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TPESD203-B1-02EL

Bi -directional TVS Diode

www.sot23.com.tw

Features

- Low operating voltage: ±13.2V
- Ultra low capacitance: 7pF typical
- Ultra low leakage: nA level
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
- – IEC 61000-4-2 (ESD) immunity test
  Air discharge: ±30kV
  Contact discharge: ±30kV
- – IEC61000-4-5 (Lightning) 8A (8/20μs)
- RoHS Compliant

Mechanical Characteristics

- Package: DFN1006-2 (1.0×0.6×0.5mm)
- Lead Finish: NiPdAu
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

Applications

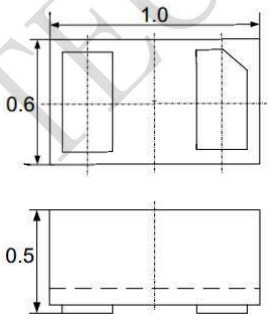
- Cellular Handsets & Accessories
- Personal Digital Assistants
- Display Port
- MDDI Ports
- Audio Players
- PCI Express
- Serial ATA

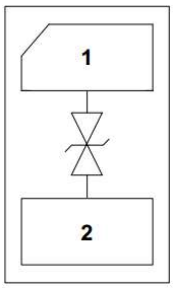
Ordering Information

Part Number	Qty per Reel	Reel Size
TPESD203-B1-02EL	12000 Or10000	7"

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Dimensions and Pin Configuration





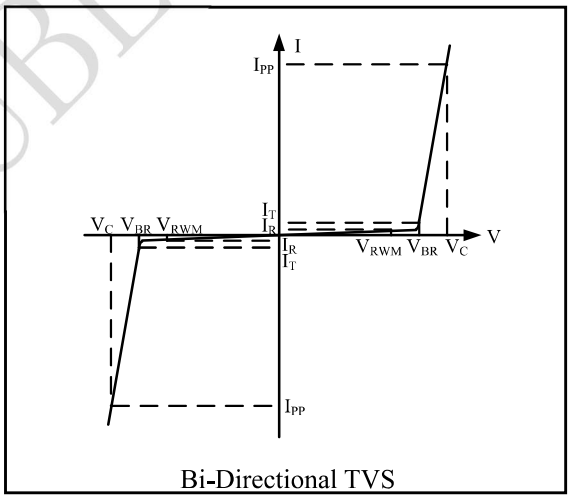
MARKING: S Or WM

Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P_{PK}	120	W
Peak Pulse Current (8/20μs)	I_{PP}	6	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

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



Bi-Directional TVS

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			13.2	V	
Breakdown Voltage	V_{BR}	13.7			V	I_T = 1mA
Reverse Leakage Current	I_R			100	nA	V_{RWM} = 12V
Clamping Voltage	V_C			20	V	I_{PP} = 6 A (8 x 20μs pulse)
Junction Capacitance	C_J		7	10	pF	V_R = 0V, f = 1MHz

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Characteristic Curves

Fig1. 8/20μs Pulse Waveform

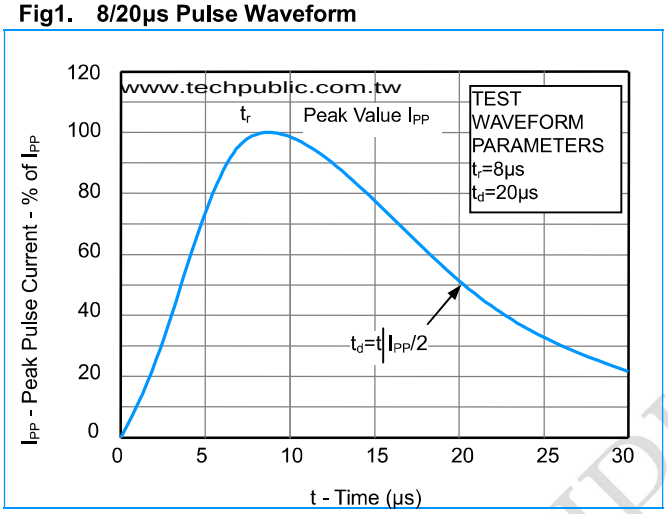


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

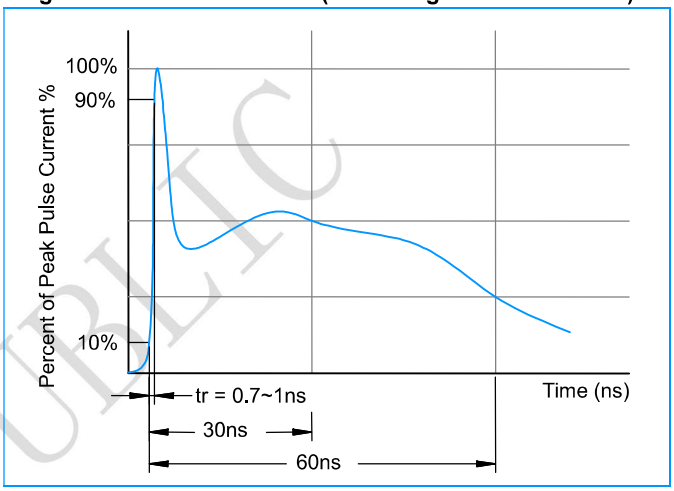
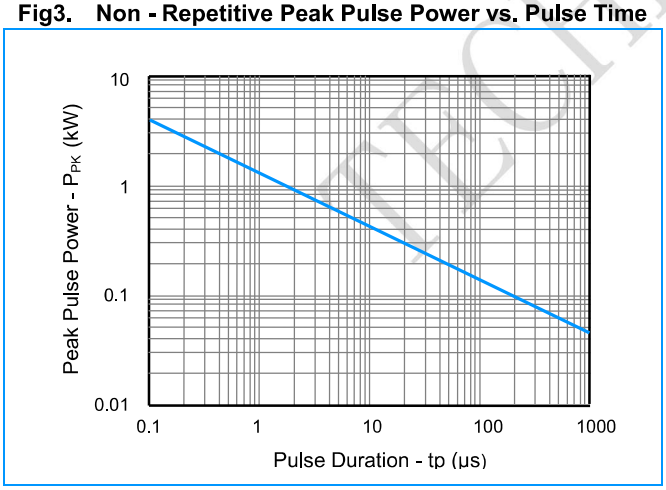
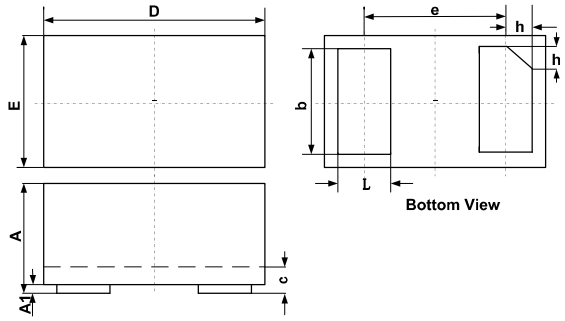


Fig3. Non - Repetitive Peak Pulse Power vs. Pulse Time



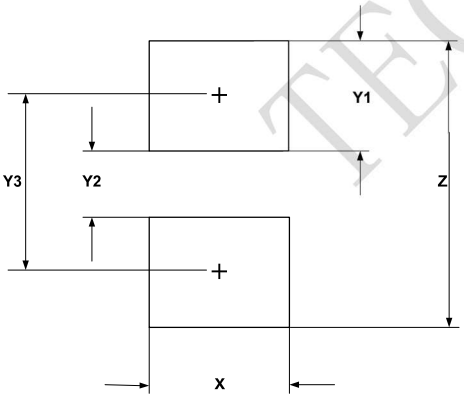
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Outline Drawing - DFN1006-2



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
h	0.07	0.12	0.17	0.003	0.005	0.007

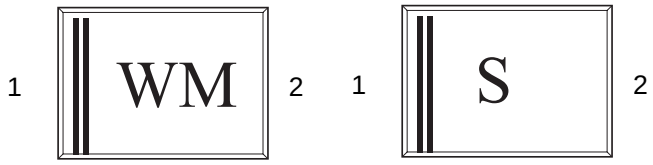
Land Pattern - DFN1006-2



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052

Marking:

Or



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ESD5B5.0ST1G-P FDC6301N-TP IRFR2405TRPBF-TP TPADM809LAKSZ TPB1A30-123 TPFMMT493 TPESD0504S6-A DDTA143ZCA TPADM809SAKSZ TPB05A40-323 TPESD0402G08V TPGC12C-1 TPZVN3320FTA LTH7 TPS3809L30DBVR-TP BV15C SI3932DV TPD1213A-02SM TPESD5311N TPS7B6950DBVR-TP TPWSB5557Z TPZXMP3A13FTA BSN20W DMP6350S FDMS7670AS-TP QM3003J-TP SN7002W TPAPX809S-31SA TPDMG6602SVT TPSPX3819M5-L-3-3