伯恩半导体
BORN SEMICONDUCTOR

BDFN2C3R31V

ESD Protection Diode

»Features

- 80Watts peak pulse power (tp = 8/20μs)
- Tiny DFN1006 package
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2 ±15kV contact ±25kV air
- IEC 61000-4-4 (EFT) 40A(5/50ns)
- IEC 61000-4-5 (Lightning) 10A (8/20μs)

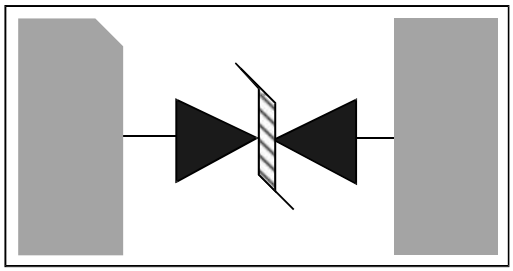
»Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation

»Mechanical Data

- DFN1006 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

»Schematic & PIN Configuration



DFN1006

»Absolute Maximum Rating

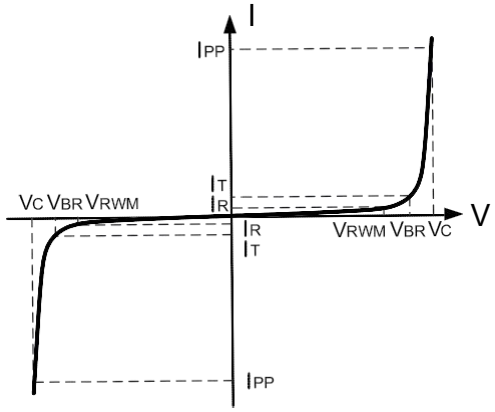
Rating	Symbol	Value	Units
Peak Pulse Power (t_p =8/20μs)	P_{PP}	80	Watts
Peak Pulse Current (t_p =8/20μs) (note1)	I_{pp}	10	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	25 15	kV
Lead Soldering Temperature	T_L	260(10seconds)	℃
Junction Temperature	T_J	-55 to + 125	℃
Storage Temperature	T_{stg}	-55 to + 125	℃

»Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				3.3	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA		4.2		V
Reverse Leakage Current	I_R	V_{RWM}=3.3V,T=25℃		0.1	0.2	μA
Peak Pulse Current	I_{PP}	tp =8/20μs			10	A
Clamping Voltage[1)]	V_{CL}	I_{PP}=16A,t_p=100ns		8		V
Clamping Voltage[2)]	V_C	I_{PP}=5A,t_p=8/20μs			6	V
Clamping Voltage[2)]		I_{PP}=10A,t_p=8/20μs			8	V
Dynamic resistance[1)]	R_{DYN}			0.2		Ω
Junction Capacitance	C_j	V_R = 0V, f = 1MHz		12	18	pF

»Electrical Parameters (TA = 25°C unless otherwise noted)

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



Note:. 8/20μs pulsewaveform.

»Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

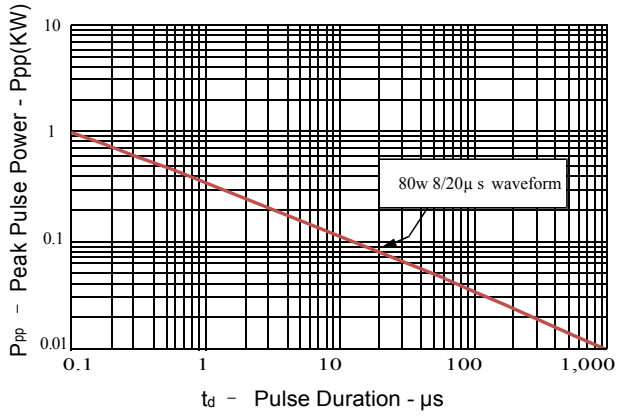


Figure 2: Power Derating Curve

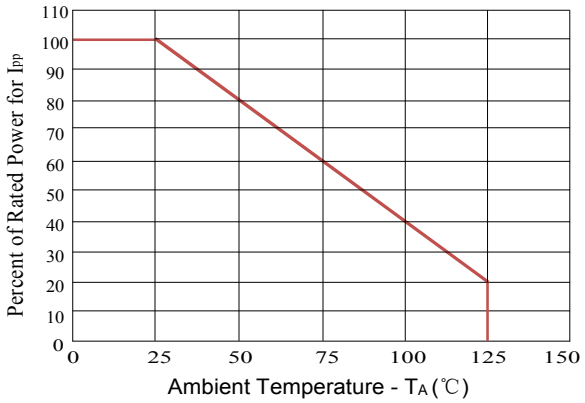


Figure3: Pulse Waveform

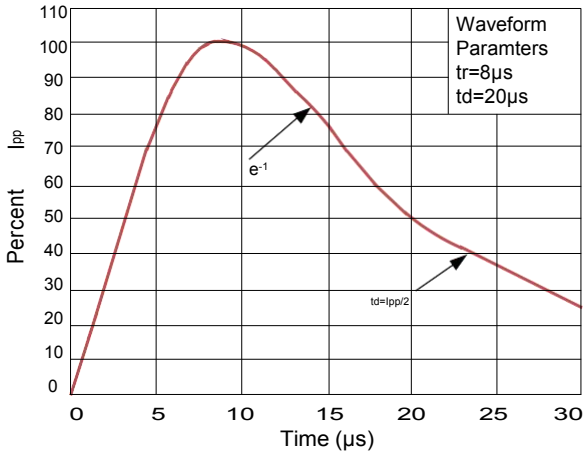
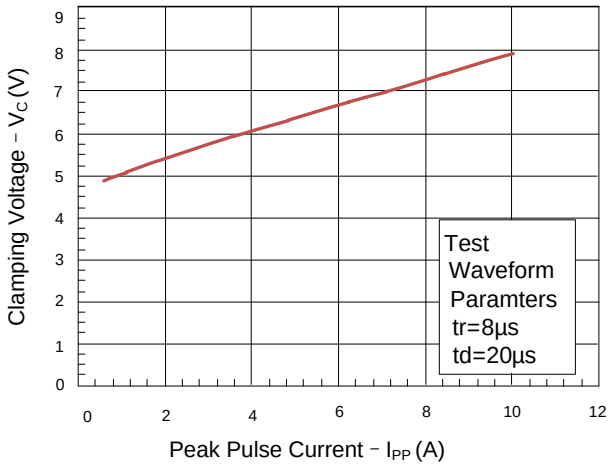
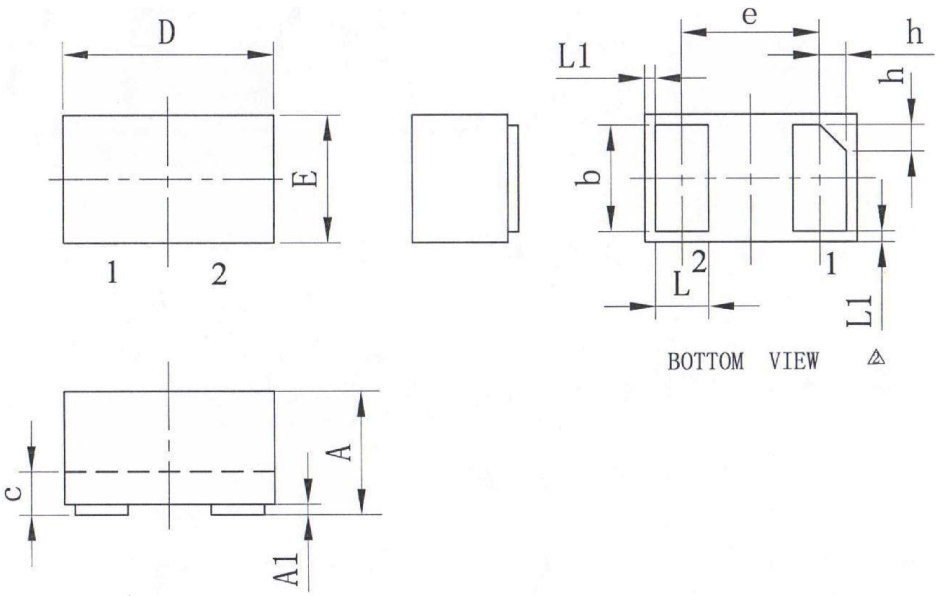


Figure 4: Clamping Voltage vs.Ipp

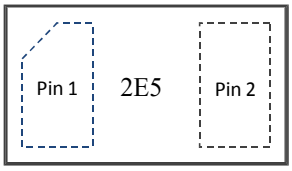


»Outline Drawing – DFN1006



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	0	0.02	0.05
b	0.45	0.50	0.55
c	0.12	0.15	0.18
D	0.95	1.00	1.05
e	0.65BSC		
E	0.55	0.60	0.65
L	0.20	0.25	0.30
L1	0.05REF		
h	0.07	0.12	0.17
载体尺寸 (Mil)	20*20		

»Marking



»Ordering information

Order code	Package	Base qty	Delivery mode
BDFN2C3R31V	DFN1006	10k	Tape and reel

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