

## Description

The WPE0791ZP4 is a high power TVS, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive lines. The WPE0791ZP4 complies with the IEC 61000-4-2 (ESD) with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is assembled into a 3-pin DFN2020-3 lead-free package. Each device will protect one line. The combination of small size, and high surge capability makes them ideal for use in applications such as cellular phones, LCD displays, USB, and multi media card interfaces.

## Features

- 6000W peak pulse power (8/20 $\mu\text{s}$ )
- Low leakage: nA level
- Operating voltage: 7V
- Ultra low clamping voltage
- One power line protects
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30\text{kV}$
    - Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-5 (Lightning) 275A (8/20 $\mu\text{s}$ )
- RoHS Compliant

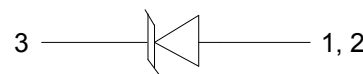
## Mechanical Characteristics

- Package: DFN2020-3
- Case Material: “Green” Molding Compound
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

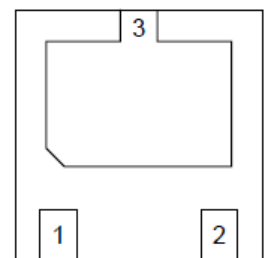
## Applications

- Power Management
- Industrial Application
- Power Supply Protection

## Dimensions and Pin Configuration



Circuit Diagram



Transparent top view

Pin Schematic

## Ordering Information

Part Number	Packaging	Reel Size
WPE0791ZP4	3000/Tape & Reel	7 inch

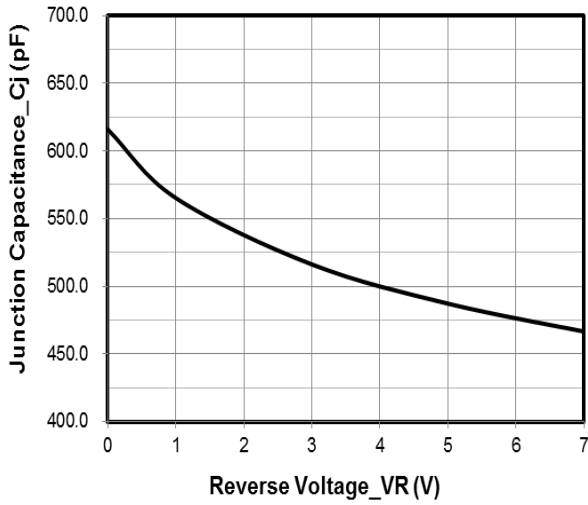
**Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	6000	W
Peak Pulse Current (8/20μs)	I <sub>PP</sub>	275	A
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	
Operating Temperature Range	T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

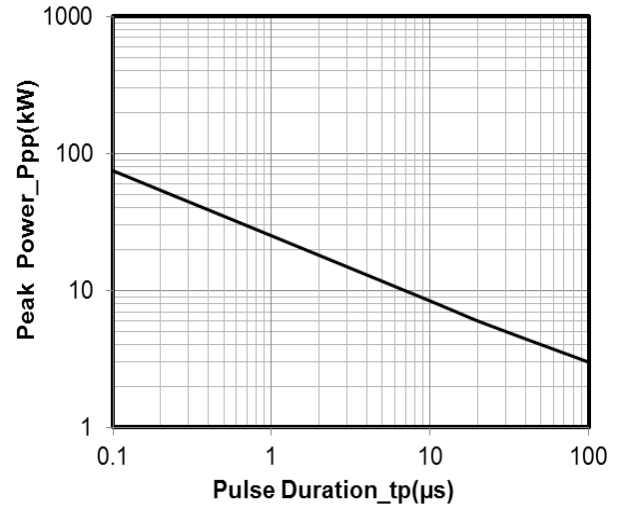
**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			7	V	
Breakdown Voltage	V <sub>BR</sub>	7.5			V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			1.0	μA	V <sub>RWM</sub> = 7V
Clamping Voltage	V <sub>C</sub>			10	V	I <sub>PP</sub> = 20A (8 x 20μs pulse)
Clamping Voltage	V <sub>C</sub>			22	V	I <sub>PP</sub> = 275A (8 x 20μs pulse)
Junction Capacitance	C <sub>J</sub>			1000	pF	V <sub>R</sub> = 0V, f = 1MHz

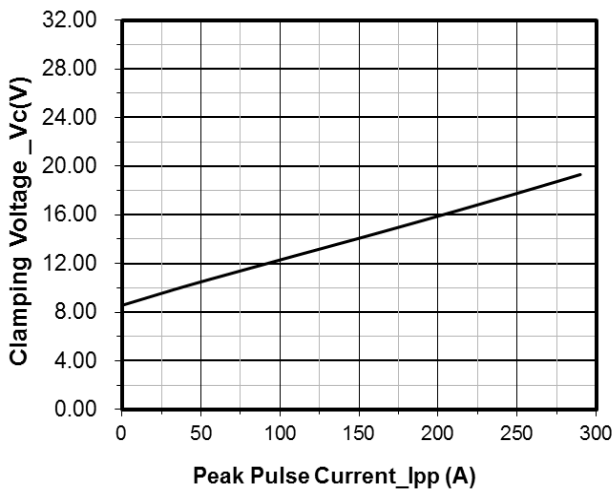
**Typical Performance Characteristics (T<sub>A</sub>=25°C unless otherwise Specified)**



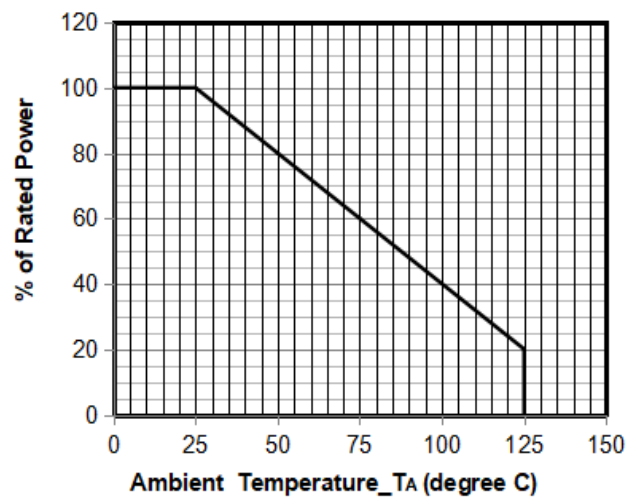
**Novction Capacitance vs. Reverse Voltage**



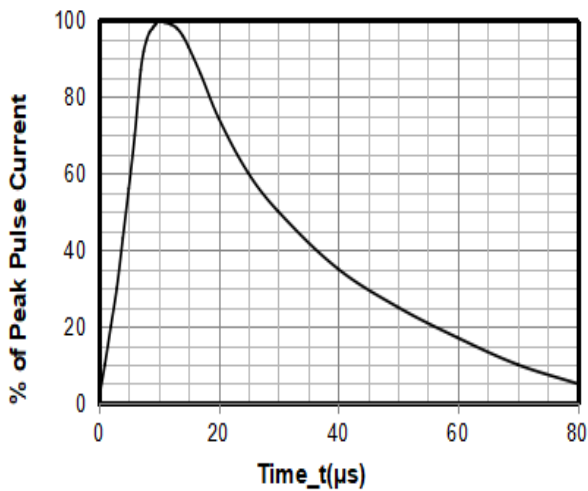
**Peak Pulse Power vs. Pulse Time**



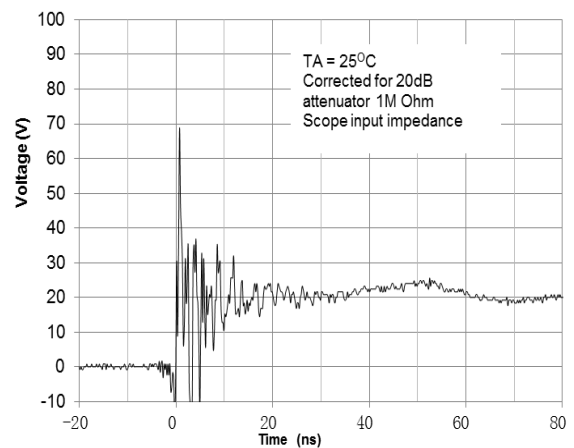
**Clamping Voltage vs. Peak Pulse Current**



**Power Derating Curve**

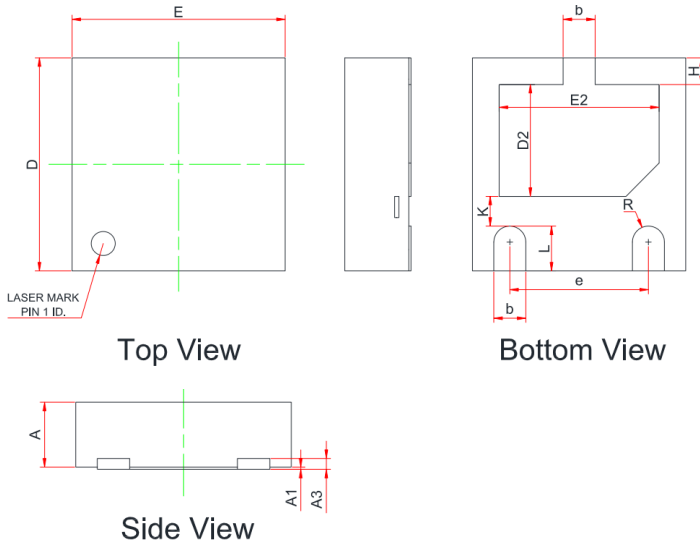


**8 X 20μs Pulse Waveform**



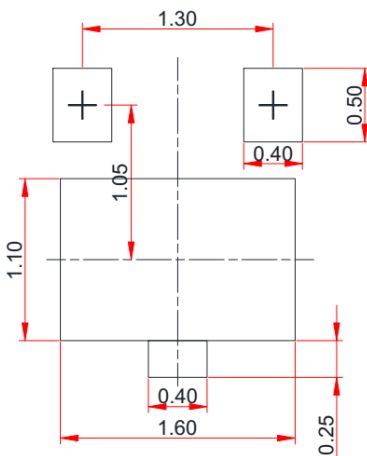
**Note: Data is taken with a 10x attenuator**  
**ESD Clamping Voltage**  
**8 kV Contact per IEC61000-4-2**

**DFN2020-3 Package Outline Drawing**



	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

**Contact information**

WPMTEK Incorporated Limited  
 Room 206-207, 2nd Floor, Block 3, Minxing Industry Park, Minzhi  
 Longhua New District, Shenzhen  
 TEL: 86755-29308003      FAX: 86755-23739900

wpmtek Incorporated Limited (WPM) reserves the right to make changes to the product specification and data in this document without notice. WPM makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does WPM assume any liability arising from the application or use of any products or circuits, and specifically dis-claims any and all liability, including without limitation special, consequential or incidental damages.