

Features

- ❑ Transient protection for high-speed data lines
 - IEC 61000-4-2 (ESD) ±25kV (Air)
 - ±17kV (Contact)
 - IEC 61000-4-4 (EFT) 40A (5/50 ns)
 - Cable Discharge Event (CDE)
- ❑ Protects five data lines
- ❑ Low capacitance: 0.6pF Typical (I/O-GND)
- ❑ Low leakage current: 0.1μA @ V_{RWM} (Typical)
- ❑ Low clamping voltage
- ❑ Each I/O pin can withstand over 1000 ESD strikes for ±8kV contact discharge
- ❑ Green Part

Description

TT0515TJX is a low capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces. With typical capacitance of 0.6pF only, TT0515TJX is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4 (±15kV air, ±8kV contact discharge), IEC 61000-4-4 (electrical fast transient - EFT) (40A, 5/50 ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

TT0515TJX uses small SOT363 package. Each TT0515TJX device can protect five high-speed data lines. The combined features of low capacitance, small size and high ESD robustness make ideal for TT0515TJX high-speed data ports and high-frequency lines (e.g., HDMI & DVI) applications. The low clamping voltage of the guarantees TT0515TJX a minimum stress on the protected IC.

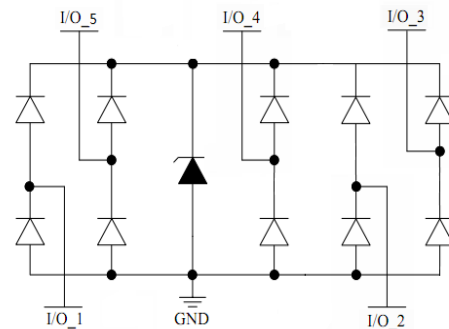
Applications

- ❑ Video Graphics Cards
- ❑ Desktops, Servers and Notebooks
- ❑ IEEE 1394 Ports
- ❑ USB2.0 Power and Data Line Protection
- ❑ Display Ports
- ❑ SIM Ports

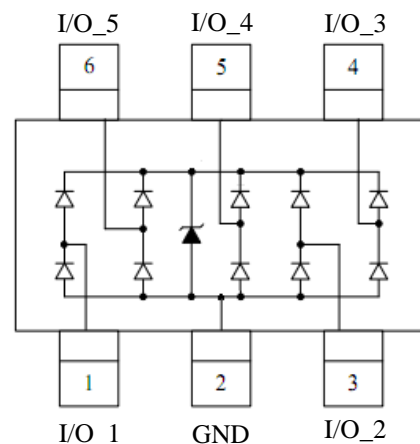
Mechanical Characteristics

- ❑ SOT363 package
- ❑ Flammability Rating: UL 94V-0
- ❑ Marking: Part number, Date
- ❑ Packaging: Tape and Reel

Circuit Diagram



Pin Configuration



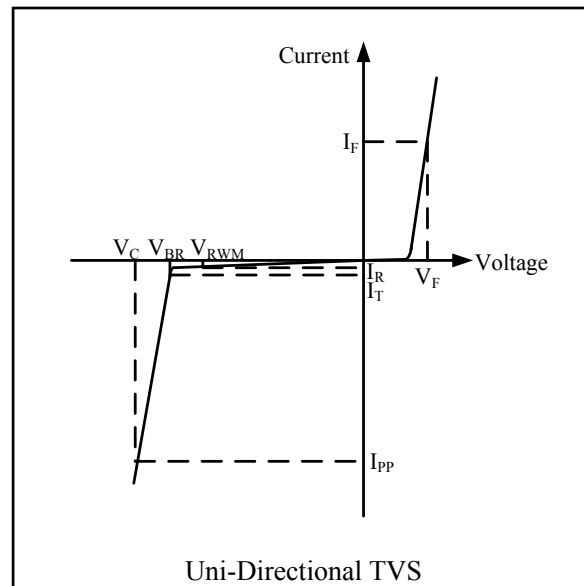
SOT 363
(Top View)

Absolute Maximum Rating

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air)	±25	kV
	ESD per IEC 61000-4-2 (Contact)	±17	
T_{OPT}	Operating Temperature	-55/+150	°C
T_{STG}	Storage Temperature	-55/+150	°C

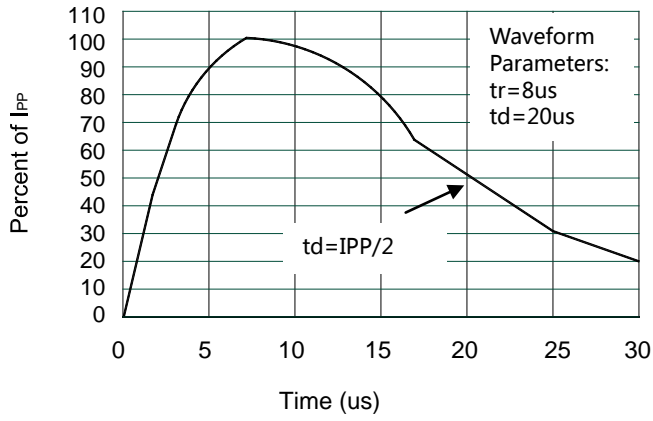
Electrical Characteristics (T = 25°C)

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

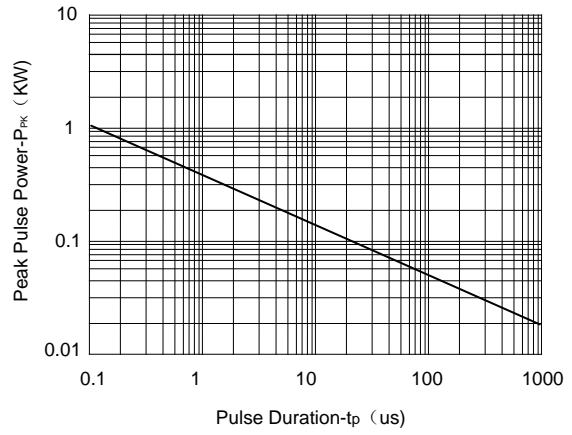


Symbol	Test Condition	Minimum	Typical	Maximum	Units
V_{RWM}				5.0	V
I_R	$V_{RWM} = 5V, T = 25^\circ C$ Between I/O and GND		0.1	1.0	μA
V_{BR}	$I_T = 1mA$ Between I/O and GND	6.0			V
V_C	$I_{PP} = 1A, t_p = 8/20\mu s$ Between I/O and GND			11.0	V
C_{ESD}	$V_R = 0V, f = 1MHz$ Between I/O and GND		0.6	0.8	pF
C_{ESD}	$V_R = 0V, f = 1MHz$ Between I/O and I/O		0.3	0.4	pF

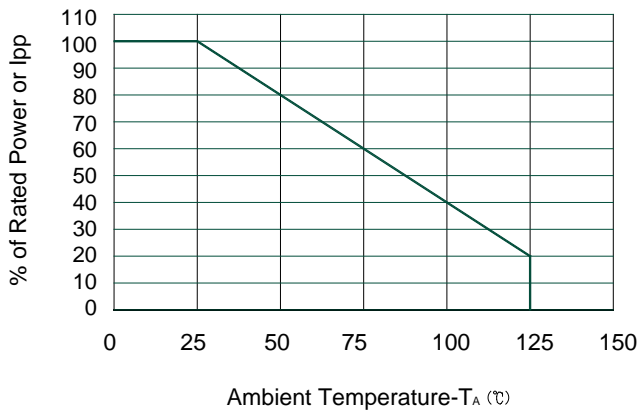
Typical Characteristic



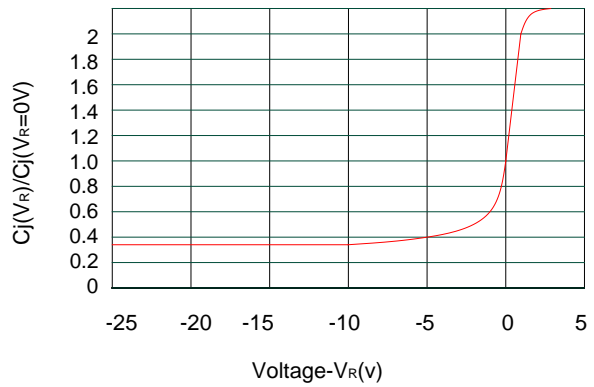
Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



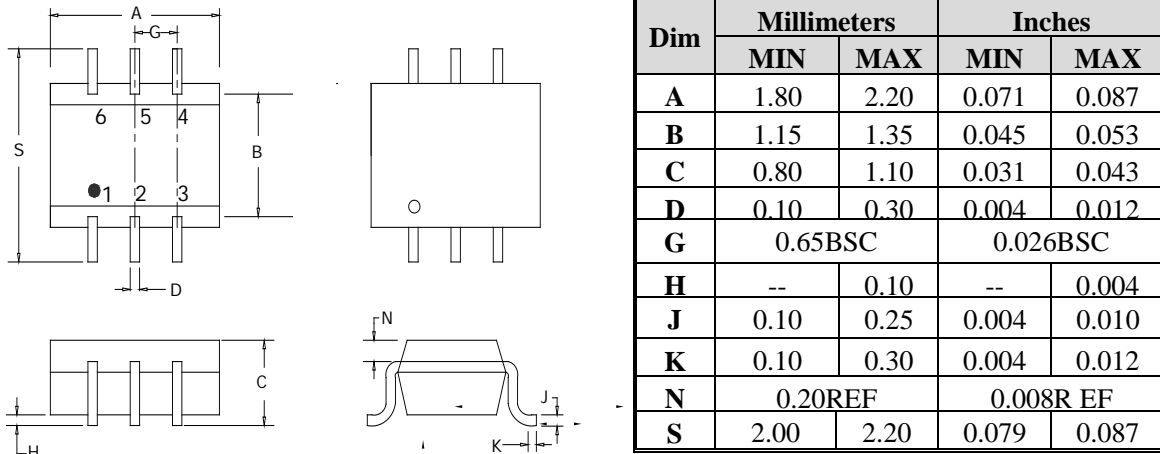
Power Derating Curve



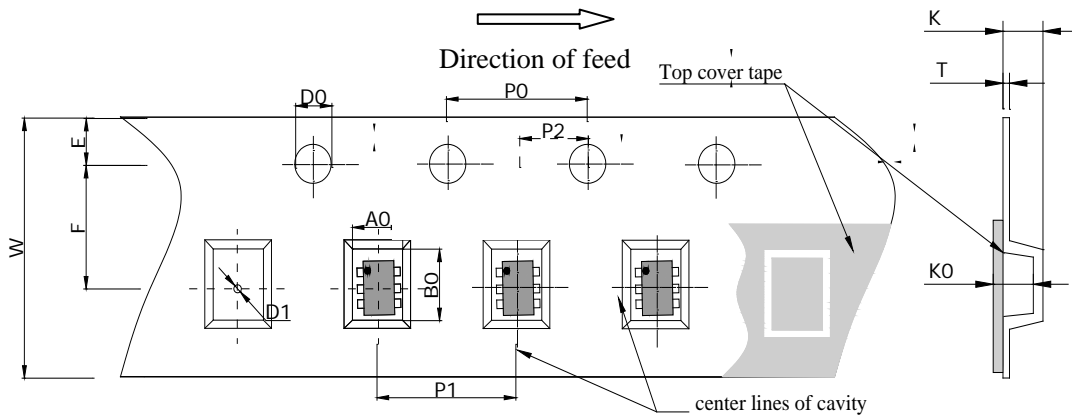
Junction Capacitance vs. Reverse Voltage

Package Outline

- SOT363 package

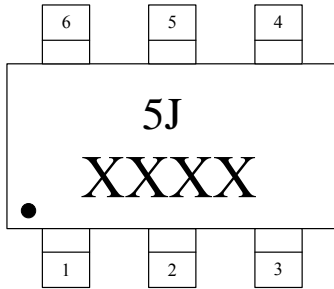


Product Orientation (continued)



Package	Chip Size	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
Sot-363	2.0×2.0×0.9	2.05×2.25×1.15	8mm	178mm(7")	3000	4mm	4mm
D0	D1	E	F	K	T	W	
1.5mm	1.0mm	1.75mm	3.5mm	1.10mm	0.2mm	8mm	

Marking Codes



Note:

- (1) “5J” is part number, fixed.
- (2) “XXXX” is internal code.

Ordering Information

Part Number	Working Voltage	Quantity Per Reel	Reel Size
TT0515TJX	5V	3,000	7 Inch