



SR9170603

Single Channel Ultra-Low Capacitance Transient Voltage Suppressor (TVS)

General Description

The UT917ZBD42 is designed as a Ultra Low capacitance TVS makes this device an ideal solution for protecting voltage sensitive high speed data lines. It provides low clamping voltage has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from over voltage caused by ESD and CDE (Cable Discharge Events).

Features

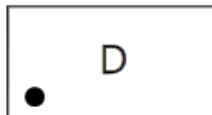
- ✓ ESD Protection for line
 - IEC 61000-4-2 (ESD): $\pm 10\text{kV}$ (Contact)
 - IEC 61000-4-2 (ESD): $\pm 12\text{kV}$ (Air)
 - IEC 61000-4-5 (Lightning): 3.5 A (8/20 μs)
- ✓ Junction Capacitance: 0.19 pF
- ✓ DFN0603-2L(0.6mm X 0.3mm X 0.3mm))
- ✓ Pb-Free/Halogen Free/BFR Free and RoHS Compliant

Applications

- ✓ USB 3.1/3.2/4.0
- ✓ Type-C
- ✓ Thunderbolt
- ✓ Mobile Phone

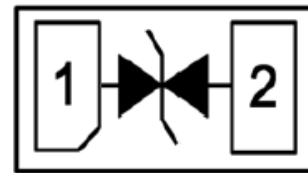
Ordering Information

Part Number	Part Marking	Parameter
UT917ZBD42	D	D= Product Code



Marking Diagram

Pin Configuration



DFN0603-2L

Bottom View / Circuit Diagram

Note:

- (1) Please check the sample/production availability with IPU representatives
- (2) IPU products are compatible with the current IPC/ JEDEC J-STD-020 requirement. They are halogen-free, RoHS compliant and 100% matte tin (Sn) plating that are suitable for use in SnPb or Pb-free soldering processes.

SR9170603

Absolute Maximum Ratings

Operating Junction Temperature Range, T_J	55°C to +125°C
Storage Temperature Range, T_{STG}	-55°C to +150°C
Lead Soldering Temperature, T_{SOL} (10sec)	260°C
Peak Pulse Current (8/20 μ s), I_{PP}	3.5 A
ESD Rating, V_{ESD}	
ESD Rating Per IEC 61000-4-2 (Contact)	± 10 kV
ESD Rating Per IEC 61000-4-2 (Air)	± 12 kV

Electrical Characteristics

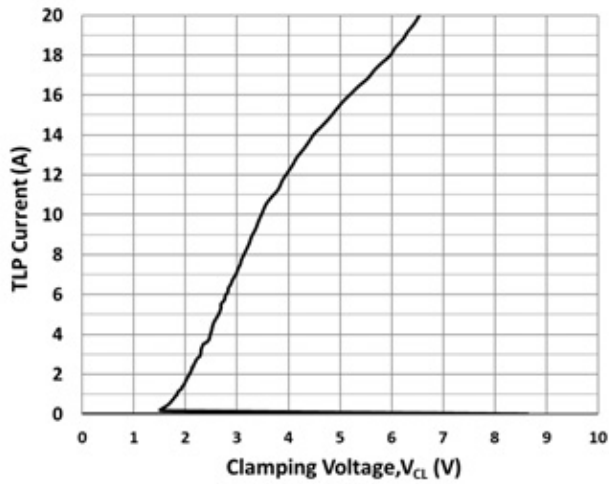
$T_J = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_{RWM}	Pin1 to Pin2	-5	--	5	V
Breakdown Voltage	V_{BR}	$I_{BR} = 1\text{mA}$, Pin1 to Pin2	6	--	--	V
Reverse Leakage Current	I_R	$V_{RWM} = \pm 5\text{V}$, Pin1 to Pin2	-1	--	1	μA
TLP Clamping Voltage ($t_{period} = 100\text{ns}$, $t_r = 1\text{ns}$)	V_C	$I_{TLP} = 16\text{A}$, Pin1 to Pin2	--	5.2	--	V
Junction Capacitance	C_J	$V_R = 1\text{V}$, $f = 1\text{MHz}$, Pin1 to Pin2	--	0.19	--	pF

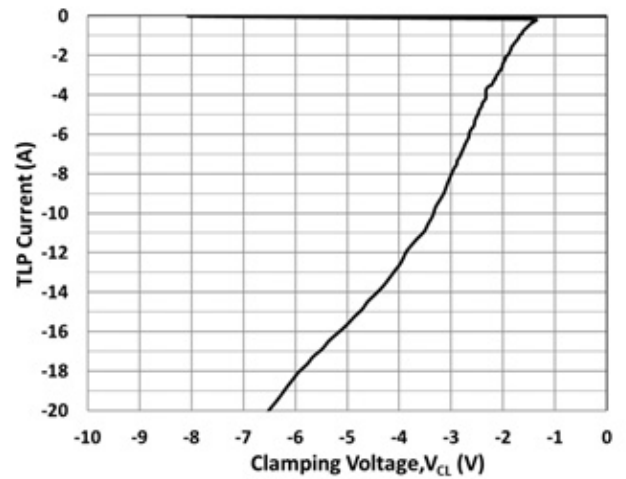
SR9170603

Typical Operating Characteristics

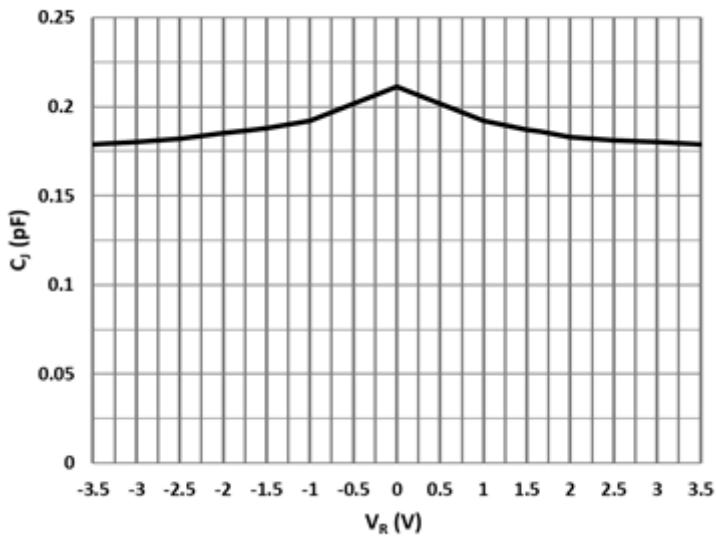
Positive-TLP Clamping Voltage (tperiod=100ns, tr=1ns)



Negative-TLP Clamping Voltage (tperiod=100ns, tr=1ns)

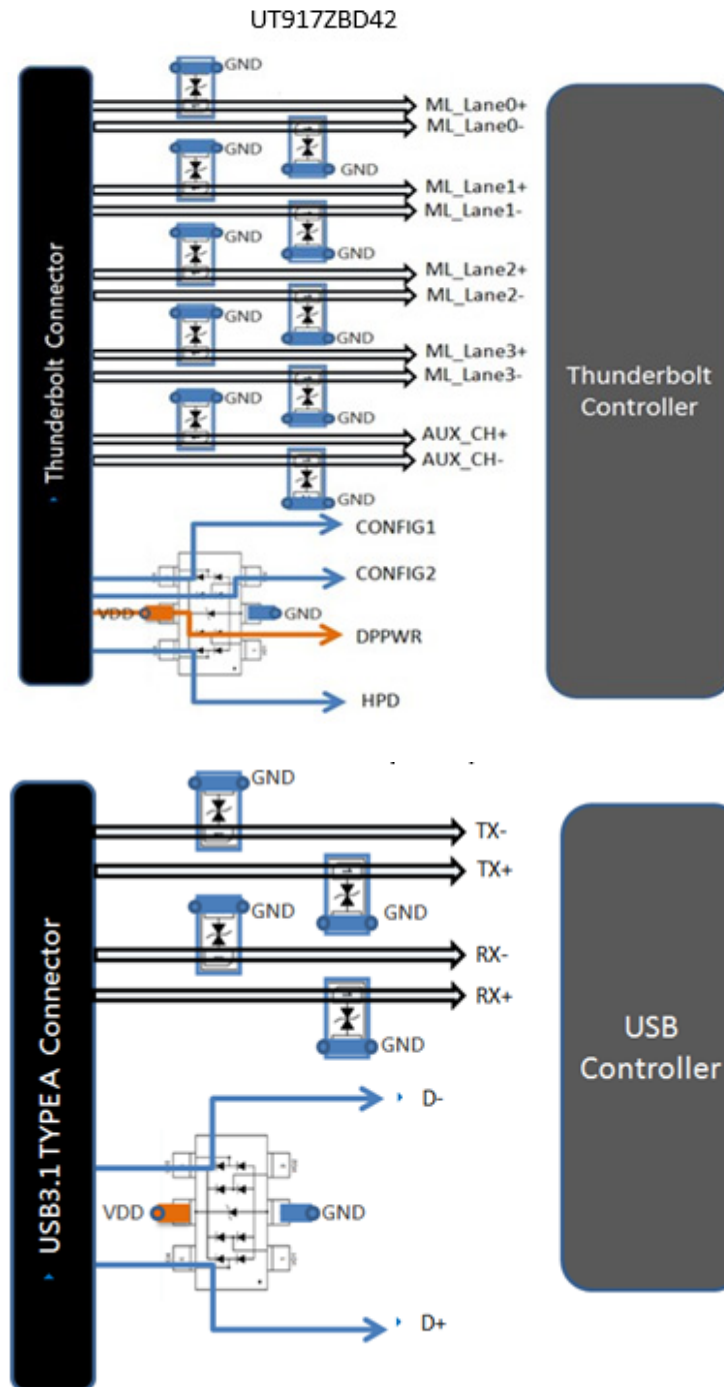


Junction Capacitance (Pin1 to Pin2)



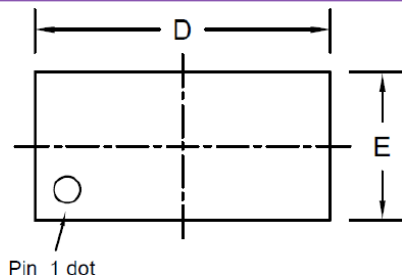
SR9170603

Application Layout Diagram

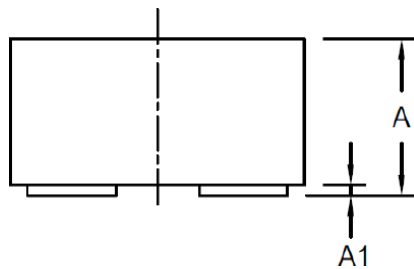


SR9170603

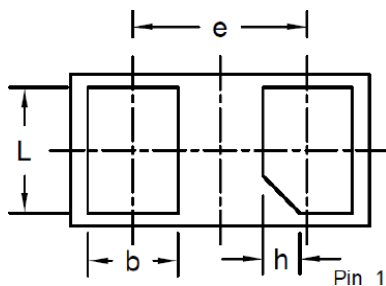
Package Information



TOP VIEW

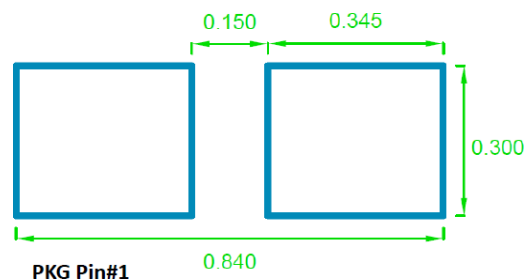


SIDE VIEW



BOTTOM VIEW

Symbol	Millimeters		
	MIN.	TYP.	MAX.
A	0.25	0.30	0.35
A1	0	0.02	0.05
b	0.13	0.18	0.24
D	0.55	0.60	0.65
E	0.25	0.30	0.35
e	0.35 BSC		
L	0.20	0.25	0.30
h	0	0.05	0.10



Unit:mm

PCB Land Layout: DFN0.6x0.3-2L (Lead Pitch: 0.35mm)

Note

1. Package Outline Unit Description:

BSC: Basic. Represents theoretical exact dimension or dimension target.

MIN: Minimum dimension specified

MAX: Maximum dimension specified

REF: Reference. Represents dimension for reference use only. This value is not a device specification.

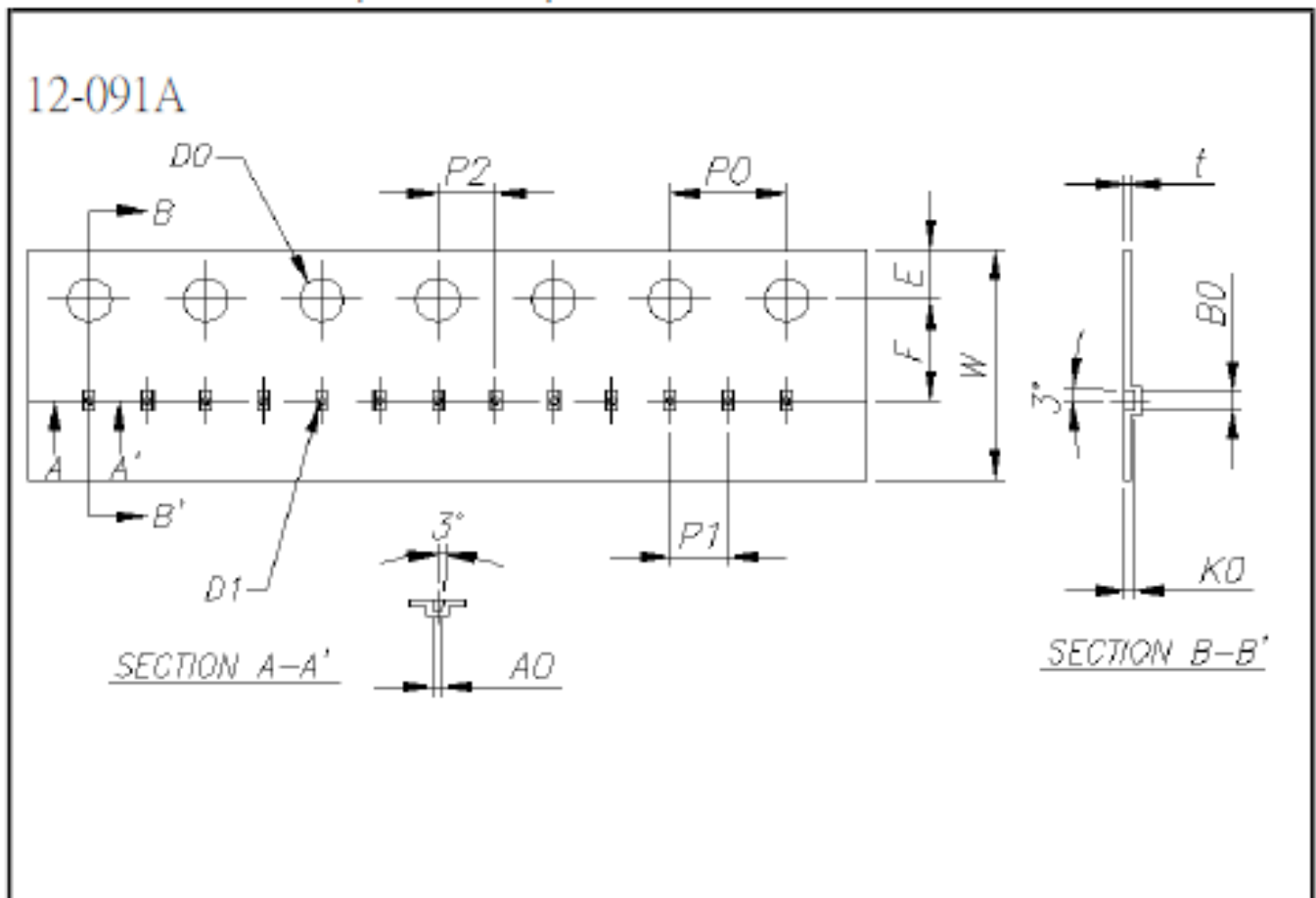
TYP : Typical. Provided as a general value. This value is not a device specification.

2. Dimensions in Millimeters

3. Drawing not to scale

4. These dimensions do not include mold flash or protrusions. Mold flash or protrusions shall not exceed 0.15mm

Tape & Reel Specification -DFN0603(0.6X0.3mm)

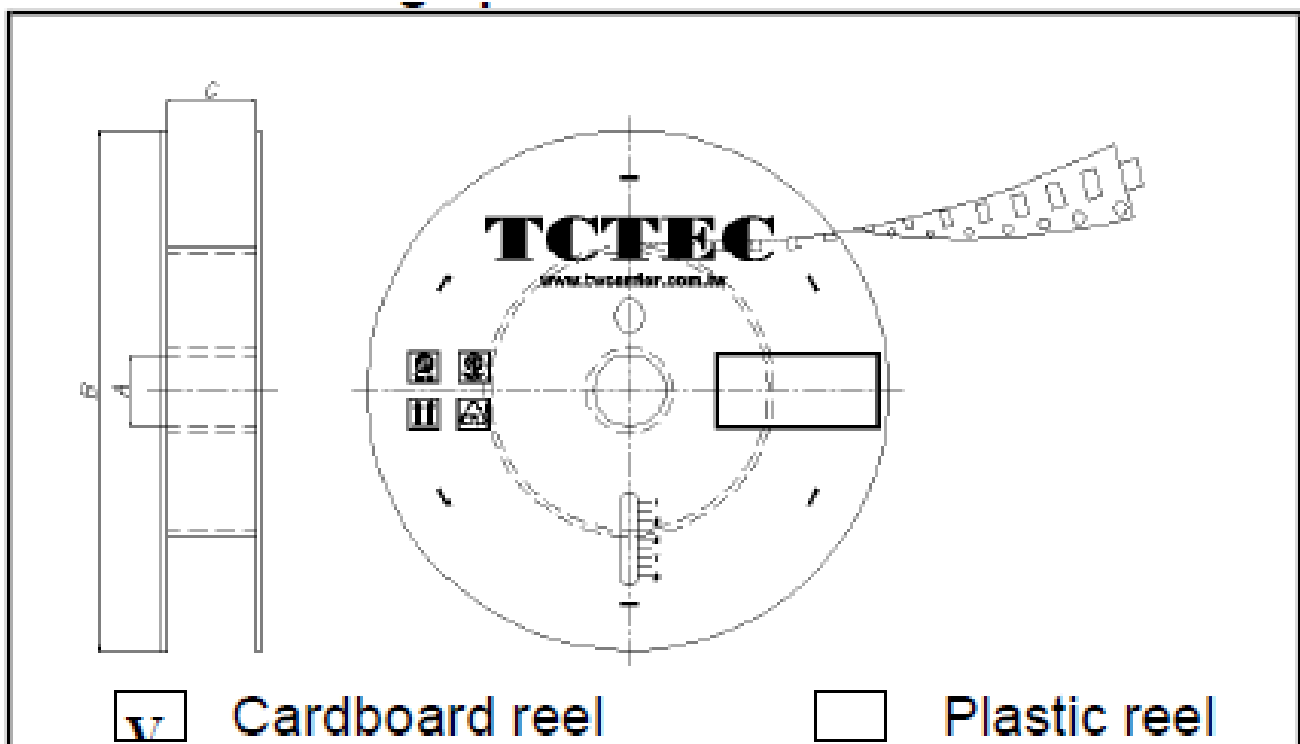


Item	Specification	Tol. (+/-)
W	8.00	+0.30, -0.10
E	1.75	± 0.10
F	3.50	± 0.05
D0	1.50	+0.10, -0
D1	0.25	± 0.05
P0	4.00	± 0.10
P1	2.00	± 0.05
P2	2.00	± 0.05
P0 x 10	40.00	± 0.20

t	0.20	± 0.02
A0	0.37	± 0.03
B0	0.67	± 0.03
K0	0.35	± 0.03

Dimensions. (Unit: mm)

Reel



Reel Dimensions		
A	77	mm
B	560	mm
C	96	mm

Ordering Information

PKG TYPE	Vacuum Package		
	Reel (7 inch)	Inner Box (3 Reels)	Carton (12 Boxes)
DFN0603-2L	12K	36K	432K