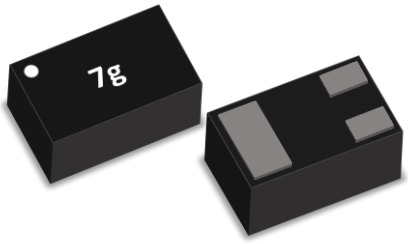


UT826ZG

2-CHANNEL ▲ TVS ARRAY

TVS ARRAY ▲ SMD type
ESD Protection for high-speed data lines
Protects two I/O lines
Ultra-low capacitance (I/O) to GND ▲ 0.75pF
1.0mm x 0.6mm x 0.5mm ▲ DFN1006-3L package
AEC-Q101 qualified

SPECIFICATION

Item		Characteristics
Operating Junction Temperature Range	T_J	-55°C to +125°C
Storage Temperature Range	T_S	-55°C to +150°C
Peak Pulse Current (8/20μs)	I_{PP}	12A
ESD Rating (Per IEC 61000-4-2 ▲ Contact)	V_{ESD}	±30kV
ESD Rating (Per IEC 61000-4-2 ▲ Air)	V_{ESD}	±30kV

DESCRIPTION

The UT826ZG ultra-low capacitance Transient Voltage Suppressor (TVS) is an ideal solution for protecting voltage sensitive high speed data lines.

It provides low clamping voltage and iPU's proprietary deep snapback technology specifically designed to protect sensitive components connected to high-speed data and transmission lines from over voltage caused by Electrostatic Discharge (ESD) and Cable Discharge Event (CDE).

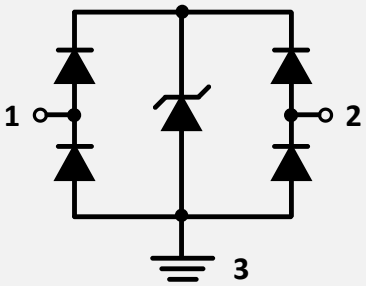
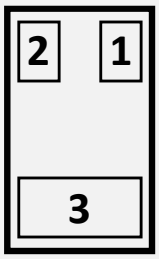
EMC STANDARDS

- **▲ IEC 61000-4-2 (ESD): ±30kV (Contact)**
- **▲ IEC 61000-4-2 (ESD): ±30kV (Air)**
- **▲ IEC 61000-4-4 (EFT): 50A (5/50ns)**
- **▲ IEC 61000-4-5 (Lightning): 12A (8/20μs)**

APPLICATIONS

Automotive	Computer Equipment	Data and I/O Lines Protection	Instrumentation & Test Devices	Switches / Push Buttons	USB 2.0, 3.0 & 3.1

PIN DESCRIPTION

Circuit Diagram ▪ Top View	Outline ▪ Bottom View	Pin No.	Description
		1 2 3	Center Tab 1 Center Tab 2 GND

ELECTRICAL CHARACTERISTICS ▲ T_J = 25°C, unless otherwise noted

Item	Condition	Symbol	Min.	Typ.	Max.	Unit
Reverse Working Voltage	Any I/O Pin to GND	V_{RWM}			3.3	V
Breakdown Voltage	I_{BR} = 1mA, any I/O Pin to GND	V_{BR}	5		13	V
Forward Voltage	I_F = 15mA, any I/O Pin to GND	V_F		1		V
Reverse Leakage Current	V_{RWM} = 3.3V, any I/O Pin to GND	I_R			1	μA
Surge Clamping Voltage (8/20μs)	I_{PP} = 5A, any I/O Pin to GND	V_C		2.5		V
TLP Clamping Voltage Note1	I_{TLP} = 16A, any I/O Pin to GND	V_C		3.5		V
TLP Dynamic Resistance Note2	Any I/O Pin to GND	R_{DYN}		0.1		Ω
Junction Capacitance	V_R = 1.65V, f = 1MHz, any I/O Pin to GND	C_J		0.75	1	pF
	V_R = 1.65V, f = 1MHz, between I/O Pins			0.1	0.15	

Note

1: t_{period} = 100ns, t_r = 1ns

2: t_{period} = 100ns, t_r = 1ns

TYPICAL OPERATING CHARACTERISTICS

Fig. 1 ▪ Junction Capacitance (I/O Pin to GND)

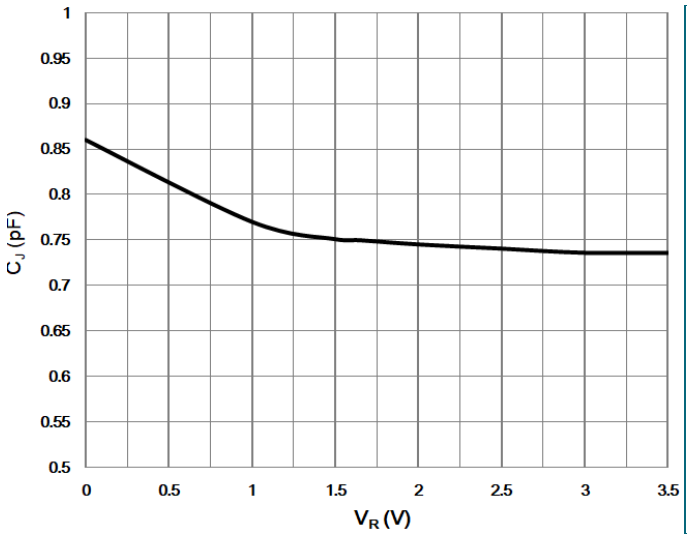
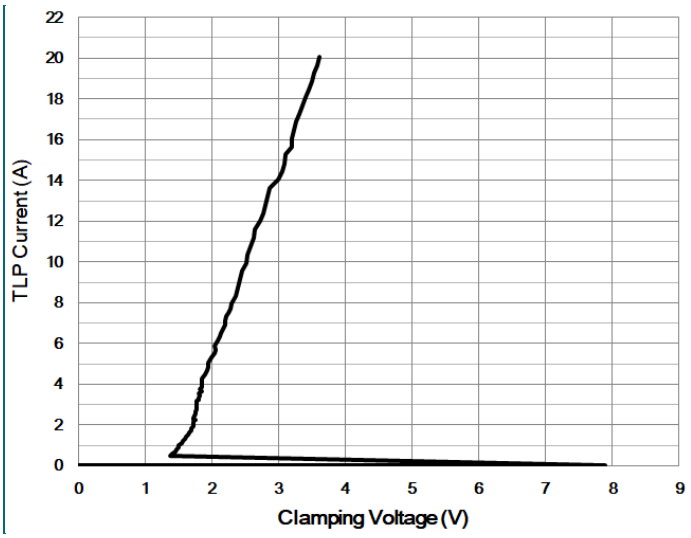
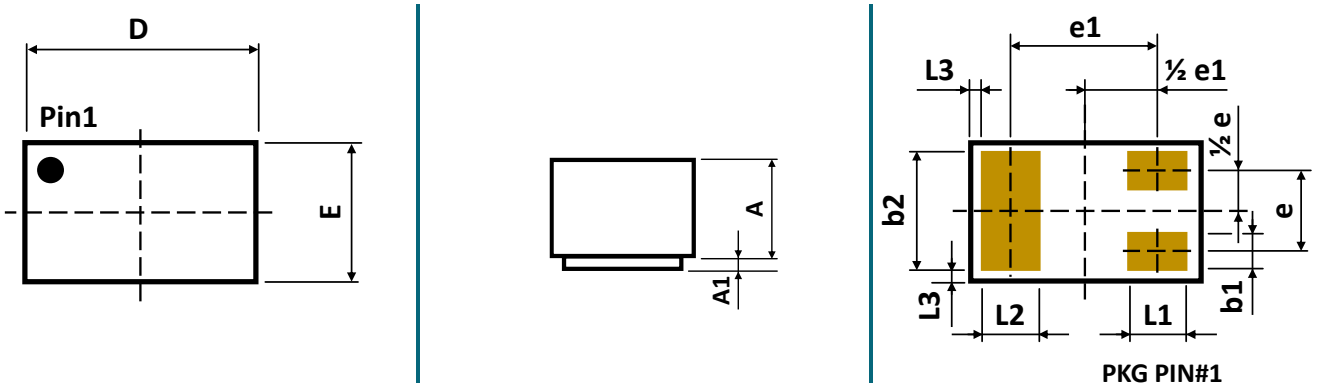


Fig. 2 ▪ TLP Clamping Voltage (t_{period} = 100ns, t_r = 1ns)

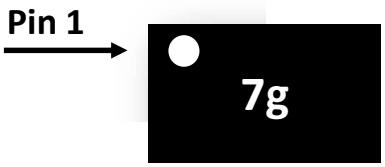


PACKAGE OUTLINE AND PART MARKING

Top View	Side View	Bottom View



Sym	Millimeters (Min.)	Millimeters (Typ.)	Millimeters (Max.)
A	0.40	-	0.55
A1	0.00	0.02	0.05
b1	0.10	0.15	0.20
b2	0.45	0.50	0.55
D		1.00 BSC	
E		0.60 BSC	
e		0.35 BSC	
e1		0.65 BSC	
L1	0.20	0.25	0.30
L2	0.20	0.25	0.30
L3		0.05 REF	



Marking:
7g: Product code
UT826ZG

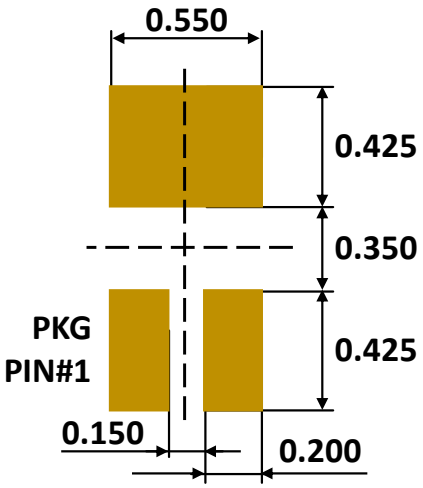
Note
1: Package Outline Unit Description:
BSC: Basic. Represents theoretical exact dimension or dimension target.
MIN: Minimum dimension specified
MAX: Maximum dimension specified
REF: Reference. Represents dimension for reference use only. This value is not a device specification.
TYP: Typical. Provided 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.

ORDERING INFORMATION

Part Number	Package Type	Package Code	Part Marking	Parameter
UT826ZGD53	DFN1006-3L	D53	7g	7g = Product Code

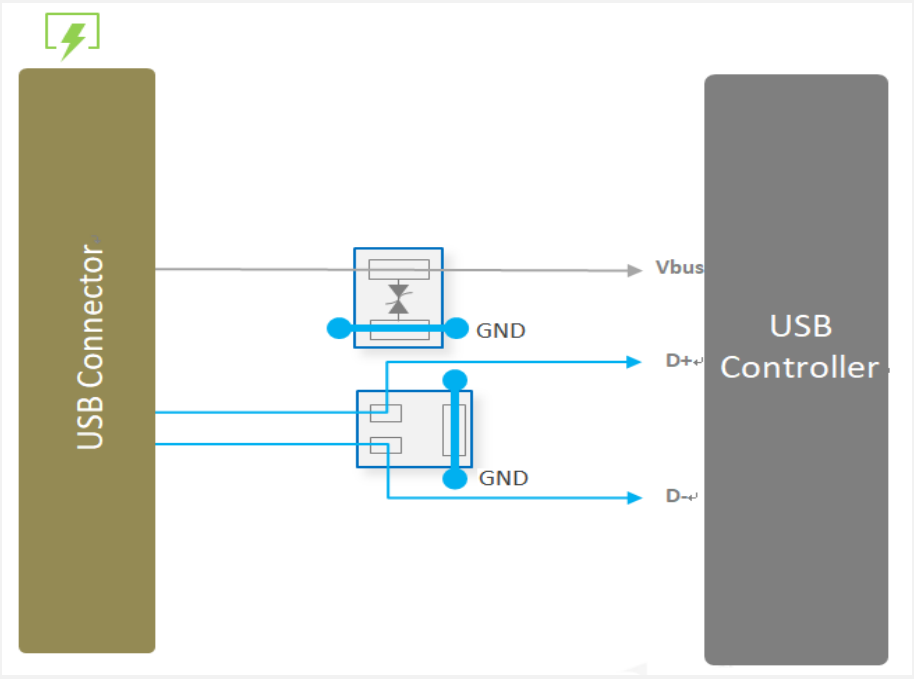
Package Type	Vacuum Package			
DFN1006-3L	Packing	Reel 180mm (7”)	Inner Box (3 Reels)	Carton (12 Boxes)
	Tape and Reel	12 000pcs	36 000pcs	432 000pcs

RECOMMENDED PAD LAYOUT FOR DFN1006-3L ▲ All dimensions in mm

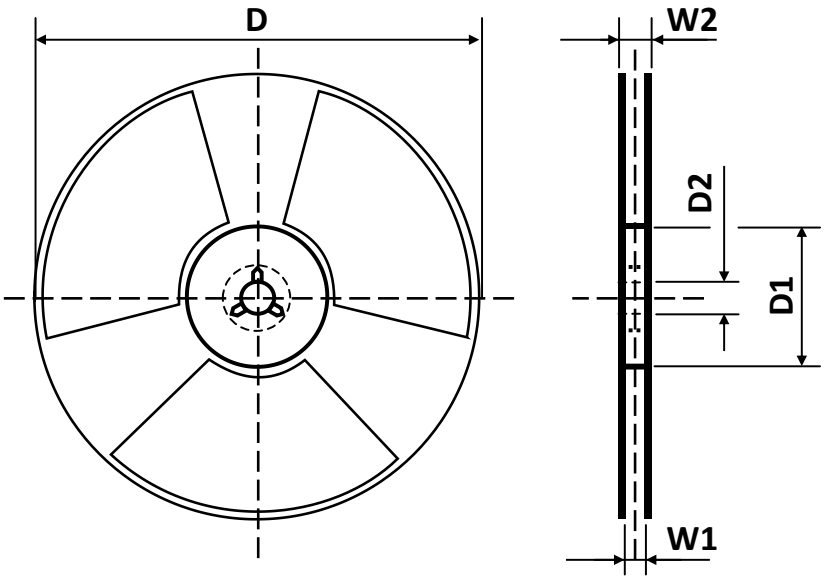


TYPICAL APPLICATION CIRCUIT

Fig. 3 ▪ USB Port Protection

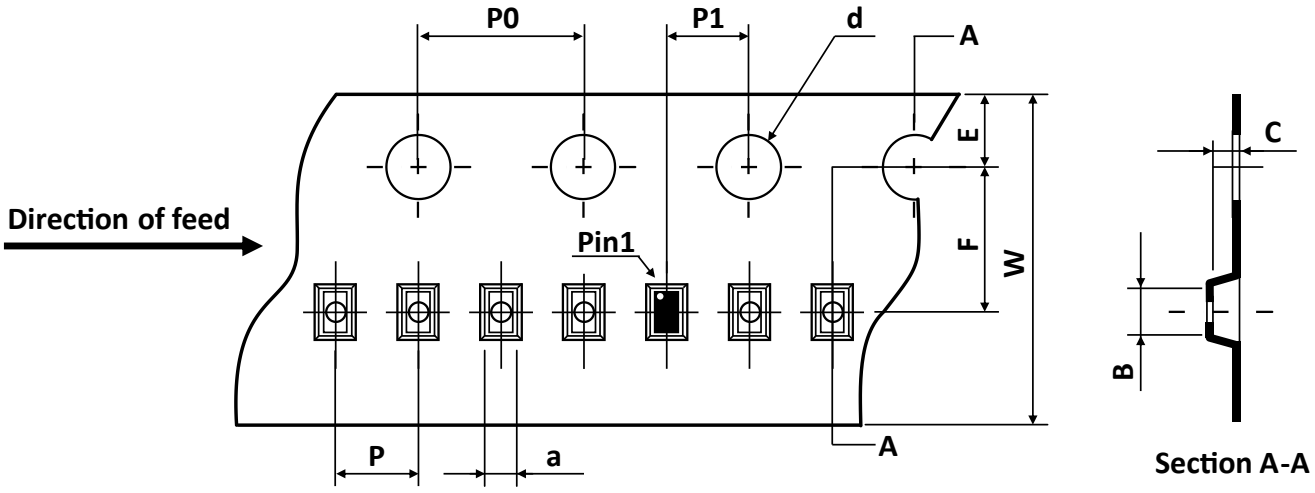


REEL DIMENSIONS ▲ All dimensions in mm



Tape Size	Reel Size	D	D1	D2	W1	W2
8mm	7 inch	Ø178.00	54.40	13.00	9.50	12.30

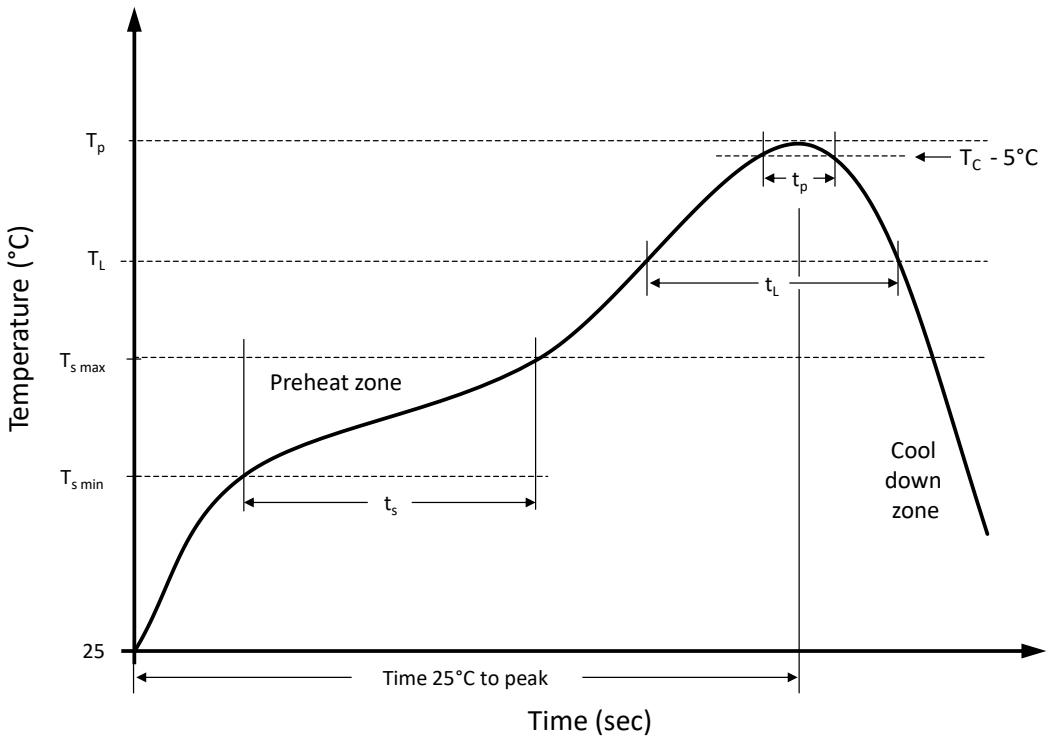
TAPE DIMENSIONS ▲ All dimensions in mm



Package	a	B	C	d	E	F	P0	P	P1	W
DFN1006-3L	0.66	1.15	0.66	1.50	1.75	3.50	4.00	2.00	2.00	8.00

Note: **All dimensions meet EIA-481-D requirements.**

RECOMMENDED REFLOW SOLDERING PROFILE



Recommended reflow soldering conditions ▲ Refer to JEDEC J-STD-020E

Profile Features		Sn-Pb Eutetic Assembly	Pb-Free Assembly
Preheat temperature min.	$T_{s\,min}$	100 °C	150 °C
Preheat temperature max.	$T_{s\,max}$	150 °C	200 °C
Preheat time t_s from $T_{s\,min}$ to $T_{s\,max}$	t_s	120 seconds	120 seconds
Ramp-up rate (T_L to T_p)		max. 3 °C/second	max. 3 °C/second
Liquidous temperature	T_L	183 °C	217 °C
Time t_L maintained above T_L	t_L	150 seconds max.	150 seconds max.
Peak package body temperature	T_p	235°C	260°C
Timeframe of within 5°C below and up to max actual peak body temperature	t_p	20 seconds max.	30 seconds max.
Ramp-down rate (T_L to T_p)		max. 6 °C/second	max. 6 °C/second
Time 25°C to peak temperature		max. 6 minutes	max. 8 minutes

REVISION TABLE

Revision	Date	Status	Notes
001	01/10/2021	Initial release	Initial publication

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