

Description

The FTV24215 is a 24V bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast re-sponse time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The FTV24215 complies with the IEC 61000-4-2 (ESD) with ± 25 kV air and ± 20 kV contact discharge. It is assembled into an ultra-small lead-free DFN0603-2 package. The small size and high ESD surge protection make FTV24215 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- ◆ Ultra small package: 0.6 x0.3 x0.3mm
- ◆ Protects one data or power line
- ◆ Ultra low leakage : nA level
- ◆ Operating voltage : 24V
- ◆ Low clamping voltage
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test Air discharge: $\pm 25\text{kV}$
Contact discharge: $\pm 20\text{kV}$
 - IEC61000-4-5 (Lightning) 2A (8/20 μs)
- ◆ RoHS Compliant

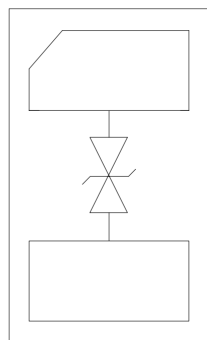
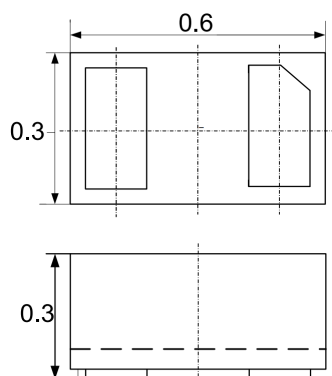
Mechanical Characteristics

- ◆ Package: DFN0603-2 (0.6 x0.3 x0.3mm)
- ◆ Case Material: "Green" Molding Compound.
- ◆ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ Terminal Connections: See Diagram Below
- ◆ Marking Information: See Below

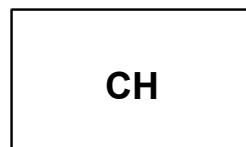
Applications

- ◆ Cellular Handsets and Accessories
- ◆ Personal Digital Assistants
- ◆ Notebooks and Handhelds
- ◆ Portable Instrumentation
- ◆ Digital Cameras
- ◆ Peripherals
- ◆ Audio Players

Dimensions and Pin Configuration



Marking Information



CH = Device Marking Code

Package Dimensions (mm) Circuit and Pin Schematic

Ordering Information

Part Number	Marking	Packaging	Reel Size
FTV24215DFN0603	CH	10000/Tape & Reel	7 inch

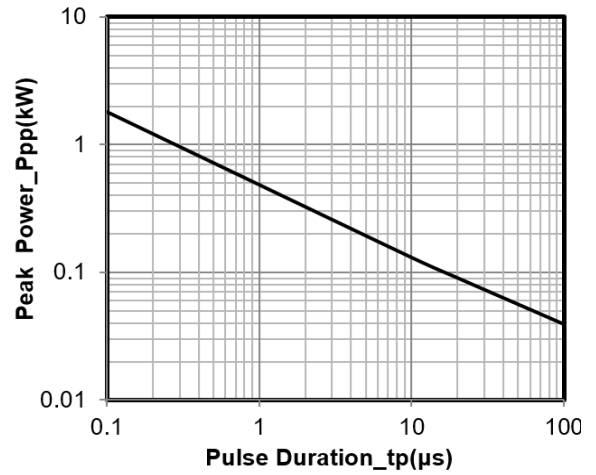
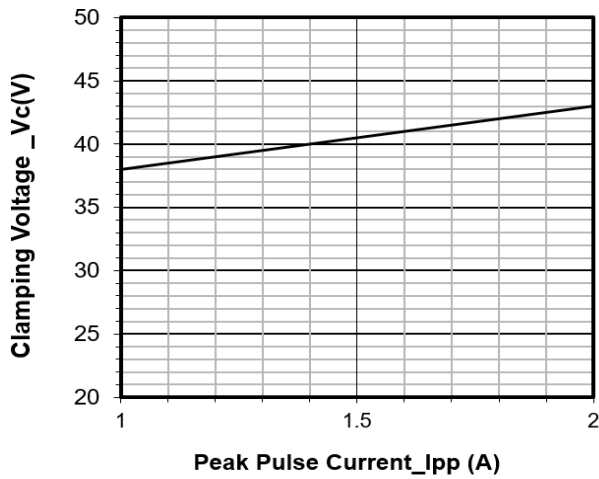
**Absolute Maximum Ratings (T_A=25°C unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20μs)	Ppk	90	W
Peak Pulse Current(8/20μs)	Ipp	2	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	±25 ±20	kV
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

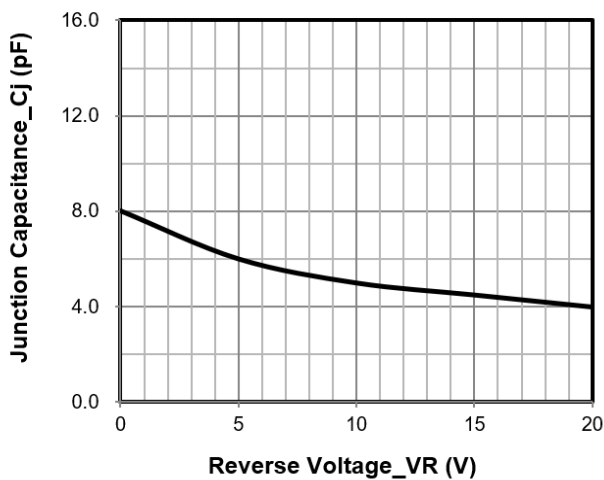
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			24	V	
Breakdown Voltage	V _{BR}	26.8			V	I _T = 1mA
Reverse Leakage Current	I _R			0.2	μA	V _T =V _{RWM}
Clamping Voltage	V _C			38	V	I _{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V _C			45	V	I _{PP} = 2A (8 x 20μs pulse)
Junction Capacitance	C _J		8		pF	V _R = 0V, f = 1MHz

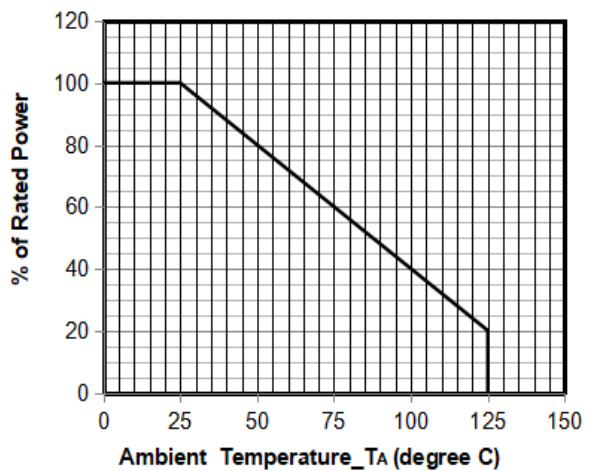
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



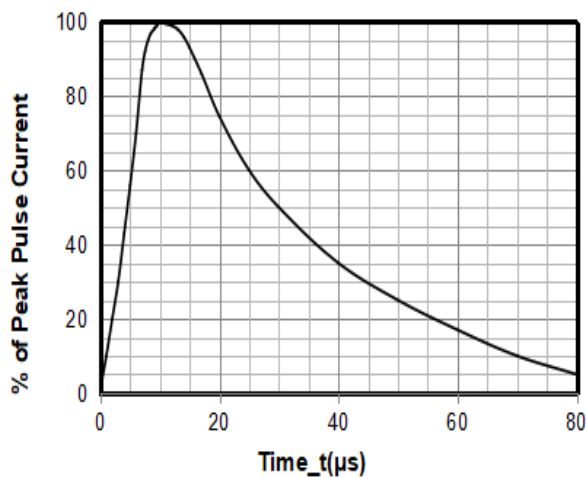
Junction Capacitance vs. Reverse Voltage



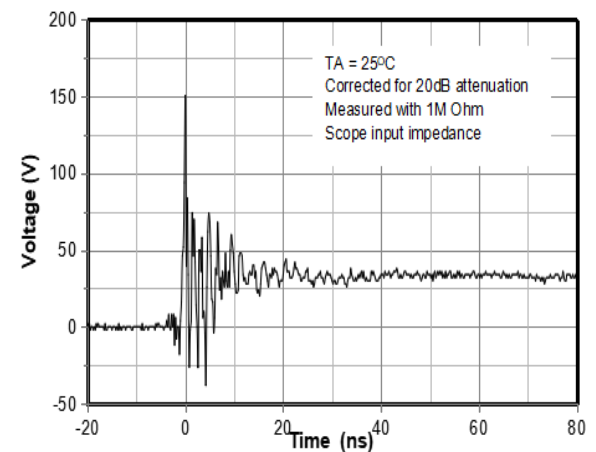
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current



Power Derating Curve

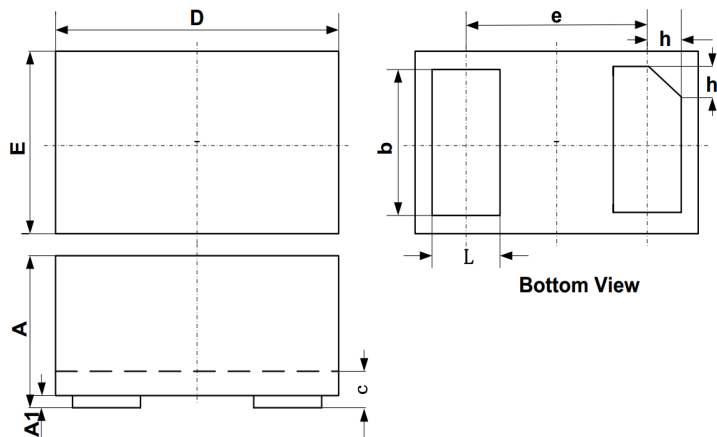


8 X 20μs Pulse Waveform

ESD Clamping Voltage

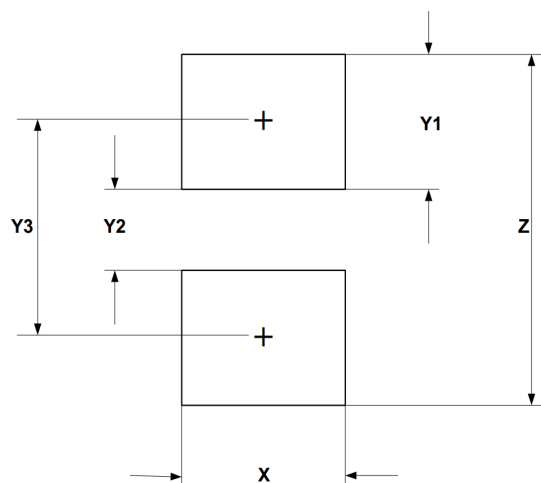
8 kV Contact per IEC61000-4-2

DFN0603-2 Package Outline Drawing



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.230		0.330
A1	0.000	0.020	0.050
b	0.215	0.245	0.275
c	0.120	0.150	0.180
D	0.550	0.600	0.650
e	0.355 BSC		
E	0.250	0.300	0.350
L	0.160	0.190	0.220
h	0.079 BSC		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.30	0.012
Y1	0.25	0.010
Y2	0.15	0.006
Y3	0.40	0.016
Z	0.65	0.026