

ECELCAH5V5U

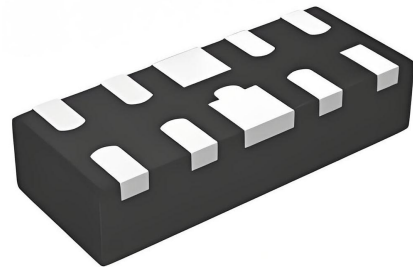
Ultra Low Capacitance Array for ESD Protection

The ECELCAH5V5U provides a typical line to line capacitance of 0.15pF 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

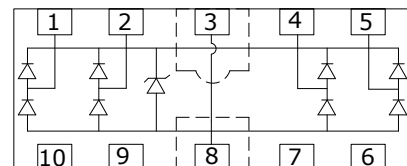
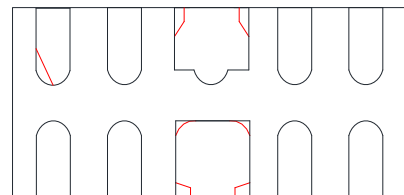
- Protects two or four I/O lines
- Low capacitance:0.15pf Typical between I/O channel
- Working voltages : 5.5V
- Low leakage current
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- **Solid-state silicon avalanche technology**
- ROHS compliant



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) ±20kV (air), ±20kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 3.5A (8/20µs)

Ordering Information

Device	Marking	Qty per Reel	Reel Size
ECELCAH5V5U	0524P	3000	7 Inch

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20µs waveform)	P _{PPP}	45	Watts
Peak Pulse Current(tp=8/20µs waveform)	I _{PP}	3.5	A
ESD Rating per IEC61000-4-2:	Contact	20	KV
	Air	20	
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.

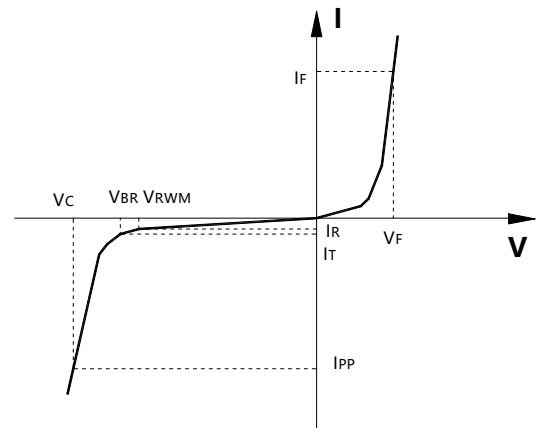
1. Non-repetitive current pulse, per Figure 1.

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

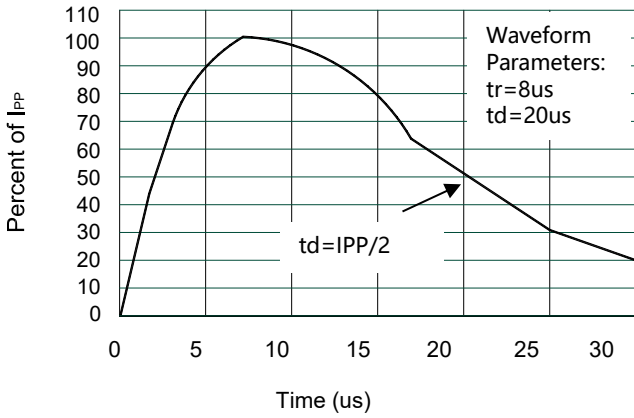
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V _{RWM}	Reverse Working Voltage	Any I/O to Ground			5.5	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA, Any I/O to Ground	6.0			V
I _R	Reverse Leakage Current	V _{RWM} = 5V, Any I/O to Ground			0.5	µA
V _F	Diode Forward Voltage	I _F = 15mA		0.85	1.2	V
V _C	Clamping Voltage	I _{PP} = 1A, tp = 8/20µs, any I/O pin to Ground		8.6	9.8	V
		I _{PP} = 3A, tp = 8/20µs, any I/O pin to Ground		11.4	15	V
R _{dyn}	dynamic resistance	positive transient negative transient		0.48 0.35		Ω
C _J	Junction Capacitance	V _R = 0V, f = 1MHz, between I/O pins		0.1	0.25	pF
		V _R = 0V, f = 1MHz, any I/O pin to Ground		0.36	0.6	pF

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

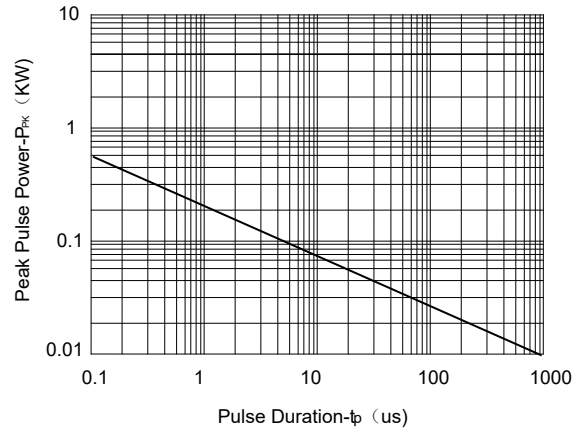
Symbol	Parameter
V _{RWM}	Working Peak Reverse Voltage
V _{BR}	Breakdown Voltage @ I _T
V _C	Clamping Voltage @ I _{PP}
I _T	Test Current
I _{RM}	Leakage current at V _{RWM}
I _{PP}	Peak pulse current
C _O	Off-state Capacitance
C _J	Junction Capacitance



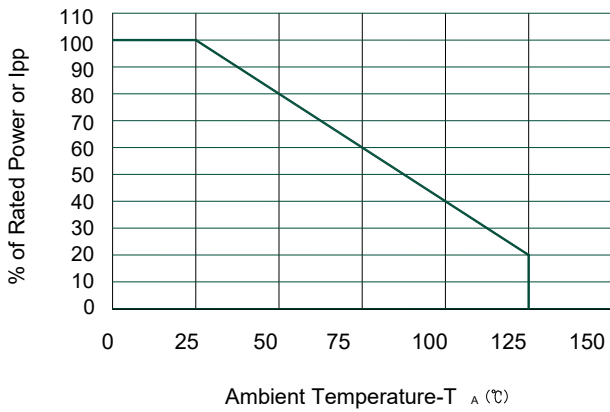
Typical electrical characterist applications



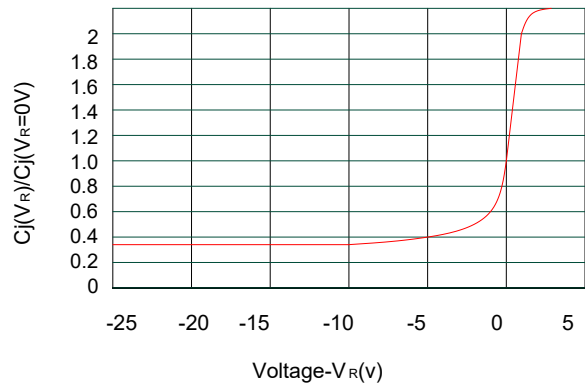
Pulse Waveform



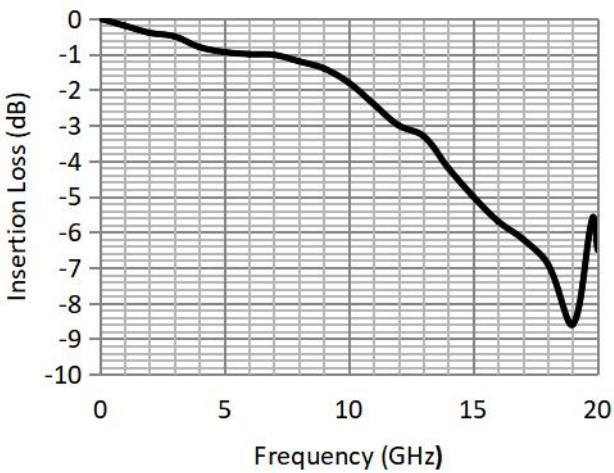
Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve



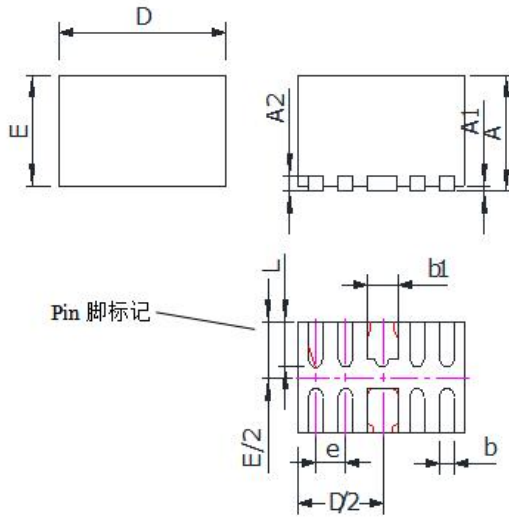
Junction Capacitance vs. Reverse Voltage



Insertion Loss S21

Package Information

DFN2510



DIM	Millimeters	
	Min	Max
A	0.45	0.65
A1	0.05REF	
A2	0.15REF	
b	0.15	0.25
b1	0.30	0.50
D	2.424	2.576
E	0.924	1.076
e	0.50REF	
L	0.30	0.45

Recommended Pad outline

