



## Film Capacitors – Power Electronic Capacitors

PCC series for Full HEV HybridPACK™2

**Series/Type:** B25655  
**Ordering code:** B25655J4507K\*\*5  
**Date:** October 2009  
**Version:** 4

**Preliminary data**
**Characteristics**

$C_R$	500 $\mu\text{F} \pm 10\%$
$V_R$	450 V DC
$W_R$	50 Ws
$I_{\text{max}}$	120 A
$L_{\text{self}}$	15 nH
$\tan \delta_0$	$2 \cdot 10^{-4}$
$R_s$	1.0 m $\Omega$

**Maximum ratings**

$V_s$	600 V
$\hat{i}$	2 kA
$I_s$	8 kA
$(dV/dt)_{\text{max}}$	4 V/ $\mu\text{s}$
$(dV/dt)_s$	16 V/ $\mu\text{s}$

**Test data**

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

**Climatic category**

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

$T_{\text{min}}$	-40 °C
$T_{\text{max}}$	+110 °C
Humidity	Max. relative humidity $\leq 95\%$
$T_{\text{stg}}$	-45 ... +110 °C
Values after Test Ca, IEC 68-2 (21 days, 40°C, 93% rel. humidity)	
$\Delta C/C$	$\leq 5\%$
$\Delta \tan \delta$	$\leq 4 \cdot 10^{-4}$
$R_{\text{ins}} \cdot C$	$\geq 3000$ s

**Mean life expectancy**

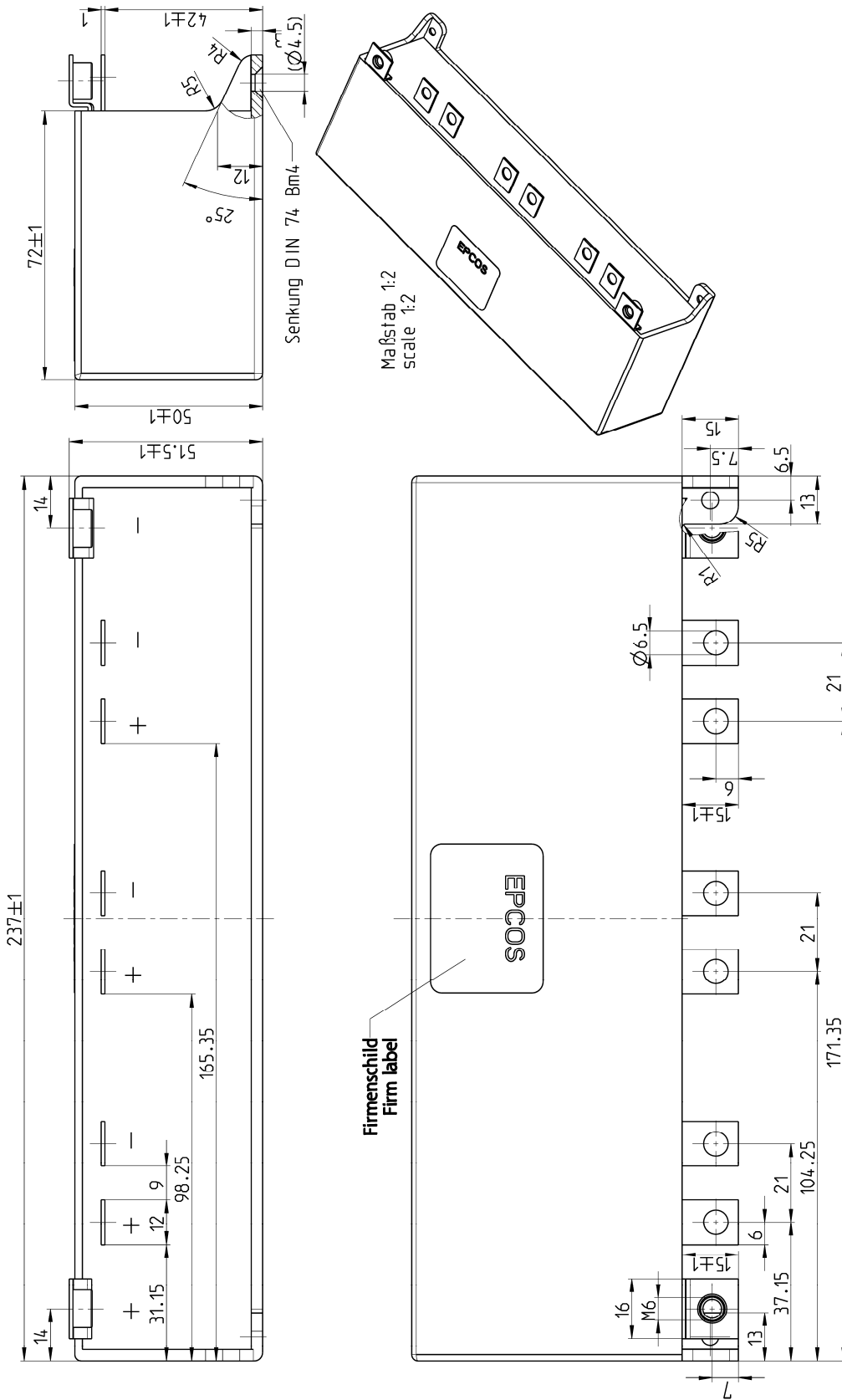
$t_{\text{LD}}$	15 000 h
$\alpha_{\text{FQ}}$	300 fit


**Design data**

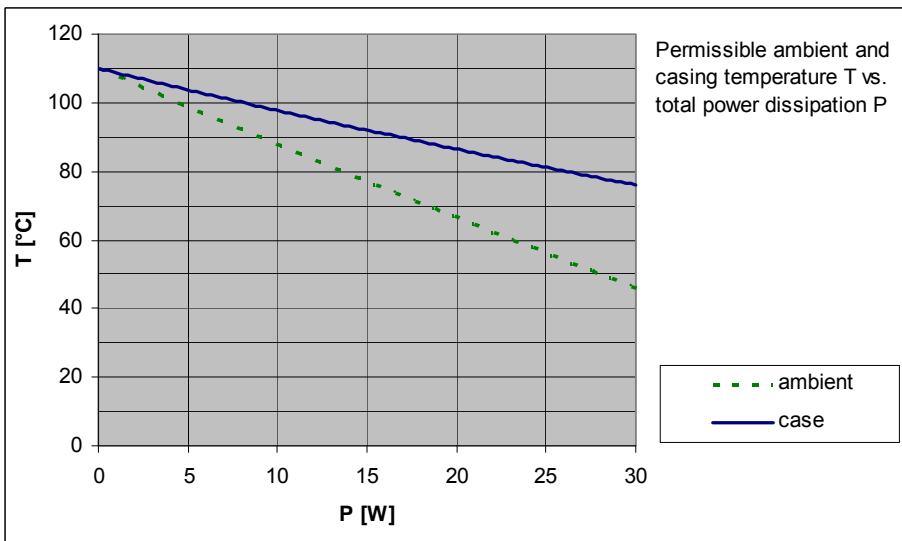
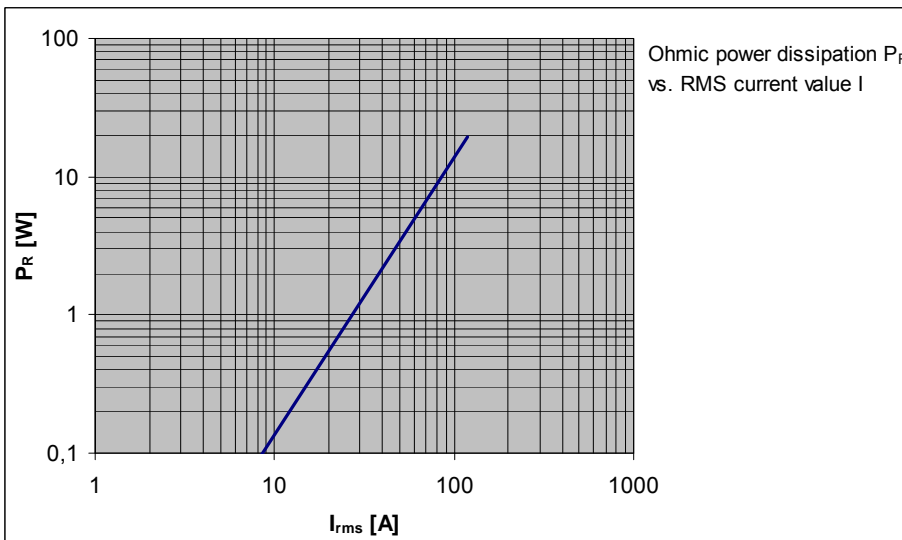
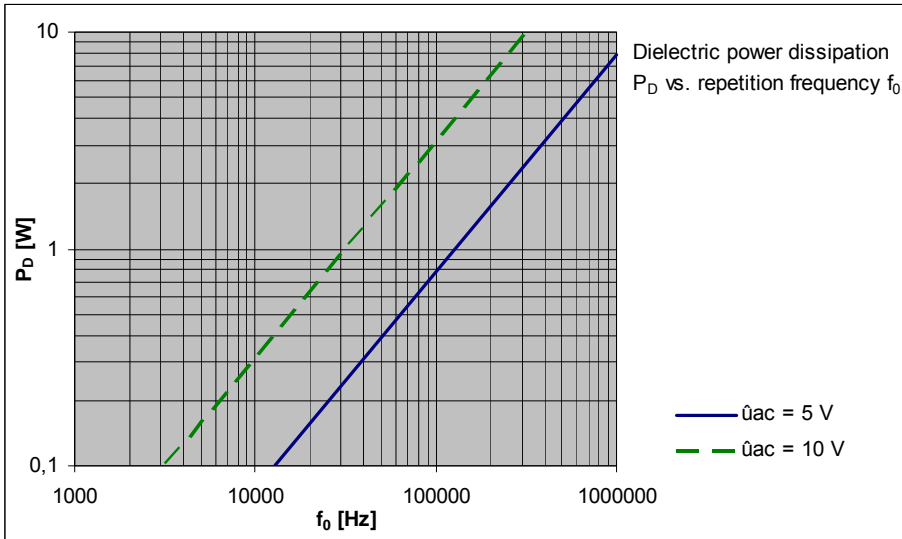
Dimensions l × w × h	237 mm × 72 mm × 50 mm
Approx. weight	1.2 kg
Impregnation	Resin filled
Terminals	Flat copper
Creepage distance	8 mm
Clearance	8 mm

Plastic case

Preliminary data



Preliminary data



## 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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