



**UK Type Examination Certificate    CML 21UKEX2898    Issue 0****United Kingdom Conformity Assessment**

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment    **A Range of Z-Series Shunt Zener Diode Safety Barriers**
- 3 Manufacturer    **Pepperl+Fuchs SE**
- 4 Address    **Lilienthalstrasse 200, 68307 Mannheim, Germany**
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.  
The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This UK Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:  
EN IEC 60079-0:2018    EN 60079-11:2012

- 10 The equipment shall be marked with the following:

 II (1) G D    [Ex ia Ga] IIC    (-20°C ≤ Ta ≤ 60°C)

 II (1) G D    [Ex ia Da] IIIC    (-20°C ≤ Ta ≤ 60°C)

 I (M1)    [Ex ia Ma] I    (-20°C ≤ Ta ≤ 60°C)





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## 11 Description

**This certificate description is taken from EU NB Baseefa certificate BAS 01ATEX7005 issue 10.**

The Z Series Shunt Zener Diode Safety Barriers are designed to restrict the transfer of energy, from unspecified safe area equipment to intrinsically safe circuits, by the limitation of voltage and current. The range consists of single, double, triple and quadruple channel barriers covering polarised – positive and negative, non-polarised, non-polarised-star connected barriers and diode return barriers.

The barriers consist of electronic components on a single printed circuit board encapsulated within a moulded plastic enclosure which incorporates two or four terminals with separate earth terminal at both the hazardous and non-hazardous area ends and an integral spring mounted foot, designed for a DIN rail.

The barriers are asymmetrical and have light blue hazardous area terminals

### Z Series Shunt Zener Diode Safety Barriers

#### INPUT PARAMETERS

|                |   |                                  |
|----------------|---|----------------------------------|
| Single Channel | - | Terminals 7 & 8                  |
| Dual Channel   | - | Terminals 5, 6, 7 & 8            |
| Triple Channel | - | Terminals 5, 6, 7 & 8            |
| Quad Channel   | - | Terminals 5, 6, 7 & 8 w.r.t. GND |

$$U_m = 250V$$

#### OUTPUT PARAMETERS

Terminals 1, 2, 3 & 4

#### Configuration Legend

| Config. | Description   |
|---------|---|
| A1      | Channel 1 output with respect to earth  |
| A2      | Channel 2 output with respect to earth  |
| A3      | Channel 3 output with respect to earth  |
| A4      | Channel 4 output with respect to earth  |
| B       | Any two channels in parallel with respect to earth  |
| B1      | Any three channels in parallel with respect to earth  |
| C       | Any two channels in series with NO earth return   |
| C1      | Any two channels in parallel connected in series with the third channel with NO earth return. |



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**Z700 Series Positive Polarity Shunt Zener Diode Barriers**

| Barrier | Config. | Fuse (mA) | U <sub>o</sub> (V) | R <sub>min</sub> (Ω) | I <sub>o</sub> (mA) | P <sub>o</sub> (W) | FOS IIC |
|---------|---------|-----------|--------------------|----------------------|---------------------|--------------------|---------|
| Z705    | A1      | 250       | 4.94               | 9.8                  | 504                 | 0.62               | 9.92    |
| Z710    | A1      | 100       | 9.56               | 49                   | 195                 | 0.47               | 25.64   |
| Z710.CL | A1      | 100       | 9.56               | 49                   | 195                 | 0.47               | 25.64   |
| Z713    | A1      | 160       | 15.75              | 21.8                 | 723                 | 2.84               | 1.50    |
| Z715    | A1      | 100       | 14.7               | 98                   | 150                 | 0.55               | 9.80    |
| Z715.CL | A1      | 100       | 14.7               | 98                   | 150                 | 0.55               | 9.80    |
| Z715.1k | A1      | 100       | 14.7               | 980                  | 15                  | 0.06               | 98.0    |
| Z722    | A1      | 50        | 22                 | 147                  | 150                 | 0.82               | 2.24    |
| Z722.CL | A1      | 50        | 22                 | 147                  | 150                 | 0.82               | 2.24    |
| Z728    | A1      | 50        | 28                 | 301                  | 93                  | 0.65               | 1.93    |
| Z728.CL | A1      | 50        | 28                 | 301                  | 93                  | 0.65               | 1.93    |
| Z728.H  | A1      | 80        | 28                 | 235                  | 120                 | 0.83               | 1.50    |
| Z755    | A1      | 250       | 4.94               | 9.8                  | 504                 | 0.62               | 9.92    |
|         | A2      | 250       | 4.94               | 9.8                  | 504                 | 0.62               | 9.92    |
|         | B       |           | 4.94               | 4.9                  | 1008                | 1.25               | 4.96    |
|         | C       |           | 6.14               | 19.6                 | 314                 | 0.49               | 15.92   |
| Z757    | A1      | 200       | 7.14               | 9.8                  | 729                 | 1.30               | 6.85    |
|         | A2      | 200       | 7.14               | 9.8                  | 729                 | 1.30               | 6.85    |
|         | B       |           | 7.14               | 4.9                  | 1457                | 2.60               | 3.43    |
|         | C       |           | 8.34               | 19.6                 | 426                 | 0.89               | 11.73   |
| Z763    | A1      | 100       | 11.6               | 31.35                | 370                 | 1.07               | 13.51   |
|         | A2      | 100       | 1.6                | 31.35                | 51                  | 0.02               | 98.03   |
|         | B       |           | 13.2               | 15.67                | 422                 | 0.70               | 6.44    |
| Z764    | A1      | 50        | 11.6               | 980                  | 12                  | 0.03               | 416     |



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**Z700 Series Positive Polarity Shunt Zener Diode Barriers**

| Barrier  | Config. | Fuse (mA)                  | U <sub>o</sub> (V) | R <sub>min</sub> (Ω)           | I <sub>o</sub> (mA) | P <sub>o</sub> (W) | FOS IIC |
|----------|---------|----------------------------|--------------------|--------------------------------|---------------------|--------------------|---------|
|          | A2      | 50                         | 11.6               | 980                            | 12                  | 0.03               | 416     |
|          | B       |                            | 11.6               | 490                            | 24                  | 0.06               | 208     |
|          | C       |                            | 12.8               | 1960                           | 6.6                 | 0.03               | 510     |
| Z765     | A1      | 100                        | 14.7               | 98                             | 150                 | 0.55               | 9.80    |
|          | A2      | 100                        | 14.7               | 98                             | 150                 | 0.55               | 9.80    |
|          | B       |                            | 14.7               | 49                             | 300                 | 1.10               | 4.90    |
|          | C       |                            | 15.9               | 196                            | 81.2                | 0.33               | 13.05   |
| Z772     | A1      | 50                         | 22                 | 147                            | 150                 | 0.82               | 2.24    |
|          | A2      | 50                         | 22                 | 147                            | 150                 | 0.82               | 2.24    |
|          | B       | Not Permitted for Grp. IIC | 22                 | 73.5                           | 300                 | 1.64               | -       |
|          | C       |                            | 24.4               | 294                            | 83                  | 0.51               | 3.02    |
| Z778     | A1      | 50                         | 28                 | 607                            | 46                  | 0.32               | 3.91    |
|          | A2      | 50                         | 28                 | 607                            | 46                  | 0.32               | 3.91    |
|          | B       |                            | 28                 | 303.5                          | 93                  | 0.65               | 1.93    |
|          | C       |                            | 30.4               | 1215.2                         | 25.1                | 0.20               | 5.85    |
| Z779     | A1      | 50                         | 28                 | 301                            | 93                  | 0.65               | 1.93    |
|          | A2      | 50                         | 28                 | 301                            | 93                  | 0.65               | 1.93    |
|          | B       | Not Permitted for Grp. IIC | 28                 | 150.5                          | 186                 | 1.30               | -       |
|          | C       |                            | 30.4               | 601.7                          | 50.52               | 0.39               | 2.90    |
| Z779.H   | A1      | 80                         | 28                 | 235                            | 120                 | 0.83               | 1.50    |
|          | A2      | 80                         | 28                 | 235                            | 120                 | 0.83               | 1.50    |
|          | B       | Not Permitted for Grp. IIC | 28                 | 117.5                          | 238                 | 1.67               | -       |
|          | C       |                            | 30.4               | 470.4                          | 65                  | 0.50               | 2.26    |
| Z786     | A1      | 50                         | 28                 | Diode Return* - See Note Below |                     |                    | -       |
|          | A2      | 50                         | 28                 | Diode Return* - See Note Below |                     |                    | -       |
|          | B       |                            | 28                 | Diode Return* - See Note Below |                     |                    | -       |
| Z787     | A1      | 50                         | 28                 | 301                            | 93                  | 0.65               | 1.93    |
|          | A2      | 50                         | 28                 | Diode Return* - See Note Below |                     |                    | -       |
|          | B       |                            | 28                 | 301                            | 93                  | 0.65               | 1.93    |
|          | C       |                            | 30.4               | 322.6                          | 94.24               | 0.72               | 1.55    |
| Z787.H   | A1      | 80                         | 28                 | 235                            | 120                 | 0.83               | 1.50    |
|          | A2      | 80                         | 28                 | Diode Return* - See Note Below |                     |                    | -       |
|          | B       |                            | 28                 | 235                            | 120                 | 0.83               | 1.50    |
|          | C       | Not Permitted for Grp. IIC | 30.4               | 249.9                          | 122                 | 0.93               | -       |
| Z788     | A1      | 50                         | 28                 | 301                            | 93                  | 0.65               | 1.93    |
|          | A2      | 50                         | 9.56               | 49                             | 195                 | 0.47               | 25.64   |
|          | B       |                            | 28                 | 42                             | 288                 | 0.87               | 16.38   |
|          | C       |                            | 29.2               | 349.9                          | 83.5                | 0.61               | 1.94    |
| Z788.R   | A1      | 50                         | 28                 | 301                            | 93                  | 0.65               | 1.93    |
|          | A2      | 50                         | 9.56               | 49                             | 195                 | 0.47               | 25.64   |
|          | B       |                            | 28                 | 42                             | 288                 | 0.87               | 16.38   |
|          | C       |                            | 29.2               | 349.9                          | 83.5                | 0.61               | 1.94    |
| Z788.H   | A1      | 80                         | 28                 | 235                            | 120                 | 0.83               | 1.50    |
|          | A2      | 80                         | 9.56               | 49                             | 195                 | 0.47               | 25.64   |
|          | B       |                            | 28                 | 40                             | 314                 | 1.00               | 10.73   |
|          | C       |                            | 29.2               | 284.2                          | 103                 | 0.75               | 1.57    |
| Z788.R.H | A1      | 80                         | 28                 | 235                            | 120                 | 0.83               | 1.50    |



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**Z700 Series Positive Polarity Shunt Zener Diode Barriers**

| Barrier | Config. | Fuse (mA) | U <sub>o</sub> (V) | R <sub>min</sub> (Ω)           | I <sub>o</sub> (mA) | P <sub>o</sub> (W) | FOS IIC |
|---------|---------|-----------|--------------------|--------------------------------|---------------------|--------------------|---------|
|         | A2      | 80        | 9.56               | 49                             | 195                 | 0.47               | 25.64   |
|         | B       |           | 28                 | 40                             | 314                 | 1.00               | 10.73   |
|         | C       |           | 29.2               | 284.2                          | 103                 | 0.75               | 1.57    |
| Z789    | A1      | 50        | 28                 | 613.8                          | 45.6                | 0.32               | 3.94    |
|         | A2      | 50        | 28                 | 613.8                          | 45.6                | 0.32               | 3.94    |
|         | A3      | 50        | 28                 | Diode Return* - See Note Below |                     |                    | -       |
|         | A4      | 50        | 28                 | Diode Return* - See Note Below |                     |                    | -       |
|         | B       |           | 28                 | 306.9                          | 91.2                | 0.64               | 1.97    |
|         | C       |           | 29                 | 720.3                          | 40.3                | 0.30               | 4.09    |
| Z796    | A1      | 50        | 26.6               | 314                            | 85                  | 0.56               | 2.38    |
|         | A2      | 50        | 20.5               | 407                            | 50                  | 0.26               | 8.54    |
|         | B       |           | 26.6               | 177                            | 135                 | 0.82               | 1.93    |
|         | C       |           | 29                 | 720.3                          | 40.3                | 0.30               | 4.09    |
| Z796.L  | A1      | 50        | 26.0               | 314                            | 83                  | 0.54               | 2.59    |
|         | A2      | 50        | 20.0               | 407                            | 49                  | 0.25               | 9.46    |
|         | B       |           | 26.0               | 177                            | 132                 | 0.77               | 2.10    |
|         | C       |           | 28.4               | 720.3                          | 39.3                | 0.28               | 4.38    |
| Z040    | A1      | 100       | 5.88               | 42.14                          | 140                 | 0.206              | 35.71   |
|         | A2      | 100       | 5.88               | 42.14                          | 140                 | 0.206              | 35.71   |
|         | B       | 2 × 100   | 5.88               | 21.07                          | 280                 | 0.412              | 17.85   |
|         | C       | 100       | 7.08               | 84.28                          | 84.1                | 0.149              | 59.45   |
| Z041    | A1      | 80        | 8.61               | 1980                           | 4.4                 | 0.0094             | 1136    |
|         | A2      | 80        | 8.61               | 1980                           | 4.4                 | 0.0094             | 1136    |
|         | B       | 2 × 80    | 8.61               | 990                            | 8.7                 | 0.0188             | 574     |
|         | C       | 80        | 9.81               | 3960                           | 2.5                 | 0.0062             | 2000    |
| Z042    | A1      | 100       | 5.88               | 198                            | 30                  | 0.044              | 166     |
|         | A2      | 100       | 5.88               | 198                            | 30                  | 0.044              | 166     |
|         | B       | 2 × 100   | 5.88               | 99                             | 60                  | 0.088              | 83      |
|         | C       | 100       | 7.08               | 396                            | 18                  | 0.032              | 277     |

**Z800 Series Negative Polarity Shunt Zener Diode Barriers**

| Barrier | Config. | Fuse (mA) | U <sub>o</sub> (V) | R <sub>min</sub> (Ω) | I <sub>o</sub> (mA) | P <sub>o</sub> (W) | FOS IIC |
|---------|---------|-----------|--------------------|----------------------|---------------------|--------------------|---------|
| Z805    | A1      | 250       | 4.94               | 9.8                  | 504                 | 0.62               | 9.92    |
| Z810    | A1      | 100       | 9.56               | 49                   | 195                 | 0.47               | 25.64   |
| Z810.CL | A1      | 100       | 9.56               | 49                   | 195                 | 0.47               | 25.64   |
| Z813    | A1      | 160       | 15.75              | 21.8                 | 723                 | 2.84               | 1.50    |
| Z815    | A1      | 100       | 14.7               | 98                   | 150                 | 0.55               | 9.80    |
| Z815.CL | A1      | 100       | 14.7               | 98                   | 150                 | 0.55               | 9.80    |
| Z815.1k | A1      | 100       | 14.7               | 980                  | 15                  | 0.06               | 98.0    |
| Z822    | A1      | 50        | 22                 | 147                  | 150                 | 0.82               | 2.24    |
| Z822.CL | A1      | 50        | 22                 | 147                  | 150                 | 0.82               | 2.24    |
| Z828    | A1      | 50        | 28                 | 301                  | 93                  | 0.65               | 1.93    |
| Z828.CL | A1      | 50        | 28                 | 301                  | 93                  | 0.65               | 1.93    |
| Z828.H  | A1      | 80        | 28                 | 235                  | 120                 | 0.83               | 1.50    |
| Z855    | A1      | 250       | 4.94               | 9.8                  | 504                 | 0.62               | 9.92    |
|         | A2      | 250       | 4.94               | 9.8                  | 504                 | 0.62               | 9.92    |
|         | B       |           | 4.94               | 4.9                  | 1008                | 1.25               | 4.96    |



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**Z800 Series Negative Polarity Shunt Zener Diode Barriers**

| Barrier | Config. | Fuse (mA)                  | U <sub>o</sub> (V) | R <sub>min</sub> (Ω)           | I <sub>o</sub> (mA) | P <sub>o</sub> (W) | FOS IIC |
|---------|---------|----------------------------|--------------------|--------------------------------|---------------------|--------------------|---------|
| Z857    | C       |                            | 6.14               | 19.6                           | 314                 | 0.49               | 15.92   |
|         | A1      | 200                        | 7.14               | 9.8                            | 729                 | 1.30               | 6.85    |
|         | B2      | 200                        | 7.14               | 9.8                            | 729                 | 1.30               | 6.85    |
|         | B       |                            | 7.14               | 4.9                            | 1457                | 2.60               | 3.43    |
|         | C       |                            | 8.34               | 19.6                           | 426                 | 0.89               | 11.73   |
| Z864    | A1      | 50                         | 11.6               | 980                            | 12                  | 0.03               | 416     |
|         | A2      | 50                         | 11.6               | 980                            | 12                  | 0.03               | 416     |
|         | B       |                            | 11.6               | 490                            | 24                  | 0.06               | 208     |
|         | C       |                            | 12.8               | 1960                           | 6.6                 | 0.03               | 510     |
| Z865    | A1      | 100                        | 14.7               | 98                             | 150                 | 0.55               | 9.80    |
|         | A2      | 100                        | 14.7               | 98                             | 150                 | 0.55               | 9.80    |
|         | B       |                            | 14.7               | 49                             | 300                 | 1.10               | 4.90    |
|         | C       |                            | 15.9               | 196                            | 81.2                | 0.33               | 13.05   |
| Z872    | A1      | 50                         | 22                 | 147                            | 150                 | 0.82               | 2.24    |
|         | A2      | 50                         | 22                 | 147                            | 150                 | 0.82               | 2.24    |
|         | B       | Not Permitted for Grp. IIC | 22                 | 73.5                           | 300                 | 1.64               | -       |
|         | C       |                            | 24.4               | 294                            | 83                  | 0.51               | 3.02    |
| Z878    | A1      | 50                         | 28                 | 607                            | 46                  | 0.32               | 3.91    |
|         | A2      | 50                         | 28                 | 607                            | 46                  | 0.32               | 3.91    |
|         | B       |                            | 28                 | 303.5                          | 93                  | 0.65               | 1.93    |
|         | C       |                            | 30.4               | 1215.2                         | 25.1                | 0.20               | 5.85    |
| Z879    | A1      | 50                         | 28                 | 301                            | 93                  | 0.65               | 1.93    |
|         | A2      | 50                         | 28                 | 301                            | 93                  | 0.65               | 1.93    |
|         | B       | Not Permitted for Grp. IIC | 28                 | 150.5                          | 186                 | 1.30               | -       |
|         | C       |                            | 30.4               | 601.7                          | 50.52               | 0.39               | 2.9     |
| Z879.H  | A1      | 80                         | 28                 | 235                            | 120                 | 0.83               | 1.50    |
|         | A2      | 80                         | 28                 | 235                            | 120                 | 0.83               | 1.50    |
|         | B       | Not Permitted for Grp. IIC | 28                 | 117.5                          | 238                 | 1.67               | -       |
|         | C       |                            | 30.4               | 470.4                          | 65                  | 0.50               | 2.26    |
| Z886    | A1      | 50                         | 28                 | Diode Return* - See Note Below |                     |                    | -       |
|         | A2      | 50                         | 28                 | Diode Return* - See Note Below |                     |                    | -       |
|         | B       |                            | 28                 | Diode Return* - See Note Below |                     |                    | -       |
| Z887    | A1      | 50                         | 28                 | 301                            | 93                  | 0.65               | 1.93    |
|         | A2      | 50                         | 28                 | Diode Return* - See Note Below |                     |                    | -       |
|         | B       |                            | 28                 | 301                            | 93                  | 0.65               | 1.93    |
|         | C       |                            | 30.4               | 322.6                          | 94.24               | 0.72               | 1.55    |
| Z887.H  | A1      | 80                         | 28                 | 235                            | 120                 | 0.83               | 1.50    |
|         | A2      | 80                         | 28                 | Diode Return* - See Note Below |                     |                    | -       |
|         | B       |                            | 28                 | 235                            | 120                 | 0.83               | 1.50    |
|         | C       | Not Permitted for Grp. IIC | 30.4               | 249.9                          | 122                 | 0.93               | -       |
| Z888    | A1      | 50                         | 28                 | 301                            | 93                  | 0.65               | 1.93    |
|         | A2      | 50                         | 9.56               | 49                             | 195                 | 0.47               | 25.64   |
|         | B       |                            | 28                 | 42                             | 288                 | 0.87               | 16.38   |
|         | C       |                            | 29.2               | 349.9                          | 83.5                | 0.61               | 1.94    |
| Z888.R  | A1      | 50                         | 28                 | 301                            | 93                  | 0.65               | 1.93    |
|         | A2      | 50                         | 9.56               | 49                             | 195                 | 0.47               | 25.64   |
|         | B       |                            | 28                 | 42                             | 288                 | 0.87               | 16.38   |



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**Z800 Series Negative Polarity Shunt Zener Diode Barriers**

| Barrier  | Config. | Fuse (mA) | U <sub>o</sub> (V) | R <sub>min</sub> (Ω) | I <sub>o</sub> (mA) | P <sub>o</sub> (W) | FOS IIC |
|----------|---------|-----------|--------------------|----------------------|---------------------|--------------------|---------|
| Z888.H   | C       |           | 29.2               | 349.9                | 83.5                | 0.61               | 1.94    |
|          | A1      | 80        | 28                 | 235                  | 120                 | 0.83               | 1.50    |
|          | A2      | 80        | 9.56               | 49                   | 195                 | 0.47               | 25.64   |
|          | B       |           | 28                 | 40                   | 314                 | 1.00               | 10.73   |
| Z888.R.H | C       |           | 29.2               | 284.2                | 103                 | 0.75               | 1.57    |
|          | A1      | 80        | 28                 | 235                  | 120                 | 0.83               | 1.50    |
|          | A2      | 80        | 9.56               | 49                   | 195                 | 0.47               | 25.64   |
|          | B       |           | 28                 | 40                   | 314                 | 1.00               | 10.73   |
| Z896     | C       |           | 29.2               | 284.2                | 103                 | 0.75               | 1.57    |
|          | A1      | 50        | 26.6               | 314                  | 85                  | 0.56               | 2.38    |
|          | A2      | 50        | 20.5               | 407                  | 50                  | 0.26               | 8.54    |
|          | B       |           | 26.6               | 177                  | 135                 | 0.82               | 1.93    |
| Z896.L   | C       |           | 29                 | 720.3                | 40.3                | 0.30               | 4.09    |
|          | A1      | 50        | 26.0               | 314                  | 83                  | 0.54               | 2.59    |
|          | A2      | 50        | 20.0               | 407                  | 49                  | 0.25               | 9.46    |
|          | B       |           | 26.0               | 177                  | 132                 | 0.77               | 2.10    |
|          | C       |           | 28.4               | 720.3                | 39.43               | 0.28               | 4.38    |

**Z900 Series a.c. Shunt Zener Diode Barriers**

| Barrier        | Config. | Fuse (mA) | U <sub>o</sub> (V) | R <sub>min</sub> (Ω) | I <sub>o</sub> (mA) | P <sub>o</sub> (W) | FOS IIC |
|----------------|---------|-----------|--------------------|----------------------|---------------------|--------------------|---------|
| Z905 (a.c.)    | A1      | 250       | 4.9                | 9.8                  | 500                 | 0.62               | 10.0    |
| Z910 (a.c.)    | A1      | 100       | 9.94               | 49                   | 203                 | 0.50               | 24.63   |
| Z915 (a.c.)    | A1      | 100       | 15                 | 98                   | 153                 | 0.57               | 8.82    |
| Z915.1k (a.c.) | A1      | 100       | 15                 | 980                  | 15                  | 0.06               | 90.0    |
| Z928 (a.c.)    | A1      | 50        | 28                 | 301                  | 93                  | 0.65               | 1.93    |
| Z954 (a.c.)    | A1      | 50        | 4.5                | 11.76                | 383                 | 0.43               | 13.05   |
|                | A2      | 50        | 4.5                | 11.76                | 383                 | 0.43               | 13.05   |
|                | A3      | 50        | 4.5                | 11.76                | 383                 | 0.43               | 13.05   |
|                | B       |           | 4.5                | 5.88                 | 765                 | 0.86               | 6.53    |
|                | B1      |           | 4.5                | 3.92                 | 1150                | 1.29               | 4.34    |
|                | C1      |           | 9                  | 17.64                | 511                 | 1.15               | 9.8     |
| Z955 (a.c.)    | A1      | 250       | 4.9                | 9.8                  | 500                 | 0.62               | 10.0    |
|                | A2      | 250       | 4.9                | 9.8                  | 500                 | 0.62               | 10.0    |
|                | B       |           | 4.9                | 4.9                  | 1000                | 1.24               | 5.0     |
|                | C       |           | 9.8                | 19.6                 | 500                 | 1.23               | 10      |
| Z960 (Star)    | A1      | 50        | 9.94               | 49                   | 203                 | 0.50               | 24.63   |
|                | A2      | 50        | 9.94               | 49                   | 203                 | 0.50               | 24.63   |
|                | B       |           | 9.94               | 24.5                 | 406                 | 1.00               | 12.31   |
|                | C       |           | 9.94               | 98                   | 102                 | 0.25               | 49.01   |
| Z961 (a.c.)    | A1      | 100       | 8.7                | 98                   | 89                  | 0.19               | 56.17   |
|                | A2      | 100       | 8.7                | 98                   | 89                  | 0.19               | 56.17   |
|                | B       |           | 8.7                | 49                   | 178                 | 0.39               | 28.08   |
|                | C       |           | 17.4               | 196                  | 89                  | 0.39               | 8.31    |
| Z961.H (a.c.)  | A1      | 50        | 8.7                | 352.8                | 25                  | 0.05               | 200     |
|                | A2      | 50        | 8.7                | 352.8                | 25                  | 0.05               | 200     |
|                | B       |           | 8.7                | 176                  | 49                  | 0.11               | 102     |



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**Z900 Series a.c. Shunt Zener Diode Barriers**

| Barrier             | Config. | Fuse (mA) | U <sub>o</sub> (V) | R <sub>min</sub> (Ω) | I <sub>o</sub> (mA) | P <sub>o</sub> (W) | FOS IIC |
|---------------------|---------|-----------|--------------------|----------------------|---------------------|--------------------|---------|
|                     | C       |           | 17.4               | 705.6                | 25                  | 0.11               | 29.6    |
| Z964 (a.c.)         | A1      | 50        | 12                 | 980                  | 12                  | 0.04               | 416     |
|                     | A2      | 50        | 12                 | 980                  | 12                  | 0.04               | 416     |
|                     | B       |           | 12                 | 490                  | 24                  | 0.08               | 208     |
|                     | C       |           | 24                 | 1960                 | 12                  | 0.08               | 21.75   |
| Z965 (Star)         | A1      | 50        | 15                 | 98                   | 153                 | 0.57               | 8.82    |
|                     | A2      | 50        | 15                 | 98                   | 153                 | 0.57               | 8.82    |
|                     | B       |           | 15                 | 49                   | 306                 | 1.14               | 4.41    |
|                     | C       |           | 15                 | 196                  | 76.5                | 0.29               | 17.64   |
| Z966 (a.c.)         | A1      | 50        | 12                 | 147                  | 82                  | 0.24               | 60.97   |
|                     | A2      | 50        | 12                 | 147                  | 82                  | 0.24               | 60.97   |
|                     | B       |           | 12                 | 73.5                 | 164                 | 0.48               | 30.48   |
|                     | C       |           | 24                 | 294                  | 82                  | 0.48               | 3.18    |
| Z966.H (a.c.)       | A1      | 100       | 12                 | 73.5                 | 164                 | 0.49               | 30.48   |
|                     | A2      | 100       | 12                 | 73.5                 | 164                 | 0.49               | 30.48   |
|                     | B       |           | 12                 | 36.75                | 328                 | 0.98               | 15.24   |
|                     | C       |           | 24                 | 147                  | 164                 | 0.98               | 1.59    |
| Z967 (Star)         | A1      | 50        | 16.8               | 117                  | 143                 | 0.60               | 5.87    |
|                     | A2      | 50        | 16.8               | 117                  | 143                 | 0.60               | 5.87    |
|                     | B       |           | 16.8               | 58                   | 286                 | 1.20               | 2.93    |
|                     | C       |           | 16.8               | 234                  | 72                  | 0.30               | 11.66   |
| Z969 (Special Star) | A1      | 80        | 14.24              | 35.6                 | 400                 | 1.42               | 4.12    |
|                     | A2      | 80        | 17.6               | 50.5                 | 349                 | 1.53               | 2.03    |
|                     | B       |           | 19.24              | 20.8                 | 749                 | 2.95               | 1.50    |
|                     | C       |           | 19.24              | 86.1                 | 224                 | 1.08               | 2.33    |
| Z972 (Star)         | A1      | 50        | 22                 | 301                  | 73                  | 0.40               | 4.61    |
|                     | A2      | 50        | 22                 | 301                  | 73                  | 0.40               | 4.61    |
|                     | B       |           | 22                 | 151                  | 146                 | 0.80               | 2.30    |
|                     | C       |           | 22                 | 602                  | 36.5                | 0.20               | 9.23    |
| Z978 (Star)         | A1      | 50        | 28                 | 607                  | 46                  | 0.32               | 3.91    |
|                     | A2      | 50        | 28                 | 607                  | 46                  | 0.32               | 3.91    |
|                     | B       |           | 28                 | 304                  | 93                  | 0.65               | 1.93    |
|                     | C       |           | 28                 | 1214                 | 23                  | 0.16               | 7.82    |

Notes: Barrier models marked \* have channels with diode returns. The hazardous area terminals for the channels with diode returns should be regarded as 28V voltage sources. The 28V must be considered as the theoretical maximum up to which a capacitive load can be applied to the terminals due to the leakage current of the diode return. This voltage is only used in calculating the load capacitance.





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### LOAD PARAMETERS

The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the load connected to the output terminals must not exceed the following values:

#### **Z700 Series Positive Polarity Shunt Zener Diode Barriers**

| Barrier | Config. | Group IIC |        |            | Group IIB |        |            | Group IIA |        |            | Group I |        |            |
|---------|---------|-----------|--------|------------|-----------|--------|------------|-----------|--------|------------|---------|--------|------------|
|         |         | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)  | L (mH) | L/R (µH/Ω) |
| Z705    | A1      | 100       | 0.14   | 57         | 1000      | 0.55   | 228        | 1000      | 1.11   | 456        | 1000    | 1.83   | 749        |
| Z710    | A1      | 3.6       | 0.93   | 76         | 26.0      | 3.74   | 305        | 210.0     | 7.48   | 610        | 500     | 12.27  | 1000       |
| Z710.CL | A1      | 3.6       | 0.93   | 76         | 26.0      | 3.74   | 305        | 210.0     | 7.48   | 610        | 500     | 12.27  | 1000       |



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**Z700 Series Positive Polarity Shunt Zener Diode Barriers**

| Barrier | Config. | Group IIC                   |        |            | Group IIB |        |            | Group IIA |        |            | Group I |        |            |
|---------|---------|-----------------------------|--------|------------|-----------|--------|------------|-----------|--------|------------|---------|--------|------------|
|         |         | C (μF)                      | L (mH) | L/R (μH/Ω) | C (μF)    | L (mH) | L/R (μH/Ω) | C (μF)    | L (mH) | L/R (μH/Ω) | C (μF)  | L (mH) | L/R (μH/Ω) |
| Z713    | A1      | 0.478                       | 0.068  | 12         | 2.88      | 0.27   | 49         | 11.6      | 0.54   | 99         | 15.8    | 0.89   | 164        |
| Z715    | A1      | 0.62                        | 1.58   | 64         | 3.86      | 6.32   | 257        | 14.9      | 12.64  | 515        | 18.6    | 20.74  | 846        |
| Z715.CL | A1      | 0.62                        | 1.58   | 64         | 3.86      | 6.32   | 257        | 14.9      | 12.64  | 515        | 18.6    | 20.74  | 846        |
| Z715.1k | A1      | 0.62                        | 158.0  | 644        | 3.86      | 632.09 | 2579       | 14.9      | 1264   | 5159       | 18.6    | 2074   | 8465       |
| Z722    | A1      | 0.165                       | 1.58   | 43         | 1.14      | 6.32   | 172        | 4.20      | 12.64  | 345        | 6.0     | 20.74  | 566        |
| Z722.CL | A1      | 0.165                       | 1.58   | 43         | 1.14      | 6.32   | 172        | 4.20      | 12.64  | 345        | 6.0     | 20.74  | 566        |
| Z728    | A1      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
| Z728.CL | A1      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
| Z728.H  | A1      | 0.083                       | 2.46   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.40  | 559        |
| Z755    | A1      | 100                         | 0.14   | 57         | 1000      | 0.55   | 228        | 1000      | 1.11   | 456        | 1000    | 1.83   | 749        |
|         | A2      | 100                         | 0.14   | 57         | 1000      | 0.55   | 228        | 1000      | 1.11   | 456        | 1000    | 1.83   | 749        |
|         | B       | 100                         | 0.034  | 28         | 1000      | 0.13   | 114        | 1000      | 0.27   | 228        | 1000    | 0.45   | 374        |
|         | C       | 34                          | 0.36   | 73         | 790       | 1.44   | 295        | 1000      | 2.88   | 591        | 1000    | 4.73   | 970        |
| Z757    | A1      | 13.5                        | 0.066  | 27         | 240       | 0.26   | 109        | 1000      | 0.53   | 218        | 1000    | 0.87   | 358        |
|         | A2      | 13.5                        | 0.066  | 27         | 240       | 0.26   | 109        | 1000      | 0.53   | 218        | 1000    | 0.87   | 358        |
|         | B       | 13.5                        | 0.016  | 13         | 240       | 0.066  | 54         | 1000      | 0.13   | 109        | 1000    | 0.21   | 179        |
|         | C       | 6.8                         | 0.195  | 40         | 66.0      | 0.783  | 160        | 1000      | 1.56   | 320        | 1000    | 2.57   | 526        |
| Z763    | A1      | 1.59                        | 0.25   | 33         | 10.8      | 1.03   | 132        | 43.0      | 2.07   | 265        | 46      | 3.40   | 434        |
|         | A2      | 100                         | 13.66  | 1741       | 1000      | 54.67  | 6966       | 1000      | 109.35 | 13933      | 1000    | 179.41 | 22859      |
|         | B       | 0.94                        | 0.19   | 12         | 5.8       | 0.79   | 51         | 21.0      | 1.59   | 102        | 27      | 2.62   | 167        |
| Z764    | A1      | 1.59                        | 246.91 | 1035       | 10.8      | 987.65 | 4143       | 43.0      | 1975   | 8286       | 46      | 3240   | 13594      |
|         | A2      | 1.59                        | 246.91 | 1035       | 10.8      | 987.65 | 4143       | 43.0      | 1975   | 8286       | 46      | 3240   | 13594      |
|         | B       | 1.59                        | 61.72  | 517        | 10.8      | 246.91 | 2071       | 43.0      | 493.82 | 4143       | 46      | 810.18 | 6797       |
|         | C       | 1.06                        | 816    | 1701       | 6.8       | 3264   | 6805       | 24.2      | 6529   | 13611      | 30.0    | 10713  | 22330      |
| Z765    | A1      | 0.62                        | 1.58   | 64         | 3.86      | 6.32   | 257        | 14.9      | 12.64  | 515        | 18.6    | 20.74  | 846        |
|         | A2      | 0.62                        | 1.58   | 64         | 3.86      | 6.32   | 257        | 14.9      | 12.64  | 515        | 18.6    | 20.74  | 846        |
|         | B       | 0.62                        | 0.39   | 32         | 3.86      | 1.58   | 128        | 14.9      | 3.16   | 257        | 18.6    | 5.18   | 423        |
|         | C       | 0.469                       | 5.39   | 110        | 2.81      | 21.57  | 441        | 11.3      | 43.14  | 882        | 15.4    | 70.77  | 1447       |
| Z772    | A1      | 0.165                       | 1.58   | 43         | 1.14      | 6.32   | 172        | 4.20      | 12.64  | 345        | 6.0     | 20.74  | 566        |
|         | A2      | 0.165                       | 1.58   | 43         | 1.14      | 6.32   | 172        | 4.20      | 12.64  | 345        | 6.0     | 20.74  | 566        |
|         | B       | Not Permitted for Group IIC |        |            | 1.14      | 1.58   | 86         | 4.20      | 3.16   | 172        | 6.0     | 5.18   | 283        |
|         | C       | 0.119                       | 5.16   | 70         | 0.89      | 20.64  | 280        | 3.20      | 41.28  | 561        | 5.1     | 67.74  | 921        |
| Z778    | A1      | 0.083                       | 16.80  | 110        | 0.65      | 67.21  | 440        | 2.15      | 134.42 | 880        | 3.76    | 220.54 | 1445       |
|         | A2      | 0.083                       | 16.80  | 110        | 0.65      | 67.21  | 440        | 2.15      | 134.42 | 880        | 3.76    | 220.54 | 1445       |
|         | B       | 0.083                       | 4.11   | 55         | 0.65      | 16.44  | 220        | 2.15      | 32.88  | 440        | 3.76    | 53.95  | 722        |
|         | C       | 0.064                       | 56.43  | 187        | 0.542     | 225.7  | 748        | 1.76      | 451.4  | 1496       | 2.96    | 740.7  | 2454       |
| Z779    | A1      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
|         | A2      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
|         | B       | Not Permitted for Group IIC |        |            | 0.65      | 4.11   | 109        | 2.15      | 8.22   | 218        | 3.76    | 13.48  | 358        |
|         | C       | 0.064                       | 13.93  | 92         | 0.542     | 55.72  | 370        | 1.76      | 111.4  | 740        | 2.96    | 182.8  | 1215       |
| Z779.H  | A1      | 0.083                       | 2.46   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.40  | 559        |
|         | A2      | 0.083                       | 2.46   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.40  | 559        |
|         | B       | Not Permitted for Group IIC |        |            | 0.65      | 2.51   | 85         | 2.15      | 5.02   | 170        | 3.76    | 8.23   | 279        |
|         | C       | 0.064                       | 8.41   | 72         | 0.542     | 33.66  | 289        | 1.76      | 67.32  | 579        | 2.96    | 110.4  | 950        |
| Z786    | A1      | 0.083                       | 1000   | 852        | 0.65      | 1000   | 1703       | 2.15      | 1000   | 2409       | 3.76    | 1000   | 3086       |
|         | A2      | 0.083                       | 1000   | 852        | 0.65      | 1000   | 1703       | 2.15      | 1000   | 2409       | 3.76    | 1000   | 3086       |
|         | B       | 0.083                       | 1000   | 852        | 0.65      | 1000   | 1703       | 2.15      | 1000   | 2409       | 3.76    | 1000   | 3086       |
| Z787    | A1      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
|         | A2      | 0.083                       | 1000   | 852        | 0.65      | 1000   | 1703       | 2.15      | 1000   | 2409       | 3.76    | 1000   | 3086       |
|         | B       | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
|         | C       | 0.064                       | 4.00   | 49         | 0.542     | 16.01  | 198        | 1.76      | 32.03  | 397        | 2.96    | 52.55  | 651        |
| Z787.H  | A1      | 0.083                       | 2.46   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.40  | 559        |
|         | A2      | 0.083                       | 1000   | 852        | 0.65      | 1000   | 1703       | 2.15      | 1000   | 2409       | 3.76    | 1000   | 3086       |
|         | B       | 0.083                       | 2.51   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.95  | 559        |
|         | C       | Not Permitted for Group IIC |        |            | 0.542     | 9.55   | 153        | 1.76      | 19.11  | 307        | 2.96    | 31.35  | 504        |
| Z788    | A1      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
|         | A2      | 3.60                        | 0.93   | 76         | 26.0      | 3.74   | 305        | 210.0     | 7.48   | 610        | 500     | 12.27  | 1000       |
|         | B       | 0.083                       | 0.42   | 40         | 0.65      | 1.71   | 160        | 2.15      | 3.42   | 321        | 3.76    | 5.62   | 526        |
|         | C       | 0.073                       | 5.09   | 58         | 0.596     | 20.39  | 233        | 1.94      | 40.79  | 466        | 3.35    | 66.93  | 766        |
| Z788.R  | A1      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
|         | A2      | 3.60                        | 0.93   | 76         | 26.0      | 3.74   | 305        | 210.0     | 7.48   | 610        | 500     | 12.27  | 1000       |
|         | B       | 0.083                       | 0.42   | 40         | 0.65      | 1.71   | 160        | 2.15      | 3.42   | 321        | 3.76    | 5.62   | 526        |
|         | C       | 0.073                       | 5.09   | 58         | 0.596     | 20.39  | 233        | 1.94      | 40.79  | 466        | 3.35    | 66.93  | 766        |
| Z788.H  | A1      | 0.083                       | 2.46   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.40  | 559        |
|         | A2      | 3.60                        | 0.93   | 76         | 26.0      | 3.74   | 305        | 210.0     | 7.48   | 610        | 500     | 12.27  | 1000       |
|         | B       | 0.083                       | 0.36   | 34         | 0.65      | 1.44   | 138        | 2.15      | 2.88   | 277        | 3.76    | 4.73   | 455        |
|         | C       | 0.073                       | 3.35   | 47         | 0.596     | 13.40  | 189        | 1.94      | 26.81  | 379        | 3.35    | 43.98  | 622        |



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**Z700 Series Positive Polarity Shunt Zener Diode Barriers**

| Barrier  | Config.  | Group IIC |        |            | Group IIB |        |            | Group IIA |        |            | Group I |        |            |
|----------|----------|-----------|--------|------------|-----------|--------|------------|-----------|--------|------------|---------|--------|------------|
|          |          | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)  | L (mH) | L/R (µH/Ω) |
| Z788.R.H | A1       | 0.083     | 2.46   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.40  | 559        |
|          | A2       | 3.60      | 0.93   | 76         | 26.0      | 3.74   | 305        | 210.0     | 7.48   | 610        | 500     | 12.27  | 1000       |
|          | B        | 0.083     | 0.36   | 34         | 0.65      | 1.44   | 138        | 2.15      | 2.88   | 277        | 3.76    | 4.73   | 455        |
|          | C        | 0.073     | 3.35   | 47         | 0.596     | 13.40  | 189        | 1.94      | 26.81  | 379        | 3.35    | 43.98  | 622        |
| Z789     | A1       | 0.083     | 17.09  | 111        | 0.65      | 68.39  | 445        | 2.15      | 136.79 | 890        | 3.76    | 224.42 | 1461       |
|          | A2       | 0.083     | 17.09  | 111        | 0.65      | 68.39  | 445        | 2.15      | 136.79 | 890        | 3.76    | 224.42 | 1461       |
|          | A3       | 0.083     | 1000   | 852        | 0.65      | 1000   | 1703       | 2.15      | 1000   | 2409       | 3.76    | 1000   | 3086       |
|          | A4       | 0.083     | 1000   | 852        | 0.65      | 1000   | 1703       | 2.15      | 1000   | 2409       | 3.76    | 1000   | 3086       |
|          | B (A1+2) | 0.083     | 4.27   | 55         | 0.65      | 17.09  | 222        | 2.15      | 34.19  | 445        | 3.76    | 56.10  | 730        |
| Z796     | A1       | 0.094     | 4.92   | 63         | 0.73      | 19.68  | 252        | 2.42      | 39.36  | 504        | 4.27    | 64.59  | 828        |
|          | A2       | 0.203     | 14.22  | 137        | 1.33      | 56.88  | 550        | 5.12      | 113.77 | 1101       | 7.5     | 186.66 | 1807       |
|          | B        | 0.094     | 1.95   | 43         | 0.73      | 7.80   | 142        | 2.42      | 15.60  | 284        | 4.27    | 25.60  | 573        |
|          | C        | 0.074     | 21.89  | 121        | 0.605     | 87.57  | 487        | 1.97      | 175.14 | 974        | 3.42    | 287.34 | 1598       |
| Z796.L   | A1       | 0.099     | 5.16   | 66         | 0.77      | 20.64  | 264        | 2.60      | 41.28  | 528        | 4.5     | 67.74  | 867        |
|          | A2       | 0.22      | 14.80  | 144        | 1.41      | 59.23  | 578        | 5.50      | 118.46 | 1157       | 8.0     | 194.36 | 1899       |
|          | B        | 0.099     | 2.04   | 45         | 0.77      | 8.16   | 148        | 2.60      | 16.32  | 297        | 4.5     | 26.78  | 603        |
|          | C        | 0.079     | 22.86  | 127        | 0.632     | 91.47  | 508        | 2.07      | 182.95 | 1016       | 3.64    | 300.16 | 1667       |
| Z040     | A1       | 43        | 1.81   | 173        | 1000      | 7.25   | 693        | 1000      | 14.51  | 1386       | 1000    | 23.80  | 2275       |
|          | A2       | 43        | 1.81   | 173        | 1000      | 7.25   | 693        | 1000      | 14.51  | 1386       | 1000    | 23.80  | 2275       |
|          | B        | 43        | 0.45   | 86.6       | 1000      | 1.81   | 346        | 1000      | 3.62   | 693        | 1000    | 5.95   | 1137       |
|          | C        | 14.6      | 5.02   | 239        | 268       | 20.10  | 956        | 1000      | 40.21  | 1913       | 1000    | 65.98  | 3138       |
| Z041     | A1       | 5.9       | 1836   | 3798       | 50        | 7346   | 15194      | 1000      | 14692  | 30388      | 1000    | 24104  | 49856      |
|          | A2       | 5.9       | 1836   | 3798       | 50        | 7346   | 15194      | 1000      | 14692  | 30388      | 1000    | 24104  | 49856      |
|          | B        | 5.9       | 459.13 | 1899       | 50        | 1836   | 7597       | 1000      | 3673   | 15194      | 1000    | 6026   | 24928      |
|          | C        | 3.2       | 5688   | 5852       | 22        | 22755  | 23409      | 115       | 45511  | 46818      | 190     | 74666  | 76811      |
| Z042     | A1       | 43        | 39.50  | 814        | 1000      | 158.02 | 3257       | 1000      | 316.04 | 6515       | 1000    | 518.51 | 10689      |
|          | A2       | 43        | 39.50  | 814        | 1000      | 158.02 | 3257       | 1000      | 316.04 | 6515       | 1000    | 518.51 | 10689      |
|          | B        | 43        | 9.87   | 407        | 1000      | 39.50  | 1628       | 1000      | 79.01  | 3257       | 1000    | 129.62 | 5344       |
|          | C        | 14.6      | 109.73 | 1123       | 268       | 438.95 | 4494       | 1000      | 877.90 | 8988       | 1000    | 1440   | 14746      |

**Z800 Series Negative Polarity Shunt Zener Diode Barriers**

| Barrier | Config. | Group IIC                   |        |            | Group IIB |        |            | Group IIA |        |            | Group I |        |            |
|---------|---------|-----------------------------|--------|------------|-----------|--------|------------|-----------|--------|------------|---------|--------|------------|
|         |         | C (µF)                      | L (mH) | L/R (µH/Ω) | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)  | L (mH) | L/R (µH/Ω) |
| Z805    | A1      | 100                         | 0.14   | 57         | 1000      | 0.55   | 228        | 1000      | 1.11   | 456        | 1000    | 1.83   | 749        |
| Z810    | A1      | 3.6                         | 0.93   | 76         | 26.0      | 3.74   | 305        | 210.0     | 7.48   | 610        | 500     | 12.27  | 1000       |
| Z810.CL | A1      | 3.6                         | 0.93   | 76         | 26.0      | 3.74   | 305        | 210.0     | 7.48   | 610        | 500     | 12.27  | 1000       |
| Z813    | A1      | 0.478                       | 0.068  | 12         | 2.88      | 0.27   | 49         | 11.6      | 0.54   | 99         | 15.8    | 0.89   | 164        |
| Z815    | A1      | 0.62                        | 1.58   | 64         | 3.86      | 6.32   | 257        | 14.9      | 12.64  | 515        | 18.6    | 20.74  | 846        |
| Z815.CL | A1      | 0.62                        | 1.58   | 64         | 3.86      | 6.32   | 257        | 14.9      | 12.64  | 515        | 18.6    | 20.74  | 846        |
| Z815.1k | A1      | 0.62                        | 158.0  | 644        | 3.86      | 632.09 | 2579       | 14.9      | 1264   | 5159       | 18.6    | 2074   | 8465       |
| Z822    | A1      | 0.165                       | 1.58   | 43         | 1.14      | 6.32   | 172        | 4.20      | 12.64  | 345        | 6.0     | 20.74  | 566        |
| Z822.CL | A1      | 0.165                       | 1.58   | 43         | 1.14      | 6.32   | 172        | 4.20      | 12.64  | 345        | 6.0     | 20.74  | 566        |
| Z828    | A1      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
| Z828.CL | A1      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
| Z828.H  | A1      | 0.083                       | 2.46   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.40  | 559        |
| Z855    | A1      | 100                         | 0.14   | 57         | 1000      | 0.55   | 228        | 1000      | 1.11   | 456        | 1000    | 1.83   | 749        |
|         | A2      | 100                         | 0.14   | 57         | 1000      | 0.55   | 228        | 1000      | 1.11   | 456        | 1000    | 1.83   | 749        |
|         | B       | 100                         | 0.034  | 28         | 1000      | 0.13   | 114        | 1000      | 0.27   | 228        | 1000    | 0.45   | 374        |
|         | C       | 34.0                        | 0.36   | 73         | 790       | 1.44   | 295        | 1000      | 2.88   | 591        | 1000    | 4.73   | 970        |
| Z857    | A1      | 13.5                        | 0.066  | 27         | 240       | 0.26   | 109        | 1000      | 0.53   | 218        | 1000    | 0.87   | 358        |
|         | A2      | 13.5                        | 0.066  | 27         | 240       | 0.26   | 109        | 1000      | 0.53   | 218        | 1000    | 0.87   | 358        |
|         | B       | 13.5                        | 0.016  | 13         | 240       | 0.066  | 54         | 1000      | 0.13   | 109        | 1000    | 0.21   | 179        |
|         | C       | 6.8                         | 0.195  | 40         | 66.0      | 0.783  | 160        | 1000      | 1.56   | 320        | 1000    | 2.57   | 526        |
| Z864    | A1      | 1.59                        | 246.91 | 1035       | 10.8      | 987.65 | 4143       | 43.0      | 1975   | 8286       | 46      | 3240   | 13594      |
|         | A2      | 1.59                        | 246.91 | 1035       | 10.8      | 987.65 | 4143       | 43.0      | 1975   | 8286       | 46      | 3240   | 13594      |
|         | B       | 1.59                        | 61.72  | 517        | 10.8      | 246.91 | 2071       | 43.0      | 493.82 | 4143       | 46      | 810.18 | 6797       |
|         | C       | 1.06                        | 816    | 1701       | 6.8       | 3264   | 6805       | 24.2      | 6529   | 13611      | 30.0    | 10713  | 22330      |
| Z865    | A1      | 0.62                        | 1.58   | 64         | 3.86      | 6.32   | 257        | 14.9      | 12.64  | 515        | 18.6    | 20.74  | 846        |
|         | A2      | 0.62                        | 1.58   | 64         | 3.86      | 6.32   | 257        | 14.9      | 12.64  | 515        | 18.6    | 20.74  | 846        |
|         | B       | 0.62                        | 0.39   | 32         | 3.86      | 1.58   | 128        | 14.9      | 3.16   | 257        | 18.6    | 5.18   | 423        |
|         | C       | 0.469                       | 5.39   | 110        | 2.81      | 21.57  | 441        | 11.3      | 43.14  | 882        | 15.4    | 70.77  | 1447       |
| Z872    | A1      | 0.165                       | 1.58   | 43         | 1.14      | 6.32   | 172        | 4.20      | 12.64  | 345        | 6.0     | 20.74  | 566        |
|         | A2      | 0.165                       | 1.58   | 43         | 1.14      | 6.32   | 172        | 4.20      | 12.64  | 345        | 6.0     | 20.74  | 566        |
|         | B       | Not Permitted for Group IIC | 1.14   | 1.58       | 86        | 4.20   | 3.16       | 172       | 6.0    | 5.18       | 283     |        |            |



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**Z800 Series Negative Polarity Shunt Zener Diode Barriers**

| Barrier  | Config. | Group IIC                   |        |            | Group IIB |        |            | Group IIA |        |            | Group I |        |            |
|----------|---------|-----------------------------|--------|------------|-----------|--------|------------|-----------|--------|------------|---------|--------|------------|
|          |         | C (µF)                      | L (mH) | L/R (µH/Ω) | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)  | L (mH) | L/R (µH/Ω) |
|          | C       | 0.119                       | 5.16   | 70         | 0.89      | 20.64  | 280        | 3.20      | 41.28  | 561        | 5.1     | 67.74  | 921        |
| Z878     | A1      | 0.083                       | 16.80  | 110        | 0.65      | 67.21  | 440        | 2.15      | 134.42 | 880        | 3.76    | 220.54 | 1445       |
|          | A2      | 0.083                       | 16.80  | 110        | 0.65      | 67.21  | 440        | 2.15      | 134.42 | 880        | 3.76    | 220.54 | 1445       |
|          | B       | 0.083                       | 4.11   | 55         | 0.65      | 16.44  | 220        | 2.15      | 32.88  | 440        | 3.76    | 53.95  | 722        |
|          | C       | 0.064                       | 56.43  | 187        | 0.542     | 225.7  | 748        | 1.76      | 451.4  | 1496       | 2.96    | 740.7  | 2454       |
| Z879     | A1      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
|          | A2      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
|          | B       | Not Permitted for Group IIC |        |            | 0.65      | 4.11   | 109        | 2.15      | 8.22   | 218        | 3.76    | 13.48  | 358        |
|          | C       | 0.064                       | 13.93  | 92         | 0.542     | 55.72  | 370        | 1.76      | 111.4  | 740        | 2.96    | 182.8  | 1215       |
| Z879.H   | A1      | 0.083                       | 2.46   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.40  | 559        |
|          | A2      | 0.083                       | 2.46   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.40  | 559        |
|          | B       | Not Permitted for Group IIC |        |            | 0.65      | 2.51   | 85         | 2.15      | 5.02   | 170        | 3.76    | 8.23   | 279        |
|          | C       | 0.064                       | 8.41   | 72         | 0.542     | 33.66  | 289        | 1.76      | 67.32  | 579        | 2.96    | 110.45 | 950        |
| Z886     | A1      | 0.083                       | 1000   | 852        | 0.65      | 1000   | 1703       | 2.15      | 1000   | 2409       | 3.76    | 1000   | 3086       |
|          | A2      | 0.083                       | 1000   | 852        | 0.65      | 1000   | 1703       | 2.15      | 1000   | 2409       | 3.76    | 1000   | 3086       |
|          | B       | 0.083                       | 1000   | 852        | 0.65      | 1000   | 1703       | 2.15      | 1000   | 2409       | 3.76    | 1000   | 3086       |
| Z887     | A1      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
|          | A2      | 0.083                       | 1000   | 852        | 0.65      | 1000   | 1703       | 2.15      | 1000   | 2409       | 3.76    | 1000   | 3086       |
|          | B       | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
|          | C       | 0.064                       | 4.00   | 49         | 0.542     | 16.01  | 198        | 1.76      | 32.03  | 397        | 2.96    | 52.5   | 651        |
| Z887.H   | A1      | 0.083                       | 2.46   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.40  | 559        |
|          | A2      | 0.083                       | 1000   | 852        | 0.65      | 1000   | 1703       | 2.15      | 1000   | 2409       | 3.76    | 1000   | 3086       |
|          | B       | 0.083                       | 2.46   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.40  | 559        |
|          | C       | Not Permitted for Group IIC |        |            | 0.542     | 9.55   | 153        | 1.76      | 19.11  | 307        | 2.96    | 31.35  | 504        |
| Z888     | A1      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
|          | A2      | 3.60                        | 0.93   | 76         | 26.0      | 3.74   | 305        | 210.0     | 7.48   | 610        | 500     | 12.27  | 1000       |
|          | B       | 0.083                       | 0.42   | 40         | 0.65      | 1.71   | 160        | 2.15      | 3.42   | 321        | 3.76    | 5.62   | 526        |
|          | C       | 0.073                       | 5.09   | 58         | 0.596     | 20.39  | 233        | 1.94      | 40.79  | 466        | 3.35    | 66.93  | 765        |
| Z888.R   | A1      | 0.083                       | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
|          | A2      | 3.60                        | 0.93   | 76         | 26.0      | 3.74   | 305        | 210.0     | 7.48   | 610        | 500     | 12.27  | 1000       |
|          | B       | 0.083                       | 0.42   | 40         | 0.65      | 1.71   | 160        | 2.15      | 3.42   | 321        | 3.76    | 5.62   | 526        |
|          | C       | 0.073                       | 5.09   | 58         | 0.596     | 20.39  | 233        | 1.94      | 40.79  | 466        | 3.35    | 66.93  | 765        |
| Z888.H   | A1      | 0.083                       | 2.46   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.40  | 559        |
|          | A2      | 3.60                        | 0.93   | 76         | 26.0      | 3.74   | 305        | 210.0     | 7.48   | 610        | 500     | 12.27  | 1000       |
|          | B       | 0.083                       | 0.36   | 34         | 0.65      | 1.44   | 138        | 2.15      | 2.88   | 277        | 3.76    | 4.73   | 455        |
|          | C       | 0.073                       | 3.35   | 47         | 0.596     | 13.40  | 189        | 1.94      | 26.81  | 379        | 3.35    | 43.98  | 622        |
| Z888.R.H | A1      | 0.083                       | 2.46   | 42         | 0.65      | 9.87   | 170        | 2.15      | 19.75  | 341        | 3.76    | 32.40  | 559        |
|          | A2      | 3.60                        | 0.93   | 76         | 26.0      | 3.74   | 305        | 210.0     | 7.48   | 610        | 500     | 12.27  | 1000       |
|          | B       | 0.083                       | 0.36   | 34         | 0.65      | 1.44   | 138        | 2.15      | 2.88   | 277        | 3.76    | 4.73   | 455        |
|          | C       | 0.073                       | 3.35   | 47         | 0.596     | 13.40  | 189        | 1.94      | 26.81  | 379        | 3.35    | 43.98  | 622        |
| Z896     | A1      | 0.094                       | 4.92   | 63         | 0.73      | 19.68  | 252        | 2.42      | 39.36  | 504        | 4.27    | 64.59  | 828        |
|          | A2      | 0.203                       | 14.22  | 137        | 1.33      | 56.88  | 550        | 5.12      | 113.77 | 1101       | 7.5     | 186.66 | 1807       |
|          | B       | 0.094                       | 1.95   | 43         | 0.73      | 7.80   | 142        | 2.42      | 15.60  | 284        | 4.27    | 25.60  | 573        |
|          | C       | 0.074                       | 21.89  | 121        | 0.605     | 87.57  | 487        | 1.97      | 175.14 | 974        | 3.42    | 287.34 | 1598       |
| Z896.L   | A1      | 0.099                       | 5.16   | 66         | 0.77      | 20.64  | 264        | 2.60      | 41.28  | 528        | 4.5     | 67.74  | 867        |
|          | A2      | 0.22                        | 14.80  | 144        | 1.41      | 59.23  | 578        | 5.50      | 118.46 | 1157       | 8.0     | 194.36 | 1899       |
|          | B       | 0.099                       | 2.04   | 45         | 0.77      | 8.16   | 148        | 2.60      | 16.32  | 297        | 4.5     | 26.78  | 603        |
|          | C       | 0.079                       | 22.86  | 127        | 0.632     | 91.47  | 508        | 2.07      | 182.95 | 1016       | 3.64    | 300.16 | 1667       |

**Z900 Series a.c. Shunt Zener Diode Barriers**

| Barrier       | Config. | Group IIC |        |            | Group IIB |        |            | Group IIA |        |            | Group I |        |            |
|---------------|---------|-----------|--------|------------|-----------|--------|------------|-----------|--------|------------|---------|--------|------------|
|               |         | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)  | L (mH) | L/R (µH/Ω) |
| Z905 (a.c)    | A1      | 100       | 0.14   | 58         | 1000      | 0.56   | 232        | 1000      | 1.13   | 464        | 1000    | 1.86   | 761        |
| Z910 (a.c)    | A1      | 3.0       | 0.86   | 70         | 20.0      | 3.45   | 282        | 100       | 6.90   | 564        | 180     | 11.32  | 925        |
| Z915 (a.c)    | A1      | 0.58      | 1.51   | 61         | 3.55      | 6.07   | 247        | 14.0      | 12.15  | 495        | 17.8    | 19.93  | 813        |
| Z915.1k (a.c) | A1      | 0.58      | 158    | 619        | 3.55      | 632.09 | 2477       | 14.0      | 1264   | 4955       | 17.8    | 2074   | 8130       |
| Z928 (a.c)    | A1      | 0.083     | 4.11   | 54         | 0.65      | 16.44  | 218        | 2.15      | 32.88  | 436        | 3.76    | 53.95  | 716        |
| Z954 (a.c.)   | A1      | 100       | 0.24   | 82         | 1000      | 0.96   | 330        | 1000      | 1.93   | 660        | 1000    | 3.18   | 1084       |
|               | A2      | 100       | 0.24   | 82         | 1000      | 0.96   | 330        | 1000      | 1.93   | 660        | 1000    | 3.18   | 1084       |
|               | A3      | 100       | 0.24   | 82         | 1000      | 0.96   | 330        | 1000      | 1.93   | 660        | 1000    | 3.18   | 1084       |
|               | B       | 100       | 0.06   | 41         | 1000      | 0.24   | 165        | 1000      | 0.48   | 330        | 1000    | 0.79   | 542        |
|               | B1      | 100       | 0.026  | 27         | 1000      | 0.10   | 110        | 1000      | 0.21   | 220        | 1000    | 0.35   | 361        |
|               | C1      | 4.9       | 0.13   | 30         | 40.0      | 0.54   | 123        | 500       | 1.09   | 247        | 1000    | 1.79   | 406        |



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**Z900 Series a.c. Shunt Zener Diode Barriers**

| Barrier                  | Config. | Group IIC |        |            | Group IIB |        |            | Group IIA |        |            | Group I |        |            |
|--------------------------|---------|-----------|--------|------------|-----------|--------|------------|-----------|--------|------------|---------|--------|------------|
|                          |         | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)    | L (mH) | L/R (µH/Ω) | C (µF)  | L (mH) | L/R (µH/Ω) |
| Z955 (a.c.)              | A1      | 100       | 0.14   | 58         | 1000      | 0.56   | 232        | 1000      | 1.13   | 464        | 1000    | 1.86   | 761        |
|                          | A2      | 100       | 0.14   | 58         | 1000      | 0.56   | 232        | 1000      | 1.13   | 464        | 1000    | 1.86   | 761        |
|                          | B       | 100       | 0.035  | 29         | 1000      | 0.14   | 116        | 1000      | 0.28   | 232        | 1000    | 0.46   | 382        |
|                          | C       | 3.3       | 0.14   | 29         | 23        | 0.568  | 116        | 135       | 1.13   | 232        | 268     | 1.86   | 381        |
| Z960 (a.c. Star)         | A1      | 3.0       | 0.86   | 70         | 20.0      | 3.45   | 282        | 100       | 6.90   | 564        | 180     | 11.32  | 925        |
|                          | A2      | 3.0       | 0.86   | 70         | 20.0      | 3.45   | 282        | 100       | 6.90   | 564        | 180     | 11.32  | 925        |
|                          | B       | 3.0       | 0.21   | 35         | 20.0      | 0.86   | 141        | 100       | 1.72   | 282        | 180     | 2.83   | 462        |
|                          | C       | 3.0       | 3.41   | 141        | 20.0      | 13.67  | 564        | 100       | 27.33  | 1128       | 180     | 44.85  | 1851       |
| Z961 (a.c.)              | A1      | 5.9       | 4.48   | 184        | 50.0      | 17.95  | 736        | 1000      | 35.91  | 1473       | 1000    | 58.91  | 2416       |
|                          | A2      | 5.9       | 4.48   | 184        | 50.0      | 17.95  | 736        | 1000      | 35.91  | 1473       | 1000    | 58.91  | 2416       |
|                          | B       | 5.9       | 1.12   | 92         | 50.0      | 4.48   | 368        | 1000      | 8.97   | 736        | 1000    | 14.72  | 1208       |
|                          | C       | 0.346     | 4.48   | 92         | 2.02      | 17.95  | 368        | 8.40      | 35.91  | 736        | 11.6    | 58.91  | 1208       |
| Z961.H (a.c.)            | A1      | 5.9       | 56.88  | 662        | 50.0      | 227.55 | 2651       | 1000      | 455.11 | 5303       | 1000    | 746.66 | 8700       |
|                          | A2      | 5.9       | 56.88  | 662        | 50.0      | 227.55 | 2651       | 1000      | 455.11 | 5303       | 1000    | 746.66 | 8700       |
|                          | B       | 5.9       | 14.80  | 330        | 50.0      | 59.23  | 1322       | 1000      | 118.46 | 2645       | 1000    | 194.36 | 4340       |
|                          | C       | 0.346     | 56.88  | 331        | 2.02      | 227.55 | 1325       | 8.40      | 455.11 | 2651       | 11.6    | 746.66 | 4350       |
| Z964 (a.c.)              | A1      | 1.41      | 246.9  | 967        | 9.00      | 987.65 | 3871       | 36.0      | 1975   | 7743       | 38      | 3240   | 12703      |
|                          | A2      | 1.41      | 246.9  | 967        | 9.00      | 987.65 | 3871       | 36.0      | 1975   | 7743       | 38      | 3240   | 12703      |
|                          | B       | 1.41      | 61.0   | 483        | 9.00      | 246.91 | 1935       | 36.0      | 493.82 | 3871       | 38      | 810.18 | 6351       |
|                          | C       | 0.125     | 246.9  | 483        | 0.93      | 987.65 | 1935       | 3.35      | 1975   | 3871       | 5.25    | 3240   | 6351       |
| Z965 (a.c. Star)         | A1      | 0.58      | 1.51   | 61         | 3.55      | 6.07   | 247        | 14.0      | 12.15  | 495        | 17.8    | 19.93  | 813        |
|                          | A2      | 0.58      | 1.51   | 61         | 3.55      | 6.07   | 247        | 14.0      | 12.15  | 495        | 17.8    | 19.93  | 813        |
|                          | B       | 0.58      | 0.37   | 30         | 3.55      | 1.51   | 123        | 14.0      | 3.03   | 247        | 17.8    | 4.98   | 406        |
|                          | C       | 0.58      | 6.07   | 123        | 3.55      | 24.30  | 495        | 14.0      | 48.60  | 991        | 17.8    | 79.74  | 1626       |
| Z966 (a.c.)              | A1      | 1.41      | 5.28   | 145        | 9.00      | 21.15  | 580        | 36.0      | 42.30  | 1161       | 38      | 69.40  | 1905       |
|                          | A2      | 1.41      | 5.28   | 145        | 9.00      | 21.15  | 580        | 36.0      | 42.30  | 1161       | 38      | 69.40  | 1905       |
|                          | B       | 1.41      | 1.32   | 72         | 9.00      | 5.28   | 290        | 36.0      | 10.57  | 580        | 38      | 17.35  | 952        |
|                          | C       | 0.125     | 5.28   | 72         | 0.93      | 21.15  | 290        | 3.35      | 42.30  | 580        | 5.25    | 69.40  | 952        |
| Z966.H (a.c.)            | A1      | 1.41      | 1.32   | 72         | 9.00      | 5.28   | 290        | 36.0      | 10.57  | 580        | 38      | 17.35  | 952        |
|                          | A2      | 1.41      | 1.32   | 72         | 9.00      | 5.28   | 290        | 36.0      | 10.57  | 580        | 38      | 17.35  | 952        |
|                          | B       | 1.41      | 0.33   | 36         | 9.0       | 1.32   | 145        | 36.0      | 2.64   | 290        | 38      | 4.33   | 476        |
|                          | C       | 0.125     | 1.32   | 36         | 0.93      | 5.28   | 145        | 3.35      | 10.57  | 290        | 5.25    | 17.35  | 476        |
| Z967 (a.c. Star)         | A1      | 0.39      | 1.73   | 58         | 2.29      | 6.95   | 235        | 9.30      | 13.90  | 471        | 13.16   | 22.82  | 773        |
|                          | A2      | 0.39      | 1.73   | 58         | 2.29      | 6.95   | 235        | 9.30      | 13.90  | 471        | 13.16   | 22.82  | 773        |
|                          | B       | 0.39      | 0.43   | 29         | 2.29      | 1.73   | 116        | 9.30      | 3.47   | 233        | 13.16   | 5.70   | 383        |
|                          | C       | 0.39      | 6.85   | 117        | 2.29      | 27.43  | 471        | 9.30      | 54.86  | 943        | 13.16   | 90.02  | 1547       |
| Z969 (a.c. Special Star) | A1      | 0.68      | 0.22   | 24         | 4.28      | 0.88   | 99         | 16.1      | 1.77   | 199        | 19.64   | 2.91   | 327        |
|                          | A2      | 0.333     | 0.29   | 23         | 1.93      | 1.16   | 92         | 8.10      | 2.33   | 185        | 11      | 3.83   | 304        |
|                          | B       | 0.248     | 0.063  | 12         | 1.52      | 0.25   | 48         | 6.03      | 0.50   | 96         | 8.68    | 0.83   | 158        |
|                          | C       | 0.248     | 0.70   | 33         | 1.52      | 2.83   | 132        | 6.03      | 5.66   | 264        | 8.68    | 9.30   | 434        |
| Z972 (a.c. Star)         | A1      | 0.165     | 6.67   | 88         | 1.14      | 26.68  | 353        | 4.20      | 53.37  | 707        | 6.0     | 87.57  | 1160       |
|                          | A2      | 0.165     | 6.67   | 88         | 1.14      | 26.68  | 353        | 4.20      | 53.37  | 707        | 6.0     | 87.57  | 1160       |
|                          | B       | 0.165     | 1.66   | 44         | 1.14      | 6.67   | 177        | 4.20      | 13.34  | 354        | 6.0     | 21.89  | 582        |
|                          | C       | 0.165     | 26.68  | 176        | 1.14      | 106.75 | 707        | 4.20      | 213.50 | 1415       | 6.0     | 350.28 | 2321       |
| Z978 (a.c. Star)         | A1      | 0.083     | 16.80  | 110        | 0.65      | 67.21  | 440        | 2.15      | 134.42 | 880        | 3.76    | 220.54 | 1445       |
|                          | A2      | 0.083     | 16.80  | 110        | 0.65      | 67.21  | 440        | 2.15      | 134.42 | 880        | 3.76    | 220.54 | 1445       |
|                          | B       | 0.083     | 4.11   | 55         | 0.65      | 16.44  | 220        | 2.15      | 32.88  | 441        | 3.76    | 53.95  | 723        |
|                          | C       | 0.083     | 67.21  | 220        | 0.65      | 268.85 | 880        | 2.15      | 537.70 | 1761       | 3.76    | 882.16 | 2890       |

Notes:

- The above load parameters apply when one of the two conditions below is given:
  - the total  $L_i$  of the external circuit (excluding the cable) is  $< 1\%$  of the  $L_o$  value or
  - the total  $C_i$  of the external circuit (excluding the cable) is  $< 1\%$  of the  $C_o$  value.
- The above parameters are reduced to 50% when both of the two conditions below are given:
  - the total  $L_i$  of the external circuit (excluding the cable) is  $\geq 1\%$  of the  $L_o$  value and
  - the total  $C_i$  of the external circuit (excluding the cable) is  $\geq 1\%$  of the  $C_o$  value.
- The reduced capacitance of the external circuit (including cable) shall not be greater than  $1\mu F$  for Groups I, IIA & IIB and 600nF for Group IIC.



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## 12 Certificate history and evaluation reports

| Issue | Date         | Associated report | Notes                     |
|-------|--------------|-------------------|---------------------------|
| 0     | 30 Sept 2021 | R14112AQ/00       | Prime Certificate issued. |

Note: Drawings that describe the equipment are listed or referred to in the Annex.

## 13 Conditions of Manufacture

None.

## 14 Specific Conditions of Use

None

## Certificate Annex

**Certificate Number** CML 21UKEX2898  
**Equipment** A Range of Z-Series Shunt Zener Diode Safety Barriers  
**Manufacturer** Pepperl+Fuchs SE



The following documents describe the equipment defined in this certificate:

### Issue 0

For drawings describing the equipment, refer to attached certificate BAS 01ATEX7005. In addition to the drawings listed on BAS 01ATEX7005, the following drawings include the additional marking required for this UK Type Examination certification:

| Drawing No   | Sheets | Rev | Approved date | Title                                    |
|--------------|--------|-----|---------------|--|
| 16-1555CM-10 | 1 to 2 | 0   | 30 Sept 2021  | Additional Marking Requirements for UKCA |