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Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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DATA SHEET

RENESAS

SURGE ABSORBER DEVICES
NSAD500S

ELECTROSTATIC DISCHARGE SURGE ABSORBER DEVICES
DUAL TYPE: COMMON ANODE
SC-70 PACKAGE

DESCRIPTION

This product series is a low capacity for ESD surge absorber devices. Use by 100 to 500 Mbps class data line (USB2.0, IEEE1394, 100B, etc.).

Based on the IEC 61000-4-2 test on electromagnetic interference (EMI), the devices assures an endurance of no less than 8 kV, thus making itself most suitable for external high signal interface circuit protection.

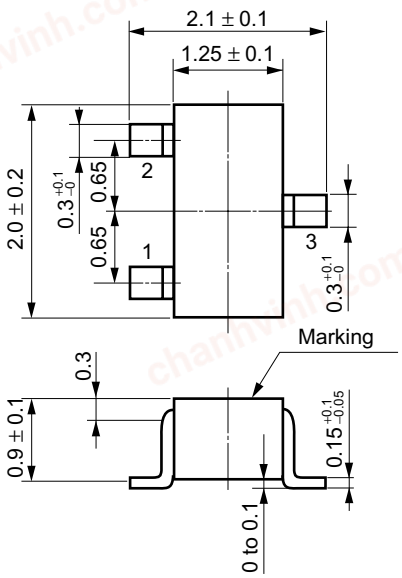
FEATURES

- Base on the electrostatic discharge immunity test (IEC 61000-4-2) product assures the minimum endurance of 8 kV.
- Capacitance: 3.5 pF TYP.
  It's an extraordinarily small capacitance.
- With 2 elements mounted (common anode).
  Mounted in the SC-70 package, the products can achieve high density and automatic packaging.

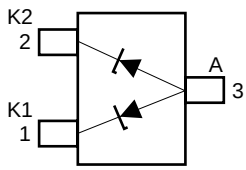
APPLICATIONS

- USB2.0, IEEE1394, 100B external interface circuit ESD protection.

PACKAGE DRAWING (Unit: mm)



ELECTRODE CONNECTION



1. K1: Cathode 1
2. K2: Cathode 2
3. A: Anode (common)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

ITEM	SYMBOL	RATING	UNIT	REMARK
Power Dissipation	P	150	mW	Total
Surge Reverse Power	P_{RSM}	2 (t = 10 μs, 1 pulse)	W	
Junction Temperature	T_j	150	°C	
Storage Temperature	T_{stg}	−55 to +150	°C	

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ELECTRICAL CHARACTERISTICS (T_A = 25°C) (A to K1, A to K2)

PARAMETER	BREAK OVER VOLTAGE V_{BO} (V)		CAPACITANCE C_t (pF)		REVERSE CURRENT I_R (μA)		ESD Note (kV)		<REFERENCE> FORWARD BREAK OVER VOLTAGE
	MIN.	TYP.	TYP.	Condition	MAX.	V_F (V)	MIN.	Condition	
NSAD500S	5.3	8	3.5	V_R = 0 V f = 1 MHz	0.1	3.0	8	C = 150 pF R = 330 Ω Contact discharge	10 V TYP.

Note Biased upon with IEC 61000-4-2.

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TYPICAL CHARACTERISTICS (T_A = 25°C)

Figure 1. I vs. V_{BO} CHARACTERISTICS

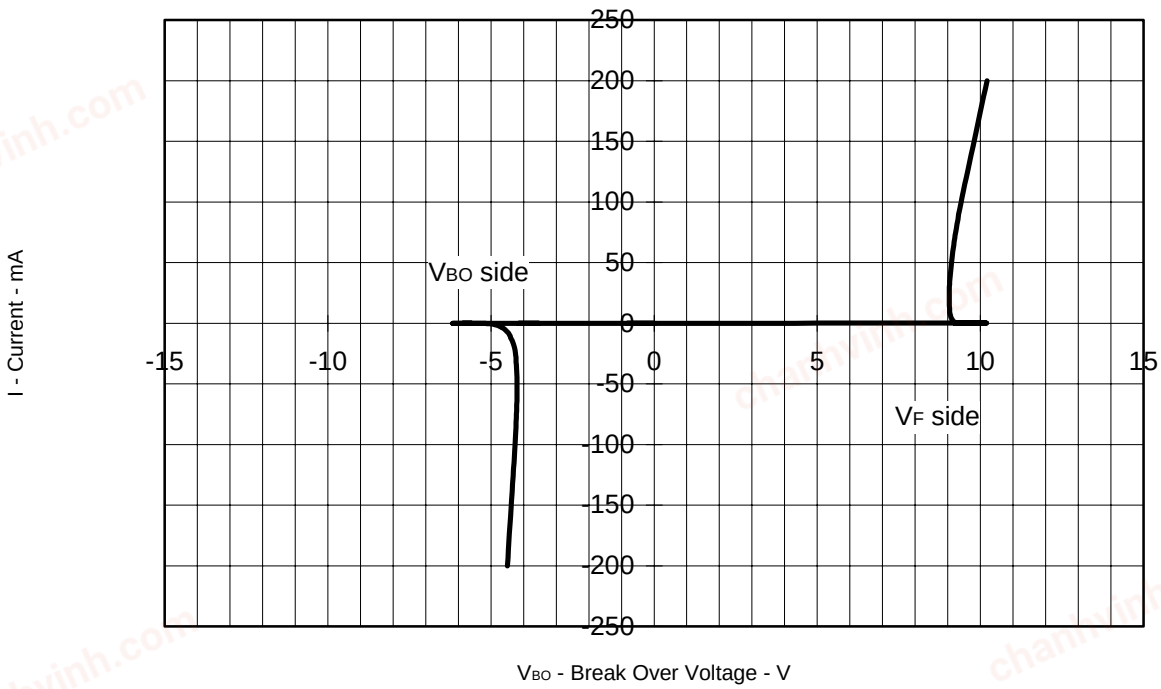
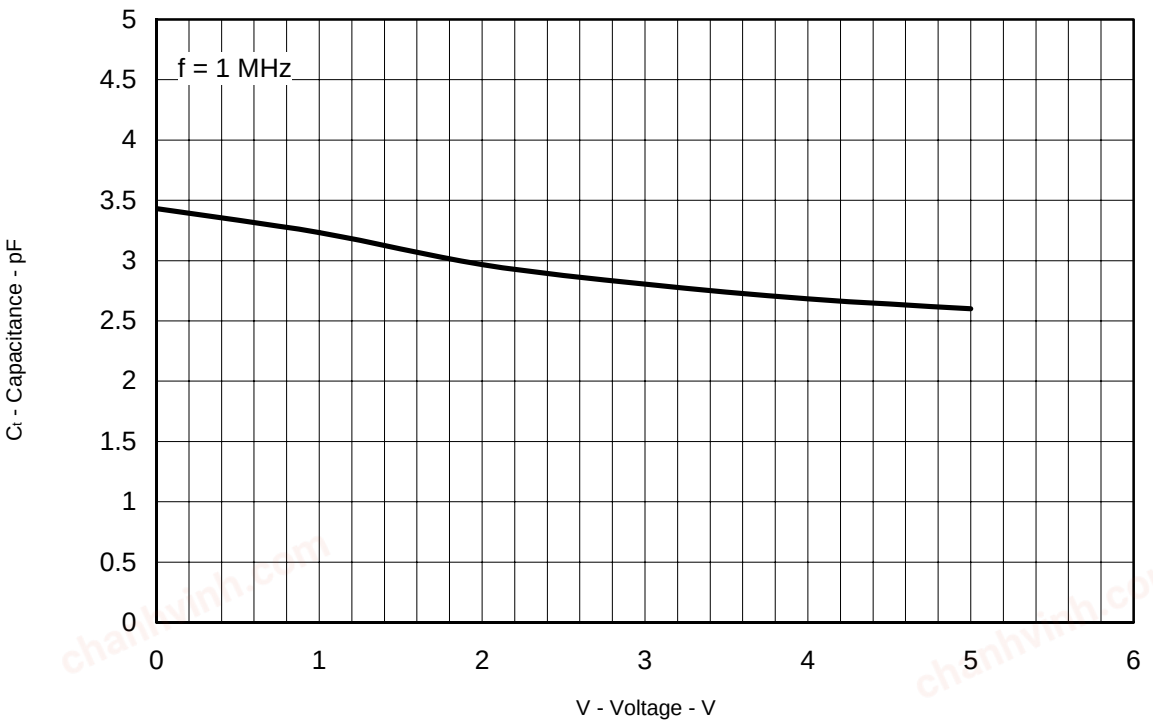
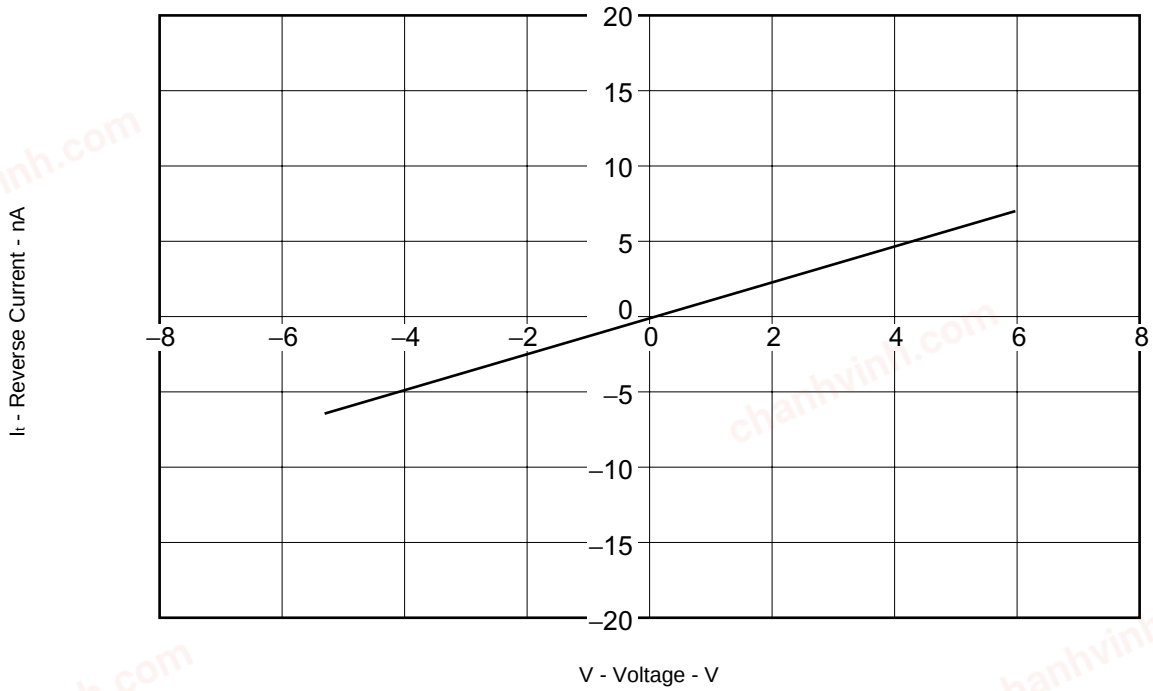


Figure 2. C_t vs. V CHARACTERISTICS



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Figure 3. I_t vs. V CHARACTERISTICS



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