

## Features

- ❑ IEC61000-4-2 (ESD) +/-30kV (air),  
+/-30KV(contact)  
IEC61000-4-4 (EFT) 40A (5/50ns)
- ❑ 350 Watts Peak Pulse Power per (tp=8/20us)
- ❑ Protects one I/O line
- ❑ Working voltages : 5V,8V,12V,15V,18V,24V  
36V,48V
- ❑ Low leakage current
- ❑ ROHS compliant

## Description

The TSxx11LBX Series is designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium. This series has been specifically designed to protect sensitive components which are connected to power data and transmission lines from overvoltage caused by ESD(electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

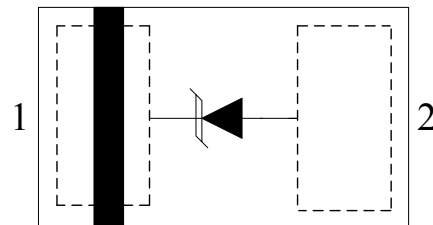
## Applications

- ❑ Cell Phone Handsets and Accessories
- ❑ Microprocessor based equipment
- ❑ Personal Digital Assistants (PDA's)
- ❑ Notebooks, Desktops, and Servers
- ❑ Portable Instrumentation
- ❑ Networking and Telecom
- ❑ Serial and Parallel Ports.
- ❑ Peripherals

## Mechanical Characteristics

- ❑ DFN1.0\*0.6-2L Package
- ❑ Flammability Rating: UL 94V-0
- ❑ Packaging: Tape and Reel
- ❑ High temperature soldering guaranteed:260°C /10s
- ❑ Reel size: 7 inch

## Pin Configuration



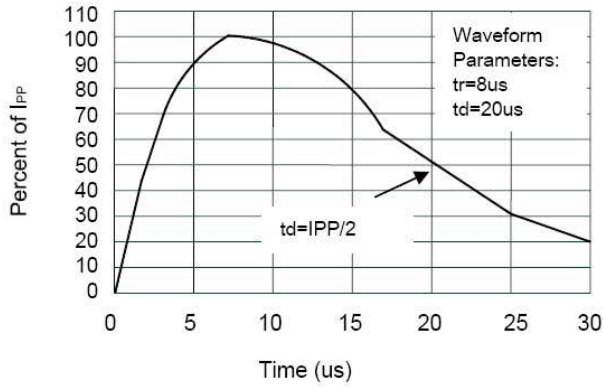
DFN1.0\*0.6-2L  
(Top View)

### Absolute Maximum Rating

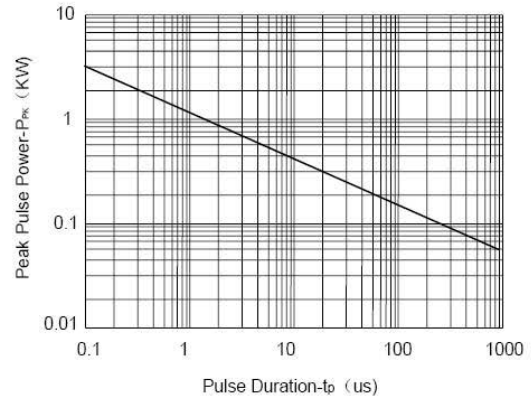
Symbol	Parameter	Value	Units
V <sub>ESD</sub>	ESD per IEC 61000-4-2 (Air)	±30	kV
	ESD per IEC 61000-4-2 (Contact)	±30	
P <sub>PP</sub>	Peak Pulse Power (8/20μs)	350	W
T <sub>OPT</sub>	Operating Temperature	-55/+150	°C
T <sub>STG</sub>	Storage Temperature	-55/+150	°C
T <sub>L</sub>	Lead Soldering Temperature	260 (10 sec.)	°C

### Electrical Characteristics (T = 25°C)

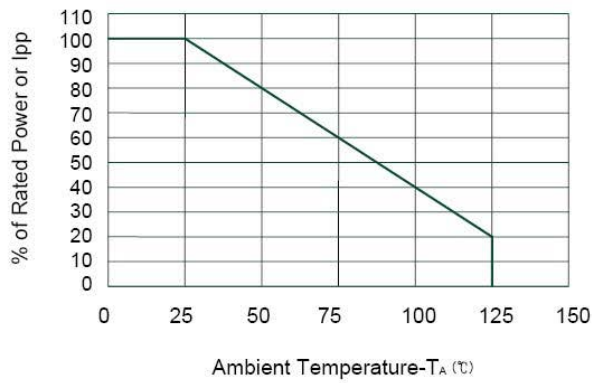
PART NUMBER	V <sub>RWM</sub>	V <sub>B</sub>	I <sub>T</sub>	V <sub>C@1A</sub>	V <sub>C</sub>		I <sub>R</sub>	C <sub>T</sub>	DEVICE MARKING
	(V) (max.)	(V) (min.)	(mA)	(V) (max.)	(V) (max.)	(@A)	(μA) (max.)	(pF) (max.)	
TS0511LBX	5	6.0	1	10	24	19	0.1	160	LB
TS0811LBX	8	9.2	1	15	28	15	0.1	140	LC
TS1211LBX	12	13.3	1	19	32	13	0.1	120	LD
TS1511LBX	15	16.7	1	24	36	10	0.1	100	LJ
TS1811LBX	18	20.4	1	28	45	8	0.1	80	LG
TS2411LBX	24	26.7	1	36	50	7	0.1	60	LH
TS3611LBX	36	40.0	1	50	60	6	0.1	40	LK
TS4811LBX	48	52.0	1	65	70	5	0.1	40	LM



**Pulse Waveform**



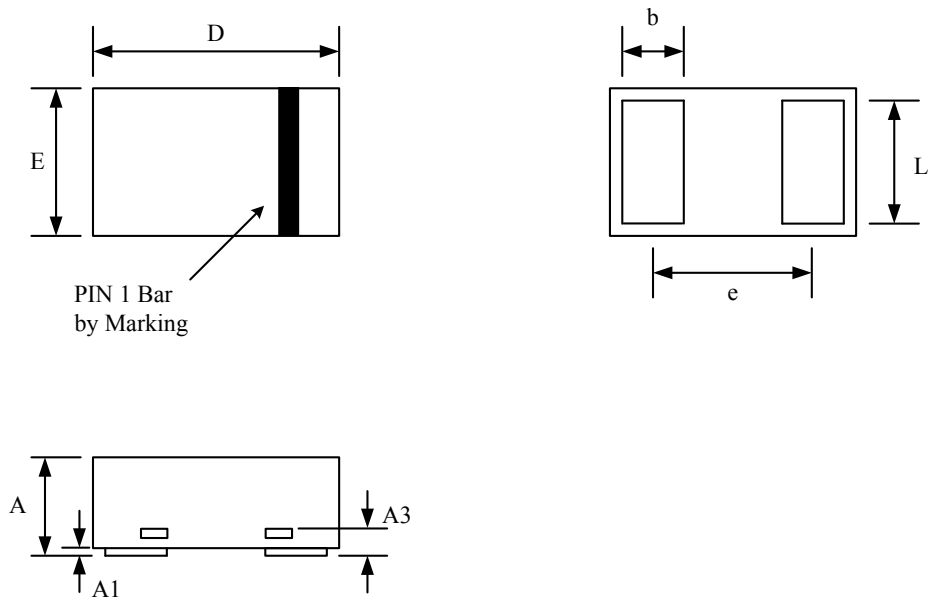
**Non-Repetitive Peak Pulse Power vs. Pulse Time**



**Power Derating Curve**

## Package Outline Dimensions

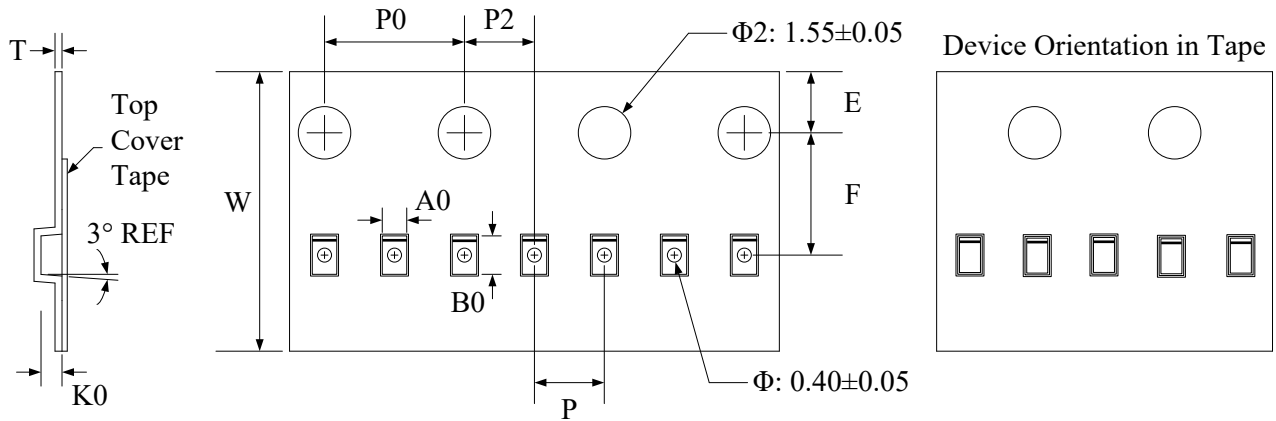
□ DFN1.0\*0.6-2L Package



Package Dimensions (Controlling dimensions are in millimeters)

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Minimum	Maximum	Minimum	Maximum
A	0.400	0.550	0.016	0.022
A1	0.000	0.050	0.000	0.002
A3	0.125 REF		0.005 REF	
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
b	0.200	0.300	0.008	0.012
e	0.650 BSC		0.026 BSC	
L	0.450	0.550	0.018	0.022

### Tape and Reel Specification



Symbol	W	A0	B0	K0	E	F	P	P0	P2	T
Dimensions (mm)	8.00±0.1	0.7±0.05	1.15±0.05	0.55±0.05	1.75±0.1	3.5±0.05	2.0±0.1	4.0±0.1	2.0±0.05	0.2±0.05

### Ordering Information

Part Number	Working Voltage	Quantity Per Reel	Reel Size
TSxx11LBX	xxV	10,000	7 Inch

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