol	Parameter
V <sub>RWM</sub>	Working Peak Reverse Voltage
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
I <sub>T</sub>	Test Current
I <sub>RM</sub>	Leakage current at V <sub>RWM</sub>
I <sub>PP</sub>	Peak pulse current
C <sub>O</sub>	Off-state Capacitance
C <sub>J</sub>	Junction Capacitance



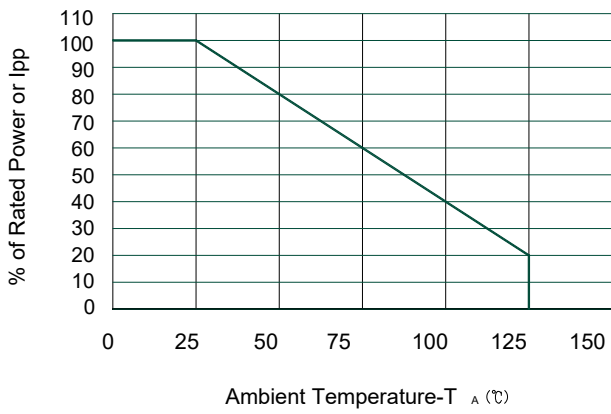
**Typical electrical characterist applications**



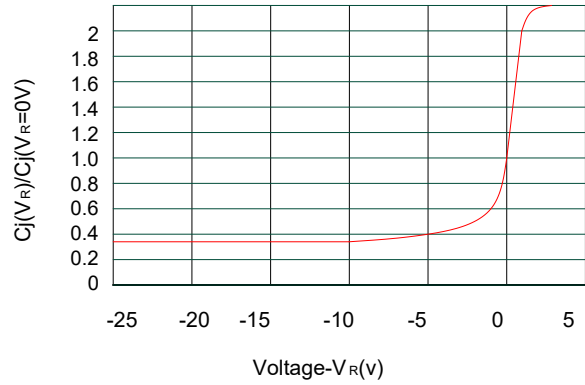
**Pulse Waveform**



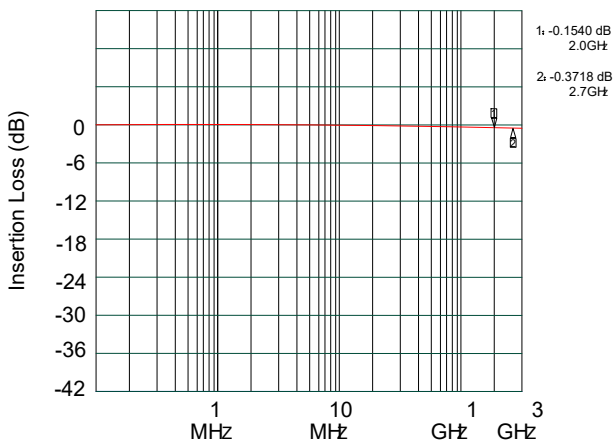
**Non-Repetitive Peak Pulse Power vs. Pulse Time**



**Power Derating Curve**



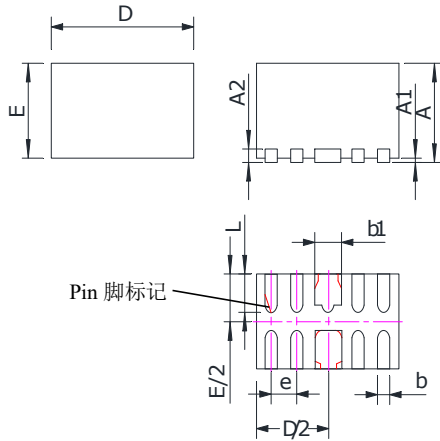
**Junction Capacitance vs. Reverse Voltage**



**Insertion Loss S21**

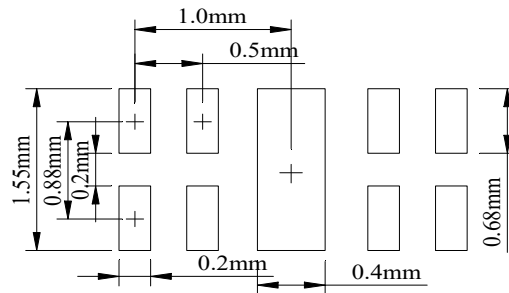
## Package Information

### DFN2510

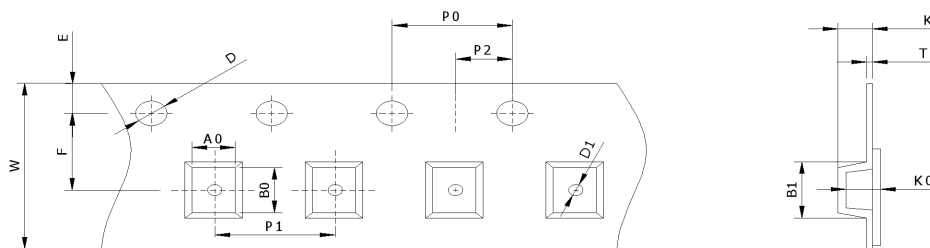


DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.45	0.65	0.018	0.026
A1	0.05REF		0.002REF	
A2	0.15REF		0.006REF	
b	0.15	0.25	0.006	0.010
b1	0.30	0.50	0.012	0.020
D	2.424	2.576	0.095	0.101
E	0.924	1.076	0.036	0.042
e	0.50REF		0.020REF	
L	0.30	0.45	0.012	0.018

### Recommended Pad outline



### DFN2510 Reel Dim



Package	Chip Size (mm)	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
DFN2510	2.50×1.00×0.60	2.70×1.20×0.80	8mm	178mm(7")	3000	4mm	4mm
D0	D1	E	F	K	T	W	
1.5mm	0.2mm	1.75mm	3.5mm	0.65mm	0.2mm	8mm	