

DFN1610-2L Plastic-Encapsulate ESD Protection Diodes

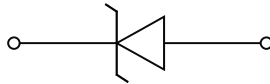
Features

- 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 μs): 32A

Applications

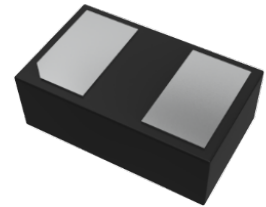
- Mobile Phone, Digital cameras
- Battery Protection
- Power Line Protection
- Vbat pin for Mobile Devices
- Hand Held Portable Applications

Function Diagram



Reverse Working Voltage
20V Max.
High capacitance
120pF(Max.)

DFN1610-2L

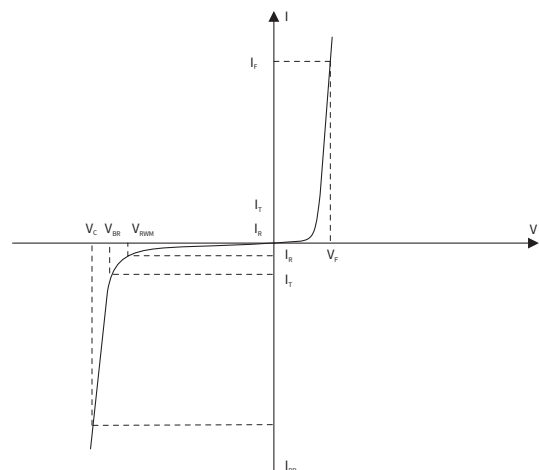


Maximum Ratings (Ta=25°C Unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{ESD}	Electrostatic Discharge Voltage	ESD per IEC 61000-4-2(Air)	± 30	KV
		ESD per IEC 61000-4-2(Contact)	± 30	KV
P _{PP}	Peak Pulse Power	tp = 8/20 μs	1200	W
I _{PP}	Rated Peak Pulse Current	tp = 8/20 μs	32	A
T _J	Operating JunctionTemperature Range	—	-55 to +125	°C
T _{STG}	Operating JunctionTemperature Range	—	-55 to +150	°C

Electrical Parameter

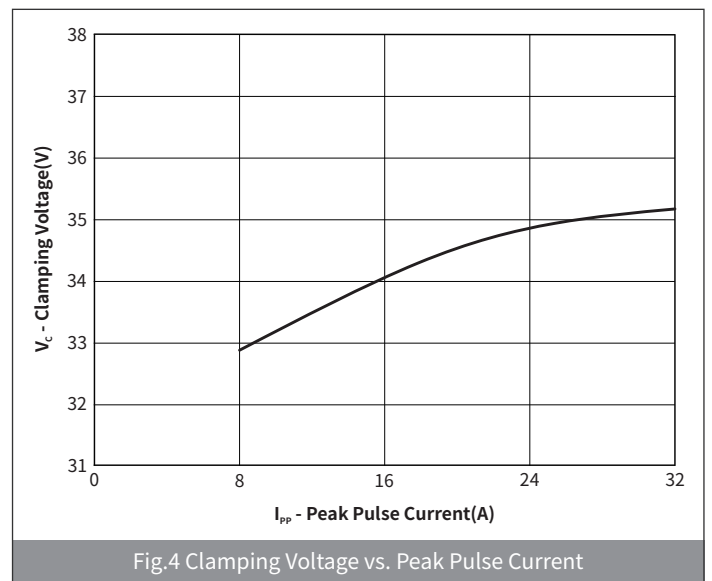
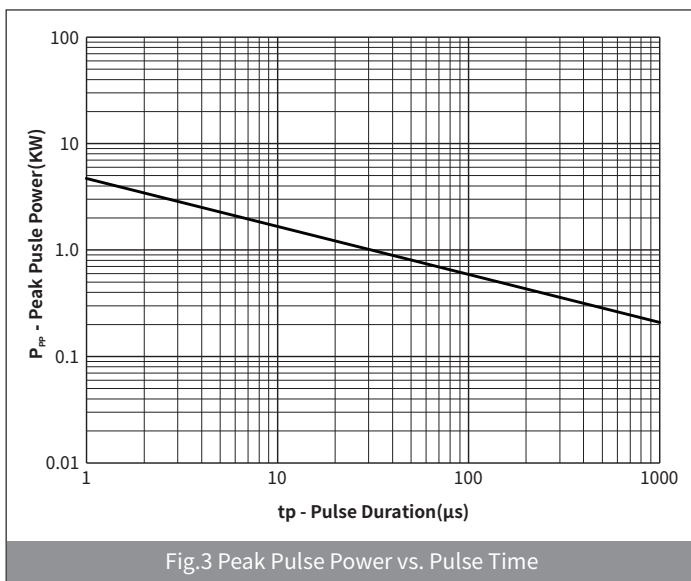
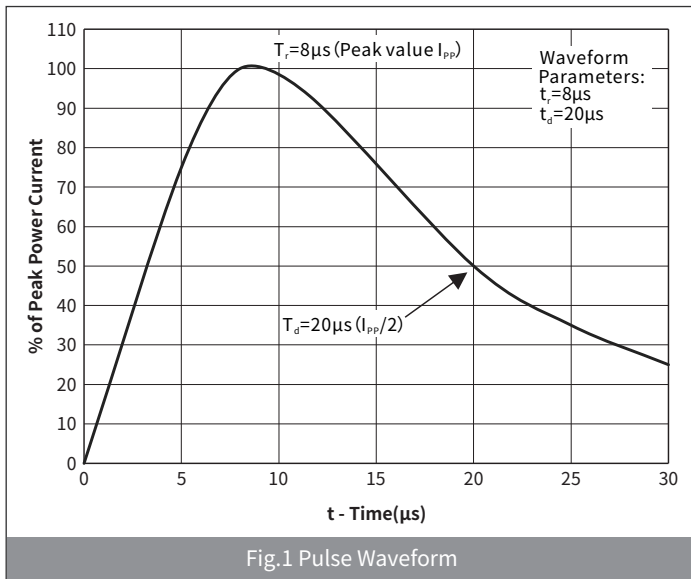
SYMBOL	PARAMETER
V _C	Clamping Voltage @ I _{PP}
V _{BR}	Breakdown Voltage @ I _T
I _{PP}	Peak Pulse Current
I _T	Test Current
I _R	Reverse Leakage Current @ VRWM
V _{RWM}	Peak Reverse Working Voltage
P _{PP}	Peak Pulse Power Dissipation
C _J	Junction Capacitance @ V _R =0V,f=1MHz
I _F	Forward Current
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_{RWM}	$T_a=25^\circ\text{C}$	—	—	20	V
Breakdown Voltage	V_{BR}	$I_R=1\text{mA}, T_a=25^\circ\text{C}$	21.8	—	25.2	V
Reverse Leakage Current	I_R	$V_R=20\text{V}, T_a=25^\circ\text{C}$	—	—	0.5	μA
Clamping Voltage	V_C	$I_{PP}=20\text{A}, t_p=8/20\mu\text{s}$	—	—	35	V
		$I_{PP}=32\text{A}, t_p=8/20\mu\text{s}$	—	—	38	
Junction Capacitance	C_J	$V_R=0\text{V}, f=1\text{MHz}$	—	60	120	pF

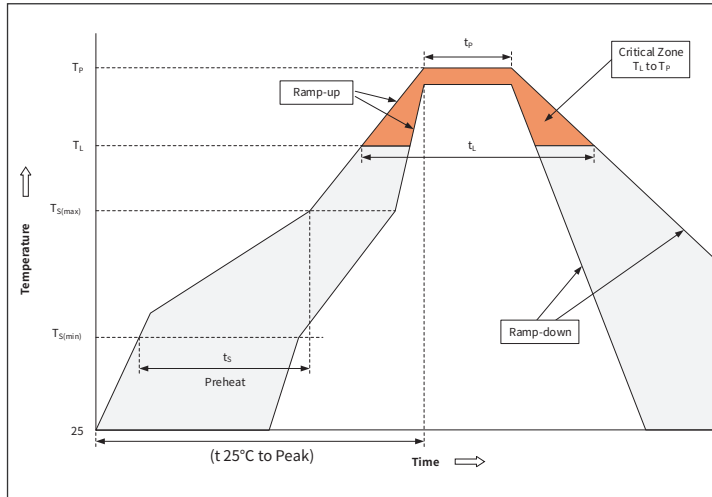
● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



Ordering Information

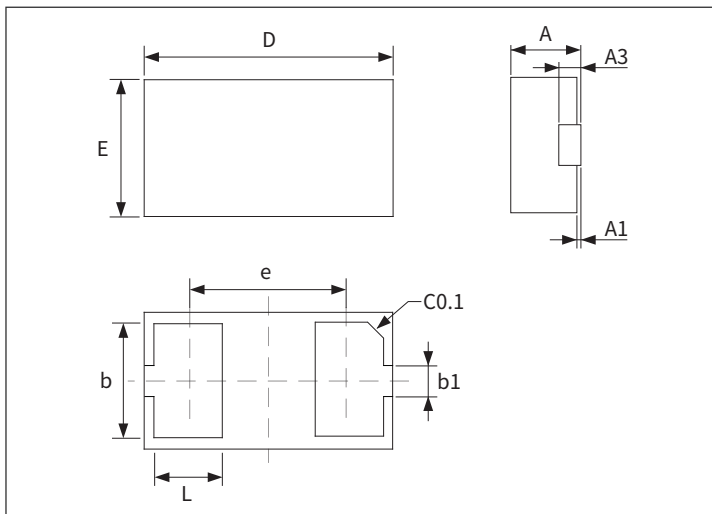
PREFERED P/N	PACKAGE	SIZE(mm)	DELIVERY MODE	MPQ(PCS)
H20VH16U	DFN1610-2L	1.575×0.975×0.485	7" REEL	3000

Recommended Soldering Conditions



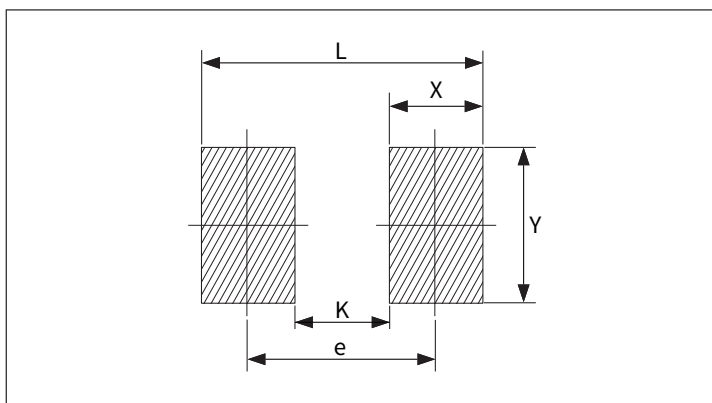
Profile Feature		Pb-Free Assembly
Pre-heat	Temperature Min ($T_{S(min)}$)	+150°C
	Temperature Max ($T_{S(max)}$)	+200°C
	Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	Temperature (T_L) (Liquid us)	+217°C
	Temperature (t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

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