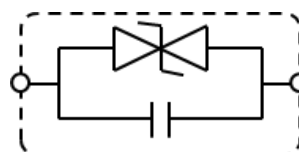


Multilayer Chip Varistor : AVRH10C101KT4R7YA8

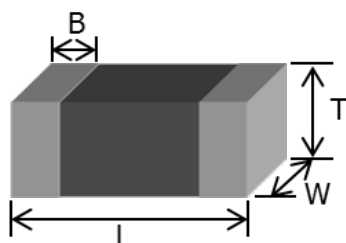
Features

- Automotive (AEC-Q200) grade
- Size : EIA0402 (1.0x0.5mm)
- Excellent ESD clamp characteristics
- High ESD durability : IEC61000-4-2, Contact 25kV
- Operating temperature range : -55°C ~ 150°C
- Compliant with OPEN Alliance 100BASE-T1

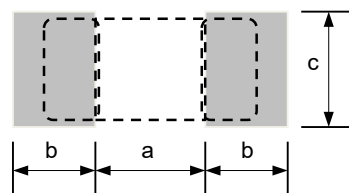
Equivalent Circuit



Shapes & Dimensions



Recommended PCB Pattern



	Unit / mm			
EIA	L	W	T	B
0402	1.0±0.05	0.5±0.05	0.5±0.05	0.1 Min.

	Unit / mm		
EIA	a	b	c
0402	0.3 to 0.5	0.35 to 0.45	0.4 to 0.6

Product Identification

<u>AVRH</u>	<u>10</u>	<u>C</u>	<u>101</u>	<u>K</u>	<u>T</u>	<u>4R7</u>	<u>Y</u>	<u>A</u>	<u>8</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

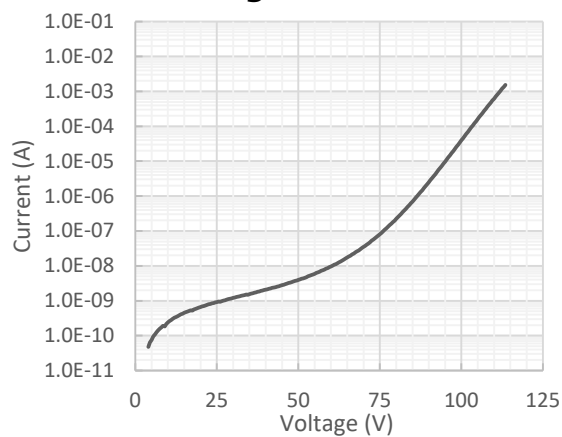
(1)	Series name / AVRH
(2)	Dimension / 10:1.0x0.5(mm)
(3)	Structure
(4)	Varistor voltage / 101:10x10 ¹ (V) *Based on OPEN Alliance (100V min.)
(5)	Varistor voltage tolerance / K : ±10(%)
(6)	Packaging scheme / T : Taping
(7)	Capacitance / 4R7 : 4.7(pF)
(8)	Capacitance tolerance / Y : ±0.57(pF)
(9)	ESD Tolerance (IEC61000-4-2) / A : ±25(kV)
(10)	Operating temperature (Max.) / 8 : 150(°C)

Electrical Characteristics

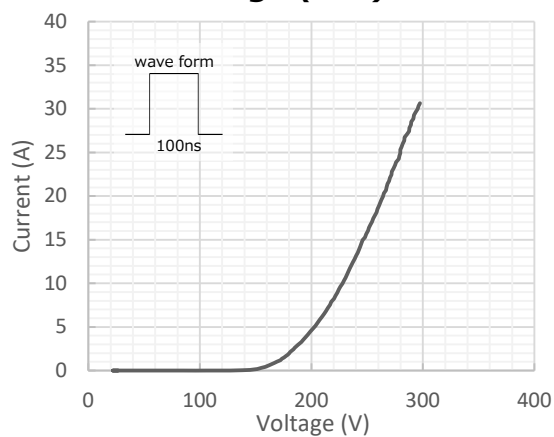
TDK Product Name	Varistor voltage (Breakdown voltage)	Rated voltage	Clamping voltage		Energy	Power Peak Pulse	Peak current	Capacitance
		DC	8/20μs		10/1000μs	10/1000μs	8/20μs	1MHz, 1Vrms
		Max.	Typ.		Max.	Typ.	Max.	
	V1mA	Vdc	Vcl	Icl	E	Ppp	Ip	C
	(V)	(V)	(V)	(A)	(Joule)	(W)	(A)	(pF)
AVRH10C101KT4R7YA8	115 (103.5~126.5)	70	212	1	0.03	24.5	1	4.7 (4.13~5.27)

Multilayer Chip Varistor : AVRH10C101KT4R7YA8

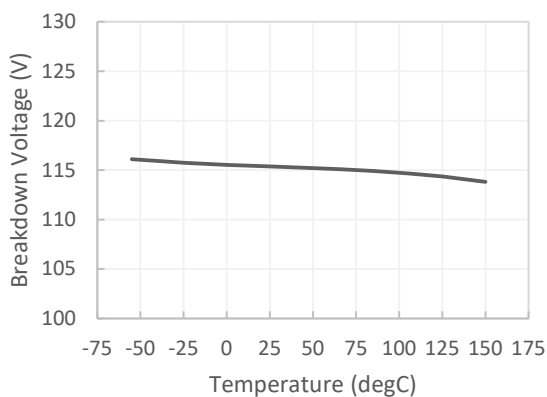
Current - Voltage



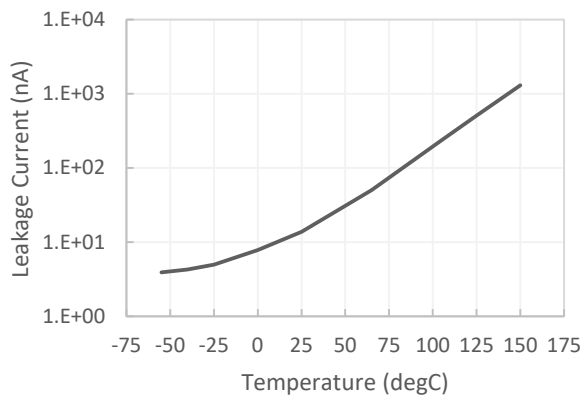
Current - Voltage (TLP)



Breakdown Voltage - Temp.



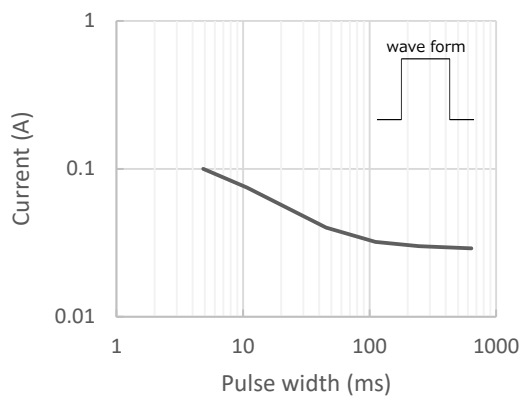
Leakage current - Temp.



※ Voltage : 70 V

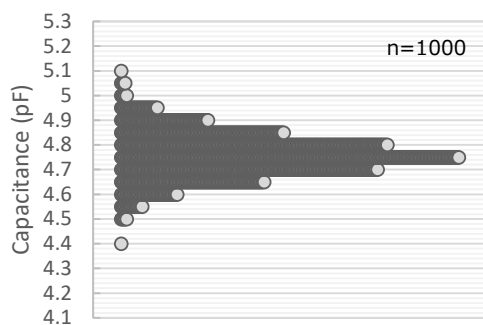
Durability of Pulse Current

(Typ. values)

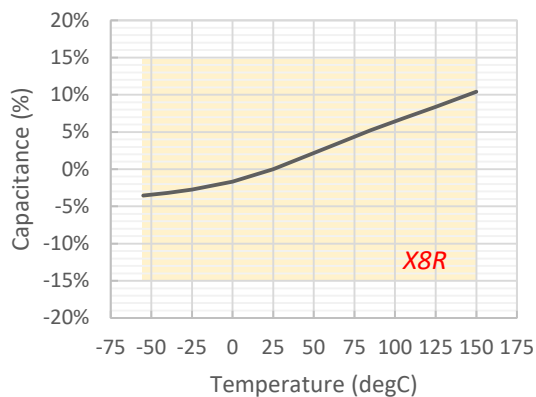


Multilayer Chip Varistor : AVRH10C101KT4R7YA8

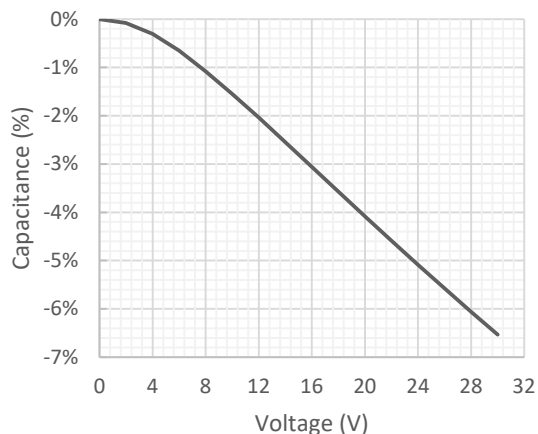
Capacitance Dispersion ※1MHz, 1Vrms



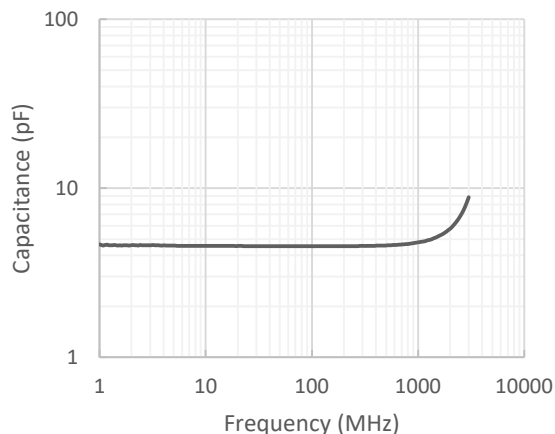
Capacitance - Temp. ※1MHz, 1Vrms



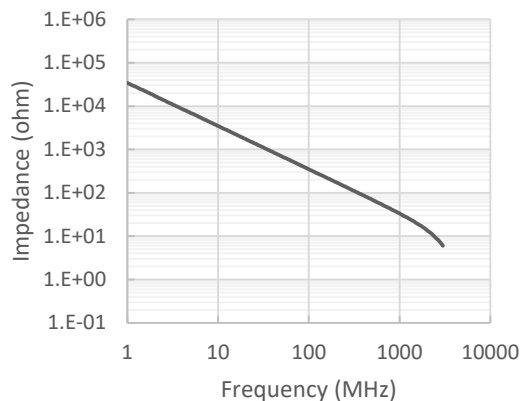
DC bias ※1MHz, 1Vrms



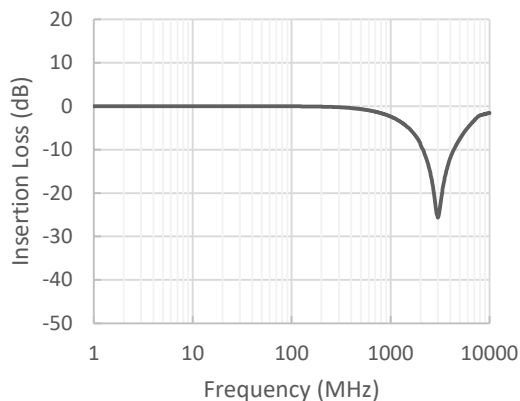
Capacitance - Freq.



Impedance - Freq.



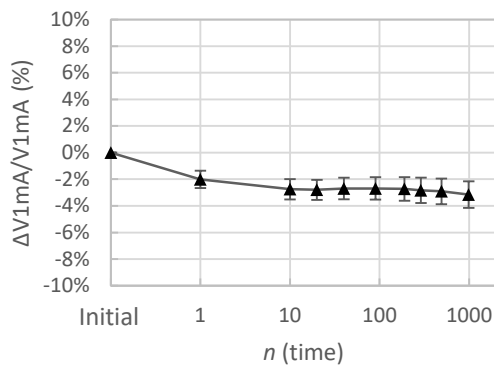
Insertion Loss



Multilayer Chip Varistor : AVRH10C101KT4R7YA8

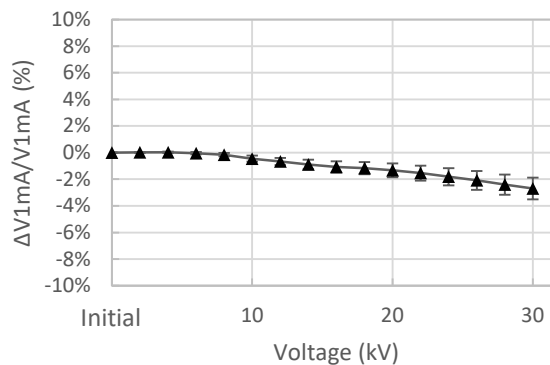
ESD Discharge

► 150pF/330ohm, $\pm 25\text{kV}$, 1000times



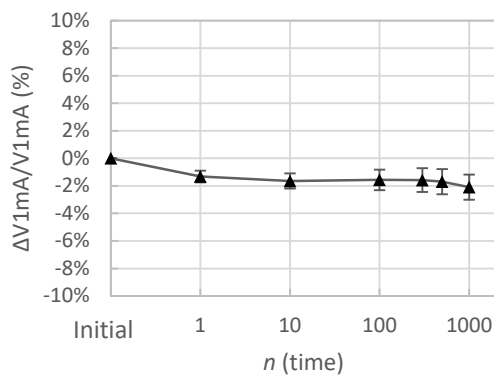
ESD Discharge

► 150pF/330ohm, $\sim \pm 30\text{kV}$, 10times



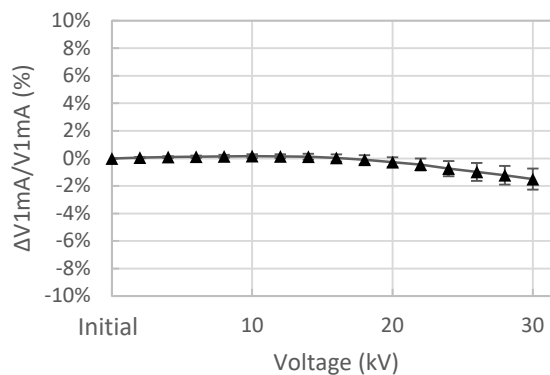
ESD Discharge

► 330pF/2000ohm, $\pm 25\text{kV}$, 1000times



ESD Discharge

► 330pF/2000ohm, $\sim \pm 30\text{kV}$, 10times



※Criteria : $\Delta V1\text{mA}/V1\text{mA} \leq 10 \%$

Multilayer Chip Varistor : AVRH10C101KT4R7YA8

Test results of OPEN Alliance 100BASE-T1

<i>Single test</i>	<i>Result / Resulting class</i>		
S-Parameter	Pass		
Damage ESD	Pass		
ESD Discharge Current Measurement CMC Saturation class II	±3 kV :	class	III
	±5 kV :	class	III
	±6 kV :	class	III
	±7 kV :	class	III
	±15 kV :	class	II
ESD Discharge Current Measurement CMC Saturation class I	±3 kV :	class	III
	±5 kV :	class	II
	±6 kV :	class	II
	±7 kV :	class	II
	±15 kV :	class	I
RF clamping	Pass : class III		

※Standard be used : IEEE 100BASE-T1 EMC Test Specification for ESD suppression devices,
Version 2.0, October 30, 2020