

为您的产品保驾护航

PRODUCT DATASHEET

Electro-Static Discharge

JEN2020-12V ESD

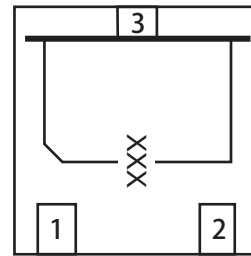
### Features

- Package: DFN2020
- 6000W peak pulse power (8/20μs)
- Low leakage: nA level
- Operating voltage: 12V
- Ultra low clamping voltage
- One power line protects
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge: ±30kV  
Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 200A (8/20μs)
- RoHS compliant

### Applications

- Power Management
- Industrial Application
- Power Supply Protection

### Pin Description



### Schematic Diagram



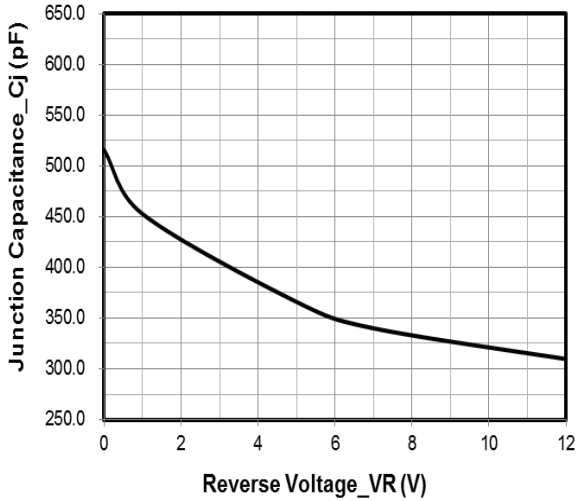
### Limiting Values(T<sub>A</sub> = 25 °C, unless otherwise specified)

Symbol	Parameter	Conditions	Value	Unit
V <sub>ESD</sub>	Electrostatic Discharge Voltage	IEC 61000-4-2;Contact Discharge	±30	kV
		IEC 61000-4-2;Air Discharge	±30	kV
P <sub>PP</sub>	Peak Pulse Power	t <sub>P</sub> =8/20μs	6000	W
I <sub>PP</sub>	Peak Pulse Current	t <sub>P</sub> =8/20μs	200	A
T <sub>J</sub>	Operating Temperature Range	-	-55 to +125	°C
T <sub>stg</sub>	Storage Temperature Range	-	-55 to +150	°C

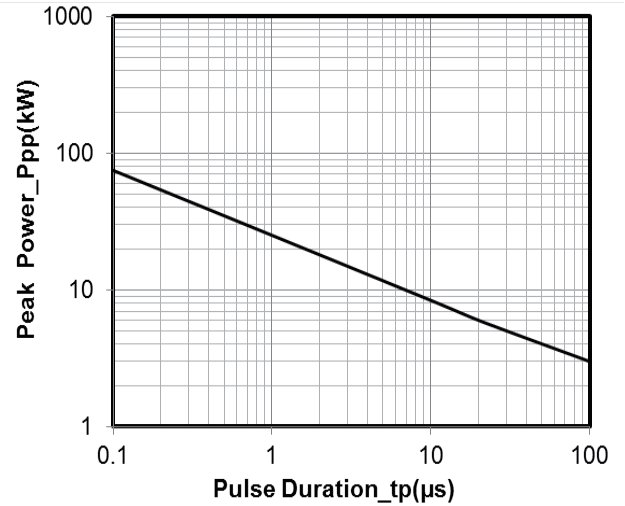
### Electrical Characteristics(T<sub>A</sub> = 25 °C, unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
V <sub>RWM</sub>	Reverse Working Voltage	T <sub>A</sub> =25°C	-	12	-	V
V <sub>BR</sub>	Breakdown Voltage	I <sub>T</sub> =1mA	13	-	-	V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> =12V	-	-	1.0	μA
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> =20A(8x20μs pulse)	-	-	15	V
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> =200A(8x20μs pulse)	-	-	30	V
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> =0V,f=1 MHz	-	-	550	pF

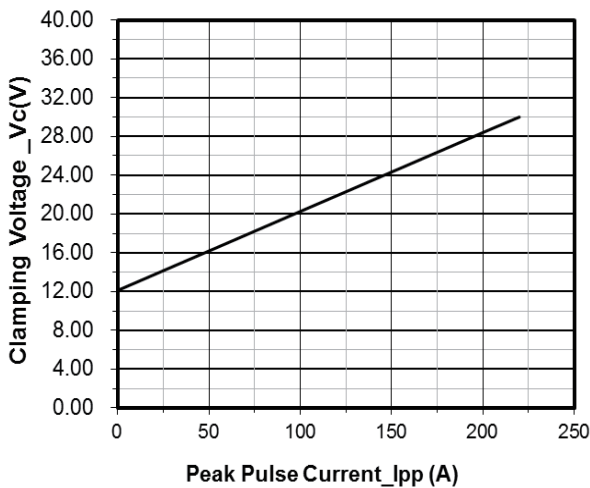
**Typical Characteristics**



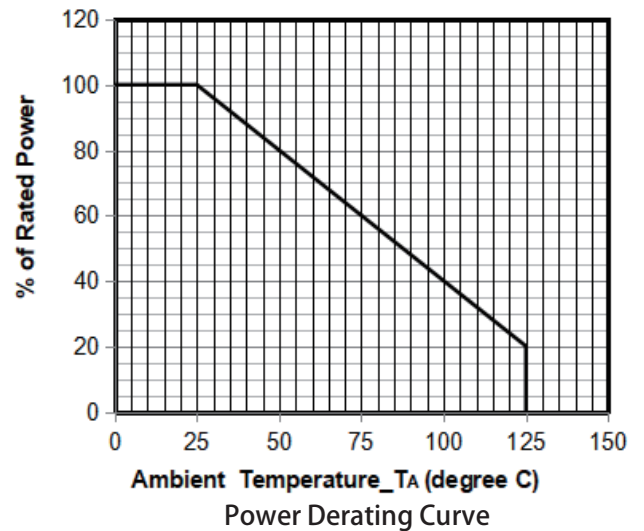
Junction Capacitance vs. Reverse Voltage



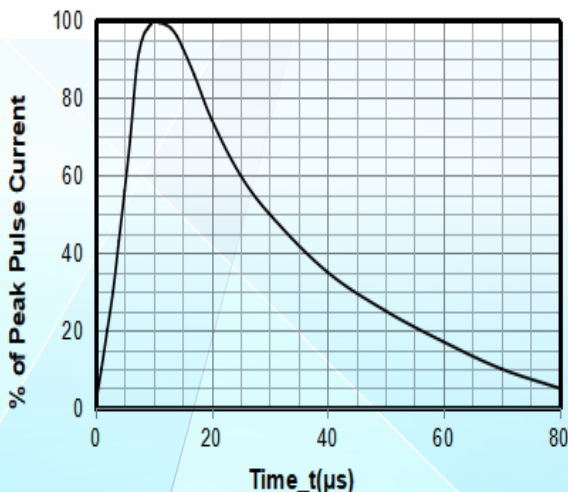
Peak Pulse Power vs. Pulse Time



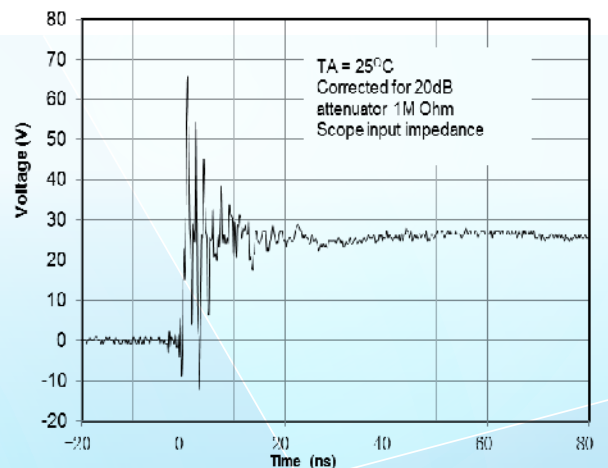
Clamping Voltage vs. Peak Pulse Current (tp = 8/20 μs)



Power Derating Curve

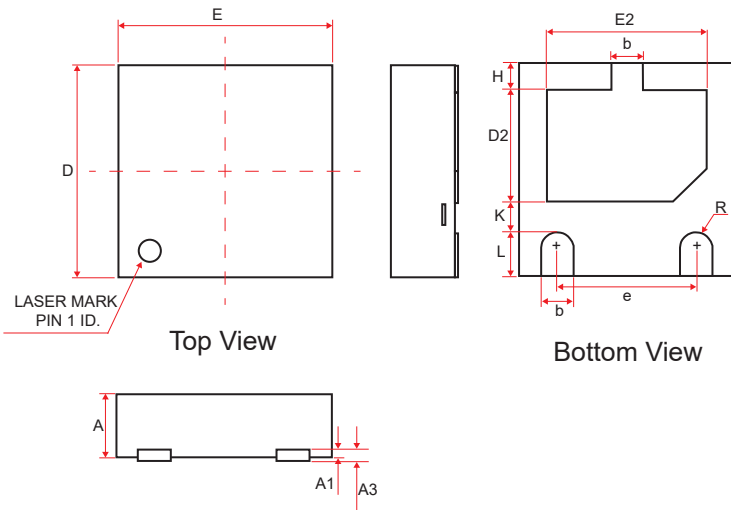


8 X 20 μs Pulse Waveform



ESD Clamping Voltage  
8 kV Contact per IEC61000-4-2

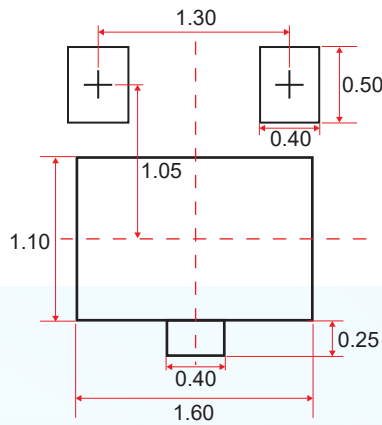
Physical Dimensions(mm.)



Symbol	Dimensions In Millimeters		
	Min	Nom	Max
A	0.55	0.60	0.65
A1	0.00	0.02	0.05
A3	0.10REF		
b	0.25	--	0.35
D	1.90	--	2.10
E	1.90	--	2.10
D2	0.95	--	1.15
E2	1.40	--	1.60
e	1.20	--	1.40
H	0.20	--	0.30
K	0.20	--	0.40
L	0.35	--	0.45
R	0.13	--	--

Suggested Land Pattern

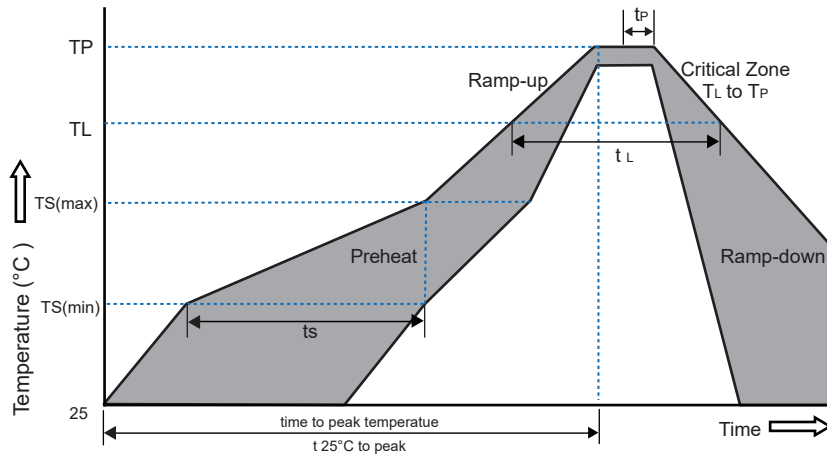
Unit: mm



Packaging Quantity

Part Number	Delivery Form	Delivery Quantity
JEN2020-12V	7"T&R	3,000

### Soldering Parameters



Reflow Condition		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
Ts(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 ( $t_p$ )		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C

### Part Number System

## JE N2020 - 12V

