

LOW CAPACITANCE BIDIRECTIONAL TVS DIODE

Features

- Provides ESD Protection per IEC 61000-4-2 Standard: Air ±30kV, Contact ±30kV
- 1 Channel of ESD Protection
- High Peak Pulse Current per IEC 61000-4-5 Standard
- Low Channel Input Capacitance
- Typically Used in Cellular Handsets, Portable Electronics, Communication Systems, Computers and Peripherals
- Response time is Typically <1ns
- **Lead Free/RoHS Compliant**

Mechanical Data

- Case: 0402(DFN1006)
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: NiPdAu over Copper leadframe. Solderable per MIL-STD-202, Method 208



Ordering Information

Part Number	Case	Packaging
RS12TD08BX	DFN1006	10,000/Tape & Reel

Notes:

1. Halogen and Antimony free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Circuit Diagram



Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P_{PP}	150	W	8/20 μs
Peak Pulse Current	I_{PP}	10	A	8/20 μs
ESD Protection – Contact Discharge	$V_{ESD_Contact}$	± 30	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	V_{ESD_Air}	± 30	kV	IEC 61000-4-2 Standard

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Package Power Dissipation	P_D	250	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	500	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Device	V_{RWM} (V)	I_{R1} (μA) @ V_{RWM}	I_{R2} (μA) @ $V_R=3.5\text{V}$	V_{BR} (V)@ I_T (Note 1)	I_T	V_C (V) @ $I_{PP}=5\text{ A}^*$	V_C (V) @ Max I_{PP}^*	I_{PP} (A)*	P_{PK} (W)*	C (pF)
	Max	Max	Max	Min	mA	Typ	Max	Max	Max	Typ
RS12TD08BX	5.0	0.5	0.3	5.6	1.0	11.6	18.6	10.0	174	10

*Surge current waveform per Figure 1.

- V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C .

Rating and Characteristic Curves

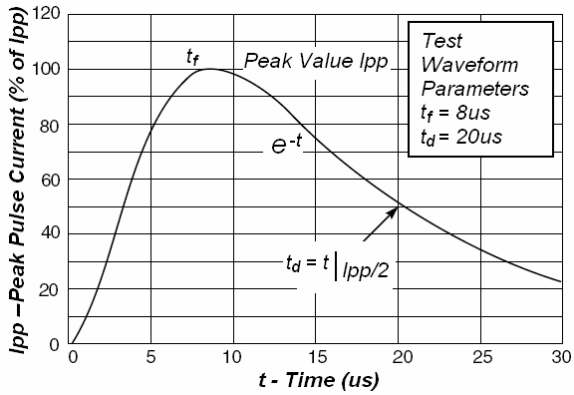


Fig1. Pulse Waveform

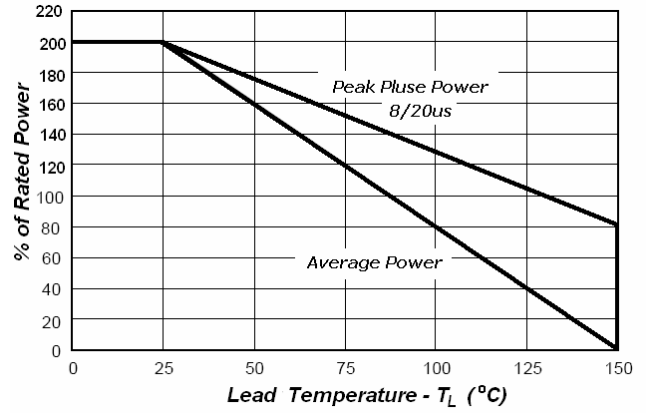
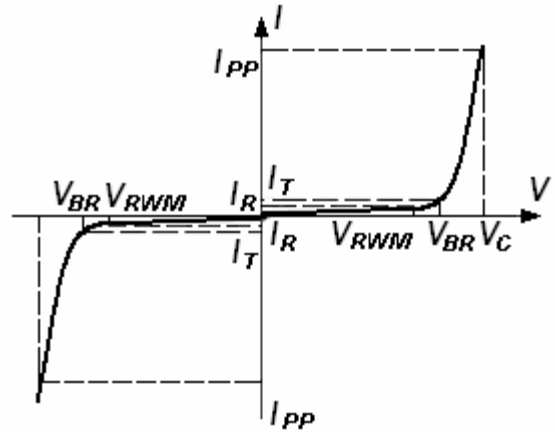


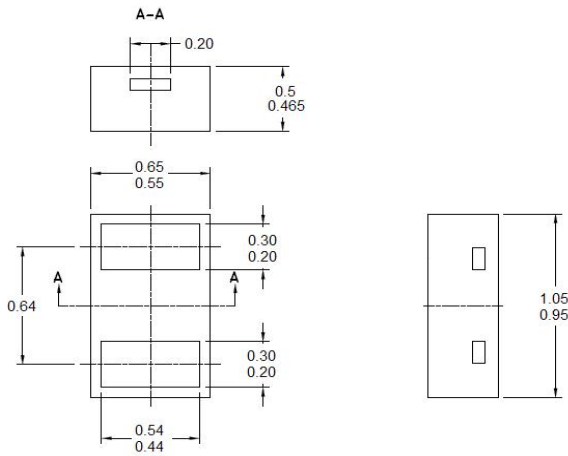
Fig2. Power Derating Curve

Electrical Parameter

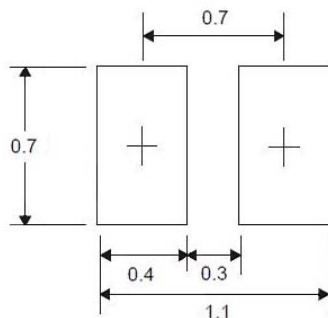
Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T



Package Outline Dimensions



Suggested Pad Layout



(Unit : mm)