AMODIODE
ADUC 0603 series

Overview

AMODIODE is a component which acts as a non-conductor on the circuit in normal circum-stances. When over-voltage is loaded, it becomes a con-ductor which diverts over-current from circuits to ground at critical voltage level.

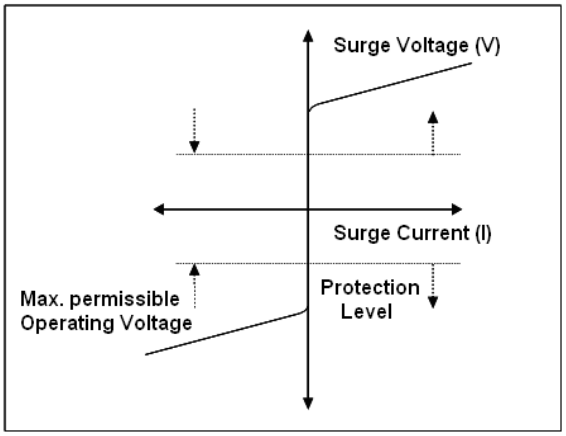


Fig 1 V-I Characteristic Curve

Features

- Lead free
- Multilayer laminated structure
- IEC 61000-4-2 (ESD) level #4
- Low capacitance
- Ideal for high speed data applications
- High reliability over multi surge
- Forward & Reverse(+, -) direction property
- Low leakage current and inductance
- Easy to control electric capacity
- Excellent reliability against ESD

Applications

- Antenna switch protection
- SAW filter protection
- USB 2.0 protection (Full, High speed)
- HDMI protection

Model Description

ADUC	10	S	03	3R3
(1)	(2)	(3)	(4)	(5)

(1) Series name : “ADUC” – **A**MO**D**iode **U**ltra low **C**apacitance type

(2) Maximum continuous working voltage (Vdc) : “5”-5V, “10” - 10V
“18”-18V, “30”-30V

(3) Breakdown voltage tolerance : “**S**” - special order

(4) Chip size : **03**means 06**03** (1.6 x 0.8 mm)

(5) Capacitance : 1R1 means 1.1 pF, 1R5 means 1.5pF, 3R3 means 3.3pF
005 means 5pF, 010means 10pF, 200means 200pF

Electrical characteristics

Part No.	Vdc(1)	Breakdown Voltage (Vn) @1mA DC	Capacitance (Cp) @ 1MHz, 0.5Vrms	Leakage Current (IL) @ Vdc	Insulation Resistance (IR) @3V
	(V)	(V)	(pF)	(uA)	(MΩ)
ADUC 10S 03 1R1	10	70 (49~91)	1.1 (0.8~1.4)	20	10 min
ADUC 10S 03 1R5	10	50 (30~70)	1.5 (1.0~1.9)	20	10 min
ADUC 10S 03 3R3	10	30 (21~39)	3.3 (2.3~4.3)	20	10 min
ADUC 10S 03 005	10	20 (14~26)	5.0 (3.5~6.5)	20	10 min
ADUC 10S 03 010	10	20 (14~26)	10 (7~13)	20	10 min
ADUC 30S 03 010	30	50min	10 (7~13)	10	10 min
ADLC 5S 03 015	5.5	9.4~15.6	15 (10.5~19.5)	20	10 min
ADLC 5S 03 030	5.5	9.4~15.6	30 (21~39)	20	10 min
ADMC 5M 03 200	5.5	6.4min	200 (140~260)	10 (@ 3.3Vdc)	10 min
ADMC 5S 03 200	5.5	12 (8.4~15.6)	200 (140~260)	20	10 min

(1) Maximum continuous DC working voltage

(2) Vn measuring source of ADUC10S031R1, and ADUC10S031R5 is 0.1mA.

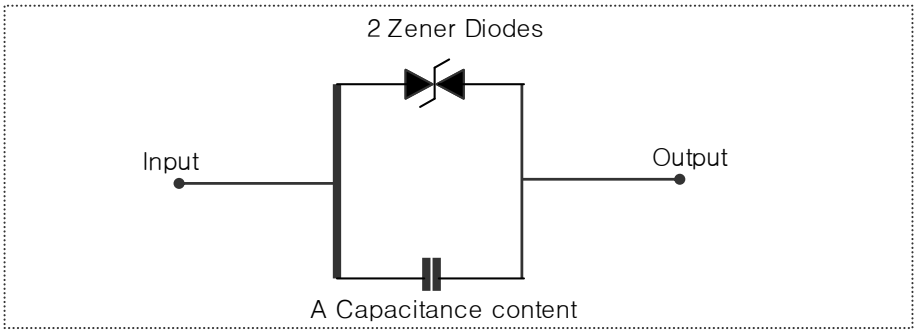
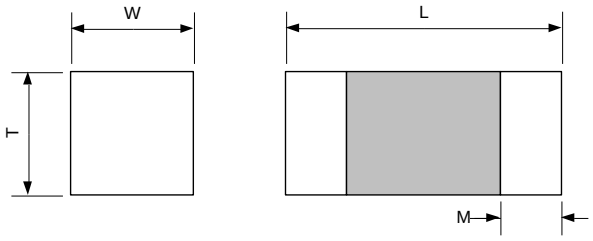


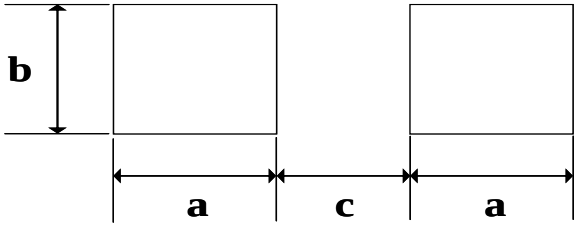
Fig.2 Equivalent Circuit

Appearance



Symbol	L	W	T	M
Size (mm)	1.6 ± 0.15	0.8 ± 0.15	Max. 0.9	0.35 ± 0.15

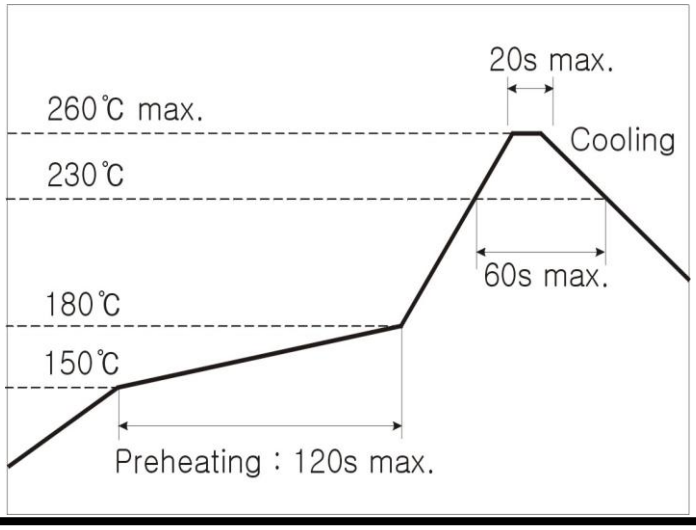
Recommended Land pattern (Typical Dimensions)



Symbol	a	b	c
Size (mm)	0.9	0.8	0.8

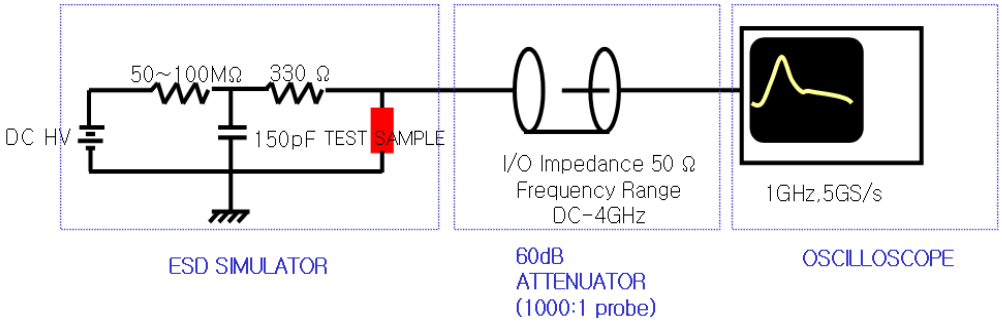
Recommended Soldering Profile

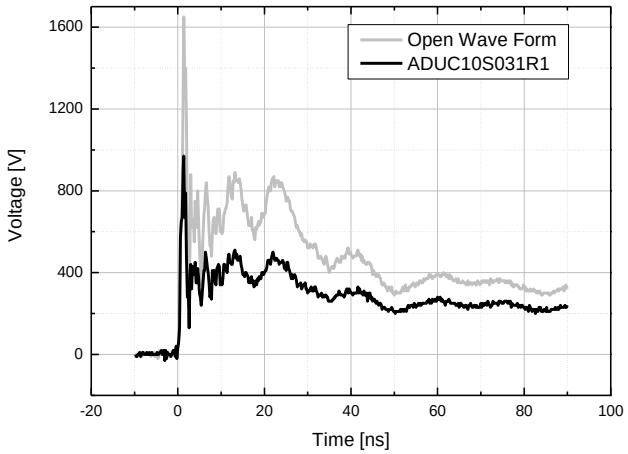
- Pb Free Solder Paste : Sn/Ag/Cu (96.5 / 3.0 / 0.5)

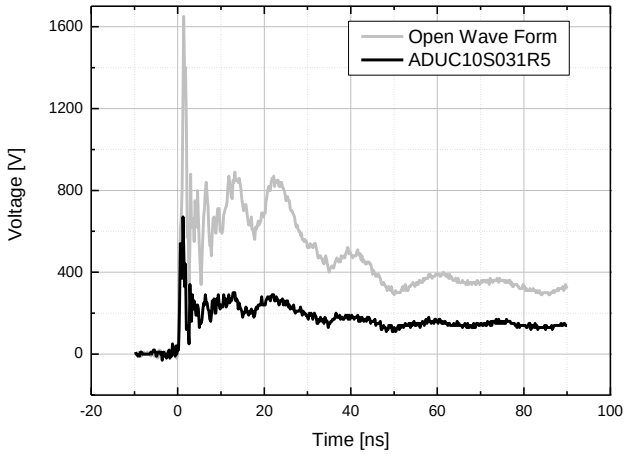


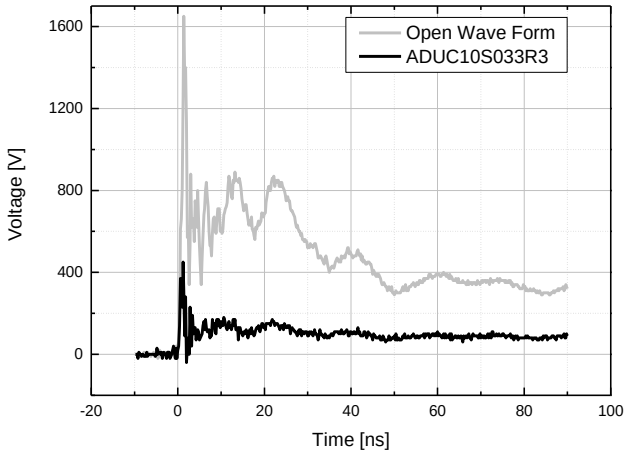
ESD Voltage Waveform

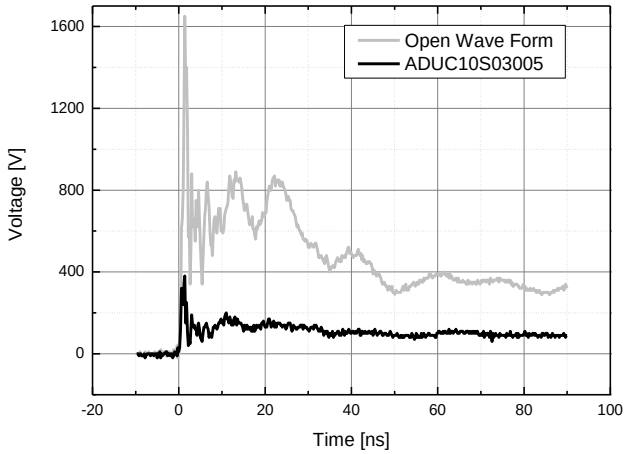
- Test setup

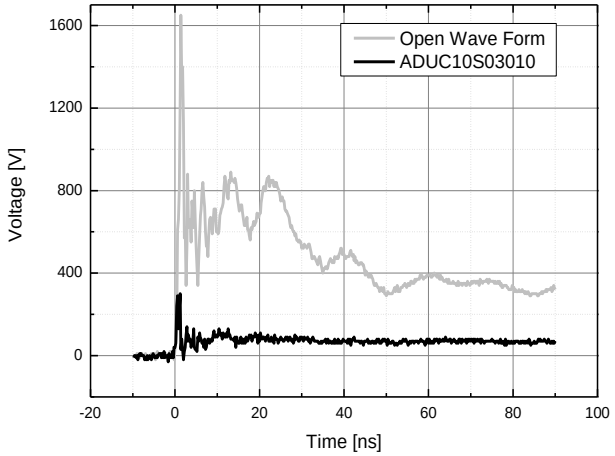


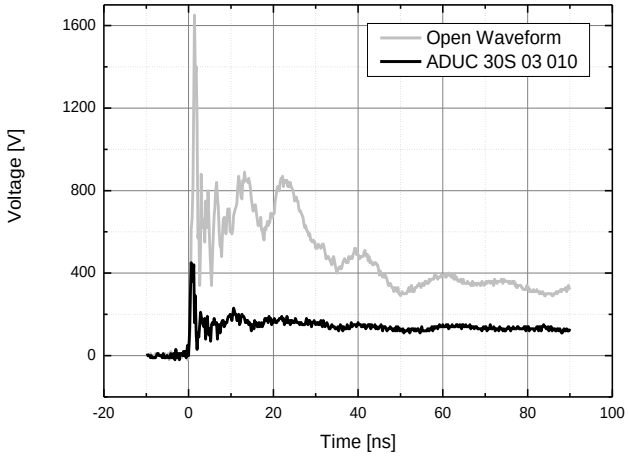


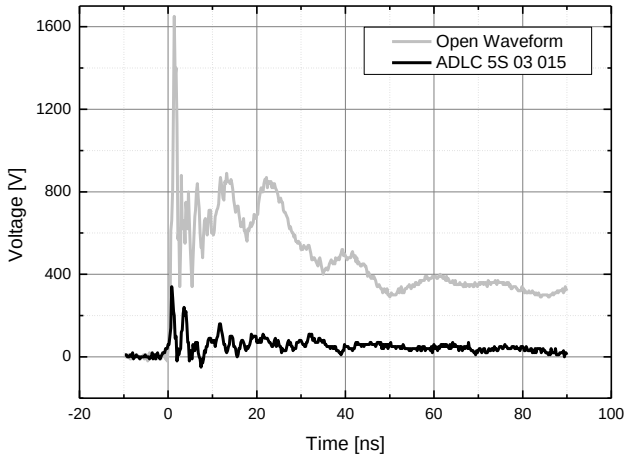


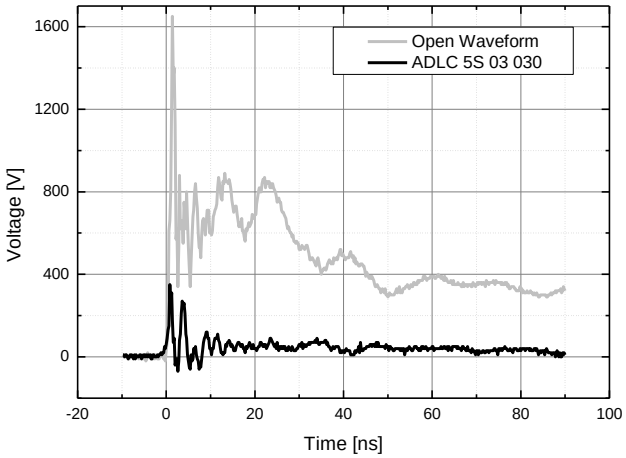


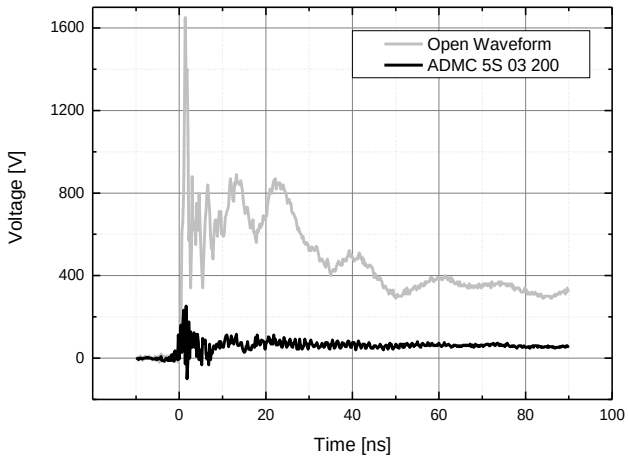


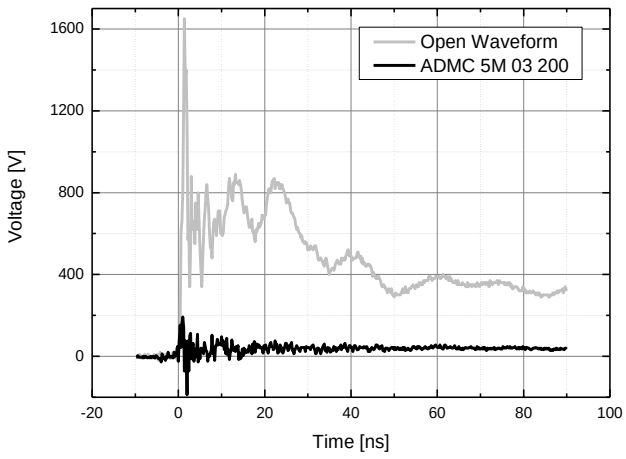

Open Wave Form
ADUC10S03010
Voltage [V]
Time [ns]


Open Waveform
ADUC 30S 03 010
Voltage [V]
Time [ns]

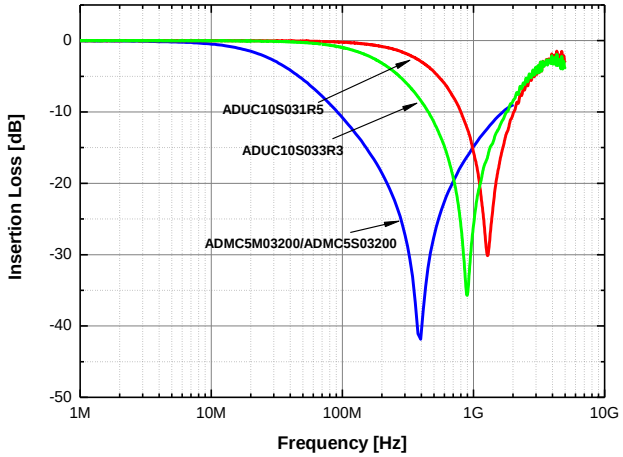

Open Waveform
ADLC 5S 03 015
Voltage [V]
Time [ns]

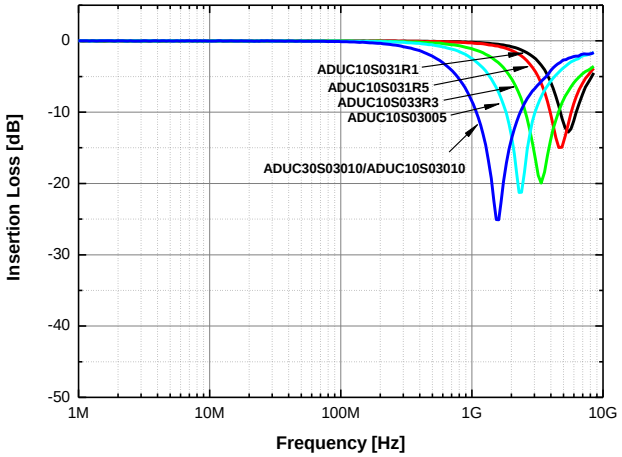

Open Waveform
ADLC 5S 03 030
Voltage [V]
Time [ns]


Open Waveform
ADMC 5S 03 200
Voltage [V]
Time [ns]

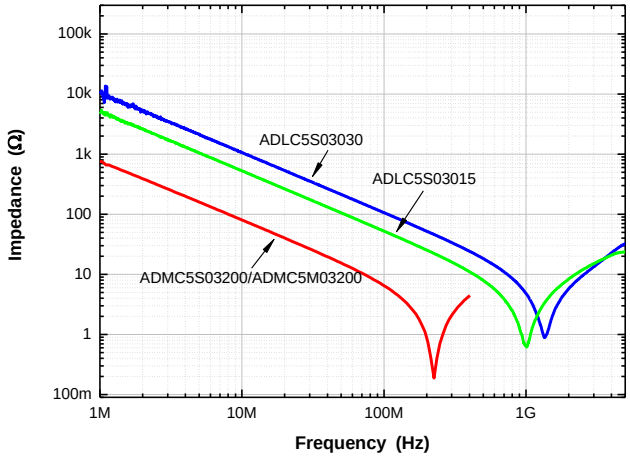

Open Waveform
ADMC 5M 03 200
Voltage [V]
Time [ns]

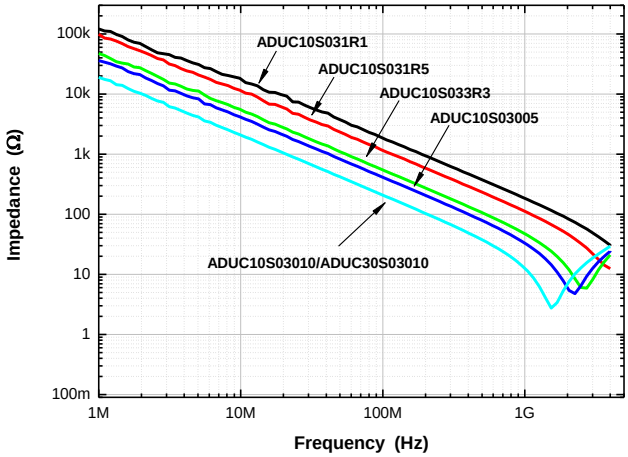
Frequency Characteristics





Impedance vs. Frequency





Capacitance vs. Frequency