

## Series 1776-X

Family of Input Voltage Dividers for Multimeters and other Instruments

Series 1776 - X Precision Decade Voltage Divider's Ceramic Protected Family of Input Voltage Dividers for Multimeters and other Instruments

EBG offers a family of Voltage Dividers for a variety of applications, including Digital Multimeters, Multi range instrumentation, and other range switching devices. This line of products utilizes the special EBG METOXFILM resulting in a family of Series 1776-X models:

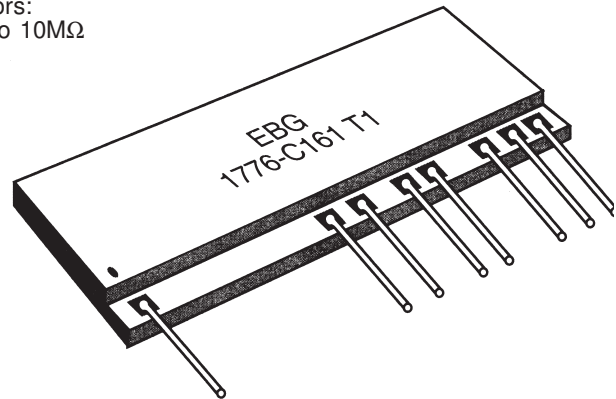
A summary of the features of the 1776-X series are:

- Compact precision resistor networks
- Easy to install package
- Absolute tolerances to  $\pm 0.1$ ,  $\pm 0.25$  and  $\pm 0.5\%$
- Relative tolerances to 0.05, 0.10 and 0.25%
- Ratio Temperature Coefficients from 10 to 50 ppm/ $^{\circ}\text{C}$
- High stability under load  $< 0.02\%$
- Excellent Shelf Life:  $< 0.02\%$

Many special combinations of ratios, absolute tolerances, relative tolerances and absolute temperature coefficients of resistance are available. Consult your EBG agent or the factory direct for your special requirements.

### Specifications

- Ratio Tolerance: 0.05% to 0.25%
- Absolute Tolerance:  $\pm 0.1\%$  to  $\pm 0.5\%$
- Ratio Temp. Coefficient: 10ppm/ $^{\circ}\text{C}$  to 50ppm/ $^{\circ}\text{C}$
- Absolute Temp. Coefficient:  $\pm 25\text{ppm}/^{\circ}\text{C}$  to  $\pm 50\text{ppm}/^{\circ}\text{C}$
- Voltage Coefficient:  $< 0.05\text{ppm}/\text{V}$
- Storage Temperature:  $-55^{\circ}\text{C}$  to  $+ 165^{\circ}\text{C}$
- Load Life (ratio stability):  $< 0.04\%$
- Shelf Life (ratio stability):  $< 0.02\%$  (six months)
- Number of Decades: 3 to 6
- Values of Single Resistors: 900 $\Omega$  to 10M $\Omega$



| Model-Nr. | Resistance Values |             |             |             |             | Figure | Voltage Rating | Absolute Tol. % | Ratio Tol. % | Absol. TC ppm/ $^{\circ}\text{C}$ | Ratio TC ppm/ $^{\circ}\text{C}$ | Vol. Coef. Ratio ppm/V | Ratio Stability % Change in Ratio |            |              | C |
|-----------|-------------------|-------------|-------------|-------------|-------------|--------|----------------|-----------------|--------------|-----------------------------------|----------------------------------|------------------------|-----------------------------------|------------|--------------|---|
|           | R1 $\Omega$       | R2 $\Omega$ | R3 $\Omega$ | R4 $\Omega$ | R5 $\Omega$ |        |                |                 |              |                                   |                                  |                        | Load Life                         | Shelf Life | Over-Voltage |   |
| B169 T3   | 9M                | 900K        | 90K         | 9K          | 900         | 1      | 1200           | 0.1             | 0.1          | 30                                | 10                               | 0.1                    | 0.02                              | 0.01       | 0.01         | C |
| B168 T3   | 9M                | 900K        | 90K         | 9K          | 1K          | 1      | 1200           | 0.1             | 0.1          | 30                                | 10                               | 0.1                    | 0.02                              | 0.01       | 0.01         | C |
| E167 T1   | 9M                | 900K        | 90K         | 9K          | 900         | 2      | 1200           | 0.25            | 0.25         | 50                                | 50                               | 0.5                    | 0.04                              | 0.02       | 0.04         | C |
| B167 T1   | 9M                | 900K        | 90K         | 9K          | 900         | 2      | 1200           | 0.1             | 0.1          | 50                                | 50                               | 0.5                    | 0.04                              | 0.02       | 0.04         | C |
| E166 T1   | 9M                | 900K        | 90K         | 9K          | 1K          | 2      | 1200           | 0.25            | 0.25         | 50                                | 50                               | 0.5                    | 0.04                              | 0.02       | 0.04         | C |
| B166 T1   | 9M                | 900K        | 90K         | 9K          | 1K          | 2      | 1200           | 0.1             | 0.1          | 50                                | 50                               | 0.5                    | 0.04                              | 0.02       | 0.04         | C |
| E16 T1    | 9M                | 900K        | 90K         | 9K          | 900         | 3      | 1200           | 0.25            | 0.25         | 50                                | 50                               | 0.3                    | 0.04                              | 0.02       | 0.04         | C |
| B16 T1    | 9M                | 900K        | 90K         | 9K          | 900         | 3      | 1200           | 0.1             | 0.1          | 50                                | 50                               | 0.2                    | 0.02                              | 0.01       | 0.02         | C |
| A16 T1    | 9M                | 900K        | 90K         | 9K          | 900         | 3      | 1200           | 0.1             | 0.05         | 50                                | 50                               | 0.2                    | 0.02                              | 0.01       | 0.02         | C |
| E161 T1   | 9M                | 900K        | 90K         | 9K          | 1K          | 3      | 1200           | 0.25            | 0.25         | 50                                | 50                               | 0.3                    | 0.04                              | 0.02       | 0.04         | C |
| D161 T1   | 9M                | 900K        | 90K         | 9K          | 1K          | 3      | 1200           | 0.25            | 0.1          | 50                                | 50                               | 0.2                    | 0.02                              | 0.01       | 0.02         | C |
| C161 T1   | 9M                | 900K        | 90K         | 9K          | 1K          | 3      | 1200           | 0.25            | 0.05         | 50                                | 50                               | 0.2                    | 0.02                              | 0.01       | 0.02         | C |
| F37 T3    | 9M                | 900K        | 90K         | 10K         | N/A         | 4      | 1200           | +0-0.5          | 0.1          | 30                                | 10                               | 0.02                   | 0.02                              | 0.01       | 0.01         |   |
| F379 T3   | 9M                | 900K        | 90K         | 10K         | N/A         | 5      | 1200           | +0-0.5          | 0.1          | 30                                | 10                               | 0.02                   | 0.02                              | 0.01       | 0.01         |   |
| C15 T3    | 9M                | 900K        | 90K         | 10K         | N/A         | 6      | 1200           | 0.25            | 0.05         | 30                                | 10                               | 0.02                   | 0.02                              | 0.01       | 0.01         |   |
| D15 T3    | 9M                | 900K        | 90K         | 10K         | N/A         | 6      | 1200           | 0.25            | 0.1          | 30                                | 10                               | 0.02                   | 0.02                              | 0.01       | 0.01         |   |
| D14 T2    | 9.9M              | 90K         | 10K         | N/A         | N/A         | 7      | 1200           | 0.25            | 0.1          | 30                                | 25                               | 0.2                    | 0.02                              | 0.01       | 0.02         | C |
| D14 T3    | 9.9M              | 90K         | 10K         | N/A         | N/A         | 7      | 1200           | 0.25            | 0.1          | 30                                | 10                               | 0.02                   | 0.02                              | 0.01       | 0.01         | C |
| E39 T3    | 10M               | 1.111M      | 101.01K     | 10.01K      | 1.0001K     | 8      | 1200           | 0.25            | 0.25         | 30                                | 10                               | 0.1                    | 0.02                              | 0.01       | 0.01         | C |
| B39 T3    | 10M               | 1.111M      | 101.01K     | 10.01K      | 1.0001K     | 8      | 1200           | 0.1             | 0.1          | 30                                | 10                               | 0.1                    | 0.02                              | 0.01       | 0.01         | C |
| G39 T1    | 10M               | 1.111M      | 101.01K     | 10.01K      | 1.0001K     | 8      | 1200           | 0.5             | 0.5          | 50                                | 50                               | 0.5                    | 0.04                              | 0.02       | 0.04         | C |
| E39 T1    | 10M               | 1.111M      | 101.01K     | 10.01K      | 1.0001K     | 8      | 1200           | 0.25            | 0.25         | 50                                | 50                               | 0.5                    | 0.04                              | 0.02       | 0.04         | C |
| E159 T5   | 900K              | 90K         | 9K          | 900         | N/A         | 9      | 750            | 0.25            | 0.25         | 25                                | 25                               | 0.4                    | 0.02                              | 0.01       | 0.02         | C |
| B159 T6   | 900K              | 90K         | 9K          | 900         | N/A         | 9      | 750            | 0.1             | 0.1          | 25                                | 15                               | 0.3                    | 0.02                              | 0.01       | 0.02         | C |
| A159 T6   | 900K              | 90K         | 9K          | 900         | N/A         | 9      | 750            | 0.1             | 0.05         | 25                                | 15                               | 0.3                    | 0.02                              | 0.01       | 0.02         | C |
| G158 T5   | 900K              | 90K         | 9K          | 1K          | N/A         | 9      | 750            | 0.25            | 0.25         | 25                                | 25                               | 0.4                    | 0.02                              | 0.01       | 0.02         | C |
| B158 T6   | 900K              | 90K         | 9K          | 1K          | N/A         | 9      | 750            | 0.1             | 0.1          | 25                                | 15                               | 0.3                    | 0.02                              | 0.01       | 0.02         | C |
| A158T6    | 900K              | 90K         | 9K          | 1K          | N/A         | 9      | 750            | 0.1             | 0.05         | 25                                | 15                               | 0.3                    | 0.02                              | 0.01       | 0.02         | C |

C = ceramic coverplate available

In the above spec sheet, you will find our standard product, please contact your local manufacturing representative or call us direct to find out details of other options available regarding this style. Please see our website for the most updated information!