

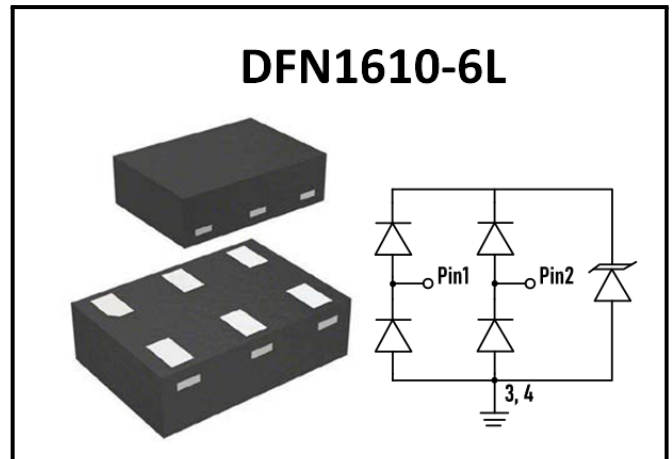
BNRCLAMP0542T

ESD Protection
Diode Array

Features

- Solid-state silicon-avalanche technology
- Low clamping Voltage
- Up to two I/O Lines of Protection
- Ultra low capacitance: 0.45pF typical (I/O to GND)
- Low Leakage
- Low operating voltage:5V
- Flow-Through design
- IEC 61000-4-2 $\pm 20\text{kV}$ contact ; $\pm 25\text{kV}$ air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 5A (8/20 μs)

Package



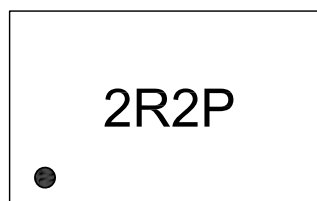
Applications

- Digital Visual Interface(DVI)
- MDDI Ports
- Display Port TM Interface
- PCI Express
- High Definition Multi-Media Interface(HDMI)
- HDMI Interfaces

Mechanical Data

- DFN1610-6L package
- Molding compound flammability rating: UL 94V-0
- Marking: Marking Code
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

Marking



Ordering information

Order code	Package	Base qty	Delivery mode
BNRCLAMP0542T	DFN1610-6L	3k	Tape and reel

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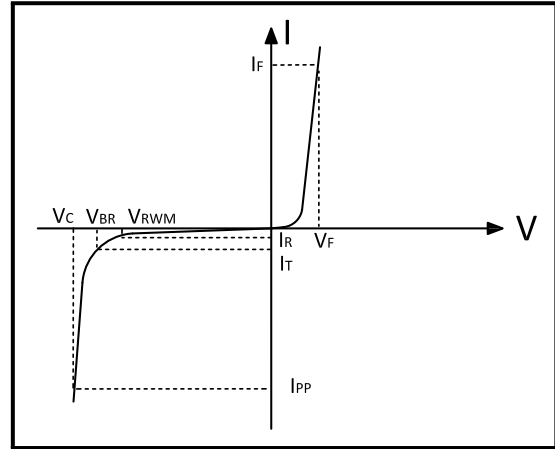


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Electrical Parameters ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current



Note: 8/20us pulse Waveform.

Absolute Maximum Rating

Rating	Symler	Value	Units
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	75	Watts
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	5	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	25	KV
ESD per IEC 61000-4-2 (Contact)		20	
Lead Soldering Temperature	T_L	260(10seconds)	$^\circ\text{C}$
Junction Temperature	T_J	-55 to + 150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to + 150	$^\circ\text{C}$

Electrical Characteristics

Parameter	Symler	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}	–	–	–	5.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	6.0	7.2	9.5	V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}, T = 25^\circ\text{C}$	–	0.1	0.5	μA
Peak Pulse Current	I_{PP}	$t_p = 8/20\mu\text{s}$	–	–	5	A
Clamping Voltage	V_C	$I_{PP} = 5\text{A}, t_p = 8/20\mu\text{s}$	–	14	15	V
Junction Capacitance	C_j	$V_R = 0\text{V}, f = 1\text{MHz}, I/O \text{ to } I/O$	–	0.20	0.4	pF
		$V_R = 0\text{V}, f = 1\text{MHz}, I/O \text{ to } \text{GND}$	–	0.45	0.6	





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Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

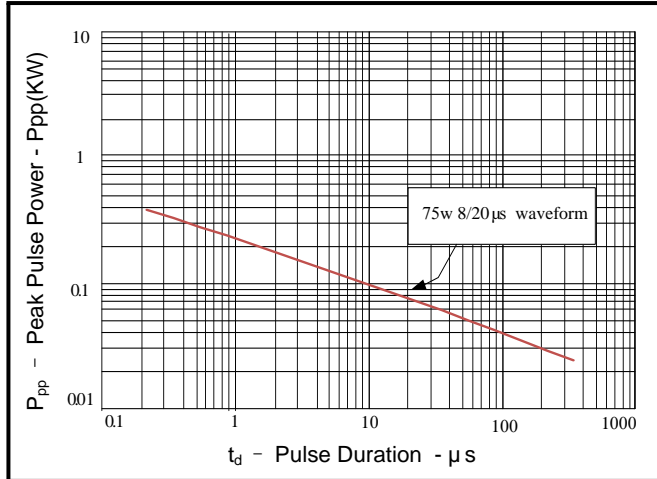


Figure 2: Power Derating Curve

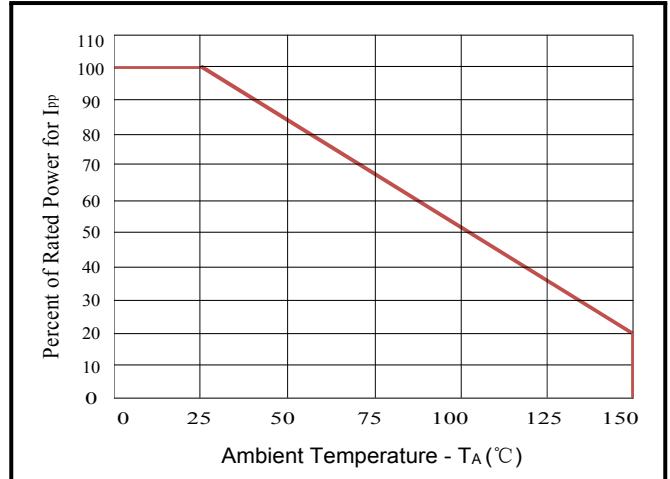


Figure 3: Pulse Waveform

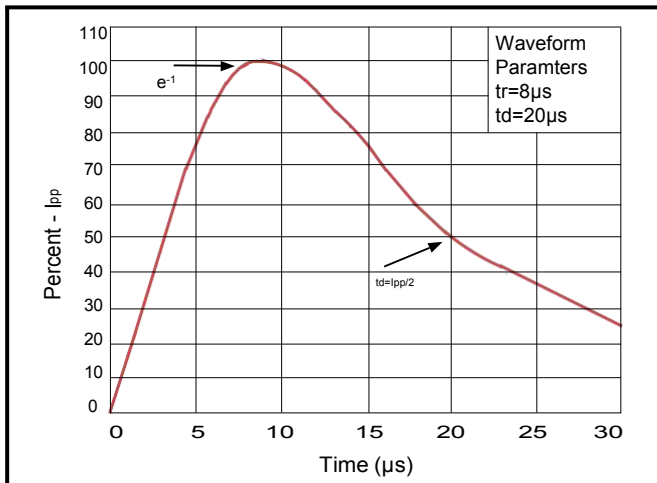
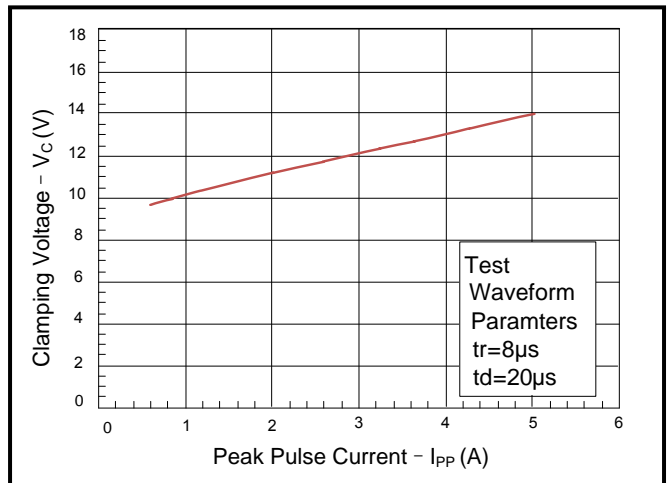


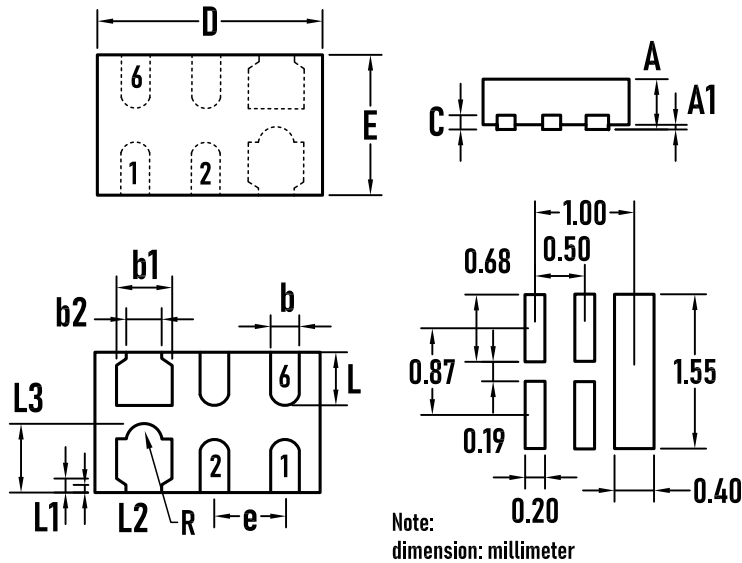
Figure 4: Clamping Voltage vs. Ipp



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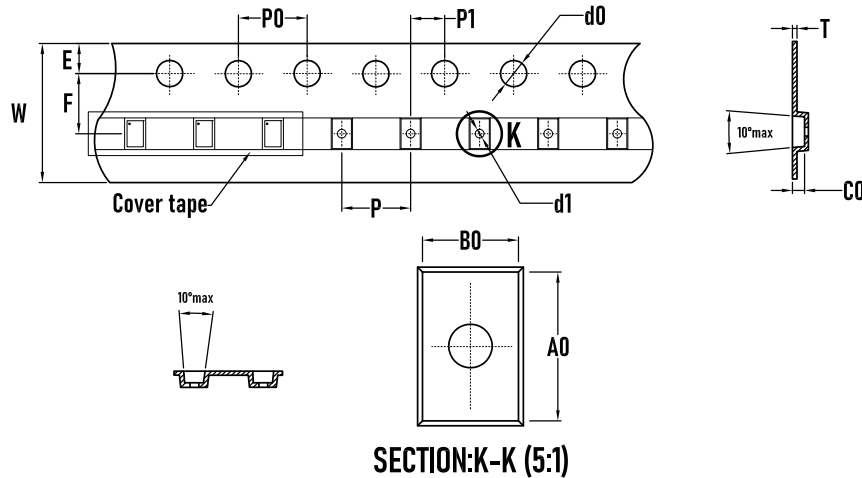
ESD Protection
Diode Array

Outline Drawing – DFN1610-6L



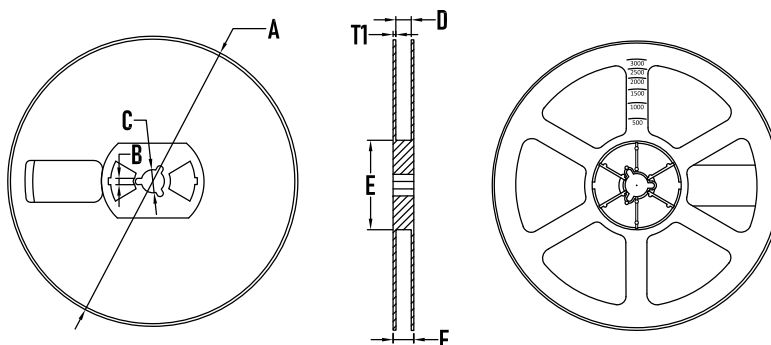
SYMBOL	MILLIMETER		
	MIN.	Typ.	MAX.
A	0.50	0.55	0.60
A1	–	0.02	0.05
b	0.15	0.20	0.25
b1	0.35	0.40	0.45
b2	0.20	0.25	0.30
C	0.10	0.15	0.20
D	1.55	1.60	1.65
e	0.50BSC		
E	0.95	1.00	1.05
L	0.33	0.38	0.43
L1	0.10REF		
L2	0.05REF		
L3	0.49REF		

Packaging Tape - DFN1610-6L



SYMBOL	MILLIMETER
A0	1.11±0.05
B0	1.72±0.05
d0	1.5 ^{+0.1} ₋₀
d1	0.50±0.1
E	1.75±0.10
F	3.50±0.05
K0	0.68±0.05
P	4.00±0.1
P0	4.00±0.10
P1	2.00±0.05
W	8.00 ^{+0.03} _{-0.01}
T	0.25±0.05

Packaging Reel



SYMBOL	MILLIMETER
A	178±1
B	3.5±0.2
C	14.3±0.2
D	9.8 ⁺² ₋₁
E	54.5±0.5
F	12.4±0.5
T1	1.0±0.2
Quantity	3000PCS

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Revision: 2022-Jan-1-A



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