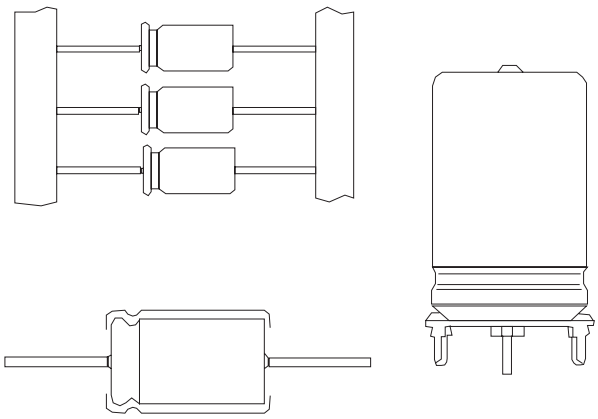
# Aluminum Electrolytic Capacitors
# Axial Miniature Capacitor Style ELM/EBM/EGM
# Solder Ring Termination as EGM03



## FEATURES

- Polarized aluminum electrolytic capacitor
- Miniature product
- High C·U product
- Charge/discharge proof
- High ripple current capability
- Solder ring available

## APPLICATIONS

- General purpose, industrial electronics
- Audio/video systems
- Coupling, smoothing, filtering, buffering and timing
- Portable and mobile units
- Vibration and shock resistant

## MAIN SPECIFICATIONS

| ITEM | UNIT | LOW VOLTAGE | | | HIGH VOLTAGE |
|---|---|---|---|---|---|
| Nominal Case Size (D x L) | mm | 4.5 x 10 | 6 x 10 to 10 x 25 | 12 x 25 to 30 x 50 | 12 x 25 to 30 x 50 |
| Rated Capacitance Range | µF | 1 - 2200 | | 330 - 47000 | 10 - 1000 |
| Capacitance Tolerance | % | ± 20 | | | ± 20 |
| Rated Voltage Range | V | 6.3 to 100 | | | 160 to 500 |
| Category Temperature Range | °C | - 40 to + 85 | | - 40 to + 105 | - 40 to + 85 |
| Endurance Test at upper category temperature | h | 1000 | | | 2000 |
| Useful Life at 105°C and $I_R$ applied | h | (500) | (750) | 1500 | |
| Useful Life at 85°C and $I_R$ applied | h | 2500 | | 5000 | 3000 |
| Useful Life at 40°C and $I_R$ applied | h | 70000 | | 150000 | 80000 |
| Shelf Life (0 V, upper category temperature) | h | 500 | | 100 | 100 |
| Failure Rate (0,8 $U_R$, 40°C) | $10^{-9}$/h | ≤ 130 | | ≤ 65 | ≤ 115 |
| Based on Sectional Specifications | | IEC 60384-4 / EN 130300 | | | |
| Detail Specifications | | similar to CECC 30301-044, similar to DIN 45910, part 126 without quality assessment | | | |
| Climatic Category IEC 60 068 | | 40/085/56 GPF | | 40/105/56 GMF | 40/085/56 GPF |

## VALUES AND DIMENSIONS $U_R \leq 100V$

Nominal size (D x L) in mm

| CAP | $U_R$ [V] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| [µF] | 6.3 | 10 | 16 | 25 | 40 | 50 | 63 | 100 |
| 1 | | | | | | | | 4.5 x 11 |
| 2.2 | | | | | | | | 4.5 x 11 |
| 4.7 | | ELM | | | | | | 4.5 x 11 |
| 10 | | | | | | | 4.5 x 11 | 6 x 10 |
| 22 | | | | | 4.5 x 11 | | 6 x 10 | 6.5 x 18 |
| 33 | | | | 4.5 x 11 | | | | |
| 47 | | | | 4.5 x 11 | 6 x 10 | EBM | 6.5 x 18 | 8 x 18 |
| 100 | | 4.5 x 11 | | 6 x 10 | 6.5 x 18 | | 8 x 18 | 10 x 25 |
| 150 | | | | | | | | |
| 220 | | 6 x 10 | | 6.5 x 18 | 10 x 18 | | 10 x 25 | 12 x 30 |
| 330 | | | | | | | 12 x 25 | 16 x 30 |
| 470 | | 6.5 x 18 | 8 x 18 | 10 x 18 | 10 x 25 | 12 x 25 | 12 x 25 | 16 x 40 |
| 680 | | 8 x 18 | 10 x 18 | 10 x 25 | 12 x 25 | 12 x 30 | 16 x 30 | 18 x 40 |
| 1000 | 8 x 18 | 10 x 18 | 10 x 25 | 12 x 25 | 12 x 30 | 16 x 30 | 16 x 40 | 21 x 40 |
| 1500 | 10 x 18 | 10 x 25 | 12 x 25 | 12 x 25 | 16 x 30 | 16 x 40 | 18 x 40 | 25 x 40 |
| 2200 | 10 x 25 | 12 x 25 | 12 x 30 | 16 x 30 | 16 x 40 | 18 x 40 | 21 x 40 | 25 x 50 |
| 3300 | 12 x 25 | 12 x 30 | 16 x 30 | 16 x 40 | 18 x 40 | 21 x 40 | 25 x 40 | 30 x 50 |
| 4700 | 12 x 30 | 16 x 30 | 16 x 40 | 18 x 40 | 21 x 40 | 25 x 40 | 25 x 45 | |
| 6800 | 16 x 30 | 16 x 40 | 18 x 40 | 21 x 40 | 25 x 40 | 25 x 50 | 30 x 45 | |
| 10000 | 16 x 40 | 18 x 40 | 21 x 40 | 25 x 40 | 25 x 50 | 30 x 50 | | |
| 15000 | 18 x 40 | 21 x 40 | 25 x 40 | 25 x 45 | 30 x 50 | | | |
| 22000 | 21 x 40 | 25 x 40 | 25 x 50 | 30 x 45 | | EGM | | |
| 33000 | 25 x 45 | 25 x 50 | 30 x 45 | | | | | |
| 47000 | 30 x 40 | 30 x 50 | | | | | | |

## VALUES AND DIMENSIONS $U_R > 100V$

Nominal size (D x L) in mm

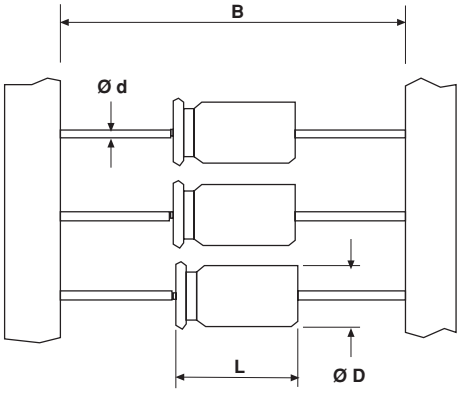
| CAP | $U_R$ [V] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| [µF] | 160 | 200 | 250 | 350 | 385 | 400 | 450 | 500 |
| 10 | | | | | | | | 12 X 25 |
| 22 | | EBM | | 12 X 25 | 12 X 25 | 12 X 30 | 12 X 30 | 16 X 30 |
| 33 | | | | 12 X 30 | 16 X 30 | 16 X 30 | 18 X 30 | 16 X 40 |
| 47 | | | 12 X 25 | 16 X 30 | 18 X 30 | 16 X 40 | 16 X 40 | 18 X 40 |
| 100 | 12 X 30 | 12 X30 | 16 X 40 | 18 X 40 | 21 X 40 | 21 X 40 | 21 X 40 | 25 X 40 |
| 150 | 16 X 30 | 16 X 40 | 18 X 40 | 21 X 40 | 25 X 40 | 25 X 40 | 25 X 50 | 25 X 50 |
| 220 | 16 X 40 | 18 X 40 | 21 X 40 | 25 X 40 | 25 X 45 | 25 X 50 | 30 X 45 | 30 X 50 |
| 330 | 18 X 40 | 21 X 40 | 25 X 45 | 30 X 40 | 30 X 45 | 30 X 50 | | |
| 470 | 21 X 40 | 25 X 40 | 30 X 45 | | | | | |
| 680 | 25 X 40 | 25 X 50 | | | EGM | | | |
| 1000 | 30 X 40 | 30 X 50 | | | | | | |

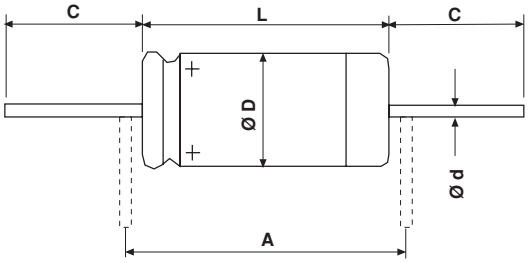
## AXIAL STYLE: DIMENSIONS, WEIGHT, PACKAGING QUANTITIES AND ORDERING CODE

| NOMINAL CASE SIZE Ø D x L | | | Ø d | C | Ø D MAX. | L MAX. | A MIN. | B | WEIGHT APPROX. | PACKAGING, ENDING OF ORDERING CODE, QUANTITIES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | BULK IN BOX | | TAPED ON REEL | | TAPED AMMO | |
| mm | x | mm | mm | mm | mm | mm | mm | mm | g | CODE | pcs. | CODE | pcs. | CODE | pcs. |
| 4.5 | x | 11 | 0.6 | | 5 | 11.0 | 15 | 63.5 ± 1.5 | 0.5 | n.a. | | ..A0V | 3000 | ..B0V | 1000 |
| 6 | x | 10 | 0.6 | | 6.3 | 10.5 | 15 | 63.5 ± 1.5 | 0.7 | n.a. | | ..A0V | 1000 | ..B0V | 1000 |
| 6.5 | x | 18 | 0.8 | | 6.9 | 18.5 | 25 | 73 ± 1.6 | 1.3 | n.a. | | ..A0V | 1000 | ..B0V | 1000 |
| 8 | x | 18 | 0.8 | | 8.5 | 18.5 | 25 | 73 ± 1.6 | 1.7 | n.a. | | ..A0V | 500 | ..B0V | 500 |
| 10 | x | 18 | 0.8 | | 10.5 | 18.5 | 25 | 73 ± 1.6 | 2.5 | n.a. | | ..A0V | 500 | ..B0V | 500 |
| 10 | x | 25 | 0.8 | | 10.5 | 25.0 | 30 | 73 ± 1.6 | 3.3 | n.a. | | ..A0V | 500 | ..B0V | 500 |
| 12 | x | 25 | 0.8 | $40_{-5}$ | 12.5 | 26.5 | 30 | 73 ± 1.6 | 4 | ..00B | 800 | ..A0B | 450 | ..B0B | 700 |
| 12 | x | 30 | 0.8 | $40_{-5}$ | 12.5 | 31.5 | 35 | 73 ± 1.6 | 6 | ..00B | 800 | ..A0B | 450 | ..B0B | 700 |
| 16 | x | 30 | 0.8 | $40_{-5}$ | 16.5 | 30.0 | 35 | 73 ± 1.6 | 8 | ..00B | 150 | ..A0B | 250 | ..B0B | 400 |
| 16 | x | 40 | 0.8 | $40_{-5}$ | 16.5 | 40.0 | 45 | | 11 | ..00B | 150 | n.a. | | n.a. | |
| 18 | x | 30 | 0.8 | $40_{-5}$ | 18.5 | 30.5 | 35 | | 10 | ..00B | 150 | n.a. | | n.a. | |
| 18 | x | 40 | 0.8 | $40_{-5}$ | 18.5 | 40.5 | 45 | | 15 | ..00B | 100 | n.a. | | n.a. | |
| 21 | x | 40 | 0.8 | $40_{-5}$ | 21.5 | 41.0 | 45 | | 21 | ..00B | 100 | n.a. | | n.a. | |
| 25 | x | 40 | 0.8 | $40_{-5}$ | 25.5 | 41.0 | 45 | | 31 | ..00B | 60 | n.a. | | n.a. | |
| 25 | x | 45 | 0.8 | $40_{-5}$ | 25.5 | 47.0 | 51 | | 38 | ..00B | 60 | n.a. | | n.a. | |
| 25 | x | 50 | 0.8 | $40_{-5}$ | 25.5 | 51.0 | 55 | | 44 | ..00B | 50 | n.a. | | n.a. | |
| 30 | x | 40 | 1.0 | $40_{-5}$ | 30.5 | 41.0 | 45 | | 46 | ..00B | 40 | n.a. | | n.a. | |
| 30 | x | 45 | 1.0 | $40_{-5}$ | 30.5 | 47.0 | 51 | | 54 | ..00B | 30 | n.a. | | n.a. | |
| 30 | x | 50 | 1.0 | $40_{-5}$ | 30.5 | 51.0 | 55 | | 64 | ..00B | 30 | n.a. | | n.a. | |

Axial style capacitors are insulated.

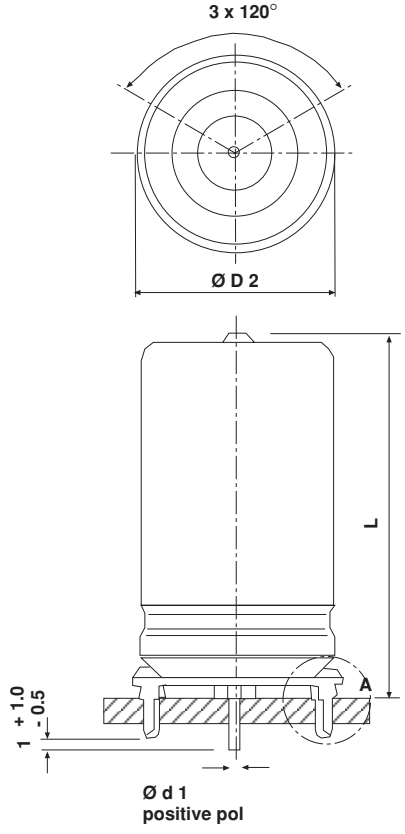
n.a. = not available

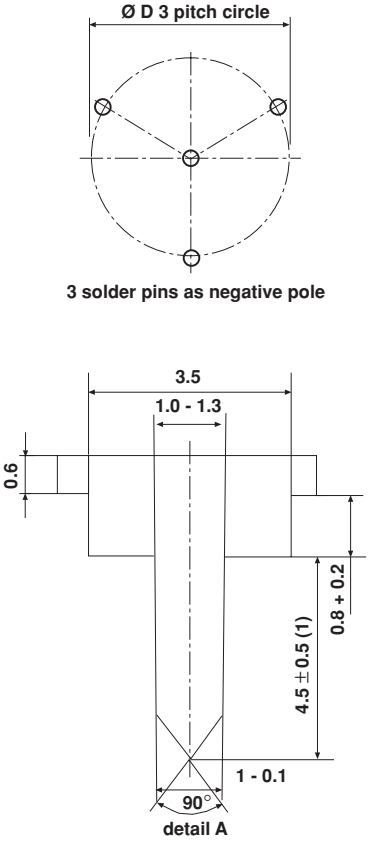


## MOUNTING RING STYLE: DIMENSIONS, WEIGHT, PACKAGING QUANTITIES AND ORDERING CODE

| NOMINAL CASE SIZE Ø D mm | x | L mm | Ø D1 mm | Ø D2 MAX. mm | ØD3 ±0.2 mm | L MAX. mm | WEIGHT APPROX. g | STARTING OF ORDERING CODE | PACKAGING QUANTITY pcs. |
|---|---|---|---|---|---|---|---|---|---|
| 16 | x | 30 | 1.0 | 17.2 | 16.5 | 32 | 12 | EGM03.. | 504 |
| 16 | x | 40 | 1.0 | 17.2 | 16.5 | 42 | 13 | EGM03.. | 336 |
| 18 | x | 30 | 1.0 | 19.2 | 18.5 | 32 | 13 | EGM03.. | 429 |
| 18 | x | 40 | 1.0 | 19.2 | 18.5 | 42 | 19 | EGM03.. | 286 |
| 21 | x | 40 | 1.0 | 22.2 | 21.5 | 42 | 24 | EGM03.. | 220 |
| 25 | x | 40 | 1.0 | 26.2 | 25.5 | 42 | 28 | EGM03.. | 144 |
| 25 | x | 45 | 1.0 | 26.2 | 25.5 | 48 | 33 | EGM03.. | 144 |
| 25 | x | 50 | 1.0 | 26.2 | 25.5 | 53 | 40 | EGM03.. | 144 |
| 30 | x | 40 | 1.0 | 31.2 | 30.5 | 42 | 42 | EGM03.. | 112 |
| 30 | x | 45 | 1.0 | 31.2 | 30.5 | 48 | 46 | EGM03.. | 112 |
| 30 | x | 50 | 1.0 | 31.2 | 30.5 | 53 | 50 | EGM03.. | 112 |




**specification of bore fit according to DIN 40810 (ø 1.3 + 0.1)**

**(1) pin length for mounting rings Ø 21, 25 and 30 is 3.1 ± 0.2**

**EGM03..**

Cases of mounting ring style capacitors are not insulated.
Insulation on request.

## ORDERING INFORMATION AND EXAMPLE

The following table gives the ordering number for standard version = axial leads, in bulk.

The 5th place of ordering code refers to termination style:

| | |
|---|---|
| EGM00.. | 0 = axial leads |
| EGM03.. | 3 = mounting ring with solder pins |

The 12th place of ordering code refers to packaging for axial lead capacitors:

| | |
|---|---|
| EBM00HD442C... | = EBM 2200µF 10V 12 x 25 |
| EBM00HD442C00B | 0 = in bulk (box) |
| EBM00HD442CA0B | A = taped on reel |
| EBM00HD442CB0B | B = taped ammo |

Please see tables “Axial Style” and “Mounting Ring Style” for available versions.

## MEASURING CONDITIONS AND FORMULA LEGEND

$T_a$ = 20°C, p = 80-106 kPa, RH = 45-75%

| | |
|---|---|
| $T_a$ | Ambient temperature |
| $T_{UC}$ | Upper category temperature |
| RH | Relative humidity |
| P | Ambient pressure |
| $C_R$ | Rated capacitance at 100Hz |
| $U_R$ | Rated voltage |
| tan δ | Dissipation factor at 100Hz |
| $R_{ESR}$ | Equivalent series resistance at 100Hz |
| Z | Impedance at 10kHz |
| $I_R$ | Rated alternating current (rms), 100Hz, upper category temperature |

## ELECTRICAL CHARACTERISTICS AND ORDERING CODE

| CAP 100 Hz $C_R$ [µF] | RATED VOLTAGE $U_R$ [V] | DIMENSION D x L [mm] | TAN δ 100Hz MAX. | $R_{ESR}$ 100Hz MAX. [Ω] | Z 10kHz MAX. [Ω] | $I_R$ 100Hz $T_{UC}$ [A] | ORDERING NO. |
|---|---|---|---|---|---|---|---|
| 1000 | 6.3 | 8 x 18 | 0.25 | 0.400 | 0.500 | 0.44 | EBM00FL410B00V |
| 1500 | 6.3 | 10 x 18 | 0.25 | 0.270 | 0.320 | 0.56 | EBM00GL415B00V |
| 2200 | 6.3 | 10 x 25 | 0.29 | 0.210 | 0.160 | 0.71 | EBM00GD422B00V |
| 3300 | 6.3 | 12 x 25 | 0.33 | 0.170 | 0.120 | 1.13 | EBM00HD433B00B |
| 4700 | 6.3 | 12 x 30 | 0.33 | 0.120 | 0.085 | 1.39 | EBM00HE447B00B |
| 6800 | 6.3 | 16 x 30 | 0.36 | 0.095 | 0.065 | 1.69 | EGM00KE468B00B |
| 10000 | 6.3 | 16 x 40 | 0.36 | 0.065 | < 0.050 | 2.21 | EGM00KG510B00B |
| 15000 | 6.3 | 18 x 40 | 0.42 | 0.050 | < 0.050 | 2.38 | EGM00LG515B00B |
| 22000 | 6.3 | 21 x 40 | 0.53 | 0.045 | < 0.050 | 2.44 | EGM00MG522B00B |
| 33000 | 6.3 | 25 x 45 | 0.65 | 0.035 | < 0.050 | 2.84 | EGM00NH533B00B |
| 47000 | 6.3 | 30 x 40 | 0.75 | 0.030 | < 0.050 | 3.20 | EGM00PG547B00B |
| 100 | 10 | 4.5 x 11 | 0.20 | 3.200 | 2.000 | 0.10 | ELM00BA310C00V |
| 220 | 10 | 6 x 10 | 0.20 | 1.500 | 0.910 | 0.16 | EBM00CK322C00V |
| 470 | 10 | 6.5 x 18 | 0.20 | 0.680 | 0.430 | 0.31 | EBM00DL347C00V |
| 680 | 10 | 8 x 18 | 0.20 | 0.470 | 0.290 | 0.40 | EBM00FL368C00V |
| 1000 | 10 | 10 x 18 | 0.20 | 0.320 | 0.200 | 0.55 | EBM00GL410C00V |
| 1500 | 10 | 10 x 25 | 0.23 | 0.250 | 0.180 | 0.69 | EBM00GD415C00V |
| 2200 | 10 | 12 x 25 | 0.26 | 0.205 | 0.140 | 1.02 | EBM00HD422C00B |
| 3300 | 10 | 12 x 30 | 0.27 | 0.140 | 0.095 | 1.29 | EBM00HE433C00B |
| 4700 | 10 | 16 x 30 | 0.28 | 0.105 | 0.070 | 1.61 | EGM00KE447C00B |
| 6800 | 10 | 16 x 40 | 0.28 | 0.070 | 0.050 | 2.08 | EGM00KG468C00B |
| 10000 | 10 | 18 x 40 | 0.31 | 0.055 | < 0.050 | 2.34 | EGM00LG510C00B |
| 15000 | 10 | 21 x 40 | 0.38 | 0.045 | < 0.050 | 2.47 | EGM00MG515C00B |
| 22000 | 10 | 25 x 40 | 0.53 | 0.045 | < 0.050 | 2.50 | EGM00NG522C00B |
| 33000 | 10 | 25 x 50 | 0.60 | 0.035 | < 0.050 | 2.95 | EGM00NJ533C00B |
| 47000 | 10 | 30 x 50 | 0.72 | 0.030 | < 0.050 | 3.20 | EGM00PJ547C00B |
| 470 | 16 | 8 x 18 | 0.16 | 0.550 | 0.340 | 0.38 | EBM00FL347D00V |
| 680 | 16 | 10 x 18 | 0.16 | 0.380 | 0.240 | 0.50 | EBM00GL368D00V |
| 1000 | 16 | 10 x 25 | 0.16 | 0.260 | 0.180 | 0.66 | EBM00GD410D00V |
| 2200 | 16 | 12 x 30 | 0.21 | 0.160 | 0.105 | 1.09 | EBM00HE422D00B |
| 3300 | 16 | 16 x 30 | 0.21 | 0.110 | 0.075 | 1.53 | EGM00KE433D00B |
| 4700 | 16 | 16 x 40 | 0.21 | 0.080 | 0.050 | 1.95 | EGM00KG447D00B |
| 6800 | 16 | 18 x 40 | 0.23 | 0.060 | < 0.050 | 2.24 | EGM00LG468D00B |

## ELECTRICAL CHARACTERISTICS AND ORDERING CODE

| CAP 100 Hz $C_R$ [µF] | RATED VOLTAGE $U_R$ [V] | DIMENSION D x L [mm] | TAN δ 100Hz MAX. | $R_{ESR}$ 100Hz MAX. [Ω] | Z 10kHz MAX. [Ω] | $I_R$ 100Hz $T_{UC}$ [A] | ORDERING NO. |
|---|---|---|---|---|---|---|---|
| 10000 | 16 | 21 x 40 | 0.27 | 0.050 | < 0.050 | 2.44 | EGM00MG510D00B |
| 15000 | 16 | 25 x 40 | 0.37 | 0.045 | < 0.050 | 2.51 | EGM00NG515D00B |
| 22000 | 16 | 25 x 50 | 0.41 | 0.035 | < 0.050 | 2.98 | EGM00NJ522D00B |
| 33000 | 16 | 30 x 45 | 0.49 | 0.030 | < 0.050 | 3.30 | EGM00PH533D00B |
| 33 | 25 | 4.5 x 11 | 0.14 | 6.700 | 3.500 | 0.07 | ELM00BA233E00V |
| 47 | 25 | 4.5 x 11 | 0.14 | 4.800 | 2.600 | 0.08 | ELM00BA247E00V |
| 100 | 25 | 6 x 10 | 0.14 | 2.300 | 1.200 | 0.15 | EBM00CK310E00V |
| 220 | 25 | 6.5 x 18 | 0.14 | 1.000 | 0.550 | 0.25 | EBM00DL322E00V |
| 470 | 25 | 10 x 18 | 0.14 | 0.480 | 0.260 | 0.45 | EBM00GL347E00V |
| 680 | 25 | 10 x 25 | 0.14 | 0.330 | 0.180 | 0.56 | EBM00GD368E00V |
| 1000 | 25 | 12 x 25 | 0.14 | 0.220 | 0.130 | 0.65 | EBM00HD410E00B |
| 1500 | 25 | 12 x 25 | 0.16 | 0.180 | 0.110 | 0.98 | EBM00HD415E00B |
| 2200 | 25 | 16 x 30 | 0.16 | 0.125 | 0.075 | 1.23 | EGM00KE422E00B |
| 3300 | 25 | 16 x 40 | 0.16 | 0.085 | 0.055 | 1.79 | EGM00KG433E00B |
| 4700 | 25 | 18 x 40 | 0.17 | 0.065 | < 0.050 | 2.09 | EGM00LG447E00B |
| 6800 | 25 | 21 x 40 | 0.20 | 0.050 | < 0.050 | 2.35 | EGM00MG468E00B |
| 10000 | 25 | 25 x 40 | 0.26 | 0.045 | < 0.050 | 2.48 | EGM00NG510E00B |
| 15000 | 25 | 25 x 45 | 0.32 | 0.040 | < 0.050 | 2.68 | EGM00NH515E00B |
| 22000 | 25 | 30 x 45 | 0.40 | 0.035 | < 0.050 | 2.90 | EGM00PH522E00B |
| 22 | 40 | 4.5 x 11 | 0.11 | 8.000 | 3.200 | 0.06 | ELM00BA222G00V |
| 47 | 40 | 6 x 10 | 0.11 | 3.800 | 1.500 | 0.11 | EBM00CK247G00V |
| 100 | 40 | 6.5 x 18 | 0.11 | 1.800 | 0.700 | 0.19 | EBM00DL310G00V |
| 220 | 40 | 10 x 18 | 0.11 | 0.800 | 0.320 | 0.33 | EBM00GL322G00V |
| 470 | 40 | 10 x 25 | 0.11 | 0.370 | 0.180 | 0.52 | EBM00GD347G00V |
| 680 | 40 | 12 x 25 | 0.12 | 0.280 | 0.120 | 0.50 | EBM00HD368G00B |
| 1000 | 40 | 12 x 30 | 0.12 | 0.195 | 0.105 | 0.86 | EBM00HE410G00B |
| 1500 | 40 | 16 x 30 | 0.12 | 0.135 | 0.075 | 1.23 | EGM00KE415G00B |
| 2200 | 40 | 16 x 40 | 0.12 | 0.090 | 0.050 | 1.58 | EGM00KG422G00B |
| 3300 | 40 | 18 x 40 | 0.13 | 0.065 | < 0.050 | 1.91 | EGM00LG433G00B |
| 4700 | 40 | 21 x 40 | 0.15 | 0.055 | < 0.050 | 2.17 | EGM00MG447G00B |
| 6800 | 40 | 25 x 40 | 0.19 | 0.050 | < 0.050 | 2.33 | EGM00NG468G00B |
| 10000 | 40 | 25 x 50 | 0.21 | 0.035 | < 0.050 | 2.80 | EGM00NJ510G00B |
| 15000 | 40 | 30 x 50 | 0.33 | 0.040 | < 0.050 | 2.81 | EGM00PJ515G00B |
| 680 | 50 | 12 x 30 | 0.11 | 0.270 | 0.150 | 0.74 | EBM00HE368H00B |
| 1000 | 50 | 16 x 30 | 0.11 | 0.185 | 0.105 | 1.06 | EGM00KE410H00B |
| 1500 | 50 | 16 x 40 | 0.11 | 0.125 | 0.070 | 1.37 | EGM00KG415H00B |
| 2200 | 50 | 18 x 40 | 0.12 | 0.090 | 0.055 | 1.70 | EGM00LG422H00B |
| 3300 | 50 | 21 x 40 | 0.13 | 0.070 | < 0.050 | 2.03 | EGM00MG433H00B |
| 4700 | 50 | 25 x 40 | 0.16 | 0.060 | < 0.050 | 2.26 | EGM00NG447H00B |
| 6800 | 50 | 25 x 50 | 0.17 | 0.045 | < 0.050 | 2.74 | EGM00NJ468H00B |
| 10000 | 50 | 30 x 50 | 0.24 | 0.045 | < 0.050 | 2.85 | EGM00PJ510H00B |
| 10 | 63 | 4.5 x 11 | 0.08 | 13.000 | 5.500 | 0.05 | ELM00BA210J00V |
| 22 | 63 | 6 x 10 | 0.08 | 5.800 | 2.500 | 0.09 | EBM00CK222J00V |
| 47 | 63 | 6.5 x 8 | 0.08 | 2.700 | 1.200 | 0.15 | EBM00DL247J00V |
| 100 | 63 | 8 x 18 | 0.08 | 1.300 | 0.550 | 0.25 | EBM00FL310J00V |
| 220 | 63 | 10 x 25 | 0.08 | 0.600 | 0.250 | 0.43 | EBM00GD322J00V |
| 330 | 63 | 12 x 25 | 0.08 | 0.390 | 0.180 | 0.39 | EBM00HD333J00B |
| 470 | 63 | 12 x 25 | 0.10 | 0.340 | 0.160 | 0.60 | EBM00HD347J00B |
| 680 | 63 | 16 x 30 | 0.10 | 0.235 | 0.115 | 0.76 | EGM00KE368J00B |
| 1000 | 63 | 16 x 40 | 0.10 | 0.165 | 0.080 | 1.10 | EGM00KG410J00B |
| 1500 | 63 | 18 x 40 | 0.10 | 0.115 | 0.055 | 1.42 | EGM00LG415J00B |
| 2200 | 63 | 21 x 40 | 0.11 | 0.085 | < 0.050 | 1.76 | EGM00MG422J00B |
| 3300 | 63 | 25 x 40 | 0.13 | 0.065 | < 0.050 | 2.09 | EGM00NG433J00B |
| 4700 | 63 | 25 x 45 | 0.14 | 0.055 | < 0.050 | 2.37 | EGM00NH447J00B |
| 6800 | 63 | 30 x 45 | 0.20 | 0.050 | < 0.050 | 2.53 | EGM00PH468J00B |

## ELECTRICAL CHARACTERISTICS AND ORDERING CODE

| CAP 100 Hz $C_R$ [µF] | RATED VOLTAGE $U_R$ [V] | DIMENSION D x L [mm] | TAN δ 100Hz MAX. | $R_{ESR}$ 100Hz MAX. [Ω] | Z 10kHz MAX. [Ω] | $I_R$ 100Hz $T_{UC}$ [A] | ORDERING NO. |
|---|---|---|---|---|---|---|---|
| 1 | 100 | 4.5 x 11 | 0.08 | 130.000 | 90.000 | 0.01 | ELM00BA110L00V |
| 2.2 | 100 | 4.5 x 11 | 0.08 | 58.000 | 41.000 | 0.02 | ELM00BA122L00V |
| 4.7 | 100 | 4.5 x 11 | 0.08 | 27.000 | 19.000 | 0.03 | ELM00BA147L00V |
| 10 | 100 | 6 x 10 | 0.08 | 13.000 | 9.000 | 0.07 | EBM00CK210L00V |
| 22 | 100 | 6.5 x 18 | 0.08 | 5.800 | 4.100 | 0.10 | EBM00DL222L00V |
| 47 | 100 | 8 x 18 | 0.08 | 2.700 | 1.900 | 0.16 | EBM00FL247L00V |
| 100 | 100 | 10 x 25 | 0.08 | 1.300 | 0.900 | 0.30 | EBM00GD310L00V |
| 220 | 100 | 12 x 30 | 0.09 | 0.655 | 0.205 | 0.37 | EBM00HE322L00B |
| 330 | 100 | 16 x 30 | 0.09 | 0.440 | 0.140 | 0.56 | EGM00KE333L00B |
| 470 | 100 | 16 x 40 | 0.09 | 0.310 | 0.100 | 0.70 | EGM00KG347L00B |
| 680 | 100 | 18 x 40 | 0.09 | 0.220 | 0.070 | 0.91 | EGM00LG368L00B |
| 1000 | 100 | 21 x 40 | 0.09 | 0.155 | 0.055 | 1.19 | EGM00MG410L00B |
| 1500 | 100 | 25 x 40 | 0.10 | 0.115 | < 0.050 | 1.52 | EGM00NG415L00B |
| 2200 | 100 | 25 x 50 | 0.11 | 0.080 | < 0.050 | 1.90 | EGM00NJ422L00B |
| 3300 | 100 | 30 x 50 | 0.13 | 0.065 | < 0.050 | 2.27 | EGM00PJ433L00B |
| 100 | 160 | 12 x 30 | 0.07 | 1.115 | 0.485 | 0.42 | EBM00HE310M00B |
| 150 | 160 | 16 x 30 | 0.07 | 0.745 | 0.330 | 0.61 | EGM00KE315M00B |
| 220 | 160 | 16 x 40 | 0.07 | 0.505 | 0.225 | 0.77 | EGM00KG322M00B |
| 330 | 160 | 18 x 40 | 0.08 | 0.385 | 0.155 | 1.03 | EGM00LG333M00B |
| 470 | 160 | 21 x 40 | 0.08 | 0.270 | 0.115 | 1.33 | EGM00MG347M00B |
| 680 | 160 | 25 x 40 | 0.08 | 0.185 | 0.090 | 1.70 | EGM00NG368M00B |
| 1000 | 160 | 30 x 40 | 0.09 | 0.145 | 0.075 | 2.10 | EGM00PG410M00B |
| 100 | 200 | 16 x 30 | 0.09 | 1.435 | 0.725 | 0.50 | EGM00KE310S00B |
| 150 | 200 | 16 x 40 | 0.09 | 0.955 | 0.485 | 0.65 | EGM00KG315S00B |
| 220 | 200 | 18 x 40 | 0.09 | 0.650 | 0.335 | 0.86 | EGM00LG322S00B |
| 330 | 200 | 21 x 40 | 0.09 | 0.435 | 0.230 | 1.15 | EGM00MG333S00B |
| 470 | 200 | 25 x 40 | 0.09 | 0.305 | 0.170 | 1.49 | EGM00NG347S00B |
| 680 | 200 | 25 x 50 | 0.09 | 0.210 | 0.120 | 1.86 | EGM00NJ368S00B |
| 1000 | 200 | 30 x 50 | 0.10 | 0.160 | 0.095 | 2.35 | EGM00PJ410S00B |
| 47 | 250 | 12 x 25 | 0.09 | 3.050 | 1.230 | 0.29 | EBM00HD247N00B |
| 100 | 250 | 16 x 40 | 0.09 | 1.435 | 0.580 | 0.53 | EGM00KG310N00B |
| 150 | 250 | 18 x 40 | 0.09 | 0.955 | 0.390 | 0.72 | EGM00LG315N00B |
| 220 | 250 | 21 x 40 | 0.09 | 0.650 | 0.270 | 0.97 | EGM00MG322N00B |
| 330 | 250 | 25 x 40 | 0.09 | 0.435 | 0.190 | 1.30 | EGM00NG333N00B |
| 470 | 250 | 25 x 45 | 0.09 | 0.305 | 0.140 | 1.58 | EGM00NH347N00B |
| 680 | 250 | 30 x 45 | 0.09 | 0.210 | 0.105 | 2.01 | EGM00PH368N00B |
| 33 | 350 | 12 x 30 | 0.10 | 4.825 | 3.050 | 0.24 | EBM00HE233O00B |
| 47 | 350 | 16 x 30 | 0.10 | 3.390 | 2.150 | 0.35 | EGM00KE247O00B |
| 100 | 350 | 18 x 40 | 0.10 | 1.590 | 1.015 | 0.59 | EGM00LG310O00B |
| 150 | 350 | 21 x 40 | 0.10 | 1.060 | 0.685 | 0.80 | EGM00MG315O00B |
| 220 | 350 | 25 x 40 | 0.10 | 0.725 | 0.475 | 1.06 | EGM00NG322O00B |
| 330 | 350 | 30 x 40 | 0.10 | 0.485 | 0.335 | 1.42 | EGM00PG333O00B |
| 22 | 385 | 12 x 25 | 0.09 | 6.515 | 4.000 | 0.19 | EBM00HD222R00B |
| 47 | 385 | 18 x 30 | 0.09 | 3.050 | 1.880 | 0.38 | EGM00LE247R00B |
| 100 | 385 | 21 x 40 | 0.09 | 1.435 | 0.890 | 0.64 | EGM00MG310R00B |
| 150 | 385 | 25 x 40 | 0.09 | 0.955 | 0.600 | 0.88 | EGM00NG315R00B |
| 220 | 385 | 25 x 45 | 0.09 | 0.650 | 0.415 | 1.09 | EGM00NH322R00B |
| 330 | 385 | 30 x 45 | 0.09 | 0.435 | 0.290 | 1.47 | EGM00PH333R00B |
| 22 | 400 | 12 x 30 | 0.12 | 8.685 | 6.105 | 0.19 | EBM00HE222X00B |
| 33 | 400 | 16 x 30 | 0.12 | 5.790 | 4.075 | 0.28 | EGM00KE233X00B |
| 47 | 400 | 16 x 40 | 0.12 | 4.065 | 2.860 | 0.35 | EGM00KG247X00B |
| 100 | 400 | 21 x 40 | 0.12 | 1.910 | 1.355 | 0.63 | EGM00MG310X00B |
| 150 | 400 | 25 x 40 | 0.12 | 1.275 | 0.910 | 0.86 | EGM00NG315X00B |
| 220 | 400 | 25 x 50 | 0.12 | 0.870 | 0.625 | 1.09 | EGM00NJ322X00B |
| 330 | 400 | 30 x 50 | 0.12 | 0.580 | 0.430 | 1.48 | EGM00PJ333X00B |

## ELECTRICAL CHARACTERISTICS AND ORDERING CODE

| CAP 100 Hz $C_R$ [µF] | RATED VOLTAGE $U_R$ [V] | DIMENSION D x L [mm] | TAN d 100Hz MAX. | $R_{ESR}$ 100Hz MAX. [Ω] | Z 10kHz MAX. [Ω] | $I_R$ 100Hz $T_{UC}$ [A] | ORDERING NO. |
|---|---|---|---|---|---|---|---|
| 22 | 450 | 12 x 30 | 0.10 | 7.240 | 3.505 | 0.20 | EBM00HE222P00B |
| 33 | 450 | 18 x 30 | 0.10 | 4.825 | 2.340 | 0.30 | EGM00LE233P00B |
| 47 | 450 | 16 x 40 | 0.10 | 3.390 | 1.645 | 0.37 | EGM00KG247P00B |
| 100 | 450 | 21 x 40 | 0.10 | 1.590 | 0.785 | 0.65 | EGM00MG310P00B |
| 150 | 450 | 25 x 50 | 0.10 | 1.060 | 0.525 | 0.91 | EGM00NJ315P00B |
| 220 | 450 | 30 x 45 | 0.10 | 0.725 | 0.370 | 1.20 | EGM00PH322P00B |
| 10 | 500 | 12 x 25 | 0.09 | 14.080 | 9.305 | 0.14 | EBM00HD210Y00B |
| 22 | 500 | 16 x 30 | 0.09 | 6.210 | 4.105 | 0.26 | EGM00KE222Y00B |
| 33 | 500 | 16 x 40 | 0.09 | 4.140 | 2.740 | 0.35 | EGM00KG233Y00B |
| 47 | 500 | 18 x 40 | 0.09 | 2.915 | 1.925 | 0.45 | EGM00LG247Y00B |
| 100 | 500 | 25 x 40 | 0.09 | 1.385 | 0.920 | 0.81 | EGM00NG310Y00B |
| 150 | 500 | 25 x 50 | 0.09 | 0.925 | 0.615 | 1.04 | EGM00NJ315Y00B |
| 220 | 500 | 30 x 50 | 0.09 | 0.645 | 0.435 | 1.39 | EGM00PJ322Y00B |

Table for the calculation of the maximum 10 kHz impedance at low temperatures.

## LOW TEMPERATURE BEHAVIOR

Z (10kHz) [Ω] = TABULAR VALUE / $C_R$[µF]

| $T_a$ | RATED VOLTAGE $U_R$ [V] | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [°C] | 6.3 | 10 | 16 | 25 | 40 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 385 | 400 | 450 | 500 |
| -25 | 2100 | 1600 | 1250 | 680 | 390 | 375 | 240 | 200 | 1000 | 1000 | 1000 | 1500 | 1800 | 2000 | 5000 | 5000 |
| -40 | 7600 | 5700 | 3500 | 1870 | 1150 | 1100 | 650 | 500 | 4600 | 4600 | 4600 | 5000 | 6000 | 8000 | 10000 | 10000 |

The lower limit of the series resistance and impedance is determined by the ohmic part of the contact points and the foil resistance values. Therefore it will not always be possible to achieve calculated values below 0.05Ω.

## ADDITIONAL ELECTRICAL DATA

| PARAMETER | CONDITIONS | SPECIFICATION |
|---|---|---|
| Leakage current $I_L$ | $U_R \leq 100V$; $U_R$, 300s<br>$U_R > 100V$; $U_R >$, 300s | $I_L/\mu A \leq 0.002 \times C_R/\mu F \times U_R/V + 3$<br>$I_L/\mu A \leq 0.015 \times C_R/\mu F \times U_R/V + 10$ |
| Surge voltage $U_S$ | $U_R \leq 100V$<br>$U_R \geq 160V$ | $U_S = 1.15 \times U_R$<br>$U_S = 1.10 \times U_R$ |
| Reverse voltage $U_{rev}$ | | $U_{rev} \leq 1V$ |

## TEST PROCEDURES AND CRITERIA

| TEST | REFERENCE | PROCEDURE | CRITERION |
|---|---|---|---|
| Endurance | IEC 60384-4/<br>EN 1300300<br>subclause 4.13 | $T_A$ = upper cat. temp.; $U_R$ applied;<br>$6.3V \leq U_R \leq 100V$: 1000h<br><br>$T_A = 85°C$; $U_R$ applied;<br>$160V \leq U_R \leq 500$ V: 2000 h | $U_R = 6.3V$: - 40%≤ DC/C ≤ 25%<br>$U_R > 6.3V$: - 30% ≤ DC/C ≤ 30%<br>tan δ ≤ 1.5 x spec. limit<br>Z ≤ 3 x spec. limit<br>$I_L$(300 s) ≤ spec. limit |
| Useful life | CECC 30301<br>subclause 1.8.1 | $T_A = 105°C$; $U_R$ and $I_R$ applied;<br>$6,3 V \leq U_R \leq 100V$<br>case 4.5 x 11: 500h<br>cases 6 x 10 to 10 x 25: 750h<br>cases 12 x 25 to 30 x 50: 1500h<br>$T_A = 85°C$; $U_R$ and $I_R$ applied;<br>$160V \leq U_R \leq 500V$: 3000h | $U_R = 6.3V$: - 50% ≤ DC/C ≤ 45%<br>$U_R > 6.3V$: - 45% ≤ DC/C ≤ 45%<br>tan δ ≤ 3 x spec. limit<br>Z ≤ 3 x spec. limit<br>$I_L$(300s) ≤ spec. limit<br>no short circuit, no open circuit<br>total failure percentage ≤ 1% |
| Shelf life<br>(storage at high temperature) | IEC 60348-4/<br>EN 130300<br>subclause 4.17 | $T_A$ = upper cat. temp.; no voltage applied;<br>$6.3V \leq U_R \leq 100V$<br>cases 4.5 x 11 to 10 x 25: 500 h<br>cases 12 x 25 to 30 x 50: 100 h<br>$160V \leq U_R \leq 500V$: 100h<br>After test: $U_R$ to be applied for 30 minutes<br>24h to 48h before measurement | $U_R = 6.3V$: - 40% ≤ DC/C ≤ 25%<br>$U_R > 6.3V$: - 30% ≤ DC/C ≤ 30%<br>tan δ ≤ 1.5 x spec. limit<br>Z ≤ 3 x spec. limit<br>$I_L$(300 s) ≤ 2 x spec. limit |

## OPERATING LIFE TABLE

Interrelation between alternating current load, ambient temperature and useful life

**$U_R \leq 100V$ and $\varnothing \leq 10mm$**

| Current ratio $I / I_R$ (depending on frequency) | | | | | | | Multiplier L for useful life (depending on $I/I_R$ and $T_a$) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.42 | 3.80 | 4.18 | 4.37 | 4.56 | 4.75 | 4.94 | 0.32 | | | | | | | | | | | | | |
| 3.24 | 3.60 | 3.96 | 4.14 | 4.32 | 4.50 | 4.68 | 0.46 | 0.37 | | | | | | | | | | | | |
| 3.06 | 3.40 | 3.74 | 3.91 | 4.08 | 4.25 | 4.42 | 0.66 | 0.53 | 0.42 | 0.34 | | | | | | | | | | |
| 2.88 | 3.20 | 3.52 | 3.68 | 3.84 | 4.00 | 4.16 | 0.95 | 0.75 | 0.59 | 0.46 | 0.36 | 0.28 | | | | | | | | |
| 2.70 | 3.00 | 3.30 | 3.45 | 3.60 | 3.75 | 3.90 | 1.4 | 1.1 | 0.82 | 0.64 | 0.49 | 0.38 | 0.30 | | | | | | | |
| 2.52 | 2.80 | 3.08 | 3.22 | 3.36 | 3.50 | 3.64 | 1.9 | 1.5 | 1.1 | 0.87 | 0.67 | 0.51 | 0.39 | 0.30 | | | | | | |
| 2.34 | 2.60 | 2.86 | 2.99 | 3.12 | 3.25 | 3.38 | 2.7 | 2.1 | 1.6 | 1.2 | 0.89 | 0.67 | 0.51 | 0.39 | 0.29 | | | | | |
| 2.16 | 2.40 | 2.64 | 2.76 | 2.88 | 3.00 | 3.12 | 3.8 | 2.8 | 2.1 | 1.6 | 1.2 | 0.89 | 0.66 | 0.50 | 0.37 | 0.28 | | | | |
| 1.98 | 2.20 | 2.42 | 2.53 | 2.64 | 2.75 | 2.86 | 5.3 | 3.9 | 2.9 | 2.1 | 1.6 | 1.2 | 0.85 | 0.63 | 0.47 | 0.35 | | | | |
| 1.80 | 2.00 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 7.3 | 5.3 | 3.8 | 2.8 | 2.0 | 1.5 | 1.1 | 0.80 | 0.59 | 0.43 | 0.32 | | | |
| 1.62 | 1.80 | 1.98 | 2.07 | 2.16 | 2.25 | 2.34 | 10 | 7.1 | 5.1 | 3.6 | 2.6 | 1.9 | 1.4 | 1.0 | 0.72 | 0.53 | 0.39 | 0.29 | | |
| 1.44 | 1.60 | 1.76 | 1.84 | 1.92 | 2.00 | 2.08 | 13 | 9.4 | 6.6 | 4.7 | 3.3 | 2.3 | 1.7 | 1.2 | 0.87 | 0.64 | 0.47 | 0.34 | | |
| 1.26 | 1.40 | 1.54 | 1.61 | 1.68 | 1.75 | 1.82 | 18 | 12 | 8.5 | 5.9 | 4.1 | 2.9 | 2.0 | 1.5 | 1.0 | 0.75 | 0.55 | 0.40 | 0.29 | |
| 1.08 | 1.20 | 1.32 | 1.38 | 1.44 | 1.50 | 1.56 | 23 | 16 | 11 | 7.3 | 5.0 | 3.5 | 2.4 | 1.7 | 1.2 | 0.88 | 0.63 | 0.46 | 0.34 | |
| 0.90 | **1.00** | 1.10 | 1.15 | 1.20 | 1.25 | 1.30 | 29 | 19 | 13 | 8.8 | 6.0 | 4.1 | 2.9 | 2.0 | 1.4 | **1.00** | 0.72 | 0.52 | 0.38 | 0.28 |
| 0.72 | 0.80 | 0.88 | 0.92 | 0.96 | 1.00 | 1.04 | 36 | 24 | 16 | 10 | 7.0 | 4.8 | 3.3 | 2.3 | 1.6 | 1.13 | 0.80 | 0.58 | 0.42 | 0.31 |
| 0.54 | 0.60 | 0.66 | 0.69 | 0.72 | 0.75 | 0.78 | 43 | 28 | 18 | 12 | 8.0 | 5.4 | 3.7 | 2.5 | 1.8 | 1.24 | 0.88 | 0.63 | 0.45 | 0.33 |
| 0.36 | 0.40 | 0.44 | 0.46 | 0.48 | 0.50 | 0.52 | 49 | 31 | 20 | 13 | 8.8 | 5.9 | 4.0 | 2.7 | 1.9 | 1.33 | 0.94 | 0.67 | 0.48 | 0.35 |
| 0.18 | 0.20 | 0.22 | 0.23 | 0.24 | 0.25 | 0.26 | 54 | 34 | 22 | 14 | 9.4 | 6.3 | 4.2 | 2.9 | 2.0 | 1.40 | 0.98 | 0.70 | 0.50 | 0.36 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | 35 | 23 | 15 | 9.7 | 6.4 | 4.3 | 3.0 | 2.0 | 1.42 | 1.00 | 0.71 | 0.51 | 0.37 |
| 50 | **100** | 250 | 500 | 1000 | 2500 | 10 K | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | **85** | 90 | 95 | 100 | 105 |
| **Frequency [Hz]** | | | | | | | **Ambient temperature $T_a$ [°C]** | | | | | | | | | | | | | |

**$U_R \leq 100V$ and $\varnothing \geq 12mm$**

| Current ratio $I / I_R$ (depending on frequency) | | | | | | | Multiplier L for useful life (depending on $I/I_R$ and $T_a$) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.42 | 3.80 | 4.18 | 4.37 | 4.56 | 4.75 | 4.94 | 1.2 | | | | | | | | | | | | | |
| 3.24 | 3.60 | 3.96 | 4.14 | 4.32 | 4.50 | 4.68 | 1.7 | 1.3 | 1.1 | | | | | | | | | | | |
| 3.06 | 3.40 | 3.74 | 3.91 | 4.08 | 4.25 | 4.42 | 2.4 | 1.9 | 1.5 | 1.2 | | | | | | | | | | |
| 2.88 | 3.20 | 3.52 | 3.68 | 3.84 | 4.00 | 4.16 | 3.4 | 2.7 | 2.1 | 1.7 | 1.3 | 1.0 | | | | | | | | |
| 2.70 | 3.00 | 3.30 | 3.45 | 3.60 | 3.75 | 3.90 | 4.9 | 3.8 | 3.0 | 2.3 | 1.8 | 1.4 | 1.1 | | | | | | | |
| 2.52 | 2.80 | 3.08 | 3.22 | 3.36 | 3.50 | 3.64 | 6.9 | 5.3 | 4.1 | 3.1 | 2.4 | 1.8 | 1.4 | 1.1 | | | | | | |
| 2.34 | 2.60 | 2.86 | 2.99 | 3.12 | 3.25 | 3.38 | 9.7 | 7.4 | 5.6 | 4.2 | 3.2 | 2.4 | 1.8 | 1.4 | 1.1 | | | | | |
| 2.16 | 2.40 | 2.64 | 2.76 | 2.88 | 3.00 | 3.12 | 14 | 10 | 7.6 | 5.7 | 4.3 | 3.2 | 2.4 | 1.8 | 1.3 | 1.0 | | | | |
| 1.98 | 2.20 | 2.42 | 2.53 | 2.64 | 2.75 | 2.86 | 19 | 14 | 10 | 7.6 | 5.6 | 4.1 | 3.1 | 2.3 | 1.7 | 1.3 | | | | |
| 1.80 | 2.00 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 26 | 19 | 14 | 10 | 7.3 | 5.3 | 3.9 | 2.9 | 2.1 | 1.6 | 1.2 | | | |
| 1.62 | 1.80 | 1.98 | 2.07 | 2.16 | 2.25 | 2.34 | 36 | 26 | 18 | 13 | 9.4 | 6.8 | 4.9 | 3.6 | 2.6 | 1.9 | 1.4 | 1.0 | | |
| 1.44 | 1.60 | 1.76 | 1.84 | 1.92 | 2.00 | 2.08 | 49 | 34 | 24 | 17 | 12 | 8.4 | 6.0 | 4.3 | 3.1 | 2.3 | 1.7 | 1.2 | | |
| 1.26 | 1.40 | 1.54 | 1.61 | 1.68 | 1.75 | 1.82 | 64 | 44 | 30 | 21 | 15 | 10 | 7.3 | 5.2 | 3.8 | 2.7 | 2.0 | 1.4 | 1.06 | |
| 1.08 | 1.20 | 1.32 | 1.38 | 1.44 | 1.50 | 1.56 | 83 | 56 | 38 | 26 | 18 | 13 | 8.8 | 6.2 | 4.4 | 3.2 | 2.3 | 1.7 | 1.21 | |
| 0.90 | **1.00** | 1.10 | 1.15 | 1.20 | 1.25 | 1.30 | 105 | 70 | 47 | 32 | 22 | 15 | 10 | 7.2 | 5.1 | 3.6 | 2.6 | 1.9 | 1.36 | **1.00** |
| 0.72 | 0.80 | 0.88 | 0.92 | 0.96 | 1.00 | 1.04 | 129 | 85 | 56 | 37 | 25 | 17 | 12 | 8.2 | 5.7 | 4.1 | 2.9 | 2.1 | 1.50 | 1.10 |
| 0.54 | 0.60 | 0.66 | 0.69 | 0.72 | 0.75 | 0.78 | 155 | 100 | 65 | 43 | 29 | 19 | 13 | 9.1 | 6.3 | 4.5 | 3.2 | 2.3 | 1.63 | 1.19 |
| 0.36 | 0.40 | 0.44 | 0.46 | 0.48 | 0.50 | 0.52 | 176 | 113 | 73 | 48 | 32 | 21 | 14 | 9.9 | 6.9 | 4.8 | 3.4 | 2.4 | 1.73 | 1.26 |
| 0.18 | 0.20 | 0.22 | 0.23 | 0.24 | 0.25 | 0.26 | 194 | 123 | 79 | 51 | 34 | 23 | 15 | 10 | 7.2 | 5.0 | 3.5 | 2.5 | 1.81 | 1.31 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 200 | 127 | 81 | 53 | 35 | 23 | 16 | 11 | 7.4 | 5.1 | 3.6 | 2.6 | 1.84 | 1.33 |
| 50 | **100** | 250 | 500 | 1000 | 2500 | 10 K | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | **105** |
| **Frequency [Hz]** | | | | | | | **Ambient temperature $T_a$ [°C]** | | | | | | | | | | | | | |

**$U_R > 100V$**

| Current ratio $I / I_R$ (depending on frequency) | | | | | | | Multiplier L for useful life (depending on $I/I_R$ and $T_a$) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.21 | 2.60 | 3.02 | 3.22 | 3.38 | 3.48 | 3.64 | 1.1 | | | | | | | | | | | | | |
| 2.04 | 2.40 | 2.78 | 2.98 | 3.12 | 3.22 | 3.36 | 1.7 | 1.3 | 1.0 | | | | | | | | | | | |
| 1.87 | 2.20 | 2.55 | 2.73 | 2.86 | 2.95 | 3.08 | 2.6 | 2.0 | 1.5 | 1.1 | | | | | | | | | | |
| 1.70 | 2.00 | 2.32 | 2.48 | 2.60 | 2.68 | 2.80 | 3.9 | 3.0 | 2.2 | 1.7 | 1.2 | | | | | | | | | |
| 1.53 | 1.80 | 2.09 | 2.23 | 2.34 | 2.41 | 2.52 | 5.9 | 4.4 | 3.2 | 2.4 | 1.8 | 1.3 | | | | | | | | |
| 1.36 | 1.60 | 1.86 | 1.98 | 2.08 | 2.14 | 2.24 | 8.8 | 6.4 | 4.7 | 3.4 | 2.5 | 1.8 | 1.3 | | | | | | | |
| 1.19 | 1.40 | 1.62 | 1.74 | 1.82 | 1.88 | 1.96 | 13 | 9.2 | 6.5 | 4.7 | 3.3 | 2.4 | 1.7 | 1.2 | | | | | | |
| 1.02 | 1.20 | 1.39 | 1.49 | 1.56 | 1.61 | 1.68 | 18 | 13 | 9.0 | 6.3 | 4.4 | 3.1 | 2.2 | 1.6 | 1.14 | | | | | |
| 0.85 | **1.00** | 1.16 | 1.24 | 1.30 | 1.34 | 1.40 | 26 | 17 | 12 | 8.3 | 5.7 | 4.0 | 2.8 | 2.0 | 1.40 | **1.00** | | | | |
| 0.68 | 0.80 | 0.93 | 0.99 | 1.04 | 1.07 | 1.12 | 35 | 23 | 16 | 11 | 7.2 | 4.9 | 3.4 | 2.4 | 1.68 | 1.19 | | | | |
| 0.51 | 0.60 | 0.70 | 0.74 | 0.78 | 0.80 | 0.84 | 44 | 29 | 19 | 13 | 8.7 | 5.9 | 4.0 | 2.8 | 1.95 | 1.37 | | | | |
| 0.34 | 0.40 | 0.46 | 0.50 | 0.52 | 0.54 | 0.56 | 54 | 35 | 23 | 15 | 10 | 6.7 | 4.6 | 3.1 | 2.18 | 1.53 | | | | |
| 0.17 | 0.20 | 0.23 | 0.25 | 0.26 | 0.27 | 0.28 | 63 | 40 | 26 | 17 | 11 | 7 | 5.0 | 3.4 | 2.35 | 1.64 | | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 | 42 | 27 | 17 | 11 | 8 | 5.1 | 3.5 | 2.42 | 1.69 | | | | |
| 50 | **100** | 250 | 500 | 1000 | 2500 | 10 K | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | **85** | 90 | 95 | 100 | 105 |
| **Frequency [Hz]** | | | | | | | **Ambient temperature $T_a$ [°C]** | | | | | | | | | | | | | |

$I_R$ [A] Rated ripple current (100Hz, rms ) at upper category temperature, taken from data sheet
I [A] User ripple current
$T_A$[°C] Ambient temperature of capacitor
L Useful life multiplier
Regard L as a function of ambient temperature (x-axis) and of current (y-axis); use the current-axis according to the frequency

Specifications are subject to change without notice.

All details in printed form are legally binding especially with respect to the provisions of §§463 and 480 II of the German Code of Civil Law after written confirmation only. The data indicated herein described the type of component and shall not be considered as assured characteristics.

The products listed in this catalog are not generally recommended for use in life support systems where a failure or malfunction of the component may directly threaten life or cause injury.

The user of products in such applications assumes all risks of such use and will agree to hold Vishay Intertechnology, Inc. and all the companies whose products are represented in this catalog, harmless against all damages.