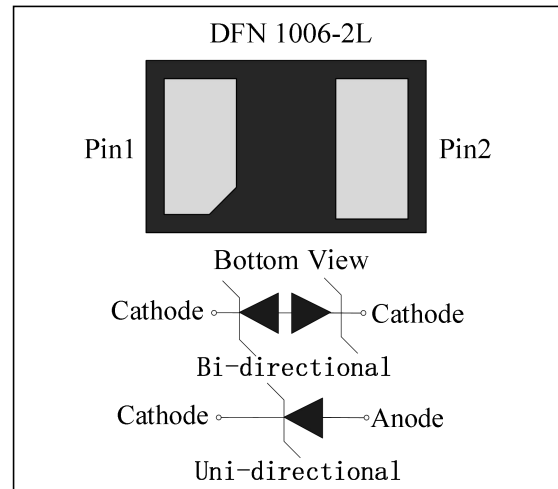


## Power Transient Voltage Suppressor

## Features

- Bi-directional/Uni-directional ESD Protection of one line
- Working voltage: 5.0V
- Epoxy Meets UL 94 V-0 Flammability Rating
- Low leakage current
- Transient protection for each line according to IEC61000-4-2 (ESD):  $\pm 30$  kV (contact discharge)



## Mechanical Characteristics

- Case: DFN 1006-2L package
- Packaging: Tape and Reel per EIA 481
- RoHS Compliant
- Marking Code

## Applications

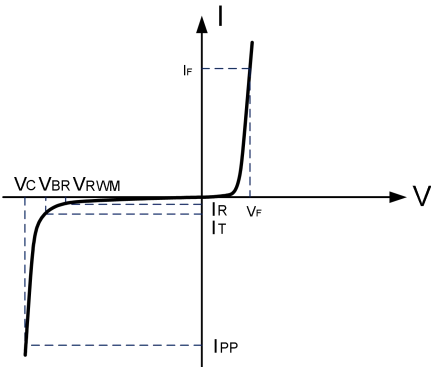
- MDDI Ports
- Cellular Handsets and Display Ports
- Computer and Peripherals

## Absolute Maximum Rating(Ratings at 25 °C ambient temperature unless otherwise specified.)

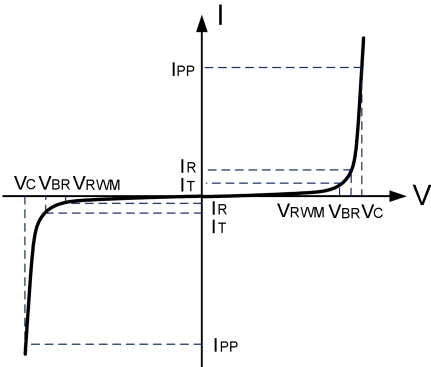
Parameter	Symbols	Value	Unit
IEC61000-4-2 (ESD)	$V_{ESD}$	$\pm 30$	KV
		$\pm 30$	
Junction Temperature Range	$T_J$	125	°C
Operating Temperature Range	$T_{OPR}$	-40 to +125	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C

Electrical Parameter( $T_c=25^\circ\text{C}$  Unless otherwise specified)

Symbol	Parameter
$V_C$	Clamping Voltage @ $I_{PP}$
$I_{PP}$	Peak Pulse Current
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{RWM}$	Reverse Standoff Voltage
$V_F$	Forward Voltage@ $I_F$



V-I characteristics for a Uni-directional TVS



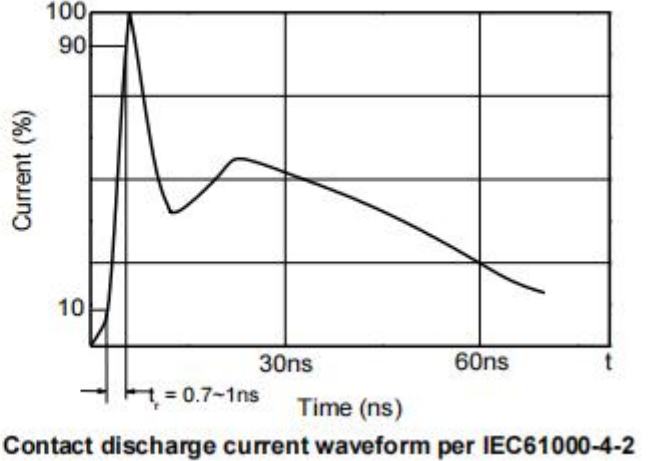
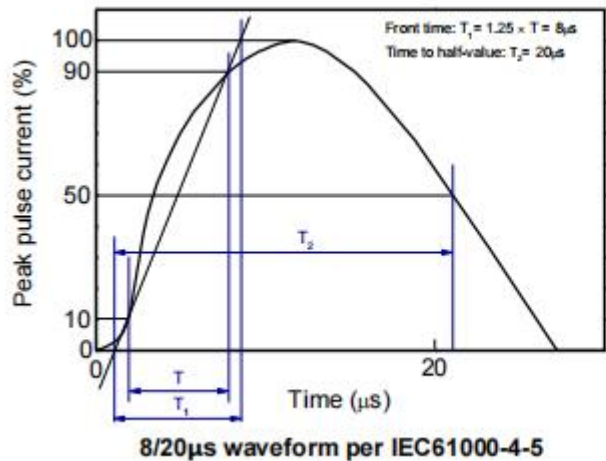
V-I characteristics for a Bi-directional TVS

Electrical Characteristics

ESDU5V0LDB					
Parameter	Symbols	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	$V_{RWM}$	--	--	5.5	V
Reverse Leakage Current at $V_{RWM} = \pm 5.5V$	$I_R$	--	--	0.1	$\mu A$
Forward Voltage at $I_F = 10mA$	$V_F$	--	--	1.2	
Breakdown Voltage at $I_T = 1 mA$	$V_{R(BR)}$	6.0	--	9.0	V
Peak Pulse Power Dissipation $t_p = 8/20\mu s$	$P_{PP}$	--	--	60	W
Peak Pulse Current $t_p = 8/20\mu s$	$I_{PP}$	--	--	4	A
Clamping Voltage at $I_{PP} = 1 A$ , $t_p = 8/20\mu s$ at $I_{PP} = 4 A$ , $t_p = 8/20\mu s$	$V_C$	--	--	10 15	V
Junction Capacitance at $V_R = 0 V$ , $f = 1MHz$	$C_J$	--	--	0.65	pF

ESDB5V0LDB					
Parameter	Symbols	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	$V_{RWM}$	--	--	5.5	V
Reverse Leakage Current at $V_{RWM} = \pm 5.5V$	$I_R$	--	--	--	$\mu A$
Breakdown Voltage at $I_T = 1 mA$	$V_{R(BR)}$	--	--	--	V
Peak Pulse Power Dissipation $t_p = 8/20\mu s$	$P_{PP}$	--	--	--	W
Peak Pulse Current $t_p = 8/20\mu s$	$I_{PP}$	--	--	--	A
Clamping Voltage at $I_{PP} = 1 A$ , $t_p = 8/20\mu s$ at $I_{PP} = -- A$ , $t_p = 8/20\mu s$	$V_C$	--	--	--	V
Junction Capacitance at $V_R = 0 V$ , $f = 1MHz$	$C_J$	--	--	--	pF

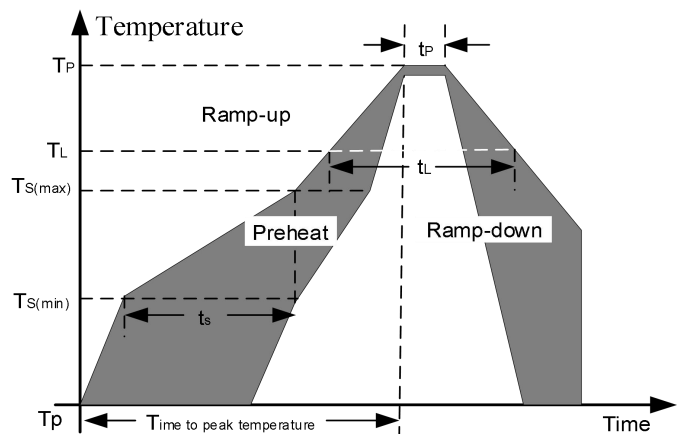
Typical Characteristics Curves



Note: The above typical parameters or typical characteristics are only indicative and do not make specific guarantees. If detailed values are required, additional communication and provision are required.

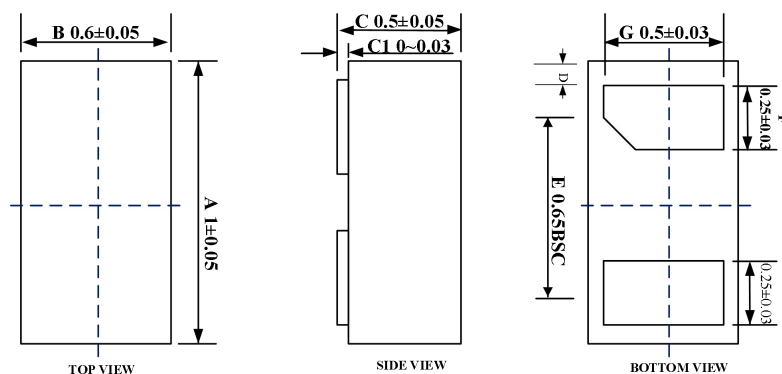
## Soldering Parameters

Reflow Condition		Pb – Free assembly
Pre Heat	Temperature Min (Ts(min))	150°C
	Temperature Max (Ts(max))	200°C
	Time (min to max) (ts )	60 – 190 secs
Average ramp up rate (Liquidus Temp) (TL) to peak		5°C/second max
TS(max) to TL—Ramp-up Rate		5°C/second max
Reflow	Temperature (TL) (Liquidus)	217°C
	Temperature (tL)	60 – 150 seconds
Peak Temperature (TP)		260+0/-5 °C
Time within actual peak Temperature (tp )		20 – 40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (TP)		8 minutes Max.
Do not exceed		280°C



## Outline Drawing – DFNx0.6-2L-0011

Dimensions in mm

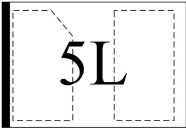
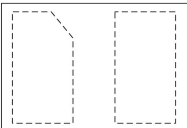


DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.037	0.041	0.95	1.05	
B	0.022	0.026	0.55	0.65	
C	0.016	0.022	0.40	0.50	
C1	-----	0.004	-----	0.05	
D	0.001	0.003	0.02	0.08	
E	0.026		0.65		TYP.
F	0.008	0.012	0.20	0.30	
G	0.018	0.022	0.45	0.55	

Package Information

Package Type	Description	Quantity (pcs)	Standard
DFNX0.6-2L-0011	Tape & Reel -7" tape	10000	EIA-481


Part Marking System(Top View)

Device	ESDU5V0LDB	ESDB5V0LDB
DFN 1006-2L-0011		

Contact Information

TANI website: <http://www.tanisemi.com> Email:tani@tanisemi.com

For additional information, please contact your local Sales Representative.

® is registered trademarks of TANI Corporation.

Product Specification Statement

The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. TANI shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and TANI assumes no responsibility for the application of the product. TANI strives to provide accurate and up -to- date information to the best of our ability. However, due to technical, human, or other reasons, TANI cannot guarantee that the information provided in the product specification is entirely accurate and error-free. TANI shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications.

TANI reserves the right to revise or update the product specification and the products at any time without prior notice, and the user's continued use of the product specification is considered an acceptance of these revisions and updates. Prior to purchasing and using the product, users should verify the above information with TANI to ensure that the product specification is the most current, effective, and complete. If users are particularly concerned about product parameters, please consult TANI in detail or request relevant product test reports. Any data not explicitly mentioned in the product specification shall be subject to separate agreement.

Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. TANI shall assume no responsibility for any consequences resulting from such usage.

Users should also comply with relevant laws, regulations, policies, and standards when using the product specification. Users are responsible for the risks and liabilities arising from the use of the product specification and must ensure that it is not used for illegal purposes. Additionally, users should respect the intellectual property rights related to the product specification and refrain from infringing upon any third- party legal rights. TANI shall assume no responsibility for any disputes or controversies arising from the above-mentioned issues in any form.