

## ECTHCAC4V5B

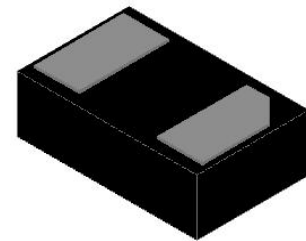
### Single-Line ESD Protection Array

The ECTHCAC4V5B is designed with ECORE technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium.

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

#### Features

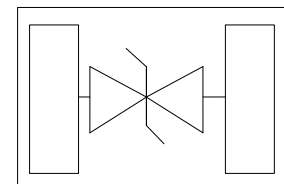
- Single-channel ESD protection
- Peak Power Dissipation – 2380 W (8 x 20 us Waveform)
- Replacement for MLV
- Protects I/O Port
- Low Clamping Voltage
- Low Leakage
- Response Time is < 1 ns
- Stand-off Voltage: 4.5V
- RoHS Compliant
- Meets MSL 1 Requirements
- Reliable silicon device avalanche breakdown Structure
- AEC-Q101 qualified



**DFN1610**

#### Main applications

- Cell phone handsets and accessories
- Personal Digital Assistants (PDAs)
- Portable Instrumentation
- Digital Cameras
- Power supply protection
- Battery port supply protection



#### Protection solution to meet

- IEC61000-4-2 (ESD) ±30 kV (contact), ±30kV (air)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Surge) 170A(8/20us)

#### Ordering Information

Device	Mark	Package	Qty per Reel	Reel Size
ECTHCAC4V5B	4.5H	DFN1610	10000	7 Inch

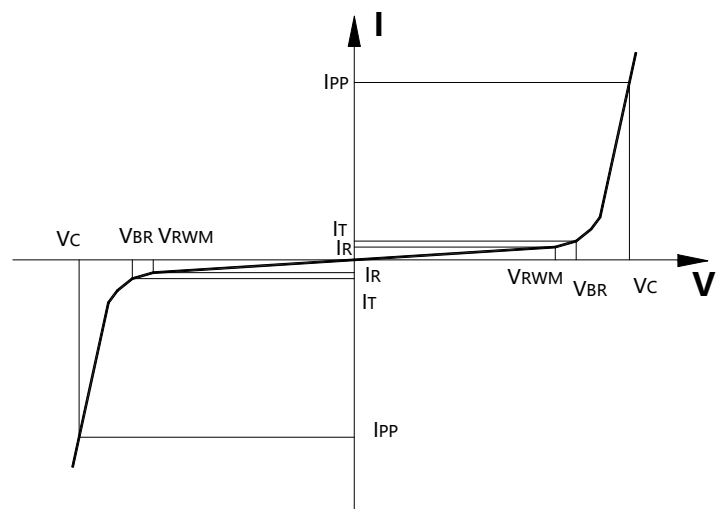
Maximum ratings (Tamb=25°C Unless Otherwise Specified)			
Parameter	Symbol	Value	Unit
Maximum Peak Pulse Power (tp=8/20μs waveform)	P <sub>PPP</sub>	2380	Watts
Maximum Peak Pulse Current(tp=8/20μs waveform)	I <sub>PP</sub>	170	A
ESD Rating per IEC61000-4-2:	Contact	30	KV
	Air	30	
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C
Operating Temperature Range	T <sub>J</sub>	-55 ~ 125	°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.

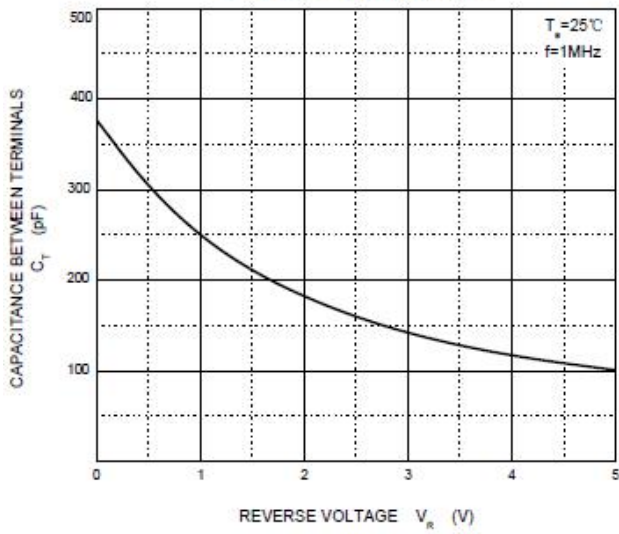
Electrical characteristics (Temp=25°C Unless Otherwise Specified)						
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V <sub>RWM</sub>	Reverse Working Voltage				4.5	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA,	4.9	5.3		V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> = 4.5V,		0.001	1	μA
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> = 100A, tp =8/20μs,		9.1		V
		I <sub>PP</sub> = 170A, tp =8/20μs,		11.3	14	V
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> = 0V, f = 1MHz,		454		pF

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

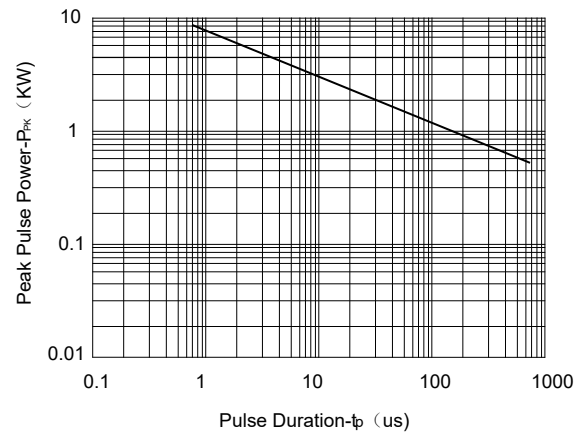
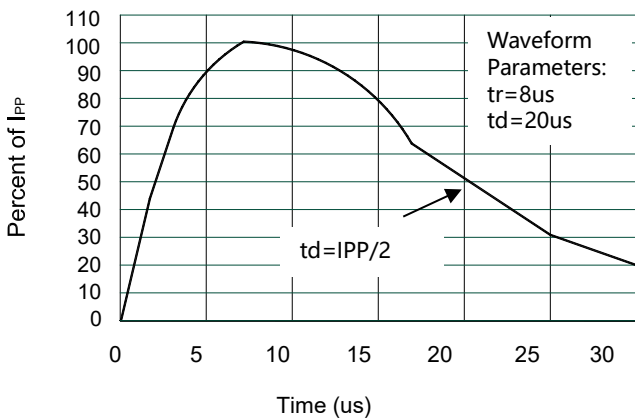
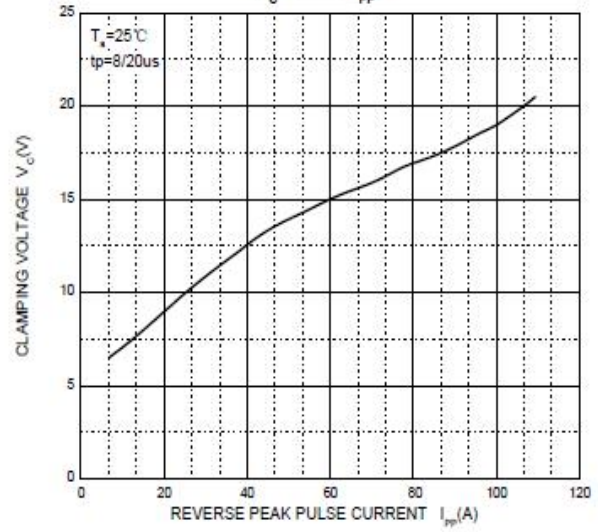


**Typical electrical characterist applications**

**Capacitance Characteristics**

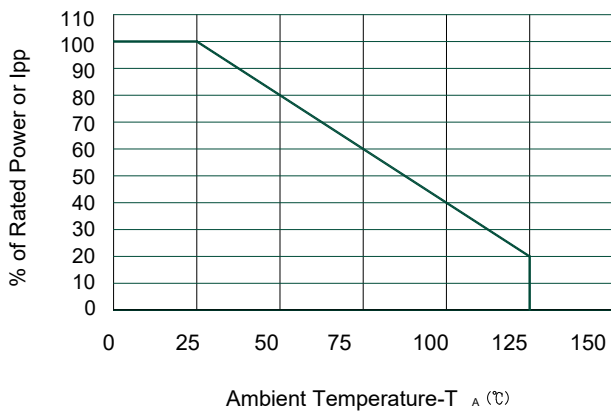


**$V_C$  —  $I_{PP}$**



**Pulse Waveform**

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



**Power Derating Curve**

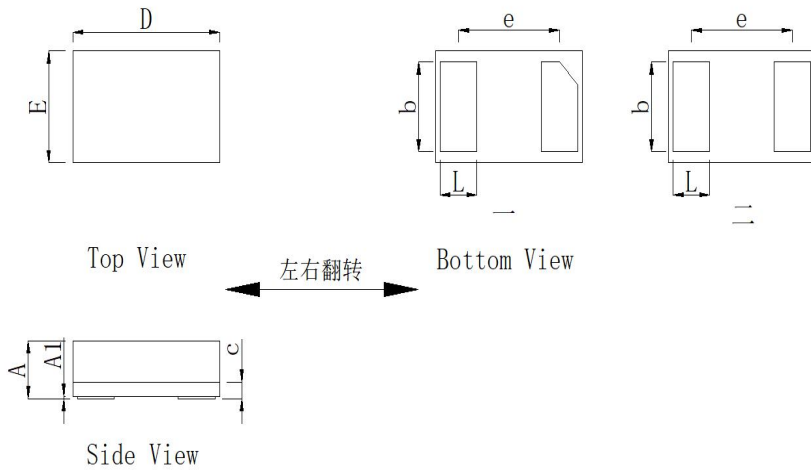
Package Information

DFN1610

Mechanical Data

Case:DFN1610

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.45	0.55
AI	0.00	0.05
b	0.75	0.95
c	0.10	0.20
D	1.55	1.65
e	1.10 BSC	
E	0.95	1.05
L	0.35	0.45

Recommended Pad outline

