

**Description**

The FTV07215D is an uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast re-sponse time and ultra low ESD clamping voltage, making this device an ideal solution for protecting voltage sensi-tive data and power line. The FTV07215D complies with the IEC 61000-4-2 (ESD) with  $\pm 30kV$  air and  $\pm 30kV$  con-tact discharge. It is assembled into an ultra-small SOD-523 lead-free package. The small size and high ESD surge protection make FTV07215D an ideal choice to pro-tect cell phone, digital cameras, audio players and many other portable applications.

**Features**

- ◆ Ultra small package:SOD-523
- ◆ Protects one data or power line
- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 7V
- ◆ Low clamping voltage
- ◆ 2-Pin leadless package
- ◆ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 30kV$   
Contact discharge:  $\pm 30kV$
  - IEC61000-4-5 (Lightning) 18A (8/20 $\mu s$ )
- ◆ ROHS Compliant

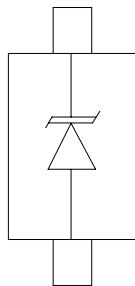
**Mechanical Characteristics**

- ◆ Package: SOD-523
- ◆ Lead Finish: Matte Tin
- ◆ Case Material: "Green" Molding Compound.
- ◆ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ Terminal Connections: See Diagram Below
- ◆ Marking Information: See Below

**Applications**

- ◆ Cellular Handsets and Accessories
- ◆ Personal Digital Assistants
- ◆ Notebooks and Handhelds
- ◆ Portable Instrumentation
- ◆ Digital Cameras
- ◆ Cellular Phone, Peripherals
- ◆ Audio Players
- ◆ Keypads, Side Keys, LCD Displays

**Dimensions and Pin Configuration**



Circuit and Pin Schematic

**Marking Information**



7D = Device Marking Code  
Bar denotes Pin1

**Ordering Information**

Part Number	Marking	Packaging	Reel Size
FTV07215D	7D	3000/Tape & Reel	7 inch



## Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

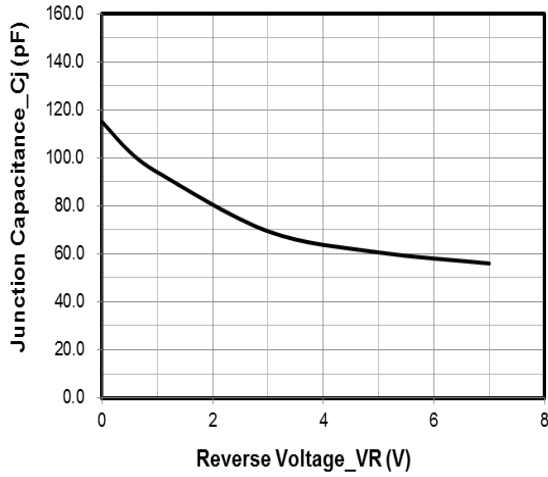
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	250	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	Ipp	18	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	$\pm 30$ $\pm 30$	kV
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

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

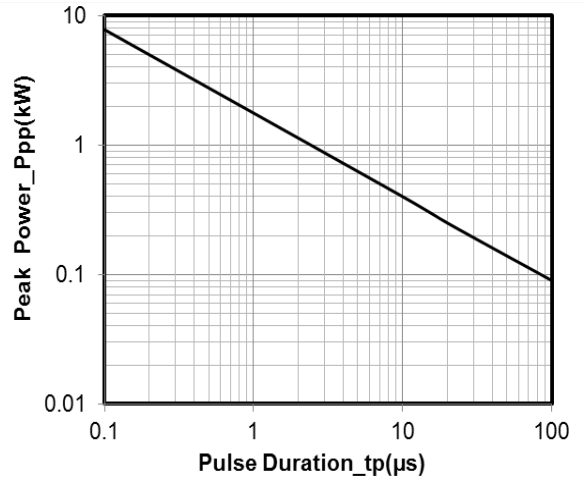
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			7	V	
Breakdown Voltage	VBR	7.5			V	IT = 1mA
Reverse Leakage Current	IR			0.2	$\mu\text{A}$	VRWM = 7V
Forward Voltage	VF			1.2	V	IF = 10mA
Clamping Voltage	VC			10	V	I <sub>PP</sub> = 5A (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	VC			14	V	I <sub>PP</sub> = 18A (8 x 20 $\mu\text{s}$ pulse)
Junction Capacitance	CJ			160	pF	VR = 0V, f = 1MHz



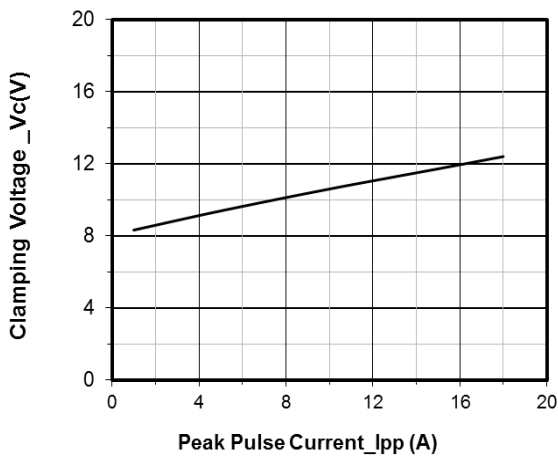
**Typical Performance Characteristics (TA=25°C unless otherwise Specified)**



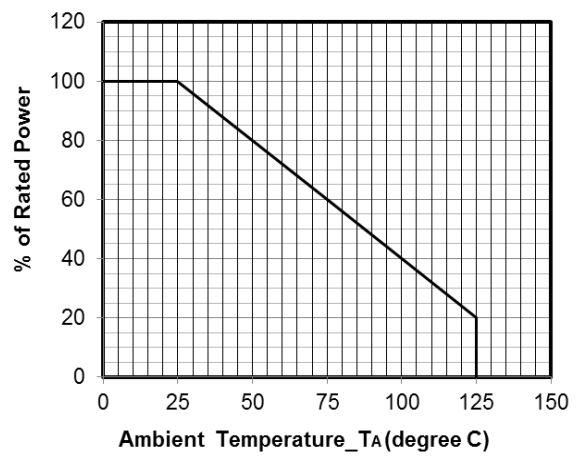
**Junction Capacitance vs. Reverse Voltage**



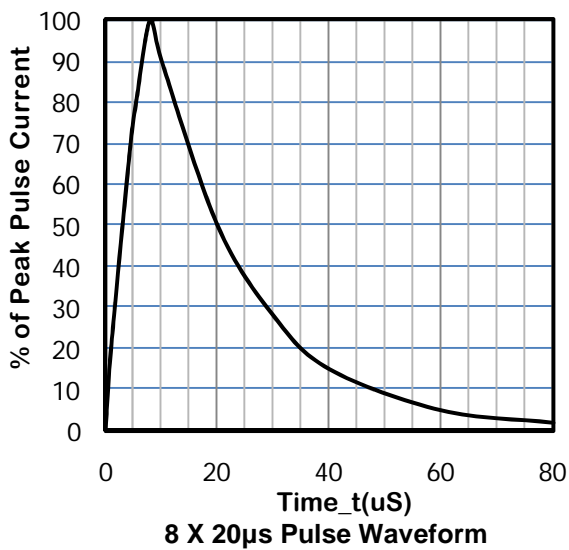
**Peak Pulse Power vs. Pulse Time**



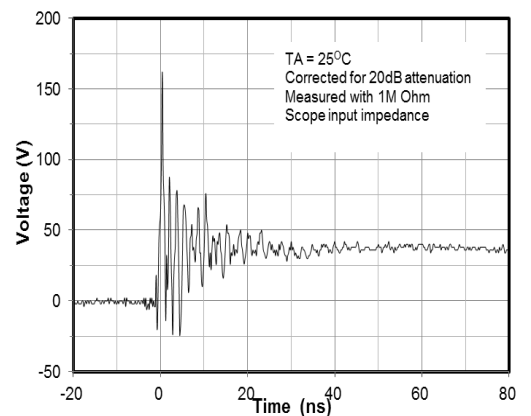
**Clamping Voltage vs. Peak Pulse Current**



**Power Derating Curve**

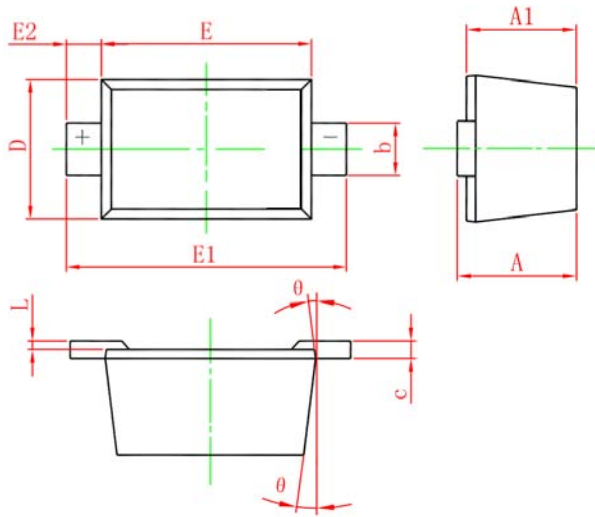


**8 X 20μs Pulse Waveform**



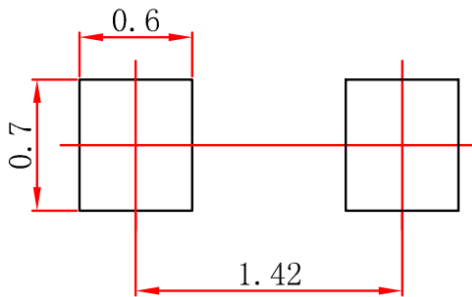
**ESD Clamping Voltage  
8 kV Contact per IEC61000-4-2**

**SOD-523 Package Outline Drawing**



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.51	--	0.77	0.020	--	0.031
A1	0.50	--	0.70	0.020	--	0.028
b	0.25	--	0.35	0.010	--	0.014
c	0.08	--	0.15	0.003	--	0.006
D	0.75	--	0.85	0.030	--	0.033
E	1.10	--	1.30	0.043	--	0.051
E1	1.50	--	1.70	0.059		0.067
E2	0.20REF			0.008REF		
L	0.01	--	0.07	0.001	--	0.003
θ	7° REF			7° REF		

**Suggested Land Pattern**



Unit : mm