

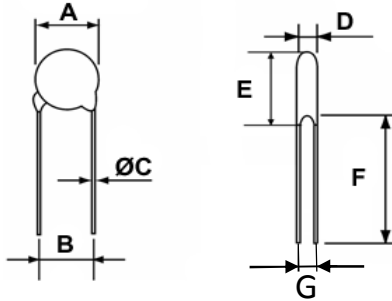
# Specification for Release

Customer : \_\_\_\_\_  
 Ordercode: **820443211E**  
 Description : **Disk Varistor HighSurge WE-VD**



DATE : 2010-04-19

## A Dimensions:



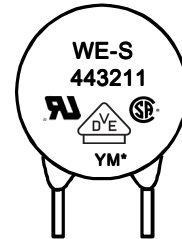
|   | Diameter 14mm |    |
|---|---------------|----|
| A | 16.5 max.     | mm |
| B | 7.5 ± 1.0     | mm |
| C | 0.8 ± 0.05    | mm |
| D | 4.8 typ.      | mm |
| D | 7.2 max.      | mm |
| E | 20.5 max.     | mm |
| F | 25.0 min.     | mm |
| G | 3.1 ± 1.0     | mm |

## B Electrical properties:

| Properties                 | Test Conditions |           | Value        | Unit | Tol.       |
|----------------------------|-----------------|-----------|--------------|------|------------|
| max. AC Operating Voltage  |                 | $V_{RMS}$ | <b>320</b>   | V    | <b>max</b> |
| max. DC Operating Voltage  |                 | $V_{DC}$  | <b>418</b>   | V    | <b>max</b> |
| Withstanding Surge Current | 8/20µs          | $i_{max}$ | <b>6000</b>  | A    | <b>max</b> |
| max. Energy                | 10/1000µs       | $W_{max}$ | <b>190.0</b> | J    | <b>max</b> |
| Rated Power                | Continuous      | $P_{max}$ | <b>0.6</b>   | W    | <b>max</b> |
| Varistor Voltage           | 1mA             | $V_{Var}$ | <b>510</b>   | V    | ±10%       |
| max. Clamping Voltage      | 50A @ 8/20µs    | $V_{Cl}$  | <b>842</b>   | V    | <b>max</b> |
| Capacitance                | 1 kHz           | $C_P$     | <b>370</b>   | pF   | <b>typ</b> |
| Voltage Protection Rating  | 6000 / 3000     | V / A     | <b>1200</b>  | V    | <b>max</b> |

## C Body marking:

WESURGE from Würth Elektronik  
 Part Branding (digit 4-9 of ordercode)  
 Approvals (see F)  
 Date Code & Internal Symbol



## D Test equipment:

**Keithley 2410** for Varistor Voltage  
**EMC Partner MIG0603CLV2** for Clamping Voltage  
**EMC Partner MIG0624LP1** for max. Surge Current and Energy  
**Agilent E4980A LCR Meter** for Capacitance

## E Test conditions:

Humidity: 33%  
 Temperature: +25°C

## F Material & approvals:

Body Insulation: 2500Vrms Withstanding Voltage  
 Coating: Epoxy, UL 94V-0, halogen free  
 Approvals: UL1449 3rd (E332875) for use in Type 2 SPD  
 VDE (40016998) & IEC 60950-1 Annex Q  
 CSA (224856)

## G General specifications:

Storage Temperature: -20°C ... + 60°C  
 Max. Operating Temperature: -40°C ... +125°C  
 Max. Ambient Temperature: -40°C ... +115°C  
 Max. Response Time: 25ns

| General Release: |       | Customer                |       |      |              |
|------------------|-------|-------------------------|-------|------|--------------|
| .....            |       | .....                   |       |      |              |
| Date             | ..... | Signature               | ..... |      |              |
|                  |       | <b>Würth Elektronik</b> |       |      |              |
| .....            |       | .....                   |       |      |              |
| Checked          | ..... | Approved                | ..... | JB   | Version 1    |
|                  |       |                         |       | Name | Modification |
|                  |       |                         |       |      | Date         |
|                  |       |                         |       |      | 2010-04-19   |

## Würth Elektronik eiSos GmbH & Co. KG

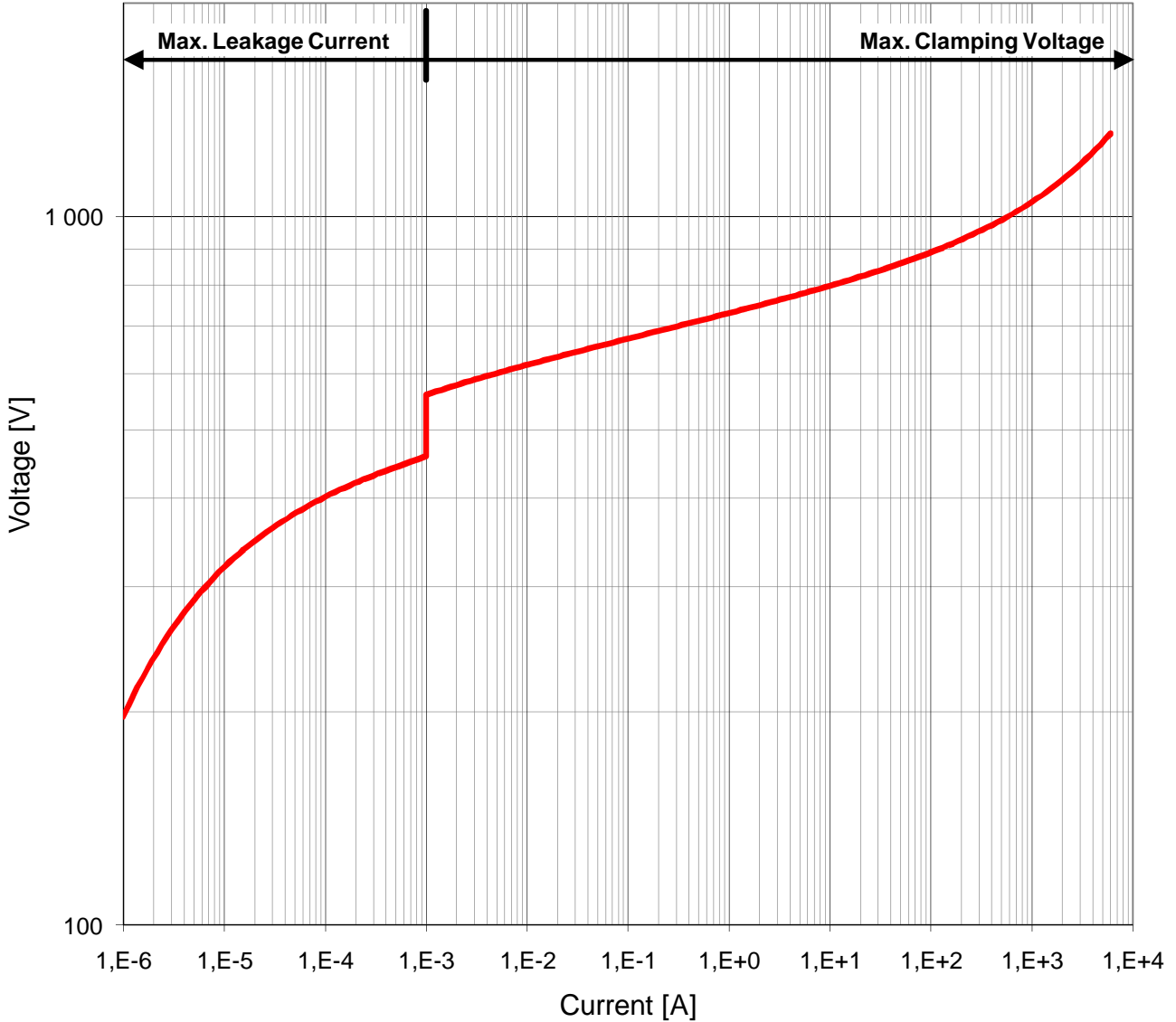
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## H Typical I/V Characteristic:



|                  |                         |      |              |            |
|------------------|-------------------------|------|--------------|------------|
| General Release: | <b>Customer</b>         |      |              |            |
| .....            | .....                   |      |              |            |
| Date             | Signature               |      |              |            |
|                  | <b>Würth Elektronik</b> |      |              |            |
| .....            | .....                   |      |              |            |
| Checked          | Approved                | JB   | Version 1    | 2010-04-19 |
|                  |                         | Name | Modification | Date       |

This electronic component has been designed and developed for usage in general electronic equipment. Before incorporating this component into any equipment where higher safety and reliability is especially required or if there is the possibility of direct damage or injury to human body, for example in the range of aerospace, aviation, nuclear control, submarine, transportation, (automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network etc, Würth Elektronik eiSos GmbH must be informed before the design-in stage. In addition, sufficient reliability evaluation checks for safety must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.

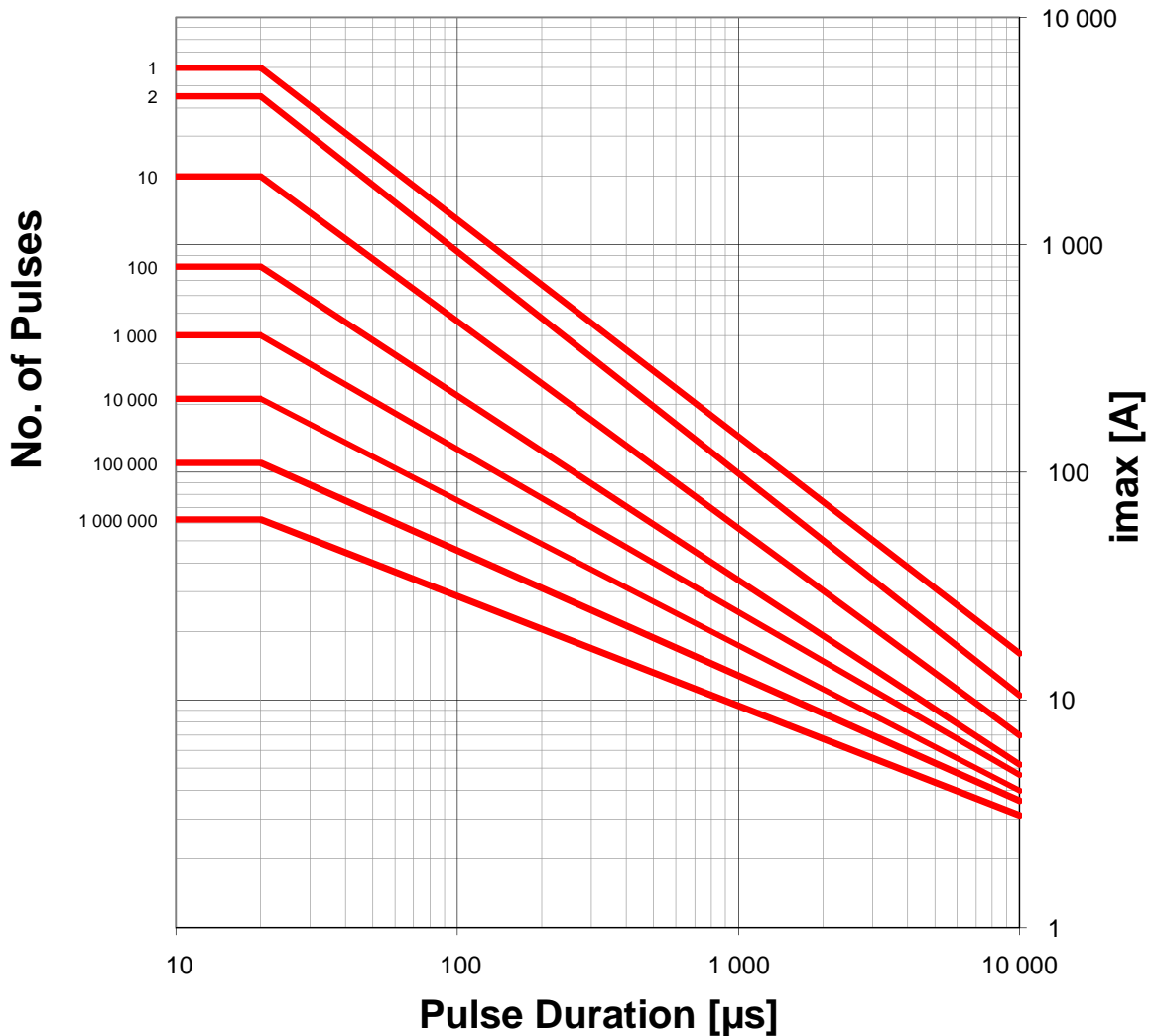
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## I Typical Pulse Lifetime Derating:



**Note:**

Varistors do not have an endless lifetime. Also a well dimensioned varistor may fail due to enormous overload. This will result in heating, smoke emission and / or disposure of varistor itself. Therefore we recommend to place varistors separate within a box on PCB. Furthermore a fuse should be in the varistor's current path to avoid secondary current in case the varistor fails. This fuse can protect against secondary currents and therewith caused damages.

|                  |                         |      |              |            |
|------------------|-------------------------|------|--------------|------------|
| General Release: | <b>Customer</b>         |      |              |            |
| .....            | .....                   |      |              |            |
| Date             | Signature               |      |              |            |
|                  | <b>Würth Elektronik</b> |      |              |            |
| .....            | .....                   |      |              |            |
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### Würth Elektronik eiSos GmbH & Co. KG

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