Film capacitors – Power electronic capacitors

PCC series for Mild HEV HybridPACK™2

Series/Type: **B25655**
Ordering code: **B25655J4507K**5**

Date: October 2009
Version: 3

Preliminary data

Characteristics

C_R	500 µF ±10%
V_R	450 V DC
W_R	50 Ws
I_{max}	120 A
L_{self}	15 nH
tan δ_0	$2 \cdot 10^{-4}$
R_s	1.0 mΩ

Maximum ratings

V_s	600 V
î	2 kA
I_s	8 kA
$(dV/dt)_{max}$	4 V/µs
$(dV/dt)_s$	16 V/µs

Test data

V_{TT}	675 V DC, 10 s
R_{ins} C	≥ 10000 s
tan δ (50 Hz)	$\leq 8 \cdot 10^{-4}$

Climatic category

40/110/21 (IEC 68-1/2)

T_{min}	–40 °C
T_{max}	+110 °C
Humidity	Max. relative humidity ≤ 95%
T_{stg}	–45 … +110 °C

Values after Test Ca, IEC 68-2
(21 days, 40°C, 93% rel. humidity)

ΔC/C	≤ 5%
Δtan δ	$\leq 4 \cdot 10^{-4}$
$R_{ins} \cdot C$	≥ 3000 s

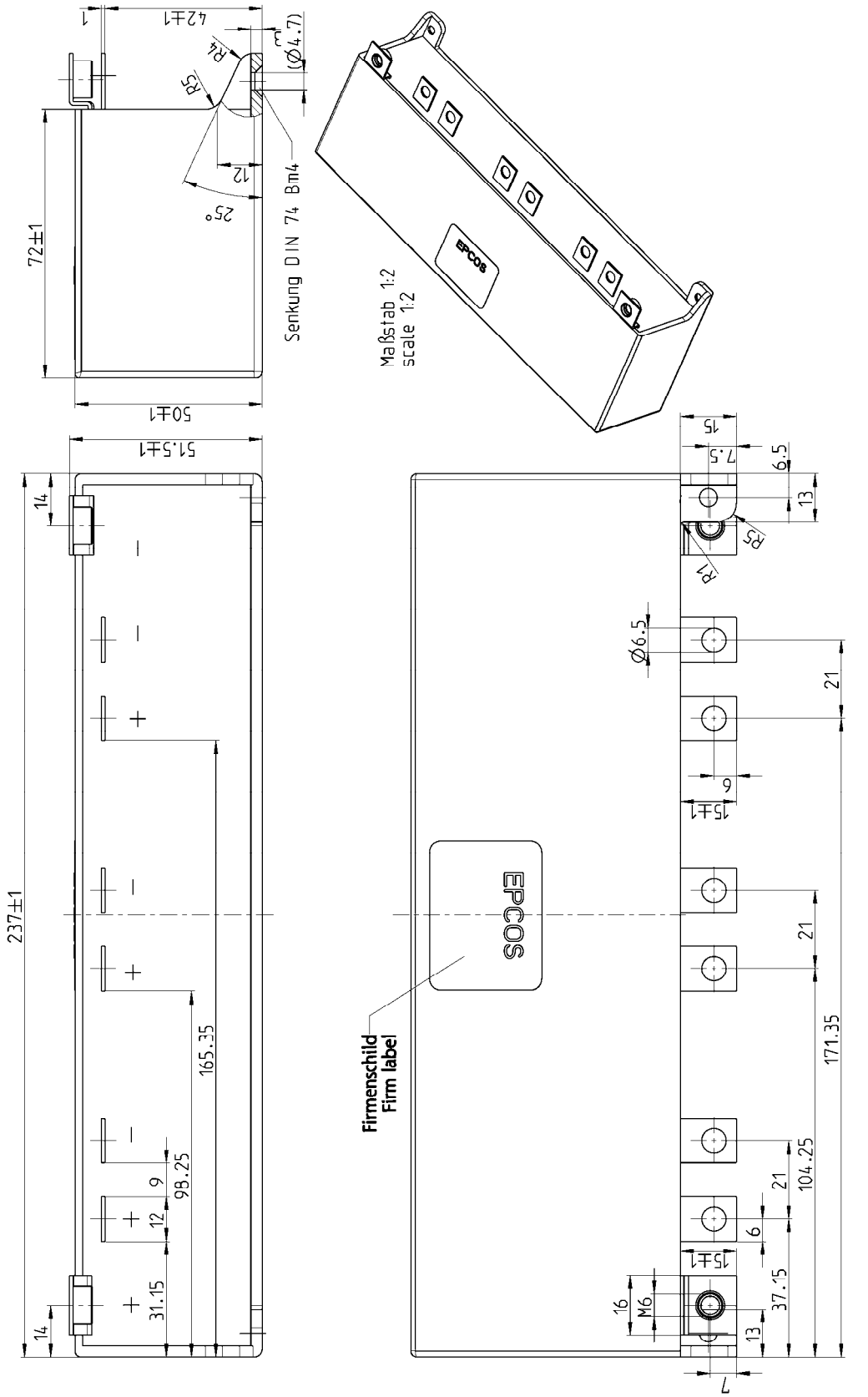
Mean life expectancy

t_{LD}	15 000 h
α_{FQ}	300 fit

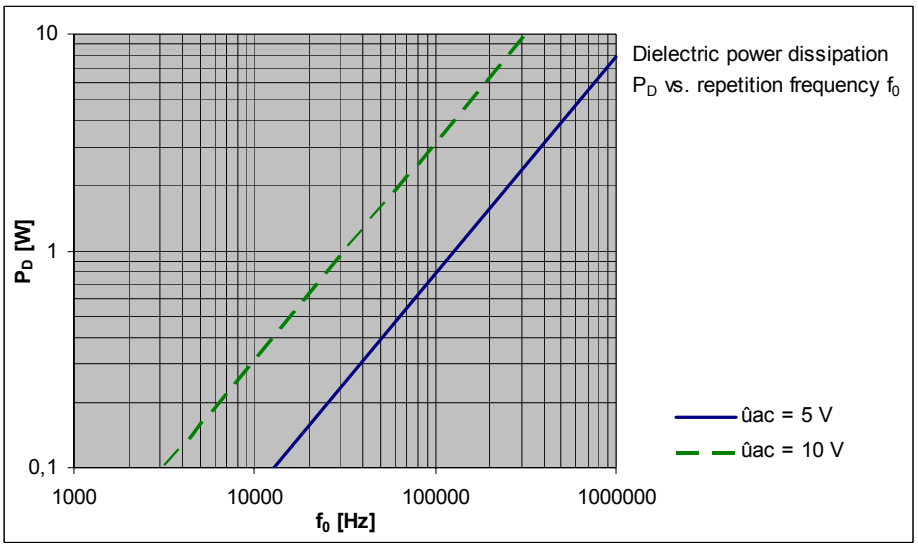
Design data

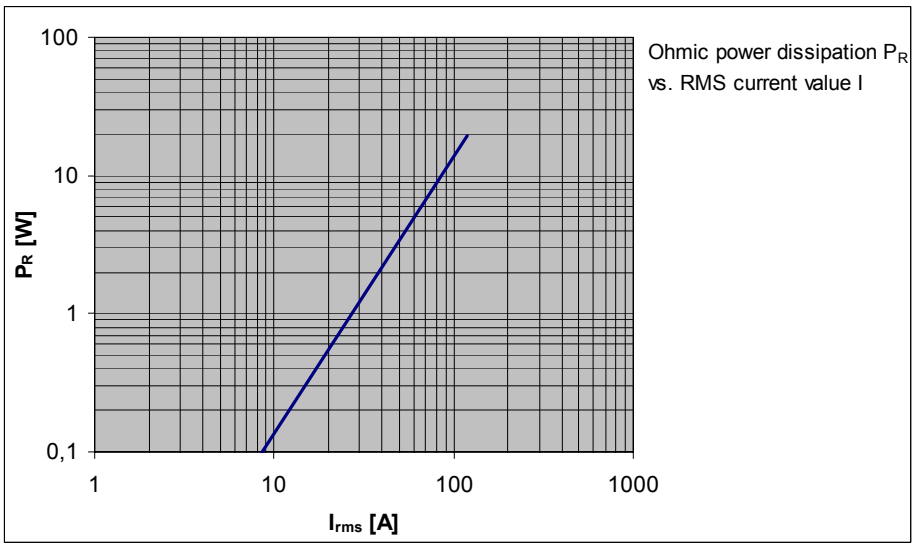
Dimensions l × w × h	237 mm × 72 mm × 50 mm
Approx. weight	1.2 kg
Impregnation	Resin filled
Terminals	Flat copper
Creepage distance	8 mm
Clearance	8 mm
Plastic case	

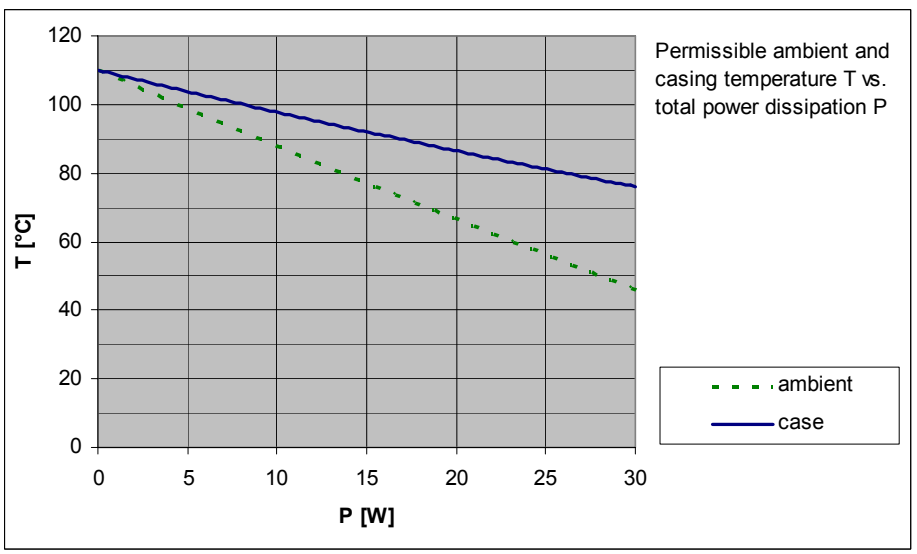
Preliminary data



Preliminary data







Cautions and warnings

- In case of dents of more than 1 mm depth or any other mechanical damage, capacitors must not be used at all.
- Check tightness of the connections/terminals periodically.
- The energy stored in capacitors may be lethal. To prevent any chance of shock, discharge and short-circuit the capacitor before handling.
- Failure to follow cautions may result, worst case, in premature failures, bursting and fire.

Safety

- Electrical or mechanical misapplication of capacitors may be hazardous. Personal injury or property damage may result from bursting of the capacitor or from expulsion of melted material due to mechanical disruption of the capacitor.
- Ensure good, effective grounding for capacitor enclosures.
- Observe appropriate safety precautions during operation (self recharging phenomena and the high energy stored in capacitors).
- Handle capacitors carefully, because they may still be charged even after disconnection.
- The terminals of capacitors, connected bus bars and cables as well as other devices may also be energized.
- Follow good engineering practice.

Thermal load

After installation of the capacitor it is necessary to verify that maximum hot-spot temperature is not exceeded at extreme service conditions.

Mechanical protection

The capacitor has to be installed in a way that mechanical damages and dents in the case are avoided.

Storage and operating conditions

Do not use or store capacitors in corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are present. In dusty environments regular maintenance and cleaning especially of the terminals is required to avoid conductive path between phases and/or phases and ground.

Service life expectancy

Electrical components do not have an unlimited service life expectancy; this applies to self-healing capacitors too. The maximum service life expectancy may vary depending on the application the capacitor is used in.

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