TPESD56301D05

1-Line Uni-directional ESD DIODE

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Features

- Low operating voltage: 5V
- 2000W peak pulse power (8/20μs)
- Ultra low leakage: nA level
- Low clamping voltage
- –IEC 61000-4-2 (ESD) immunity test
  Air discharge: ±30kV
  Contact discharge: ±30kV
  –IEC61000-4-4 (EFT) 40A (5/50ns)
  –IEC61000-4-5 (Lightning) 100A (8/20μs)
- 2-pin leadless package
- These are Pb−Free Devices
- Response Time is Typically < 1 ns

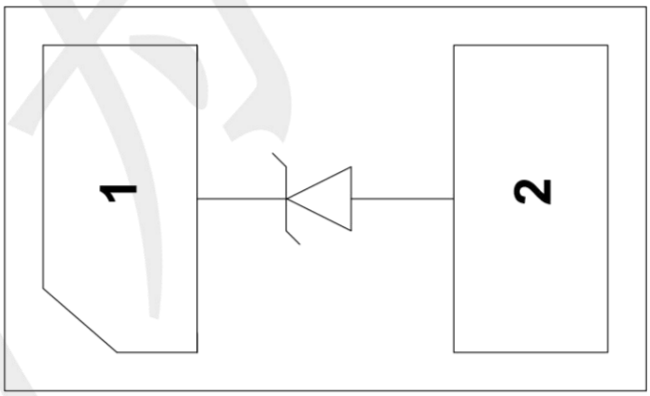
Mechanical Characteristics

- Package: DFN1610-2
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound
- Terminal Connections: See Diagram Below
- -IEC 61000-4-2 (ESD) immunity test

Applications

- Power Management
- Industrial Application
- Power Supply Protection
- Portable Instrumentation
- Peripherals

Dimensions and Pin Configuration



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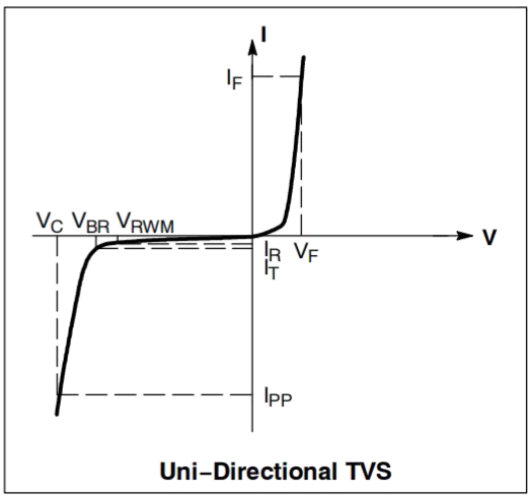
Absolute Maximum Ratings(Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	2000	W
Peak Pulse Current (8/20μs)	Ipp	100	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±30 ±30	KV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM	--	--	5	V	
Breakdown Voltage	VBR	6	7.2	8	V	IT= 1mA
Reverse Leakage Current	IR	--	--	1	uA	VRWM=5V
Forward Voltage	VF	--	0.7	1.25	V	IF = 10mA
Clamping Voltage	VC	--	10	--	V	Ipp=50A(8x 20us pulse)
Clamping Voltage	VC	--	14	20	V	Ipp=100A(8x 20us pulse)
Junction Capacitance	CJ	--	860	1050	pF	VR = 0V, f = 1MHz

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F
P_{pk}	Peak Power Dissipation
C	Capacitance @ V_R = 0 and f = 1.0 MHz



Uni−Directional TVS

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

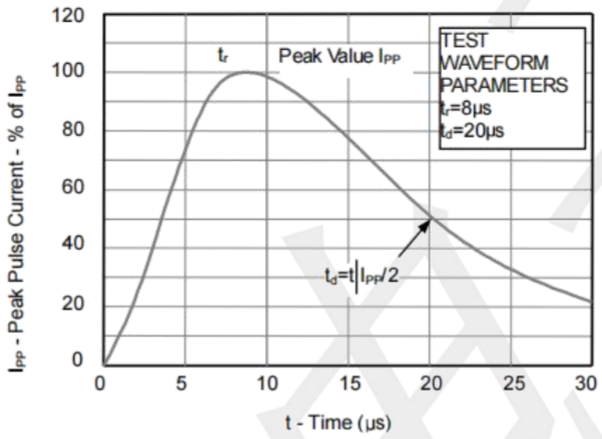


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

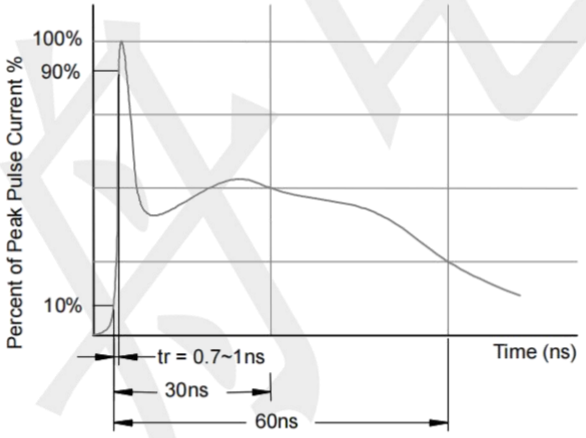
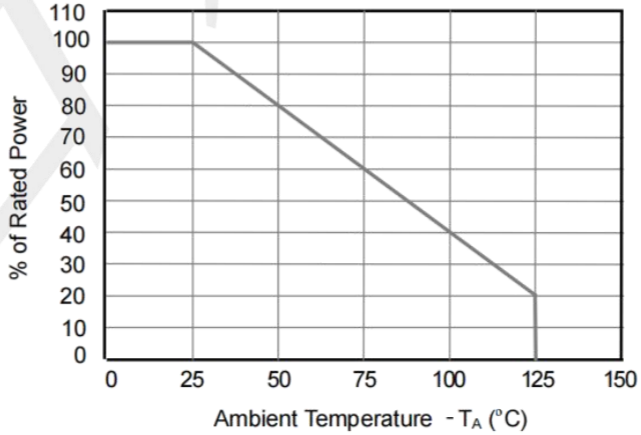
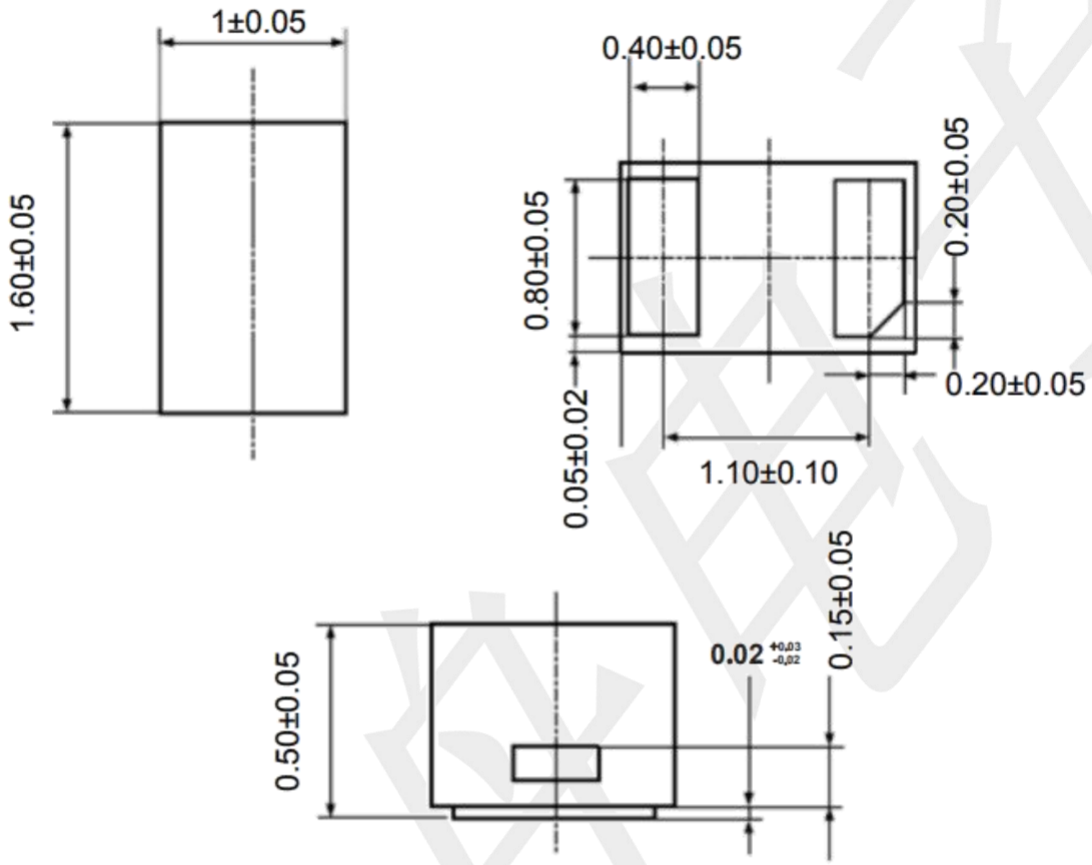


Fig3. Power Derating Curve

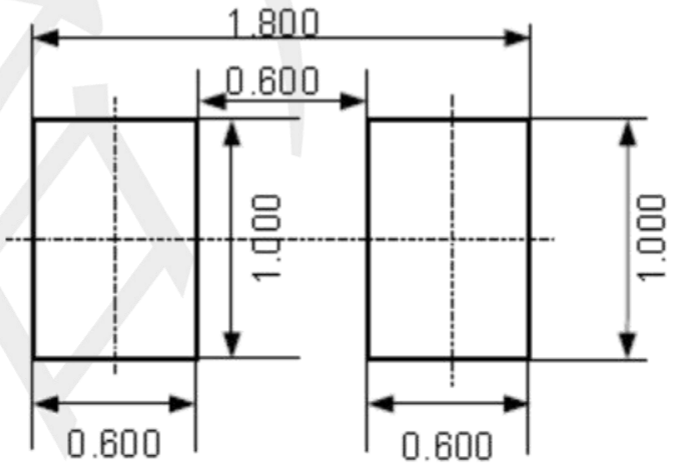


Package Outline Dimensions (unit: mm)

DFN1610



Mounting Pad Layout (unit: mm)



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