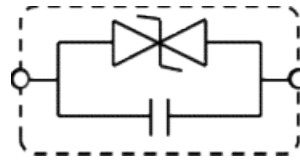


# Multilayer Chip Varistor : AVRH10C270KT150NA8

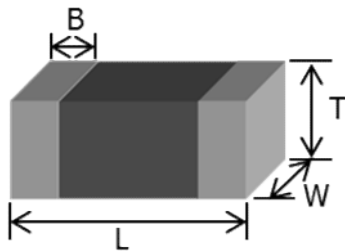
## Features

- 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

## Equivalent Circuit

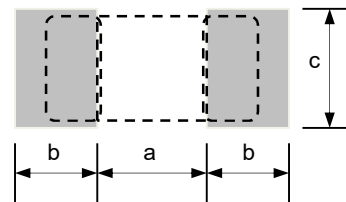


## Shapes & Dimensions



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

## Recommended PCB Pattern



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

## Product Identification

**AVRH 10 C 270 K T 150 N A 8**  
 (1) (2) (3) (4) (5) (6) (7) (8) (9) (10)

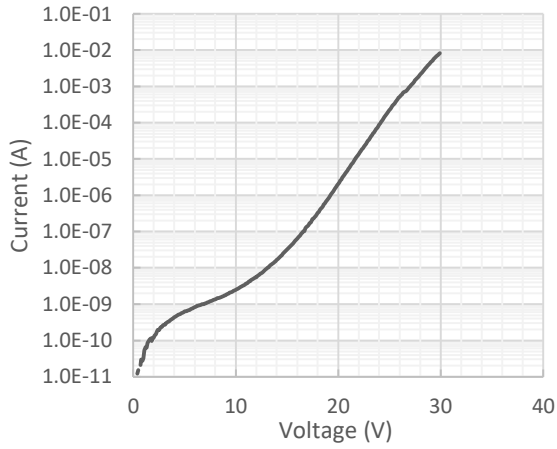
|      |   |
|------|---|
| (1)  | Series name / AVRH                            |
| (2)  | Dimension / 10:1.0x0.5(mm)                    |
| (3)  | Structure                                     |
| (4)  | Varistor voltage / 270:27x10 <sup>0</sup> (V) |
| (5)  | Varistor voltage tolerance / K : ±10(%)       |
| (6)  | Packaging scheme / T : Taping                 |
| (7)  | Capacitance / 150:15x10 <sup>0</sup> (pF)     |
| (8)  | Capacitance tolerance / N : ±30(%)            |
| (9)  | ESD Tolerance (IEC61000-4-2) / A : ±25(kV)    |
| (10) | Operating temperature (Max.) / 8 : 150(°C)    |

## Electrical Characteristics

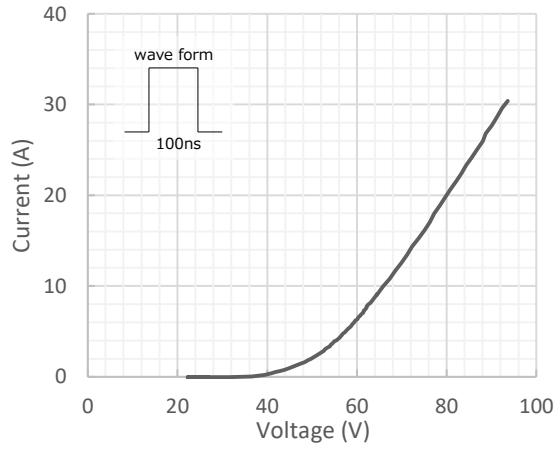
| TDK Product Name   | Varistor voltage<br>(Breakdown voltage) | Rated<br>voltage | Clamping voltage         | Energy                       | Power Peak<br>Pulse               | Peak<br>current                 | Capacitance                 |                          |
|--------------------|---|------------------|--------------------------|------------------------------|-----------------------------------|---------------------------------|-----------------------------|--------------------------|
|                    | V1mA<br>(V)                             | Vdc<br>(V)       | DC<br>Max.<br>Vcl<br>(V) | 8/20µs<br>Typ.<br>Icl<br>(A) | 10/1000µs<br>Max.<br>E<br>(Joule) | 10/1000µs<br>Typ.<br>Ppp<br>(W) | 8/20µs<br>Max.<br>Ip<br>(A) | 1kHz, 1Vrms<br>C<br>(pF) |
| AVRH10C270KT150NA8 | 27(24~30)                               | 19               | 52                       | 2                            | 0.02                              | 19.07                           | 2                           | 15(10.5~19.5)            |

# Multilayer Chip Varistor : AVRH10C270KT150NA8

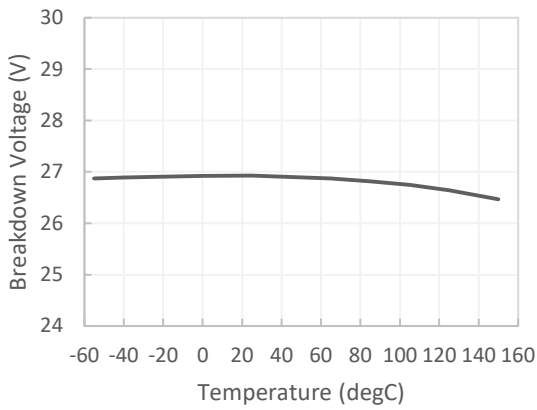
**Current - Voltage**



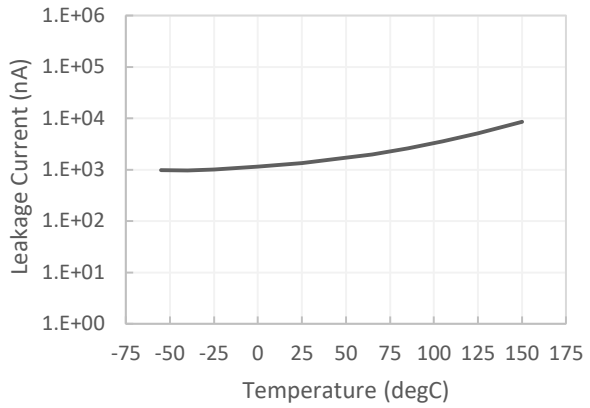
**Current - Voltage (TLP)**



**Breakdown Voltage - Temp.**



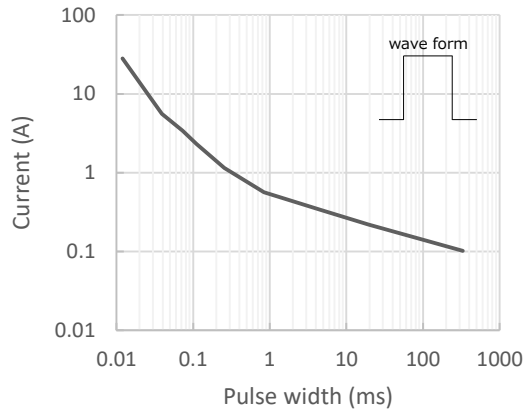
**Leakage current - Temp.**



※ Voltage : 19 V

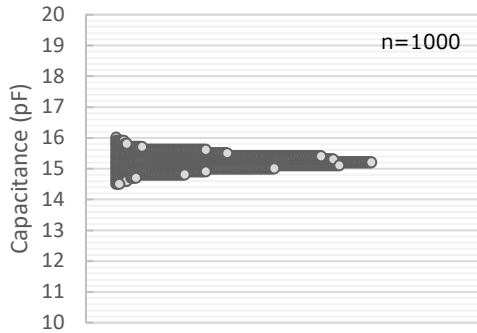
**Durability of Pulse Current**

( Typ. values )

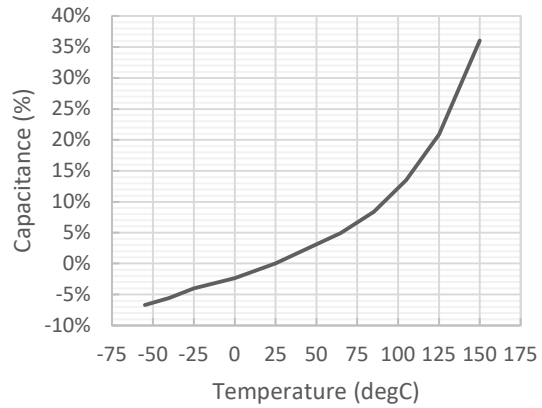


# Multilayer Chip Varistor : AVRH10C270KT150NA8

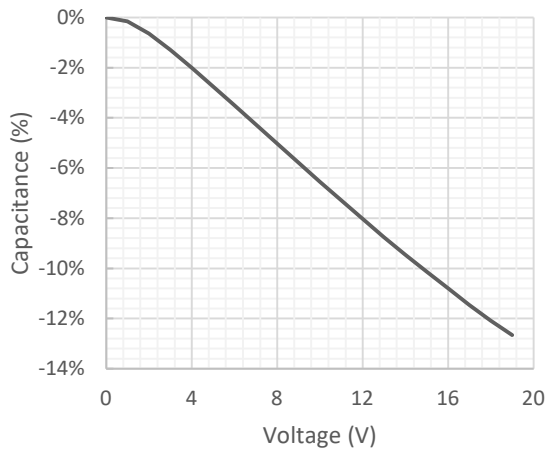
**Capacitance Dispersion** ※1kHz, 1Vrms



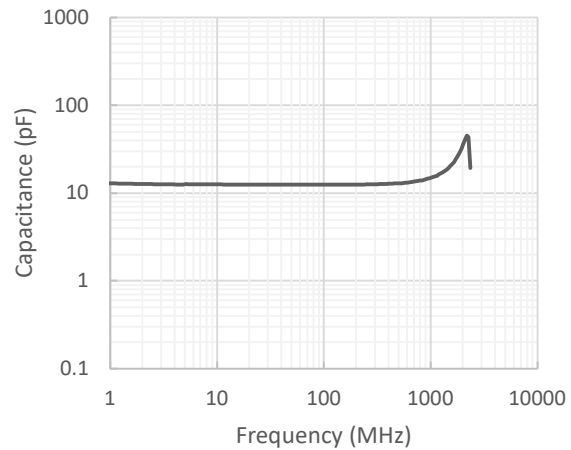
**Capacitance - Temp.** ※1kHz, 1Vrms



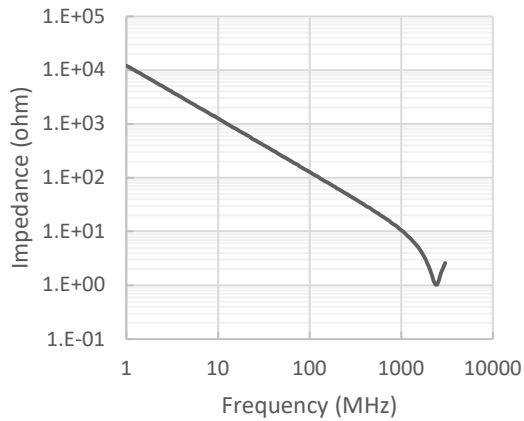
**DC bias** ※1MHz, 1Vrms



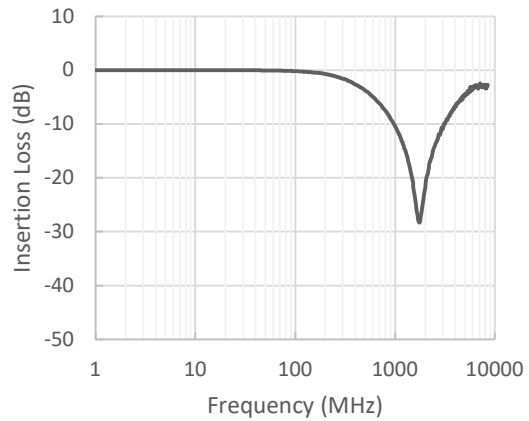
**Capacitance - Freq.**



**Impedance - Freq.**



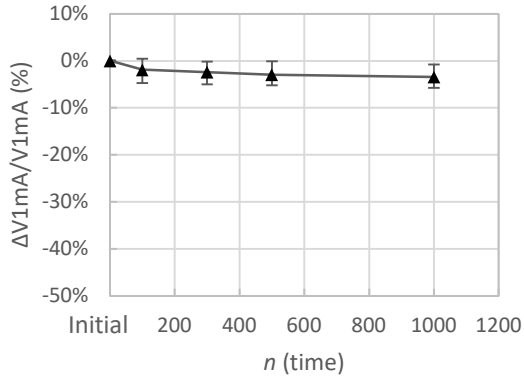
**Insertion Loss**



# Multilayer Chip Varistor : AVRH10C270KT150NA8

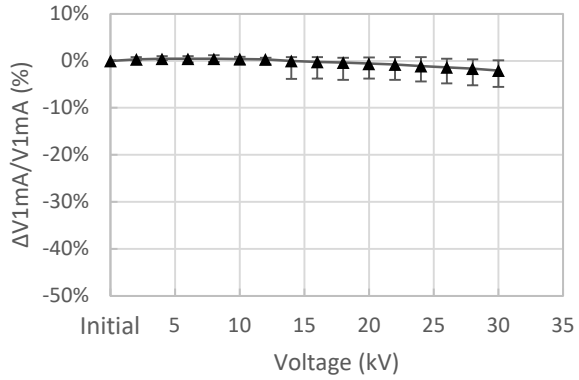
## ESD Discharge

▶ 150pF/330ohm, ±25kV, 1000times



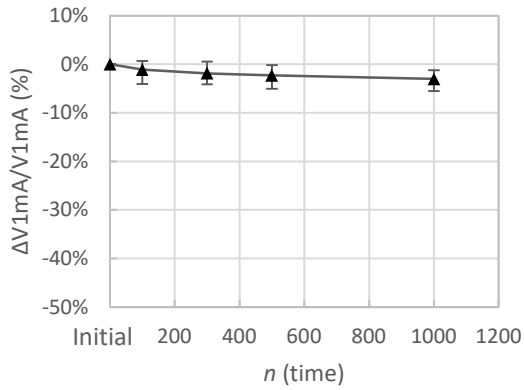
## ESD Discharge

▶ 150pF/330ohm, ~±30kV, 10times



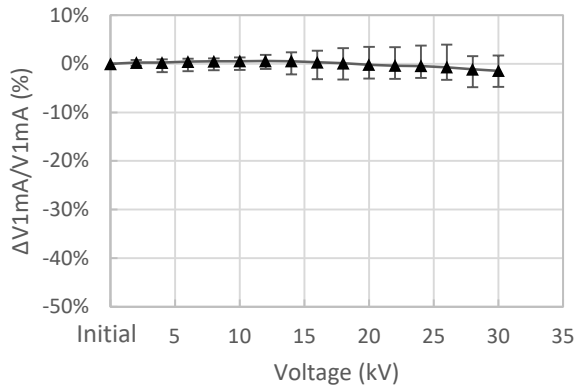
## ESD Discharge

▶ 330pF/2000ohm, ±25kV, 1000times



## ESD Discharge

▶ 330pF/2000ohm, ~±30kV, 10times



※Criteria :  $\Delta V1mA/V1mA \leq 10 \%$