

## Features

- Low operating voltage:  $\pm 9V$
- Ultra low capacitance: 8pF typical
- Ultra low leakage: nA level
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 20kV$
    - Contact discharge:  $\pm 20kV$
  - IEC61000-4-5 (Lightning) 5A (8/20 $\mu s$ )
- RoHS Compliant

## Mechanical Characteristics

- Package: X1SON
- Lead Finish: NiPdAu
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

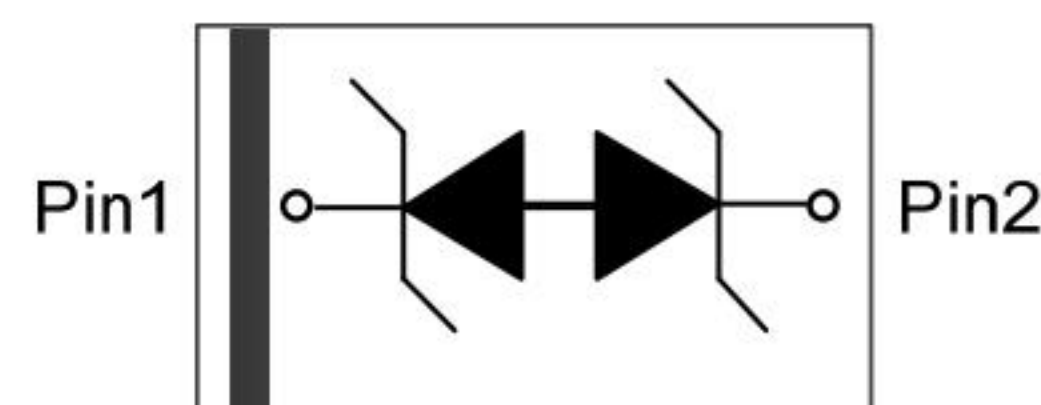
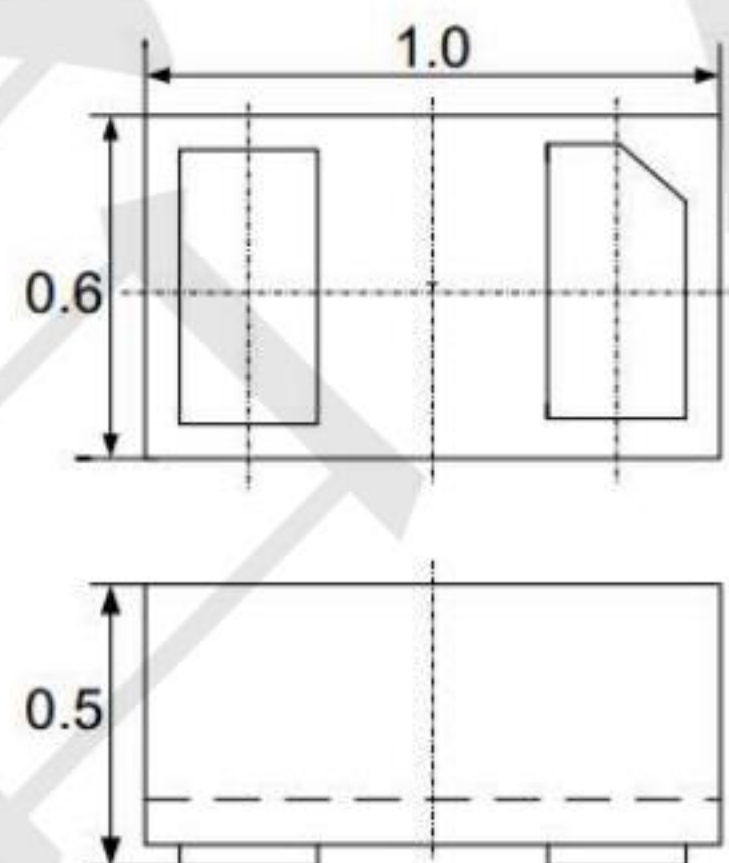
## Applications

- Cellular Handsets & Accessories
- Personal Digital Assistants
- Display Port
- MDDI Ports
- Audio Players
- PCI Express
- Serial ATA

## Ordering Information

Part Number	Qty per Reel	Reel Size
TPD1E10B09DPYR-TP	10000	7"

## Dimensions and Pin Configuration



**Marking: BJ**

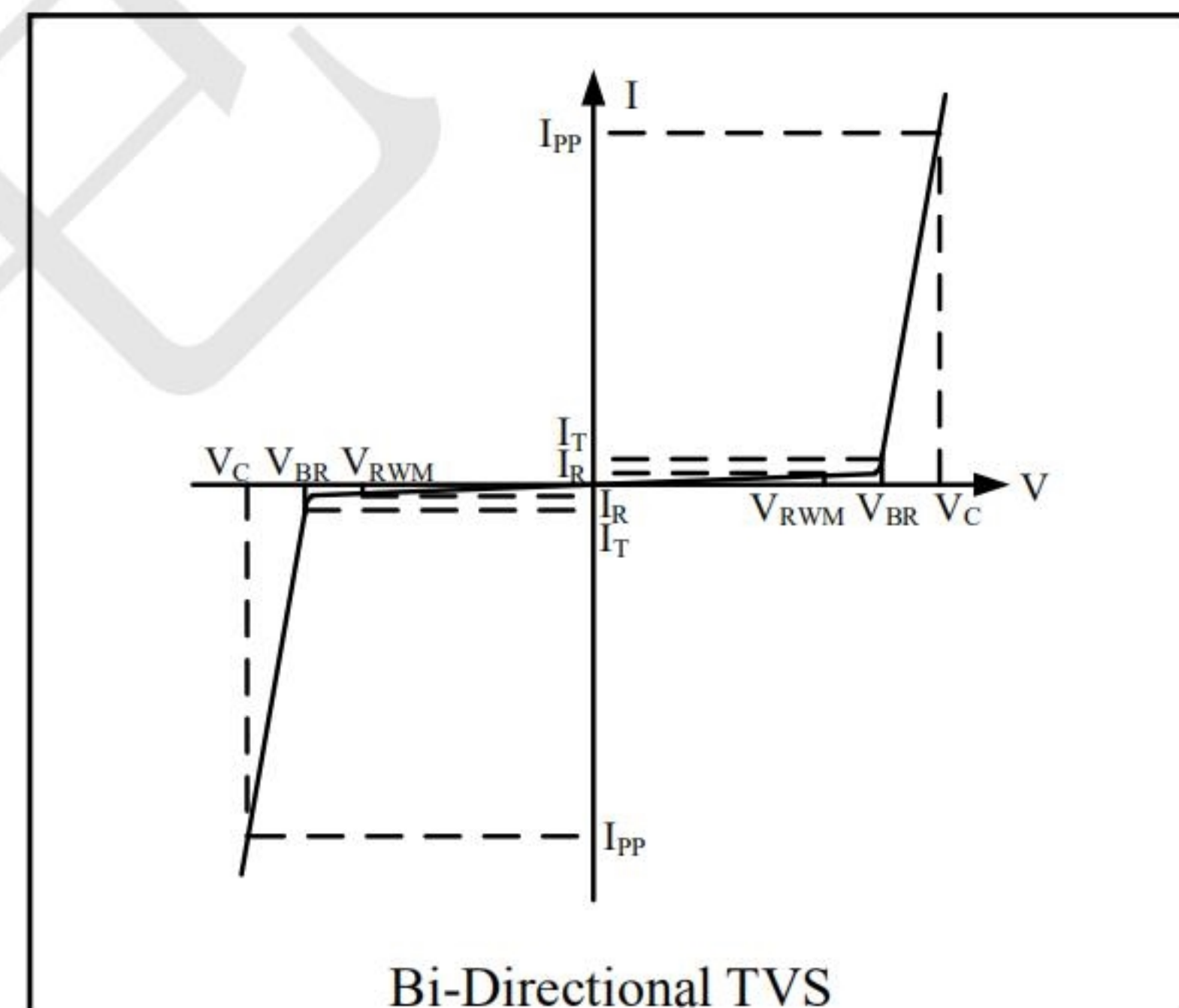


**Absolute Maximum Ratings** ( $T_{amb}=25^{\circ}\text{C}$  unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	$P_{PK}$	100	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	$I_{PP}$	5	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	$\pm 20$ $\pm 20$	kV
Operating Temperature Range	$T_J$	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^{\circ}\text{C}$

**Electrical Characteristics** ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)

Symbol	Parameter
$V_{RWM}$	Nominal Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Reverse Breakdown Voltage @ $I_T$
$I_T$	Test Current for Reverse Breakdown
$V_C$	Clamping Voltage @ $I_{PP}$
$I_{PP}$	Maximum Peak Pulse Current
$C_{ESD}$	Parasitic Capacitance
$V_R$	Reverse Voltage
$f$	Small Signal Frequency



Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	$V_{RWM}$			9	V	
Breakdown Voltage	$V_{BR}$	10	13.7		V	$I_T = 1\text{mA}$
Reverse Leakage Current	$I_R$			100	nA	$V_{RWM} = 9\text{V}$
Clamping Voltage				13	V	$I_{PP} = 1\text{A}$ (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	$V_C$			20	V	$I_{PP} = 5\text{A}$ (8 x 20 $\mu\text{s}$ pulse)
Junction Capacitance	$C_J$		8	12	pF	$V_R = 0\text{V}$ , $f = 1\text{MHz}$



## Characteristic Curves

Fig1. 8/20 $\mu$ s Pulse Waveform

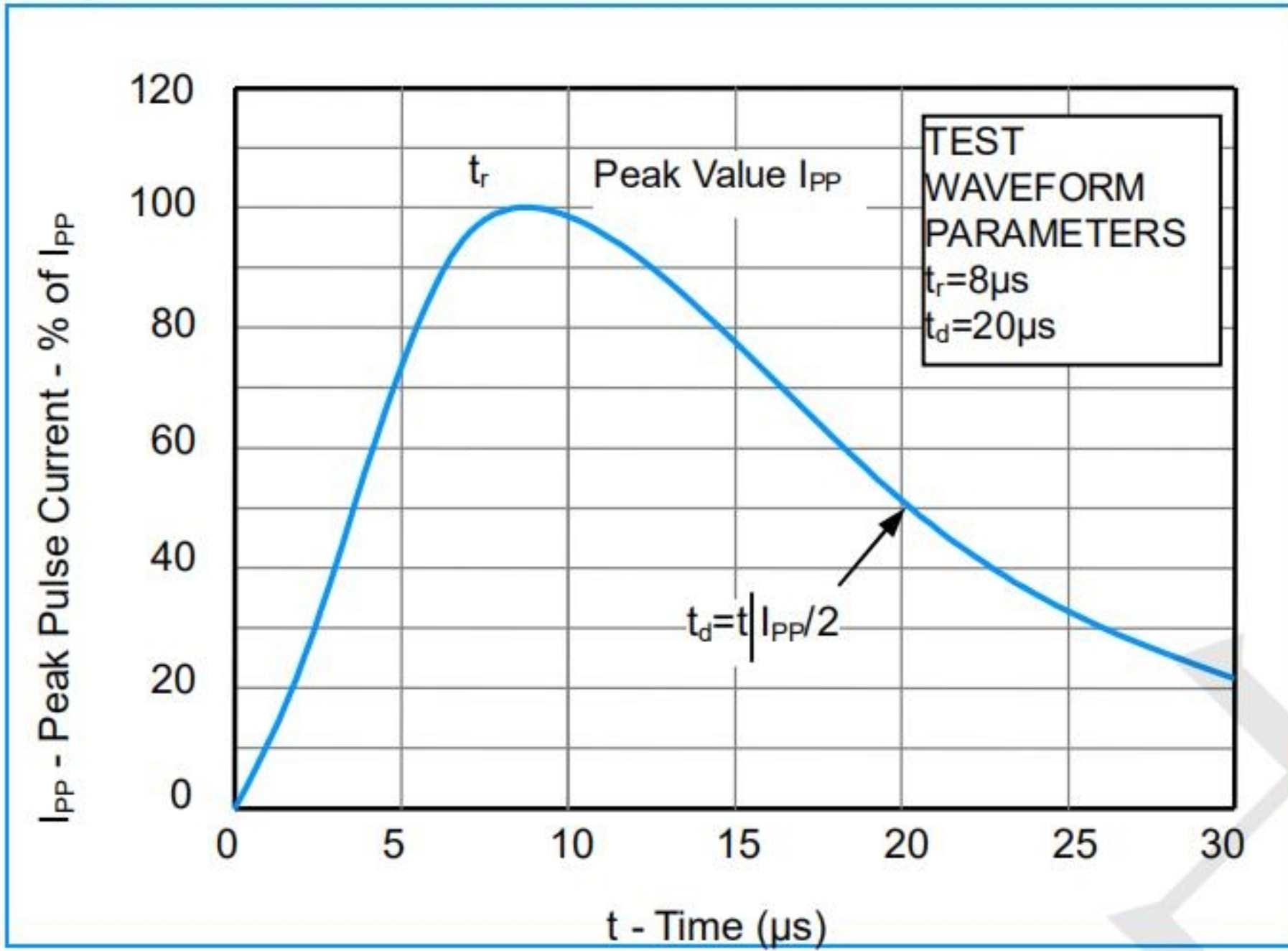


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

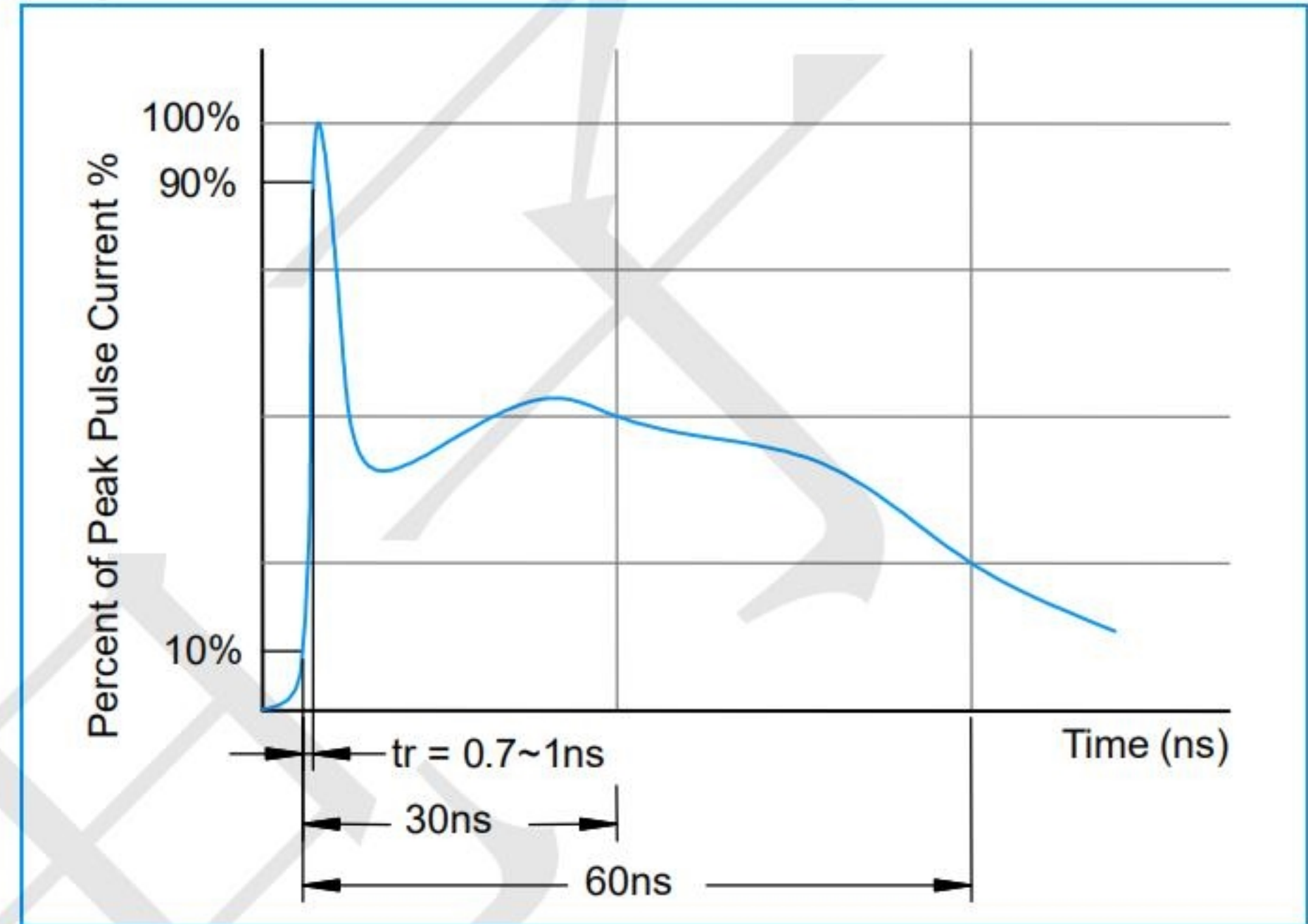
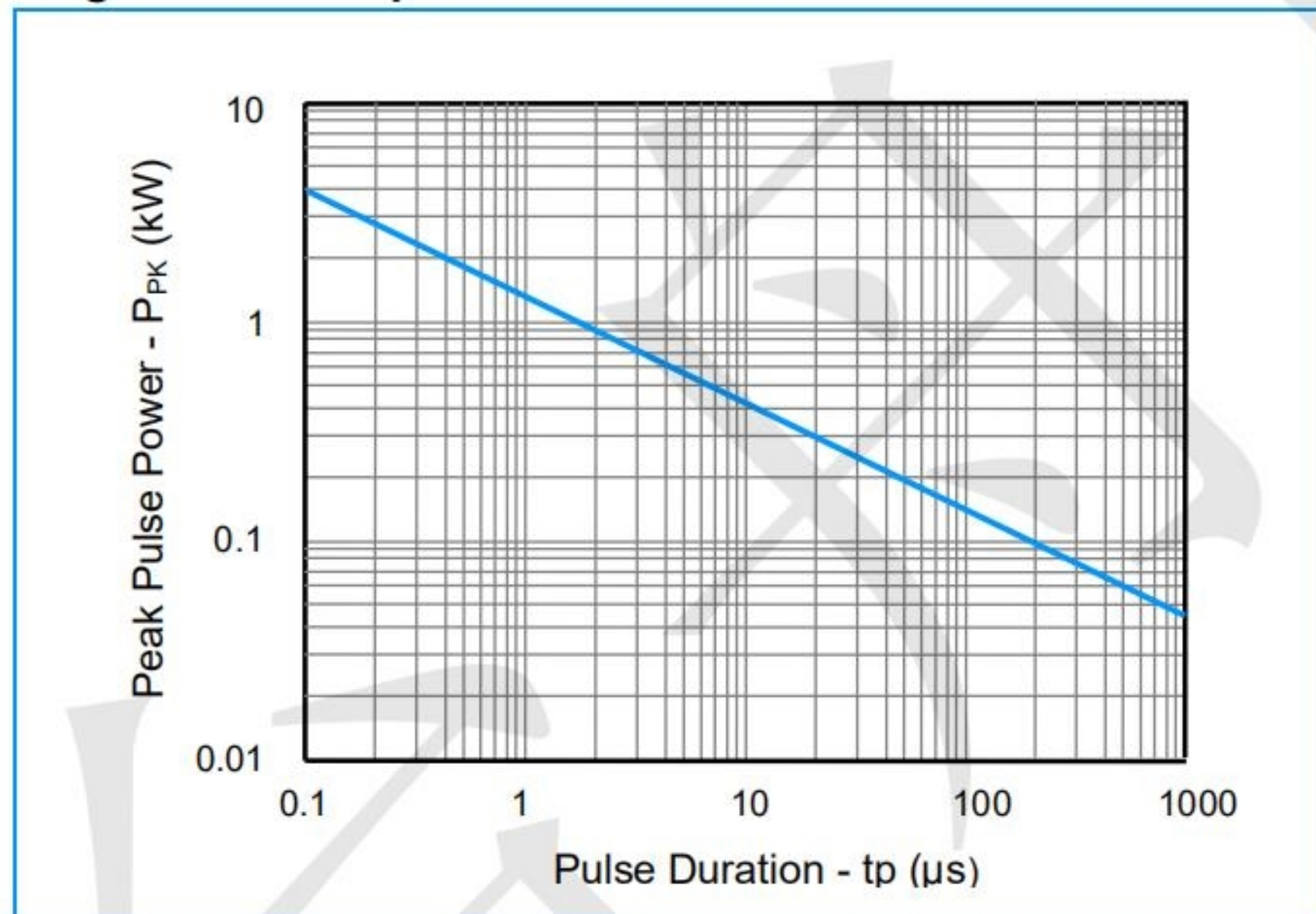
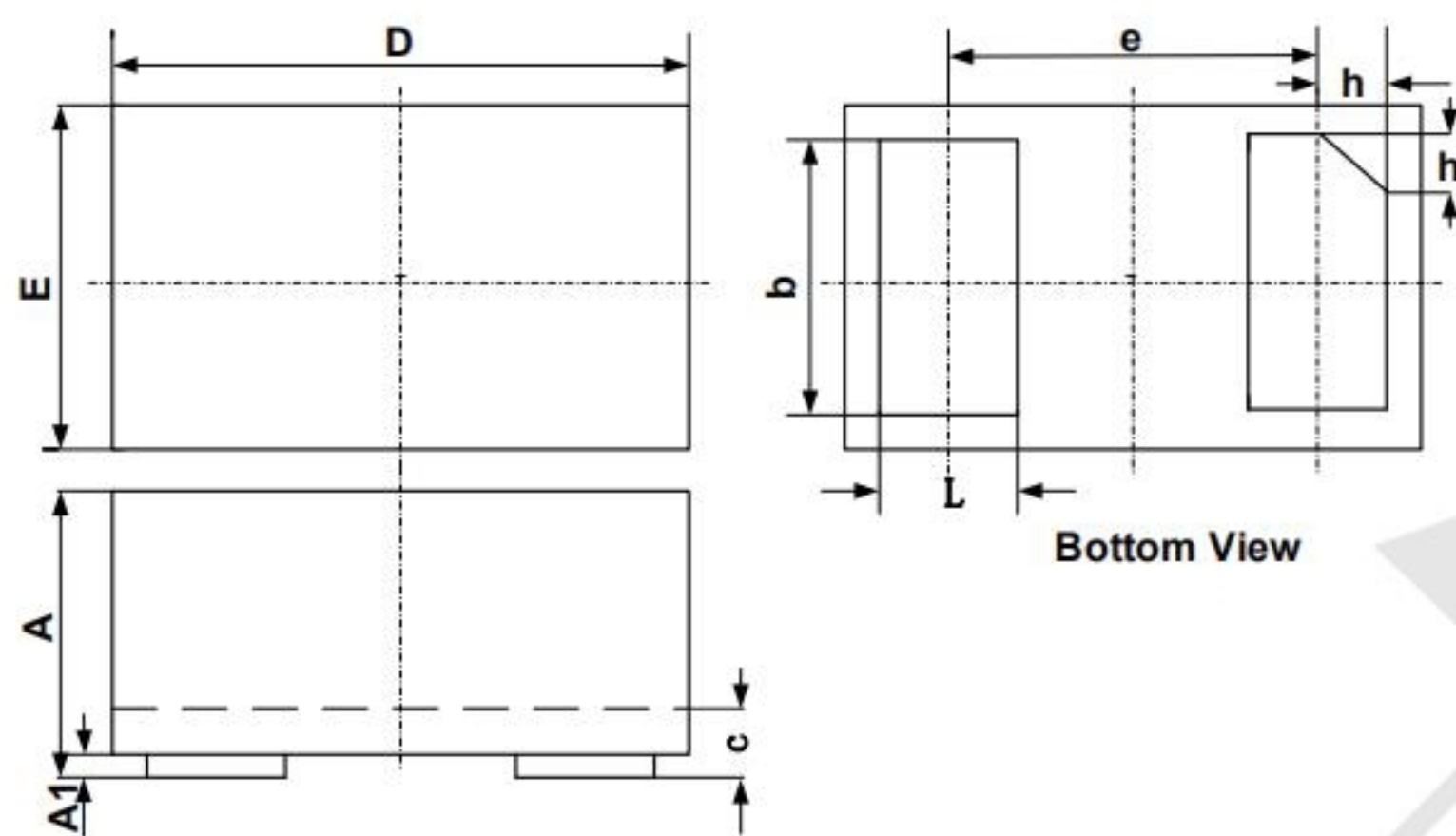


Fig3. Non - Repetitive Peak Pulse Power vs. Pulse Time



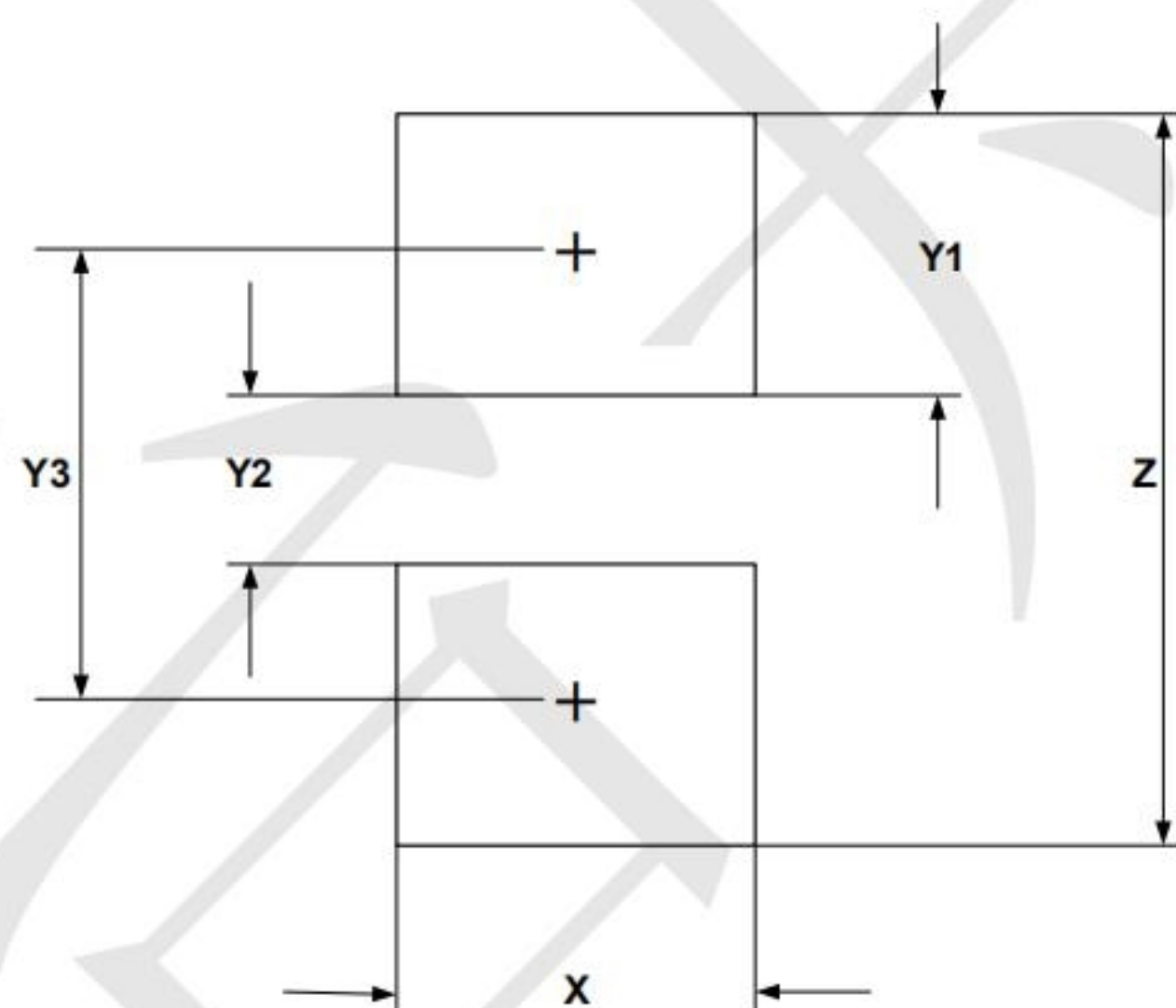


### Outline Drawing - X1SON



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
h	0.07	0.12	0.17	0.003	0.005	0.007

### Land Pattern - X1SON



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052