



## Product/Process Change Notice (PCN)

- Major Change  
 Minor Change

|   |  |
|---|--|
| <p><b>PCN Number:</b> PCN_VarVD_20250210</p> <p><b>Affected Series:</b> WE-VD</p> <p><b>Affected Part Number:</b> see table below</p> <p><b>PCN Date:</b> 2024-11-11 (YYYY-MM-DD)</p> <p><b>Effective Date:</b> 2025-02-10 (YYYY-MM-DD)</p> | <p><b>Change Category:</b></p> <p><input type="checkbox"/> Equipment/Location</p> <p><input checked="" type="checkbox"/> General Data</p> <p><input type="checkbox"/> Material</p> <p><input type="checkbox"/> Process</p> <p><input type="checkbox"/> Product Design</p> <p><input type="checkbox"/> Shipping/Packaging</p> <p><input type="checkbox"/> Supplier</p> <p><input type="checkbox"/> Software</p> |
|---|--|

|   |   |
|---|---|
| <p><b>Contact:</b> Product Management</p> <p><b>Phone:</b> +49 (0) 7942 - 945 5001</p> <p><b>Fax:</b> +49 (0) 7942 - 945 5179</p> <p><b>E-Mail:</b> pcn.eisos@we-online.com</p> | <p><b>Datasheet Change:</b></p> <p><input checked="" type="checkbox"/> Yes      <input type="checkbox"/> No</p> <p><b>Attachment:</b></p> <p><input type="checkbox"/> Yes      <input checked="" type="checkbox"/> No</p> |
|---|---|

**DESCRIPTION OF CHANGE:**

To meet current customer demands, Würth Elektronik eiSos will increase the operating temperature to 105 °C. There will be no change in form, fit, function or quality of the product. Affected part numbers see details of change.

**DETAILS OF CHANGE:**

In the past the limiting factor was that the used Epoxy wasn't released for 105 °C. Now the Epoxy is released at UL and VDE for 105 °C and therefore we qualified also our products until 1000 V<sub>rms</sub> for this temperature. The parts are still certified at UL (E332875) and VDE (40016998 and 40016986). At UL we keep now only the AC approval for 105 °C parts.

| Before Change  | After Change          |                  |  |                     |                                  |   |  |  |   |                       |                   |  |                     |                                  |   |  |  |
|--|-----------------------|------------------|--|---------------------|----------------------------------|---|--|--|---|-----------------------|-------------------|--|---------------------|----------------------------------|---|--|--|
| <p><b>General Properties:</b></p> <table border="1"> <tr> <td>Operating Temperature</td> <td>-40 up to +85 °C</td> </tr> <tr> <td>Storage Conditions (in original packaging)</td> <td>&lt; 40 °C ; &lt; 75 % RH</td> </tr> <tr> <td>Moisture Sensitivity Level (MSL)</td> <td>1</td> </tr> <tr> <td colspan="2">Test conditions of Electrical Properties: +20 °C, 33 % RH if not specified differently</td> </tr> </table> | Operating Temperature | -40 up to +85 °C | Storage Conditions (in original packaging) | < 40 °C ; < 75 % RH | Moisture Sensitivity Level (MSL) | 1 | Test conditions of Electrical Properties: +20 °C, 33 % RH if not specified differently |  | <p><b>General Properties:</b></p> <table border="1"> <tr> <td>Operating Temperature</td> <td>-40 up to +105 °C</td> </tr> <tr> <td>Storage Conditions (in original packaging)</td> <td>&lt; 40 °C ; &lt; 75 % RH</td> </tr> <tr> <td>Moisture Sensitivity Level (MSL)</td> <td>1</td> </tr> <tr> <td colspan="2">Test conditions of Electrical Properties: +20 °C, 33 % RH if not specified differently</td> </tr> </table> | Operating Temperature | -40 up to +105 °C | Storage Conditions (in original packaging) | < 40 °C ; < 75 % RH | Moisture Sensitivity Level (MSL) | 1 | Test conditions of Electrical Properties: +20 °C, 33 % RH if not specified differently |  |
| Operating Temperature  | -40 up to +85 °C      |                  |  |                     |                                  |   |  |  |   |                       |                   |  |                     |                                  |   |  |  |
| Storage Conditions (in original packaging)   | < 40 °C ; < 75 % RH   |                  |  |                     |                                  |   |  |  |   |                       |                   |  |                     |                                  |   |  |  |
| Moisture Sensitivity Level (MSL)   | 1                     |                  |  |                     |                                  |   |  |  |   |                       |                   |  |                     |                                  |   |  |  |
| Test conditions of Electrical Properties: +20 °C, 33 % RH if not specified differently   |                       |                  |  |                     |                                  |   |  |  |   |                       |                   |  |                     |                                  |   |  |  |
| Operating Temperature  | -40 up to +105 °C     |                  |  |                     |                                  |   |  |  |   |                       |                   |  |                     |                                  |   |  |  |
| Storage Conditions (in original packaging)   | < 40 °C ; < 75 % RH   |                  |  |                     |                                  |   |  |  |   |                       |                   |  |                     |                                  |   |  |  |
| Moisture Sensitivity Level (MSL)   | 1                     |                  |  |                     |                                  |   |  |  |   |                       |                   |  |                     |                                  |   |  |  |
| Test conditions of Electrical Properties: +20 °C, 33 % RH if not specified differently   |                       |                  |  |                     |                                  |   |  |  |   |                       |                   |  |                     |                                  |   |  |  |



Affected part numbers:

|              |              |              |             |             |             |
|--------------|--------------|--------------|-------------|-------------|-------------|
| 820411102    | 820423011S1  | 820445001ES1 | 820511102   | 820523511B  | 820551102   |
| 820411111    | 820423211    | 820445111E   | 820511111   | 820523811   | 820551311   |
| 820411311    | 820423211S1  | 820445511E   | 820511311   | 820523811B  | 820551406   |
| 820411406    | 820423211S2  | 820445511ES1 | 820511406   | 820524006   | 820551411   |
| 820411411    | 820423211S3  | 820445511ES2 | 820511411   | 820524211   | 820551511   |
| 820411511    | 820423506    | 820446001E   | 820511511   | 820524211B  | 820551701   |
| 820411701    | 820423511    | 820446211E   | 820511701   | 820524611   | 820551711   |
| 820411711    | 820423511B   | 820446211ES1 | 820511711   | 820524811   | 820552001   |
| 820412001    | 820423811    | 820446211ES2 | 820511711S1 | 820525111   | 820552311   |
| 820412311    | 820423811B   | 820446211ES3 | 820512001   | 820525511   | 820552311S1 |
| 820412501    | 820423811S1  | 820446811E   | 820512111   | 820526211   | 820552501   |
| 820412511    | 820423811S2  | 820446811ES3 | 820512311   | 820526211S1 | 820552511   |
| 820412511S1  | 820423811S3  | 820446811ES4 | 820512501   | 820526811   | 820552711   |
| 820412711    | 820424006    | 820446811ES5 | 820512511   | 820526811S1 | 820552711S1 |
| 820412711S1  | 820424211    | 820447501E   | 820512711   | 820526811S2 | 820552711S2 |
| 820412711S10 | 820424211B   | 820449501E   | 820512711S3 | 820529501   | 820553001   |
| 820412711S2  | 820424211S1  | 820451311    | 820512711S4 | 820541102   | 820553011   |
| 820412711S3  | 820424611    | 820451411    | 820512711S6 | 820541111   | 820553211   |
| 820412711S4  | 820424811    | 820451511    | 820513001   | 820541311   | 820553501   |
| 820412711S5  | 820425111    | 820451701    | 820513011   | 820541406   | 820553511   |
| 820412711S6  | 820425111S1  | 820451711    | 820513011S1 | 820541411   | 820553811   |
| 820412711S7  | 820425511    | 820452001    | 820513011S2 | 820541511   | 820553811S1 |
| 820412711S8  | 820425511S1  | 820452311    | 820513011S3 | 820541701   | 820554001   |
| 820412711S9  | 820426211    | 820452501    | 820513211   | 820541711   | 820554211   |
| 820413001    | 820426811    | 820452511    | 820513211S1 | 820542001   | 820554611   |
| 820413011    | 820426811S2  | 820452711    | 820513501   | 820542111   | 820554611S1 |
| 820413011S1  | 820426811S3  | 820453001    | 820513511   | 820542311   | 820555001   |
| 820413011S2  | 820429501    | 820453011    | 820513811   | 820542311S1 | 820556001   |
| 820413011S3  | 820441111E   | 820453211    | 820513811S1 | 820542311S2 | 820557501   |
| 820413011S4  | 820441111ES1 | 820453501    | 820514001   | 820542501   | 820559501   |
| 820413211    | 820441111ES2 | 820453511    | 820514211   | 820542511   | 820559501S1 |
| 820413501    | 820441311E   | 820453811    | 820514611   | 820542711   | 820571102   |
| 820413511    | 820441411E   | 820454001    | 820514611S1 | 820542711S1 | 820571111   |
| 820413811    | 820441511E   | 820454211    | 820514611S2 | 820542711S2 | 820571311   |



|             |              |             |             |             |             |
|-------------|--------------|-------------|-------------|-------------|-------------|
| 820414001   | 820441711E   | 820454611   | 820514811   | 820542711S3 | 820571406   |
| 820414211   | 820442111E   | 820455001   | 820515001   | 820542711S4 | 820571411   |
| 820414611   | 820442311E   | 820456001   | 820515111   | 820543001   | 820571511   |
| 820414811   | 820442511E   | 820457501   | 820515511   | 820543001S1 | 820571701   |
| 820415001   | 820442711E   | 820459501   | 820515511B  | 820543011   | 820571701S1 |
| 820415001S1 | 820442711ES2 | 820471102   | 820516001   | 820543211   | 820571711   |
| 820415111   | 820442711ES3 | 820471111   | 820516001S1 | 820543211S1 | 820572001   |
| 820415111S1 | 820442711ES4 | 820471311   | 820516211   | 820543211S2 | 820572111   |
| 820415511B  | 820442711ES5 | 820471406   | 820516211B  | 820543211S3 | 820572311   |
| 820415511S1 | 820442711ES6 | 820471411   | 820516811   | 820543501   | 820572501   |
| 820416001   | 820443011E   | 820471511   | 820516811B  | 820543511   | 820572511   |
| 820416211B  | 820443011ES1 | 820471701   | 820516811S1 | 820543511S1 | 820572711   |
| 820416811B  | 820443011ES2 | 820471711   | 820517501   | 820543811   | 820572711S1 |
| 820417501   | 820443211E   | 820472001   | 820519501   | 820543811S1 | 820572711S2 |
| 820419501   | 820443211ES1 | 820472311   | 820521311   | 820544001   | 820572711S3 |
| 820421311   | 820443211ES2 | 820472501   | 820521402   | 820544211   | 820572711S4 |
| 820421402   | 820443211ES3 | 820472511   | 820521411   | 820544611   | 820573001   |
| 820421411   | 820443211ES5 | 820472711   | 820521511   | 820544611S2 | 820573011   |
| 820421511   | 820443211ES6 | 820472711S1 | 820521702   | 820544811   | 820573011S1 |
| 820421702   | 820443501    | 820473001   | 820521711   | 820545001   | 820573211   |
| 820421711   | 820443511E   | 820473011   | 820521711S1 | 820545111   | 820573501   |
| 820421711S1 | 820443511ES1 | 820473211   | 820522002   | 820545511   | 820573511   |
| 820422002   | 820443811E   | 820473211S1 | 820522311   | 820545511B  | 820573811   |
| 820422311   | 820443811ES1 | 820473501   | 820522506   | 820545511S2 | 820574001   |
| 820422506   | 820443811ES2 | 820473511   | 820522511   | 820545511S4 | 820574211   |
| 820422511   | 820443811ES3 | 820473811   | 820522511S1 | 820545511S5 | 820574211S1 |
| 820422711   | 820444001    | 820474001   | 820522711   | 820545511S6 | 820574611   |
| 820422711S1 | 820444211E   | 820474211   | 820522711S1 | 820546001   | 820574611S2 |
| 820422711S2 | 820444611E   | 820474611   | 820523006   | 820546211   | 820575001   |
| 820422711S3 | 820444611ES1 | 820475001   | 820523011   | 820546211S1 | 820576001   |
| 820422711S4 | 820444611ES2 | 820475001S1 | 820523211   | 820546811   | 820576001S1 |
| 820422711S5 | 820444611ES3 | 820476001   | 820523211S1 | 820546811S2 | 820576001S2 |
| 820423006   | 820444811E   | 820477501   | 820523506   | 820547501   | 820576001S3 |
| 820423011   | 820445001E   | 820479501   | 820523511   | 820549501   | 820577501   |
|             |              |             |             | 820579501S1 | 820579501   |



**RELIABILITY / QUALIFICATION OF CHANGE:**

An additional reliability testing was performed and approved. Qualification according to AEC-Q200 table 10.  
 Additional details of the tests can be found in the table below:

| Test Item                       | Sample size | Reference              | Test conditions   | Acceptance |
|---------------------------------|-------------|------------------------|---|------------|
| Thermal Shock                   | 30          | IEC 60068-2-14 Test Na | -40 °C (30 min) until 105 °C (30 min)<br>Transfer time max. 3 minutes, 5 cycles   | Approved   |
| Humidity (Steady State)         | 30          | MIL-STD-202-103        | 40±5 °C, 95 %RH, 500 h, max DC voltage  | Approved   |
| Operational Life                | 30          | MIL-STD-202-108        | 105 °C, 1000 h, max DC voltage  | Approved   |
| Terminal Strength               | 30          | MIL-STD-202-211        | Test condition A: hang a 2.27 kg weight under the terminal, maintain for 5-10 seconds   | Approved   |
|                                 |             |                        | Test condition C: hang a 227 g weight under the terminal, bend it three times. 3 seconds per bend.  |            |
| Vibration                       | 30          | MIL-STD-202-204        | 15-2000 Hz,<br>5 g's for 20 minutes,<br>12 cycles each of 3 orientations.   | Approved   |
| Solderability                   | 30          | JESD22-B102            | Steam Aging 4 h @ 93 °C<br>Dip & Look @ 245 °C  | Approved   |
| Electrical Transient Conduction | 30          | IEC 61000-4-5          | Peak Current: $I_{Peak}$<br>Number of Pulses: 2<br>$ \Delta V/V (1 \text{ mA})  \leq 10 \%$ (measured in direction of surge current)  | Approved   |
| Voltage Proof                   | 30          | IEC 61051-1            | 1. 55±2 °C and relative humidity not exceeding 20 % for 24±4 h in an oven<br>2. 100±5 °C for 96±4 h in an oven<br>3. Metal ball method: The complete varistor shall be placed in a container holding 1,6 mm ± 0,2 mm diameter metal balls such that only the terminations of the varistor are protruding. An electrode shall be inserted between the metal balls. | Approved   |