

## DFN1610-2L Plastic-Encapsulate ESD Protection Diodes

### Features

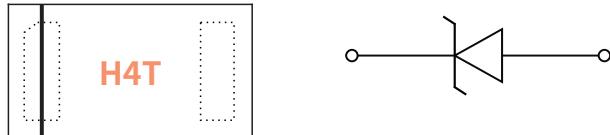
- Low leakage current
- DFN1610-2L surface mount package
- IEC 61000-4-2 (ESD Air):  $\pm 30\text{ kV}$
- IEC 61000-4-2 (ESD Contact):  $\pm 30\text{ kV}$
- IEC 61000-4-5 (Lightning 8/20 $\mu\text{s}$ ): 185A

**Reverse Working Voltage**  
4.5V Max.  
**High capacitance**  
650pF(Max.)

### Applications

- Mobile Phone, Digital cameras
- Battery Protection
- Power Line Protection
- Vbat pin for Mobile Devices
- Hand Held Portable Applications

### Function Diagram



**DFN1610-2L**

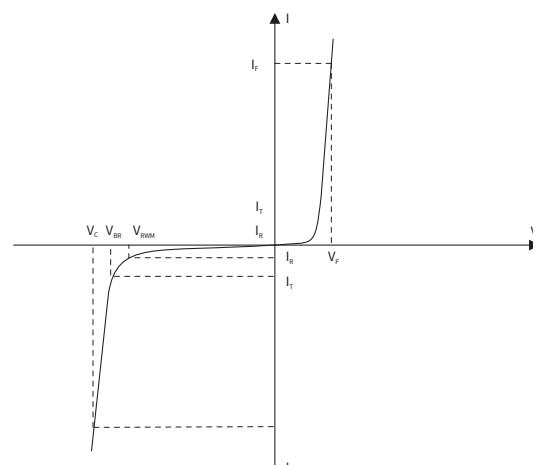


### Maximum Ratings (Ta=25°C Unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{ESD}$	Electrostatic Discharge Voltage	ESD per IEC 61000-4-2( Air )	$\pm 30$	kV
		ESD per IEC 61000-4-2( Contact )	$\pm 30$	kV
$P_{PP}$	Peak Pulse Power	$t_p = 8/20 \mu\text{s}$	2775	W
$I_{PP}$	Rated Peak Pulse Current	$t_p = 8/20 \mu\text{s}$	185	A
$T_J$	Operating JunctionTemperature Range	—	-55 to +125	°C
$T_{STG}$	Operating JunctionTemperature Range	—	-55 to +150	°C

### Electrical Parameter

SYMBOL	PARAMETER
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_{PP}$	Peak Pulse Current
$I_T$	Test Current
$I_R$	Reverse Leakage Current @ VRWM
$V_{RWM}$	Peak Reverse Working Voltage
$P_{PP}$	Peak Pulse Power Dissipation
$C_J$	Junction Capacitance @ $V_R=0\text{V}, f=1\text{MHz}$
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



## ● Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	CONDITION	Min	Typ	Max	UNIT
Peak Reverse Working Voltage	V <sub>RWM</sub>	T <sub>a</sub> =25°C	—	—	4.5	V
Breakdown Voltage	V <sub>BR</sub>	I <sub>R</sub> =1mA, T <sub>a</sub> =25°C	4.8	—	7	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> =4.5V, T <sub>a</sub> =25°C	—	—	0.2	μA
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> =1A, t <sub>p</sub> =8/20μs	—	—	7	V
		I <sub>PP</sub> =185A, t <sub>p</sub> =8/20μs	—	—	15	
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V, f=1MHz	—	—	650	pF

## ● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

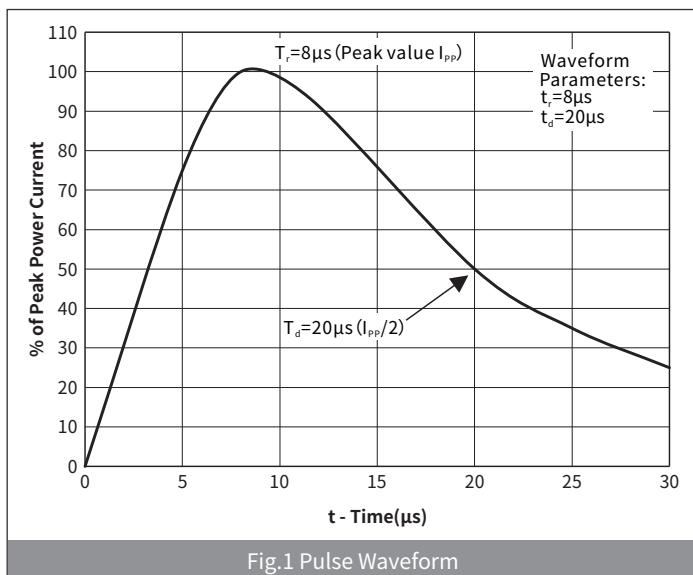


Fig.1 Pulse Waveform

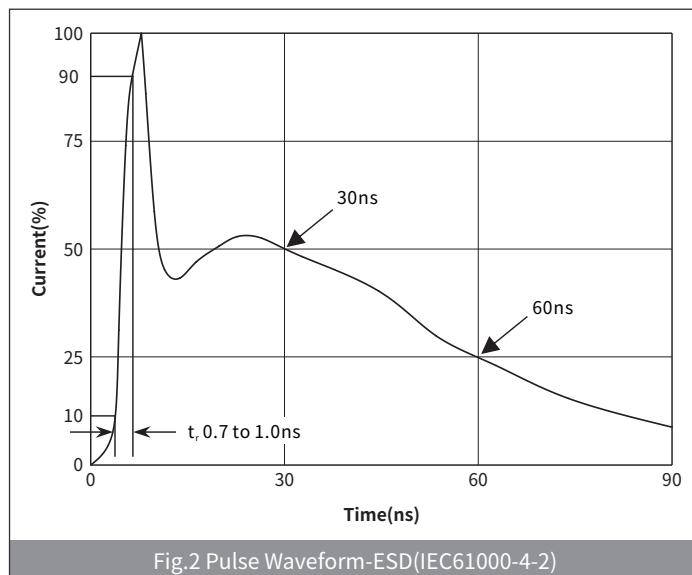


Fig.2 Pulse Waveform-ESD(IEC61000-4-2)

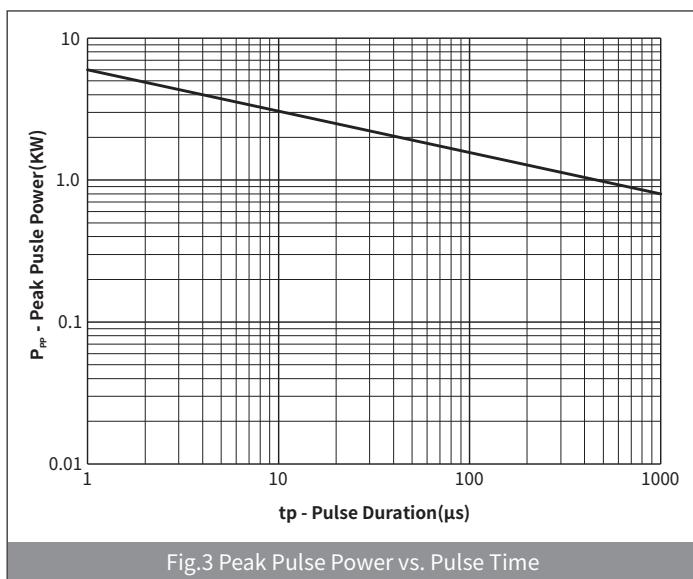


Fig.3 Peak Pulse Power vs. Pulse Time

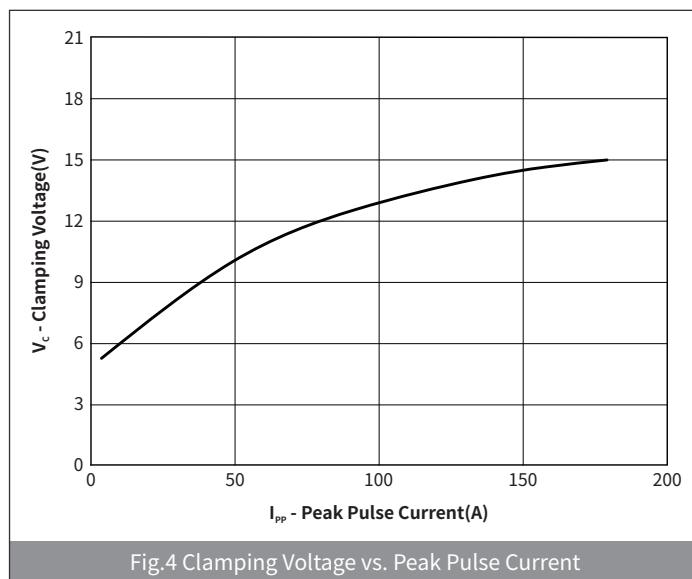
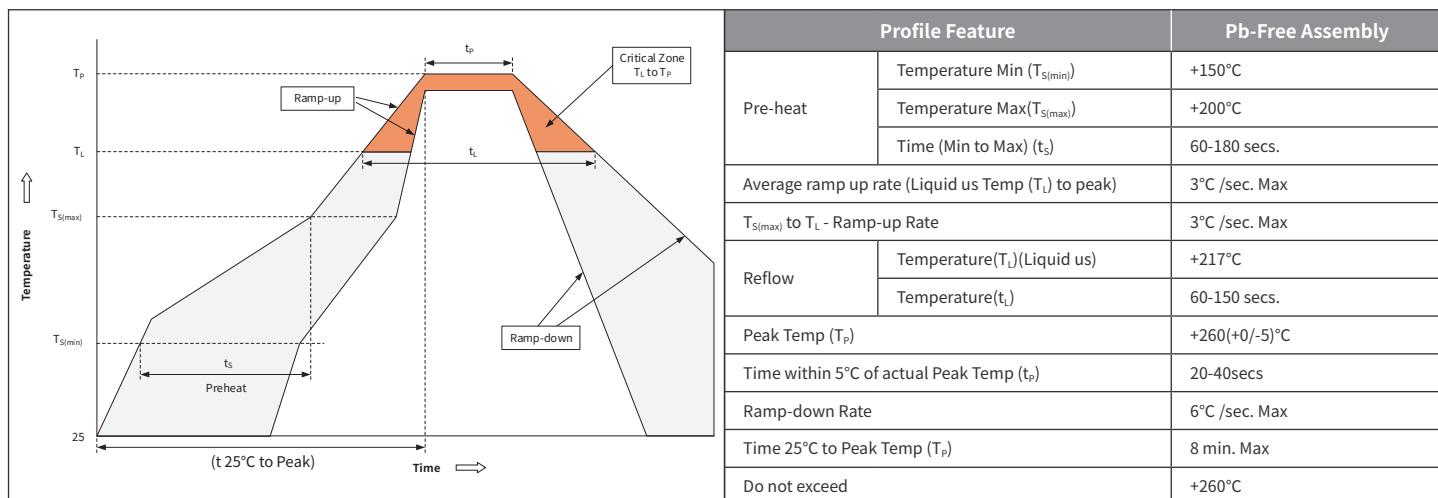


Fig.4 Clamping Voltage vs. Peak Pulse Current

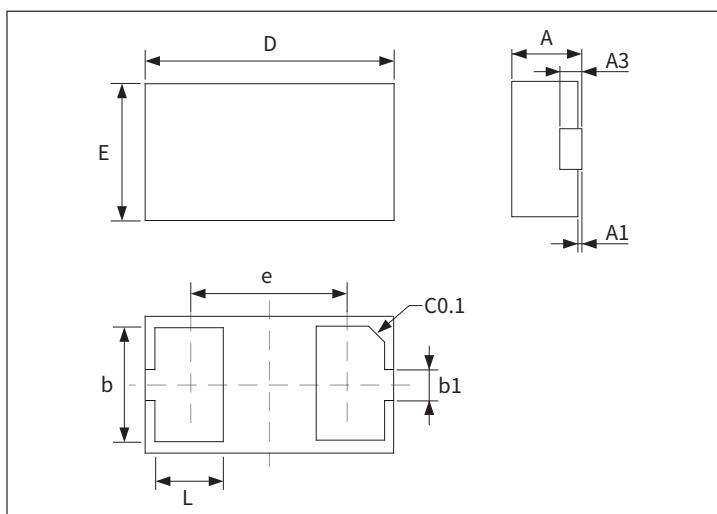
## ● Ordering Information

PREFERRED P/N	PACKAGE	SIZE(mm)	DELIVERY MODE	MPQ(PCS)
H4V5H16U	DFN1610-2L	1.575×0.975×0.485	7" REEL	3000

## ● Recommended Soldering Conditions

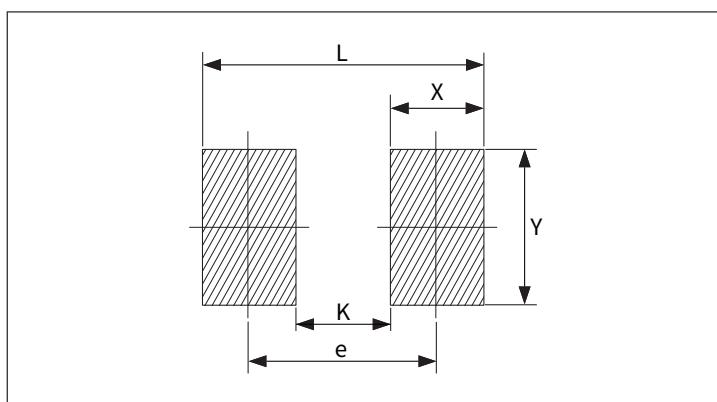


## ● Package Outline Dimensions (DFN1610-2L)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.46	0.56	0.018	0.022
A1	0.01	0.05	0.001	0.003
b	0.75	0.85	0.030	0.033
b1	0.25	0.35	0.010	0.014
D	1.55	1.65	0.061	0.065
E	0.95	1.05	0.037	0.041
e	1.10BSC		0.043 BSC	
L	0.35	0.45	0.014	0.018
A3	0.127REF		0.005REF	

## ● Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
X	0.57	0.67	0.024	0.028
Y	0.95	1.05	0.039	0.043
L	1.79	1.89	0.072	0.076
e	1.17	1.27	0.048	0.052
K	0.55	0.65	0.024	0.028