EPCOS Product Brief 2017

# Film Capacitors

## For Solar Inverters in Photovoltaic Systems

Photovoltaic systems consist of multiple components, including cells, mechanical and electrical connections or mountings. They regulate and/or modify the electrical output. The generated electricity can be stored, used directly or fed into a large grid powered by central generating plants connected or tied to the grid.

The solar inverter transforms DC to AC current. Power electronic designers are under increasing pressure to achieve:

- Higher power requirements with very high efficiencies
- Overvoltage and overcurrent protection due to switching failures, lightning, ground faults, safety regulations etc.
- Long-term stability and reliability
- Use of approved materials and components according to recognized institutes such as UL and VDE

EPCOS offers specific products for many circuit functions, depending on the application requirements. Thus, its film capacitor technology is particularly suitable for power electronics designers looking for proven performance:

- Higher rated voltages compared to other capacitor technologies
- Option of AC operation (reverse current)
- High overvoltage capability due to their self-healing properties
- Lower equivalent serial resistance (ESR) and inductance (ESL)
- Higher power operation ($I_{RMS}$ vs. frequency)
- Stability of electrical parameters over time and temperature


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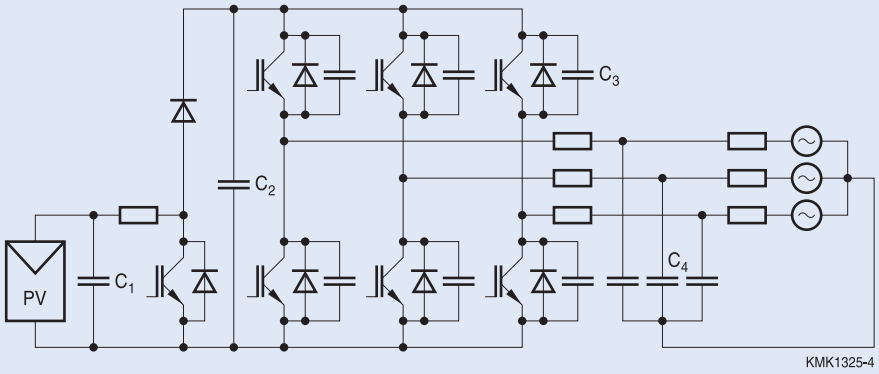
## Schematic circuit

**DC filter / DC link capacitors ($C_1$, $C_2$)**
B32674 … B32678
B3277…
B2562…

**Snubber capacitors ($C_3$)**
B32656S … B32658S
B32686S

**Output filter capacitors ($C_4$)**
B3275…
B3292… (X2), THB
B3202… (Y2)
B3237…




## Technical data

| | Capacitance | Voltage | Ordering code/ type |
|---|---|---|---|
| **DC link capacitors** | | | |
|    | 40 … 1500 µF<br>1.5 … 480 µF<br>0.47 … 270 µF<br>1.5 … 120 µF<br>1 … 50 µF | 700 … 1980 V DC<br>450 … 1300 V DC<br>300 … 875 V DC<br>450 … 1300 V DC<br>630 … 840 V DC | B2562…<br>B32774 … B32778<br>B32674 … B32678<br>B32774H … B32778H<br>B32774P … B32778P |
| **Snubber capacitors** | | | |
|   | 0.068 … 5.6 µF<br>0.022 … 680 nF | 850 … 2000 V DC<br>1000 … 2000 V DC | B32656S … B32658S<br>B32686S |
| **Output filter capacitors** | | | |
|   | 5 … 600 µF<br>1 … 70 µF<br>0.47 … 20 µF | 250 … 600 V RMS<br>250 … 310 V AC<br>$V_{RMS}$: 350 V AC | B3237…<br>B32754 … B32758<br>B32924*4 … B32926*4 |
| **EMC capacitors** | | | |
|    | 0.1 … 15 µF<br>0.47 … 20 µF<br>1 nF … 1 µF | $V_{RMS}$: 305 V AC<br>$V_{RMS}$: 350 V AC<br>$V_{RMS}$: 300 V AC | B32922H/J … B32926H/J<br>B32924*4 … B32926*4<br>B32021 … B32026 |

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