

LOW CAPACITANCE BIDIRECTIONAL TVS DIODE

Features

- Provides ESD Protection per IEC 61000-4-2 Standard: Air ±15kV, Contact ±10kV
- 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
RS825D72TG	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	$V_{ESD_Contact}$	± 10	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	V_{ESD_Air}	± 15	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_R (μA) @ V_{RWM}	V_{BR} (V) @ I_T (Note 2)	I_T	C (pF)	V_C (V) @ $I_{PP} = 1\text{ A}$ (Note 3)	V_C
	Max	Max	Min	mA	pF	Max	Per IEC61000-4-2 (Note 4)
RS825D72TG	5.0	1.0	5.4	1.0	1.5	12.9	Figures 1 and 2 See Below

- V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C .
- Surge current waveform per Figure 4.
- For test procedure see Figures 3.

Rating and Characteristic Curves

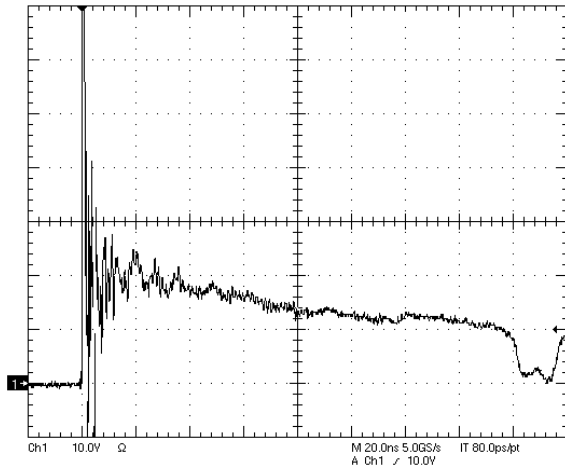


Figure 1. ESD Clamping Voltage Screenshot Positive 8 kV Contact per IEC61000-4-2

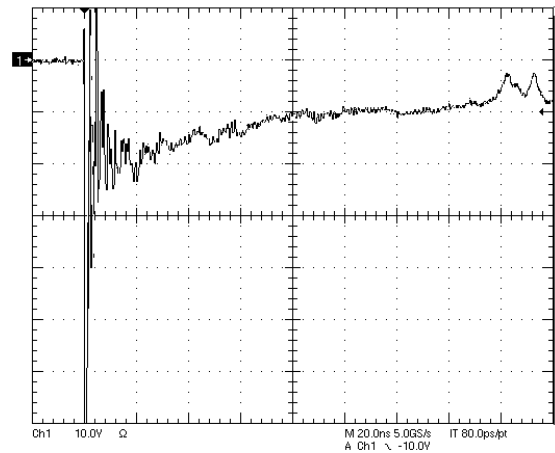


Figure 2. ESD Clamping Voltage Screenshot Negative 8 kV Contact per IEC61000-4-2

IEC 61000-4-2 Spec.

Level	Test Voltage (kV)	First Peak Current (A)	Current at 30 ns (A)	Current at 60 ns (A)
1	2	7.5	4	2
2	4	15	8	4
3	6	22.5	12	6
4	8	30	16	8

IEC61000-4-2 Waveform

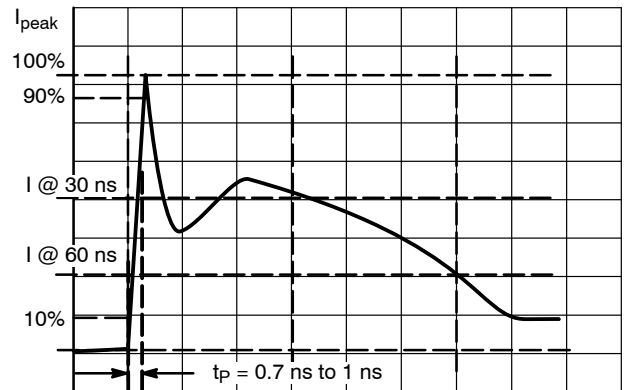


Figure 3. IEC61000-4-2 Spec

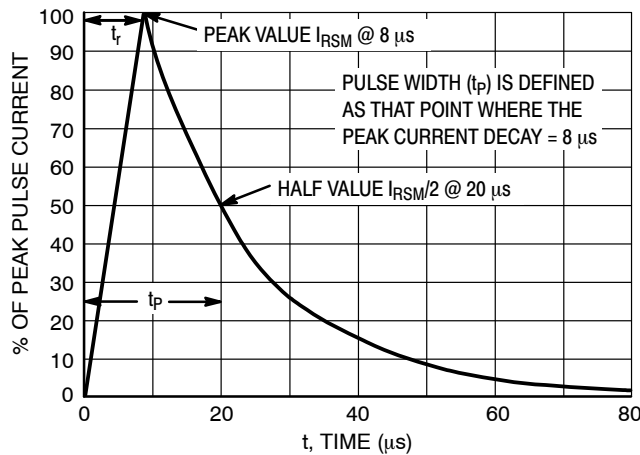
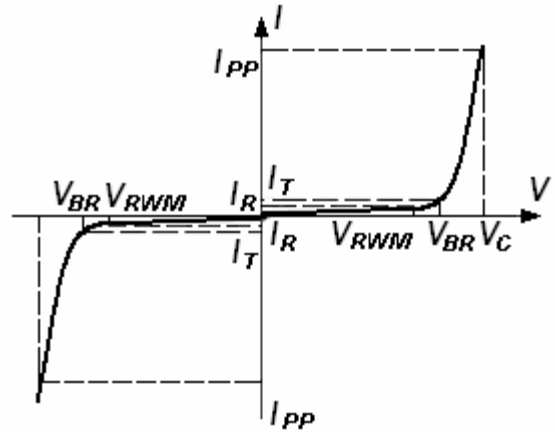


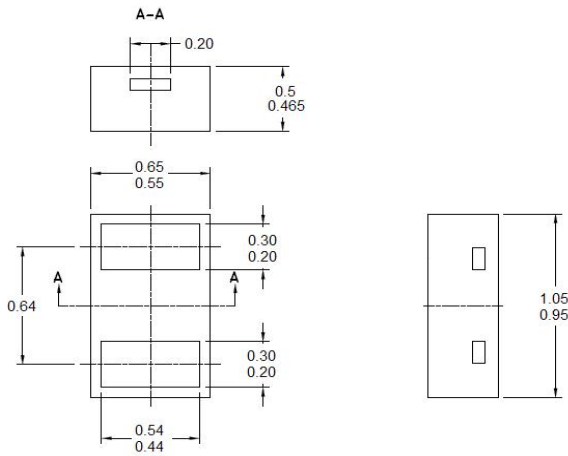
Figure 4. 8 X 20 μs Pulse Waveform

Electrical Parameter

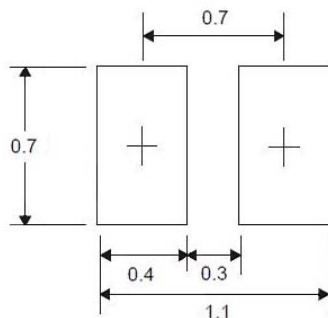
Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T



Package Outline Dimensions



Suggested Pad Layout



(Unit : mm)