# Tantalum Electrolytic Capacitor
# Sindered Anode, Solid Semiconductor Electrolyte, +125°C

## ETQW

Tantalum capacitors with sintered anode and solid semiconductor electrolyte with flame retardant fluidized bed coating. The ETQW type is characterized by very favourable electric values even at higher ambient temperatures. The capacitor complies with DIN 44 358/45 910 part 147. Furthermore, this type is available as a radially taped version.

Colour: Green

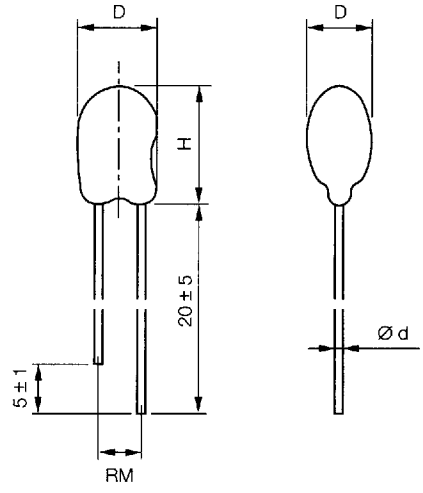
Marking: White stamping (in clear text), with additional polarity marking, manufacturing code in accordance with DIN.

**Special advantages of ETQW:**
- Flame retardant encapsulation
- Practically without epoxy run down
- Very high temperature range
- Improved humidity class
- Very low leakage current
- Very high CV product
- Close capacitance tolerance
- Low temperature dependence
- Very high operational reliability
- Very low failure rate
- Preaged under temperature and voltage

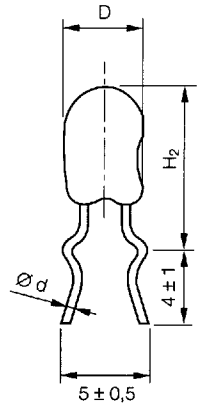
**Leads:** tinned

**Dimensions**

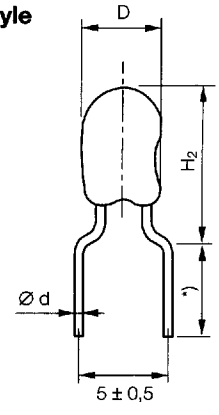
**Basic version**




**S style**




**L style**




Capacitors must not correspond with the sketches, only the dimensions have to be kept.

*) only in typed version available, lead length see taping page 8

**Dimensions (mm)**

| Type | D max. | H max. | S, L style, $H_2$ max. | p.c.m ± 0,5 | Ød ± 0,05 |
|---|---|---|---|---|---|
| ETQW 1 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 |
| ETQW 2 | 5 | 9,5 | 12,5 | 2,5 | 0,5 |
| ETQW 3 | 6 | 10,5 | 13,5 | 2,5 | 0,5 |
| ETQW 4 | 6,5 | 11,5 | 14,5 | 2,5 | 0,5 |
| ETQW 5 | 9 | 14 | 17 *) | 5 | 0,5 |
| ETQW 6 | 9,5 | 17 | 20 *) | 5 | 0,5 |

*) Only "S" style

# Roederstein

## ETQW

**Technical data:**

**Application class:**
FKD according to DIN 40 040

**Climatic category:**
55/125/56 according to IEC

**Temperature range:**
–55°C up to +125°C, as of +85°C voltage derating

**Rated voltage:**
3V– up to 50V–

**Category voltage:**
2V– up to 33V–

**Peak voltage:**
1.3 times the rated voltage at +85°C

**Reverse voltage:**
(temporarily)
15% of rated voltage at +20°C
10% of rated voltage at +55°C
5% of rated voltage at +85°C

**Rated capacitance:**
0,1 µF up to 330 µF

**Capacitance tolerance:**
± 20%; close ± 10%

**Leakage current in µA:**
**(measured at +20°C after 5 minutes)**
$\leq 0{,}01 \cdot C_R \cdot U_R$ or 0,5 µA, whichever is greater.
See table (restricted leakage current values upon request).

**Dissipation factor:**
**(at 120 Hz and +20°C)**
See table

**Impedance:**
**(measured at 100 kHz and +20°C)**
See table

**Voltage derating:**
See Diagram 1 General Information

**Leakage current behaviour and leakage current change at various operating voltages:**
See General Information

**Frequency and temperature behaviour of capacitance, dissipation factor, impedance, equivalent series resistance:**
See Diagrams 1 –14

**Permissible AC voltage stress:**
The highest permissible AC voltage for the respective frequency may be taken from Diagrams 15 to 19.

The values apply for +20°C. For higher temperatures, the values have to be multplied with the following factors:

| Temperature | Factor |
|---|---|
| + 50°C | 0,7 |
| + 85°C | 0,5 |
| + 125°C | 0,3 |

Intermediate values can be obtained by linear interpolation.

For further notes on AC voltage stress:
See General Information

**Service life:**
> 300 000 hours *)

**Failure percentage:**
≤ 0,6% within 100 000 hours *)

**Failure rate (λ):**
$\leq 0{,}6 \cdot 10^{-7}/h = \leq 60$ fit *)

*) related to $U_R$ +40°C and a circuit resistance of ≥ 3Ω/V

**Failure criteria:**
Complete failure: Short circuit or interruption
Change failure:
ΔC > +5 –15%
Z > 3 times initial limit value
$I_R$ > 5 times initial limit value +5 µA

**Internal resistance of power source:**
See General Information

**Other technical specifications:**
**Permissible tensile stress of leads:**
10 N of constant stress for 30 sec. in lead direction.

**Permissible bending stress of leads:**
2 bendings under stress of 2,5 N

(A bending means: To curve the lead by 90° from normal position and back into normal position. All bendings have to be performed in one plane, and all succeeding bendings in opposite direction each).

## ETQW

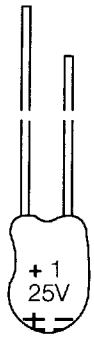
**Features at high and low temperatures (limit values)**

| Test temperature | –55°C | +20°C | +85°C | +125°C |
|---|---|---|---|---|
| Permissible capacitance change ΔC/C | –10 % | – | + 12 % | + 15 % |
| tan δ | | | | |
| ≤ 1,5 µF | 0,04 | 0,04 | 0,04 | 0,06 |
| < 10 µF | 0,06 | 0,06 | 0,06 | 0,08 |
| < 100 µF | 0,08 | 0,06 | 0,08 | 0,08 |
| ≥ 100 µF | 0,1 | 0,08 | 0,1 | 0,1 |
| Leakage current $I_R$ | – | ≤ 0,01·$C_R$·$U_R$ or 0,5 µA, whichever is greater | ≤ 0,1·$C_R$·$U_R$ or 10 µA, whichever is greater | ≤ 0,125·$C_R$·$U_R$ or 12,5 µA, whichever is greater [1] |

[1] Measured at category voltage

**Marking example:**

The ETQW type is marked additionally on the front side with several + and – symbols in direction of the top rounding. Additionally the positive lead is approx. 5 mm longer.
On the rear side the manufacturing code is stamped in accordance with DIN 41 314 (year/month)



# Roederstein

## ETQW

| Case size | Rated cap. | Rated voltage +85°C | Category voltage +125°C | Dimensions | | | | | Leakage current after 5 min. at +20°C | Impedance at 100 kHz +20°C | Dissipation factor at 120 Hz +20°C | Article-No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $C_R$ | $U_R$ | $U_C$ | D max. | H max. | $H_2$ max. | RM ±0,5 | d ±0,05 | $I_R$ max. | Z max. | tan δ max. | |
| | µF | V– | V– | mm | mm | mm | mm | mm | µA | Ω | | |
| 1A | 6,8 | 3 | 2 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 6 | 0,06 | Q1A 685003 M 00 |
| 1A | 10 | 3 | 2 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 5 | 0,06 | Q1A 106003 M 00 |
| 1B | 15 | 3 | 2 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 4 | 0,06 | Q1B 156003 M 00 |
| 2C | 22 | 3 | 2 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 0,7 | 3,2 | 0,06 | Q2C 226003 M 00 |
| 2D | 33 | 3 | 2 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 1 | 2,5 | 0,06 | Q2D 336003 M 00 |
| 2E | 47 | 3 | 2 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 1,4 | 2 | 0,06 | Q2E 476003 M 00 |
| 3F | 68 | 3 | 2 | 6 | 10,5 | 13,5 | 2,5 | 0,5 | 2 | 1,6 | 0,06 | Q3F 686003 M 00 |
| 3G | 100 | 3 | 2 | 6 | 10,5 | 13,5 | 2,5 | 0,5 | 3 | 1,2 | 0,08 | Q3G 107003 M 00 |
| 4H | 150 | 3 | 2 | 6,5 | 11,5 | 14,5 | 2,5 | 0,5 | 4,5 | 1 | 0,08 | Q4H 157003 M 00 |
| 5J | 220 | 3 | 2 | 9 | 14 | 17 | 5 | 0,5 | 6,6 | 0,8 | 0,08 | Q5J 227003 M 00 |
| 5L | 330 | 3 | 2 | 9 | 14 | 17 | 5 | 0,5 | 9,9 | 0,6 | 0,08 | Q5L 337003 M 00 |
| 1A | 4,7 | 6,3 | 4 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 6 | 0,06 | Q1A 475603 M 00 |
| 1B | 6,8 | 6,3 | 4 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 5 | 0,06 | Q1B 685603 M 00 |
| 2C | 10 | 6,3 | 4 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 0,6 | 4 | 0,06 | Q2C 106603 M 00 |
| 2D | 15 | 6,3 | 4 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 0,9 | 3,2 | 0,06 | Q2D 156603 M 00 |
| 2E | 22 | 6,3 | 4 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 1,4 | 2,5 | 0,06 | Q2E 226603 M 00 |
| 3F | 33 | 6,3 | 4 | 6 | 10,5 | 13,5 | 2,5 | 0,5 | 2,1 | 2 | 0,06 | Q3F 336603 M 00 |
| 3G | 47 | 6,3 | 4 | 6 | 10,5 | 13,5 | 2,5 | 0,5 | 3 | 1,6 | 0,06 | Q3G 476603 M 00 |
| 4H | 68 | 6,3 | 4 | 6,5 | 11,5 | 14,5 | 2,5 | 0,5 | 4,3 | 1,2 | 0,06 | Q4H 686603 M 00 |
| 5J | 100 | 6,3 | 4 | 9 | 14 | 17 | 5 | 0,5 | 6,3 | 1 | 0,08 | Q5J 107603 M 00 |
| 5L | 150 | 6,3 | 4 | 9 | 14 | 17 | 5 | 0,5 | 9,5 | 0,8 | 0,08 | Q5L 157603 M 00 |
| 6M | 220 | 6,3 | 4 | 9,5 | 17 | 20 | 5 | 0,5 | 13,9 | 0,6 | 0,08 | Q6M 227603 M 00 |
| 6P | 330 | 6,3 | 4 | 9,5 | 17 | 20 | 5 | 0,5 | 20,8 | 0,5 | 0,08 | Q6P 337603 M 00 |
| 1A | 3,3 | 10 | 6,3 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 6,5 | 0,06 | Q1A 335010 M 00 |
| 1B | 4,7 | 10 | 6,3 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 5 | 0,06 | Q1B 475010 M 00 |
| 2C | 6,8 | 10 | 6,3 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 0,7 | 4 | 0,06 | Q2C 685010 M 00 |
| 2D | 10 | 10 | 6,3 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 1 | 3,2 | 0,06 | Q2D 106010 M 00 |
| 2E | 15 | 10 | 6,3 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 1,5 | 2,5 | 0,06 | Q2E 156010 M 00 |
| 3F | 22 | 10 | 6,3 | 6 | 10,5 | 13,5 | 2,5 | 0,5 | 2,2 | 2 | 0,06 | Q3F 226010 M 00 |
| 3G | 33 | 10 | 6,3 | 6 | 10,5 | 13,5 | 2,5 | 0,5 | 3,3 | 1,6 | 0,06 | Q3G 336010 M 00 |
| 4H | 47 | 10 | 6,3 | 6,5 | 11,5 | 14,5 | 2,5 | 0,5 | 4,7 | 1,2 | 0,06 | Q4H 476010 M 00 |
| 5J | 68 | 10 | 6,3 | 9 | 14 | 17 | 5 | 0,5 | 6,8 | 1 | 0,06 | Q5J 686010 M 00 |
| 5L | 100 | 10 | 6,3 | 9 | 14 | 17 | 5 | 0,5 | 10 | 0,8 | 0,08 | Q5L 107010 M 00 |

Ordering example: Q1A 685003 M 00

→ Bulk packed
In case of differing packing "00" to replaced by corresponding code (see packaging) or clear text to indicate.

→ Capacitance tolerances: M ≙ ±20% K ≙ ±10% J ≙ ±5%

## ETQW

| Case size | Rated cap. | Rated voltage +85°C | Category voltage +125°C | Dimensions | | | | | Leakage current after 5 min. at +20°C | Impedance at 100 kHz +20°C | Dissipation factor at 120 Hz +20°C | Article-No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $C_R$ | $U_R$ | $U_C$ | D max. | H max. | $H_2$ max. | RM ±0,5 | d ±0,05 | $I_R$ max. | Z max. | tan δ max. | |
| | µF | V– | V– | mm | mm | mm | mm | mm | µA | Ω | | |
| 6N | 150 | 10 | 6,3 | 9,5 | 17 | 20 | 5 | 0,5 | 15 | 0,6 | 0,08 | Q6N 157010 M 00 |
| 6P | 220 | 10 | 6,3 | 9,5 | 17 | 20 | 5 | 0,5 | 22 | 0,5 | 0,08 | Q6P 227010 M 00 |
| 1A | 2,2 | 16 | 10 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 7 | 0,06 | Q1A 225016 M 00 |
| 1B | 3,3 | 16 | 10 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 6 | 0,06 | Q1B 335016 M 00 |
| 2C | 4,7 | 16 | 10 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 0,8 | 4,5 | 0,06 | Q2C 475016 M 00 |
| 2D | 6,8 | 16 | 10 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 1,1 | 3,2 | 0,06 | Q2D 685016 M 00 |
| 2E | 10 | 16 | 10 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 1,6 | 2,5 | 0,06 | Q2E 106016 M 00 |
| 3F | 15 | 16 | 10 | 6 | 10,5 | 13,5 | 2,5 | 0,5 | 2,4 | 2 | 0,06 | Q3F 156016 M 00 |
| 3G | 22 | 16 | 10 | 6 | 10,5 | 13,5 | 2,5 | 0,5 | 3,5 | 1,6 | 0,06 | Q3G 226016 M 00 |
| 4H | 33 | 16 | 10 | 6,5 | 11,5 | 14,5 | 2,5 | 0,5 | 5,3 | 1,2 | 0,06 | Q4H 336016 M 00 |
| 5K | 47 | 16 | 10 | 9 | 14 | 17 | 5 | 0,5 | 7,5 | 1 | 0,06 | Q5K 476016 M 00 |
| 5L | 68 | 16 | 10 | 9 | 14 | 17 | 5 | 0,5 | 10,9 | 0,8 | 0,06 | Q5L 686016 M 00 |
| 6N | 100 | 16 | 10 | 9,5 | 17 | 20 | 5 | 0,5 | 16 | 0,6 | 0,08 | Q6N 107016 M 00 |
| 6R | 150 | 16 | 10 | 9,5 | 17 | 20 | 5 | 0,5 | 24 | 0,5 | 0,08 | Q6R 157016 M 00 |
| 1A | 1 | 25 | 16 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 8,5 | 0,04 | Q1A 105025 M 00 |
| 1A | 1,5 | 25 | 16 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 7,5 | 0,04 | Q1A 155025 M 00 |
| 1B | 2,2 | 25 | 16 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,6 | 6 | 0,06 | Q1B 225025 M 00 |
| 2C | 3,3 | 25 | 16 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 0,8 | 4,5 | 0,06 | Q2C 335025 M 00 |
| 2D | 4,7 | 25 | 16 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 1,2 | 3,2 | 0,06 | Q2D 475025 M 00 |
| 2E | 6,8 | 25 | 16 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 1,7 | 2,5 | 0,06 | Q2E 685025 M 00 |
| 3F | 10 | 25 | 16 | 6 | 10,5 | 13,5 | 2,5 | 0,5 | 2,5 | 2 | 0,06 | Q3F 106025 M 00 |
| 4H | 15 | 25 | 16 | 6,5 | 11,5 | 14,5 | 2,5 | 0,5 | 3,8 | 1,6 | 0,06 | Q4H 156025 M 00 |
| 5J | 22 | 25 | 16 | 9 | 14 | 17 | 5 | 0,5 | 5,5 | 1,2 | 0,06 | Q5J 226025 M 00 |
| 5K | 33 | 25 | 16 | 9 | 14 | 17 | 5 | 0,5 | 8,3 | 1 | 0,06 | Q5K 336025 M 00 |
| 6M | 47 | 25 | 16 | 9,5 | 17 | 20 | 5 | 0,5 | 11,8 | 0,8 | 0,06 | Q6M 476025 M 00 |
| 6N | 68 | 25 | 16 | 9,5 | 17 | 20 | 5 | 0,5 | 17 | 0,6 | 0,06 | Q6N 686025 M 00 |
| 1A | 0,1 | 35 | 23 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 38 | 0,04 | Q1A 104035 M 00 |
| 1A | 0,15 | 35 | 23 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 30 | 0,04 | Q1A 154035 M 00 |
| 1A | 0,22 | 35 | 23 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 23 | 0,04 | Q1A 224035 M 00 |
| 1A | 0,33 | 35 | 23 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 18 | 0,04 | Q1A 334035 M 00 |
| 1A | 0,47 | 35 | 23 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 14 | 0,04 | Q1A 474035 M 00 |
| 1A | 0,68 | 35 | 23 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 10 | 0,04 | Q1A 684035 M 00 |
| 1A | 1 | 35 | 23 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 8 | 0,04 | Q1A 105035 M 00 |

Ordering example: Q1A 685003 M 00

→ Bulk packed
In case of differing packing "00" to replaced by corresponding code (see packaging) or clear text to indicate.

→ Capacitance tolerances: M ≙ ±20% K ≙ ±10% J ≙ ±5%

# Roederstein

## ETQW

| Case size | Rated cap. | Rated voltage +85°C | Category voltage +125°C | Dimensions | | | | | Leakage current after 5 min. at +20°C | Impedance at 100 kHz +20°C | Dissipation factor at 120 Hz +20°C | Article-No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $C_R$ | $U_R$ | $U_C$ | D max. | H max. | $H_2$ max. | RM ±0,5 | d ±0,05 | $I_R$ max. | Z max. | tan δ max. | |
| | µF | V– | V– | mm | mm | mm | mm | mm | µA | Ω | | |
| 1B | 1,5 | 35 | 23 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 6,5 | 0,04 | Q1B 155035 M 00 |
| 2C | 2,2 | 35 | 23 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 0,8 | 5 | 0,06 | Q2C 225035 M 00 |
| 2D | 3,3 | 35 | 23 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 1,2 | 3,5 | 0,06 | Q2D 335035 M 00 |
| 2E | 4,7 | 35 | 23 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 1,6 | 2,5 | 0,06 | Q2E 475035 M 00 |
| 3F | 6,8 | 35 | 23 | 6 | 10,5 | 13,5 | 2,5 | 0,5 | 2,4 | 2 | 0,06 | Q3F 685035 M 00 |
| 3G | 10 | 35 | 23 | 6 | 10,5 | 13,5 | 2,5 | 0,5 | 3,5 | 1,6 | 0,06 | Q3G 106035 M 00 |
| 5J | 15 | 35 | 23 | 9 | 14 | 17 | 5 | 0,5 | 5,3 | 1,2 | 0,06 | Q5J 156035 M 00 |
| 5L | 22 | 35 | 23 | 9 | 14 | 17 | 5 | 0,5 | 7,7 | 1 | 0,06 | Q5L 226035 M 00 |
| 6M | 33 | 35 | 23 | 9,5 | 17 | 20 | 5 | 0,5 | 11,6 | 0,8 | 0,06 | Q6M 336035 M 00 |
| 6P | 47 | 35 | 23 | 9,5 | 17 | 20 | 5 | 0,5 | 16,5 | 0,6 | 0,06 | Q6P 476035 M 00 |
| 1A | 0,1 | 50 | 33 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 38 | 0,04 | Q1A 104050 M 00 |
| 1A | 0,15 | 50 | 33 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 30 | 0,04 | Q1A 154050 M 00 |
| 1A | 0,22 | 50 | 33 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 23 | 0,04 | Q1A 224050 M 00 |
| 1B | 0,33 | 50 | 33 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 18 | 0,04 | Q1B 334050 M 00 |
| 1B | 0,47 | 50 | 33 | 4,5 | 7,5 | 10,5 | 2,5 | 0,5 | 0,5 | 14 | 0,04 | Q1B 474050 M 00 |
| 2C | 0,68 | 50 | 33 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 0,5 | 10 | 0,04 | Q2C 684050 M 00 |
| 2D | 1 | 50 | 33 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 0,5 | 8 | 0,04 | Q2D 105050 M 00 |
| 2E | 1,5 | 50 | 33 | 5 | 9,5 | 12,5 | 2,5 | 0,5 | 0,8 | 6,5 | 0,04 | Q2E 155050 M 00 |
| 3F | 2,2 | 50 | 33 | 6 | 10,5 | 13,5 | 2,5 | 0,5 | 1,1 | 5 | 0,06 | Q3F 225050 M 00 |
| 3G | 3,3 | 50 | 33 | 6 | 10,5 | 13,5 | 2,5 | 0,5 | 1,7 | 3,5 | 0,06 | Q3G 335050 M 00 |
| 4H | 4,7 | 50 | 33 | 6,5 | 11,5 | 14,5 | 2,5 | 0,5 | 2,4 | 2,5 | 0,06 | Q4H 475050 M 00 |
| 5J | 6,8 | 50 | 33 | 9 | 14 | 17 | 5 | 0,5 | 3,4 | 2 | 0,06 | Q5J 685050 M 00 |
| 5L | 10 | 50 | 33 | 9 | 14 | 17 | 5 | 0,5 | 5 | 1,6 | 0,06 | Q5L 106050 M 00 |
| 6M | 15 | 50 | 33 | 9,5 | 17 | 20 | 5 | 0,5 | 7,5 | 1,2 | 0,06 | Q6M 156050 M 00 |
| 6P | 22 | 50 | 33 | 9,5 | 17 | 20 | 5 | 0,5 | 11 | 1 | 0,06 | Q6P 226050 M 00 |

**Lead styles and packing:**

| Sizes | Code | p.c.m [mm] ±0,5 | Clear text |
|---|---|---|---|
| 1 – 6 | 00 | 2,5 / 5 | Bulk packed |
| 1 – 6 | A0 | 5 | "S" style |
| 1 – 4 | W0 | 2,5 | Reel, positive pole in tape run direction in front. |
| 1 – 4 | T0 | 2,5 | Reel, negative pole in tape run direction in front. |
| 1 – 4 | H0 | 2,5 | Ammo |
| 1 – 5 | V2 | 5 | Reel, positive pole in tape run direction in front. |
| 1 – 5 | R0 | 5 | Reel, negative pole in tape run direction in front. |
| 1 – 5 | O8 | 5 | Ammo |

Taping see page 8

Reel with positiv pole in tape run direction in front is standard !

**Packaging units:**
See page 10

# ETQW

**Diagram 1:** Capacitance change versus temperature (standard value)

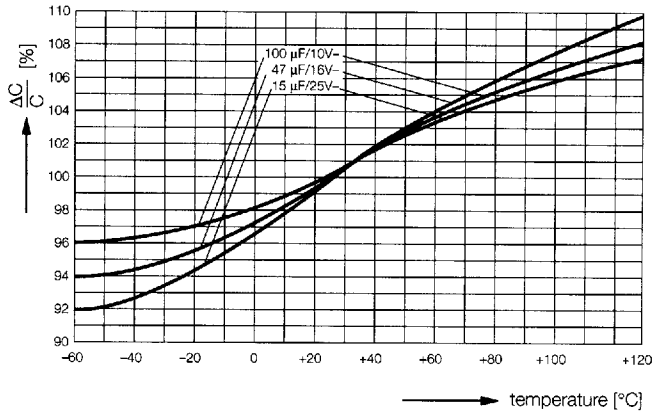



**Diagram 2:** Capacitance change versus frequency (standard value)
ETQW with 6,3 V–

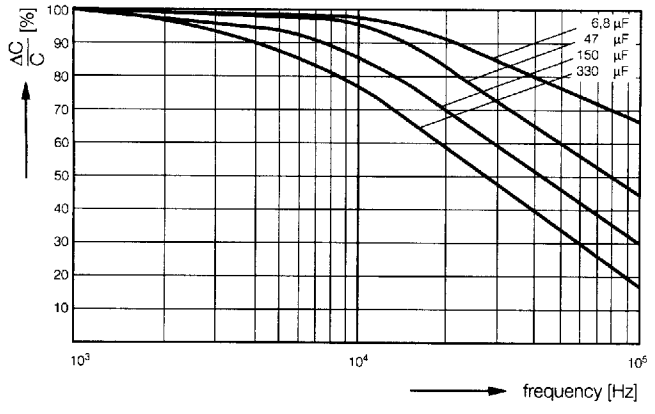



**Diagram 3:** Capacitance change versus frequency (standard value)
ETQW with 35 V–

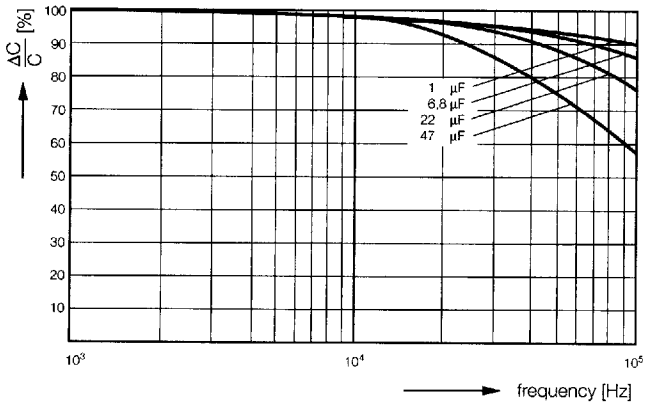



**Diagram 4:** Dissipation factor versus temperature (standard value)

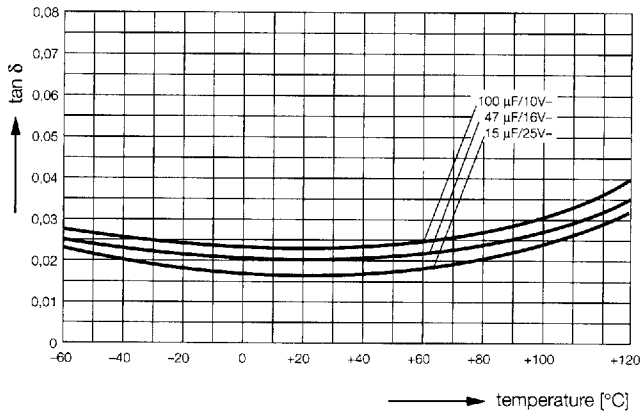



**Diagram 5:** Dissipation factor versus frequency (standard value)
ETQW with 6,3 V–

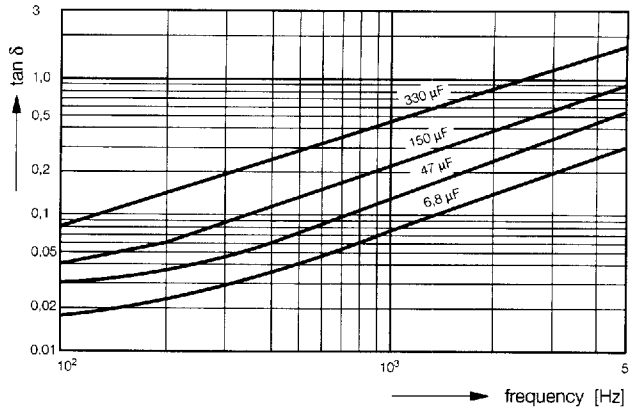
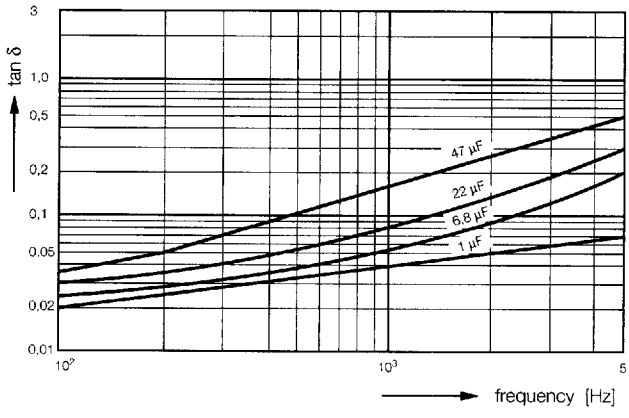



**Diagram 6:** Dissipation factor versus frequency (standard value)
ETQW with 35 V–



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## ETQW

**Diagram 7:** Impedance at 10 and 100 kHz versus temperature (standard value) ETQW with 6,3 V–

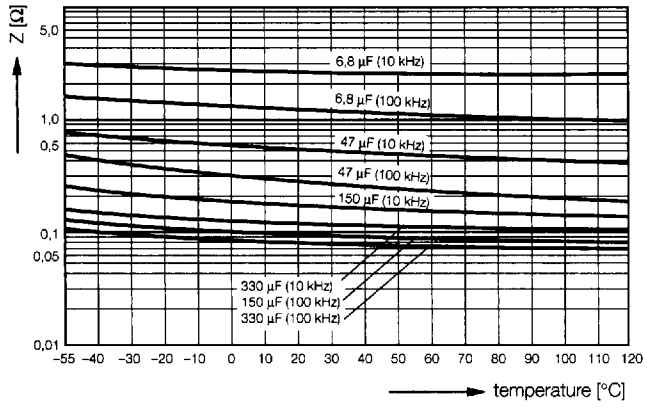



**Diagram 8:** Impedance at 10 and 100 kHz versus temperature (standard value) ETQW with 35 V–

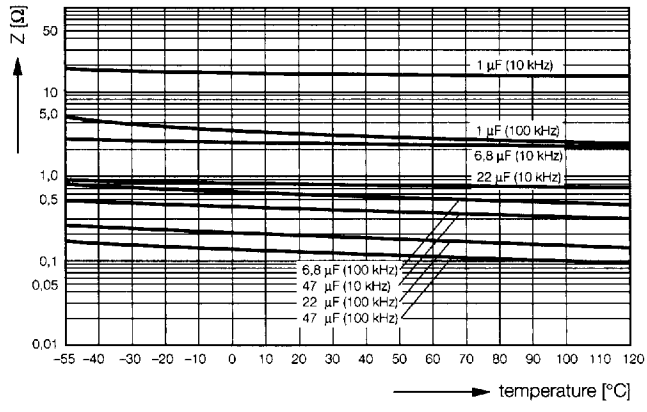



**Diagram 9:** Typical behaviour of impedance versus frequency (standard value) ETQW with 6,3 V–

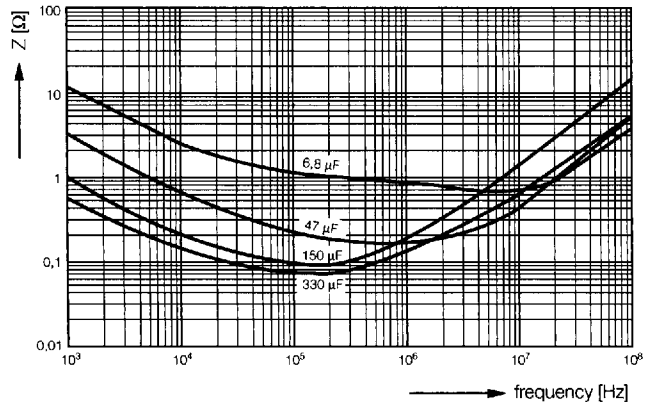



**Diagram 10:** ESR at 10 and 100 kHz versus temperature (standard value) ETQW with 6,3 V–

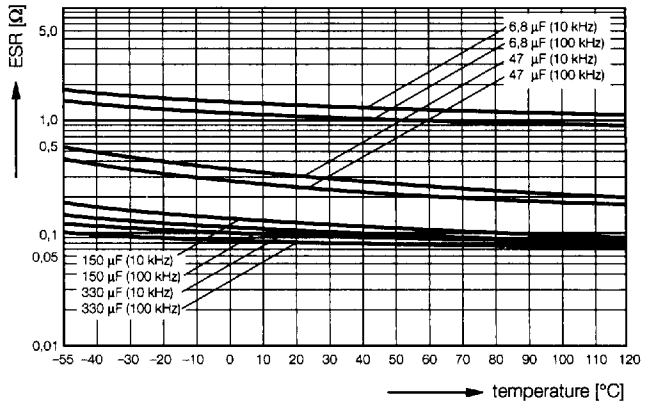



**Diagram 11:** ESR at 10 and 100 kHz versus temperature (standard value) ETQW with 35 V–

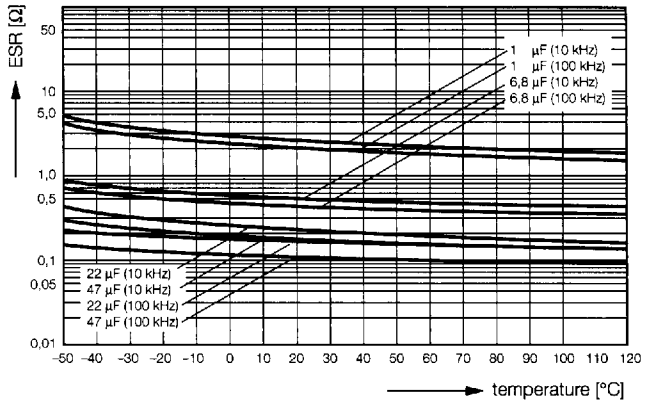
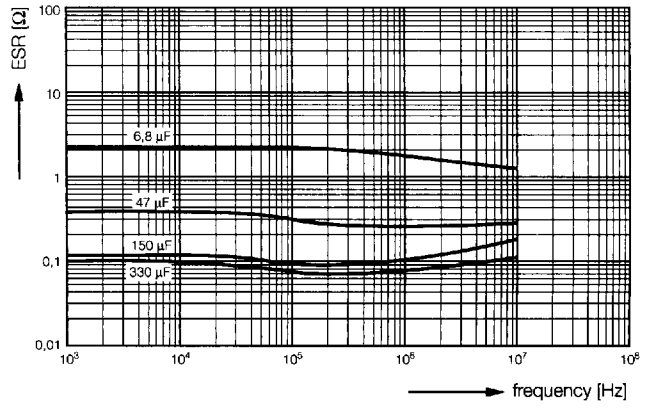



**Diagram 12:** Typical behaviour of ESR versus frequency (standard value) ETQW with 6,3 V–



# ETQW

**Diagram 13:** Typical behaviour of impedance versus frequency (standard value) ETQW with 35 V–

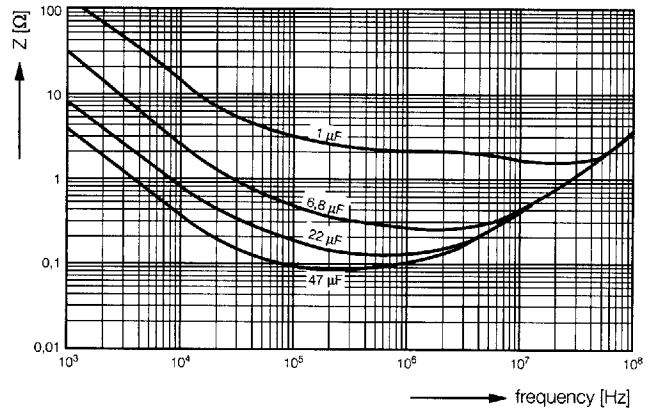



**Diagram 14:** Typical behaviour of ESR versus frequency (standard value) ETQW with 35 V–

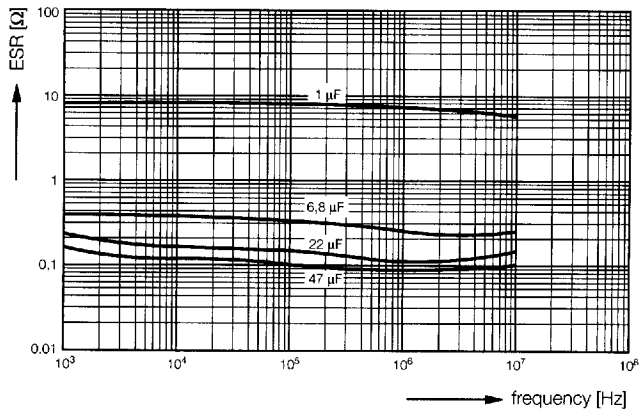


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**Diagram 15:** Permissible superimposed AC voltage versus rated voltage and frequency at +20°C ETQW 1

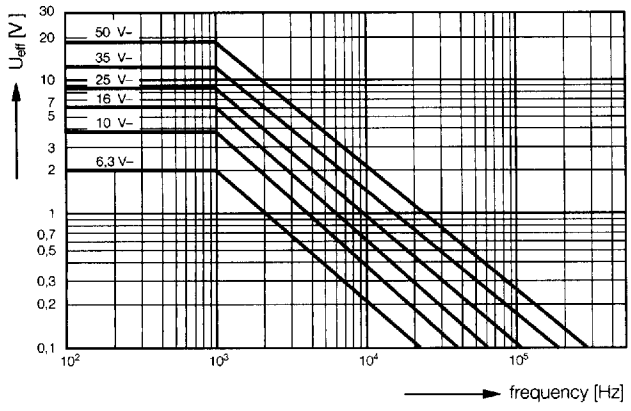


**Diagram 16:** Permissible superimposed AC voltage versus rated voltage and frequency at +20°C ETQW 2

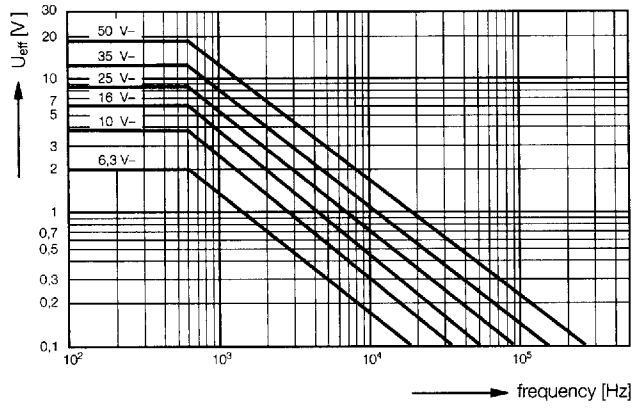


**Diagram 17:** Permissible superimposed AC voltage versus rated voltage and frequency at +20°C ETQW 3

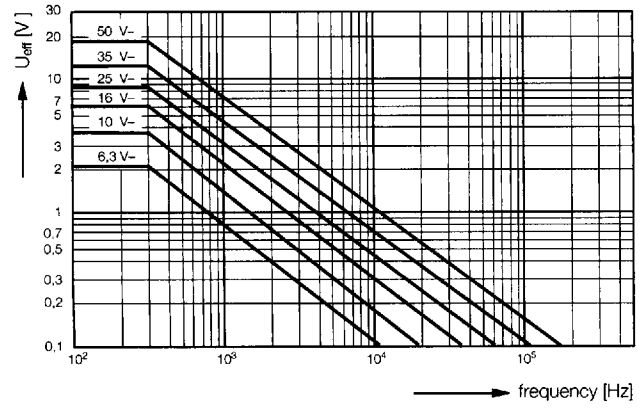


**Diagram 18:** Permissible superimposed AC voltage versus rated voltage and frequency at +20°C ETQW 4

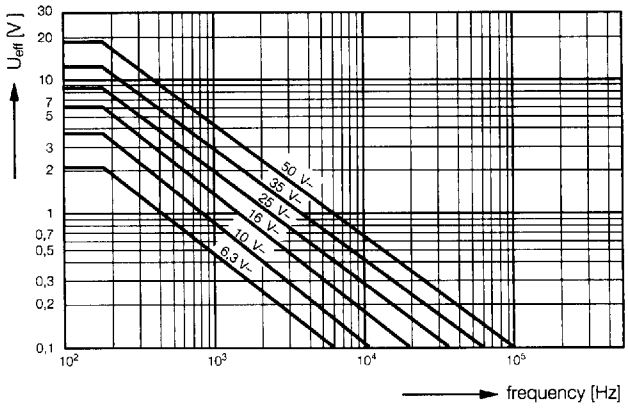


**Diagram 19:** Permissible superimposed AC voltage versus rated voltage and frequency at +20°C ETQW 5/6