

AVLC5S01015

Ultra Compact Size Multilayer Chip Varistor



Overview

ESD Varistor is a component which acts as a non-conductor on the circuit in normal circumstances. When over-voltage is loaded, it becomes a conductor which diverts over-current from circuits to ground at critical voltage level. Especially, new ultra compact size chip varistor with 0.6x0.3mm dimension can save design space in mobile phone and show even enhanced ESD performance.

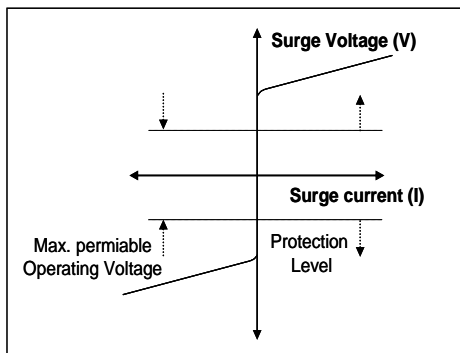


Fig 1 V-I Characteristic Curve

Features

- Ultra small size (0201 : 0.6x0.3mm)
- Meets IEC 61000-4-2(ESD) level 4 requirements
- ESD Protection > 15kV
- Low capacitance for high frequency data line protection
- Fast response time < 1ns
- Available in tape and reel for automatic pick and place

Applications

- Electronic alliance for protection on ESD.
- LCD Module
- Mobile phone/PDAs
- MP3 Player
- Digital Camera
- ESD Protection for sensitive IC
- I / O Port, Keypad
- Wireless Handsets
- Lap top Computer
- Desk top Computer
- Notebook

Model Description

AVLC	5	S	01	015
(1)	(2)	(3)	(4)	(5)

- (1) Series name : "AVLC" – Low capacitance type varistor
- (2) Maximum continuous working voltage (Vdc) : "5"- 5.5V
- (3) Varistor voltage tolerance : "S" - special order
- (4) Chip size : 01 means 0201 (0.6 x 0.3 mm)
- (5) Capacitance : 015 means 15pF (typical)

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Electrical characteristics

Part No.	Vdc ⁽¹⁾	Varistor voltage (Vn) @1mA dc	Leakage Current (IL) @Vdc	Capacitance (Cp)	Clamping Voltage (VC) @8/20us, 1A	Peak Current (Imax ⁽²⁾) @8/20u s	Transient Energy (Wmax ⁽³⁾) @10/1000 us	Insulation Resistance (IR) @3.6V
	(V)			(pF)				
AVLC5S01015	5.5	10.0 ~ 15.6	50 max.	15 (10.5 ~ 19.5) @ 1kHz, 0.5V _{rms}	35 max.	1	0.01	10 min

- (1) 'Vdc' means maximum DC voltage which can be applied to this device.
- (2) 'Imax' means maximum surge current which this device can withstand.
- (3) 'Wmax' means maximum transient energy which this device can withstand.

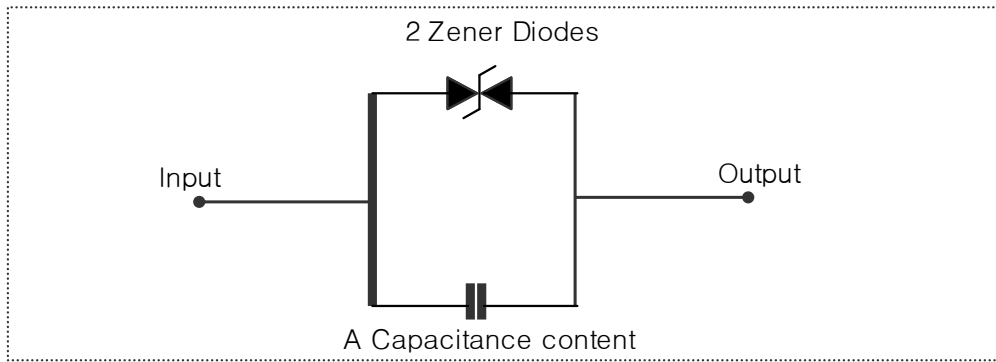
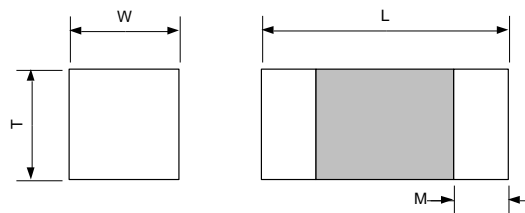


Fig.2 Equivalent Circuit

Appearance



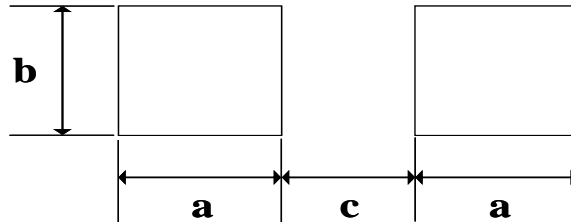
Size(mm)	L	W	T	M
0603	0.60 ± 0.03	0.30 ± 0.03	0.30 ± 0.03	Min 0.1.

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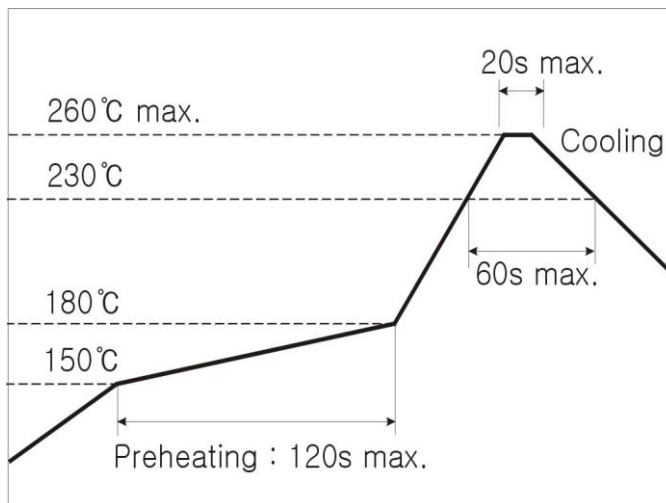
Recommended Land pattern (Typical Dimensions)



Item	a	b	c
Size (mm)	2.5	3.2	2.5

Recommended Soldering Profile

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

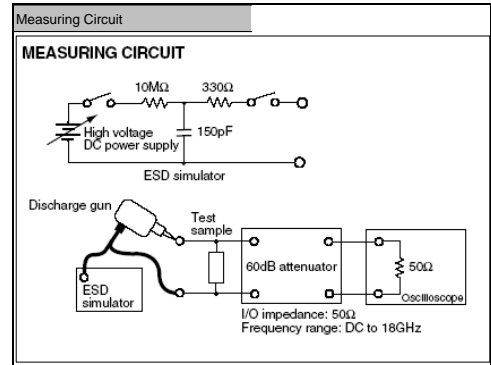
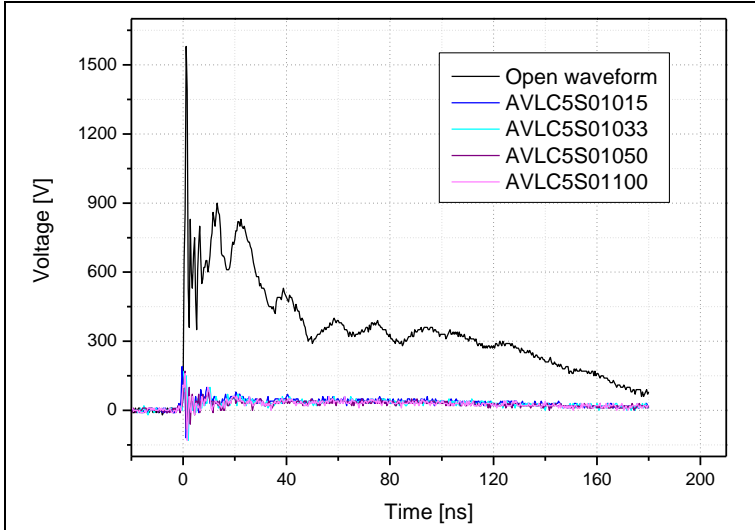


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ESD Absorption Characteristics (Typical data)

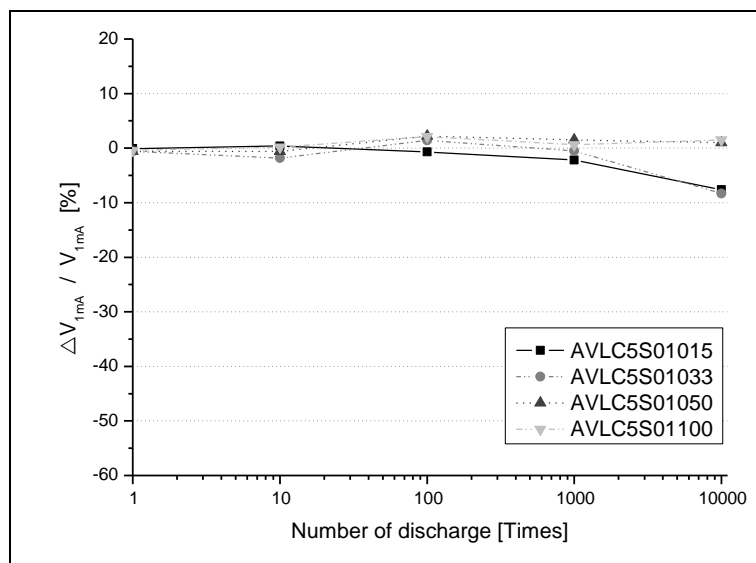


Model	Open Waveform	AVLC 5S 01 015	AVLC 5S 01 033	AVLC 5S 01 050	AVLC 5S 01 100
Peak Voltage	1580 V	190 V	170 V	170 V	160 V
Average Voltage (30ns to 100ns)	372 V	42 V	37 V	34 V	34 V

ESD TESTS

TEST CONDITIONS

150pF , 330 Ω contact discharge
Charged voltage : 8kV, 0.1s interval

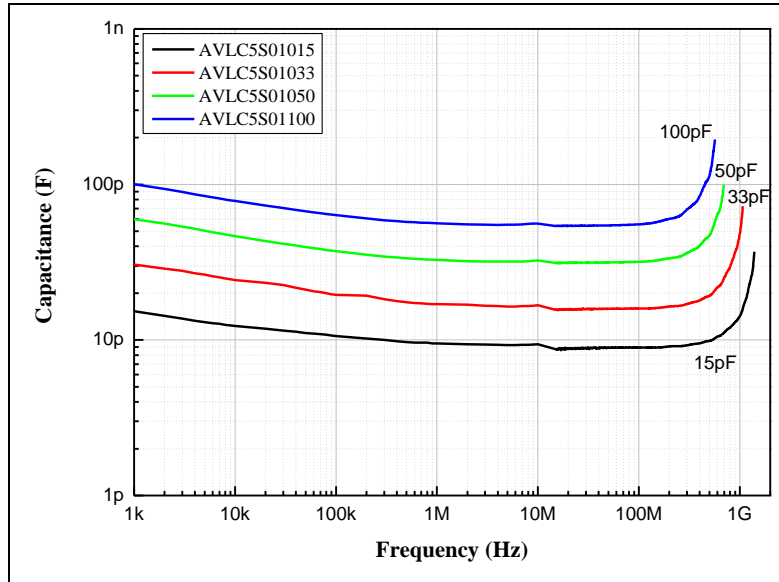


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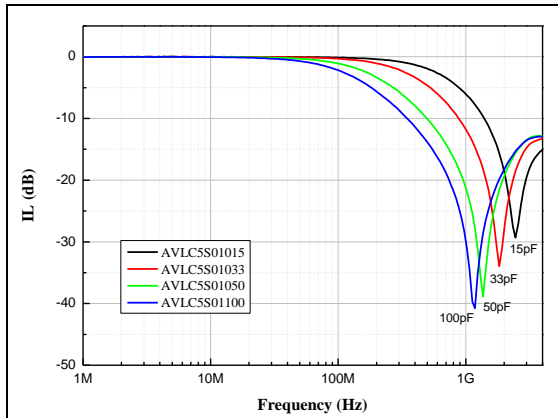
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CAPACITANCE vs. FREQUENCY CHARACTERISTICS



TRANSMISSION CHARACTERISTICS



IMPEDANCE vs. FREQUENCY CHARACTERISTICS

