Distributor Sales Guide

Film Capacitors for Power Supply and Snubber Applications

KEMET CHARGED™
Film Capacitor Applications

- Industrial
- Automotive
- Telecom
- White goods
- Medical
- Lighting
- Power
Ask the question – Do you build or buy your power supplies?

- If the customer buys their power offer them products in your portfolio (Astec, Power-One, Omron, Condor, Emerson, etc.)

- If the customer builds their power supply you have numerous products to offer. For capacitors:
  - **DC-DC**: Ceramic. Others in higher power designs.
  - **AC-DC**: Film, Electrolytic, Ceramic and Tantalum.

We will focus on film capacitors.
X and Y caps are an especially attractive target:

- **X2**: R46
  - PHE840
  - PME271M
    - (high rel)
- **Y2**: PHE850
  - R41
  - PME271Y
    - (high rel)

X and Y caps for higher industrial voltages are also available.
Snubber capacitors are another target, especially in high power equipment.

- In Low Power equipment the snubber capacitor can be a ceramic disk or polypropylene film.
  - PHE426, R75
  - PHE450, R76
  - ASP .15 to $2.00 each
- In High Power equipment a larger box polypropylene film capacitor is used.
  - ASP $3.00- $12.00 each
Applications for Snubber Caps

• UPS: Constant Load, typically low frequency
• Welding Equipment
• Motor Controls
• Inverter/Converter
All power electronic devices use switching transistors of some kind. For high power applications IGBT modules are most common.

IGBT = Insulated Gate Bipolar Transistor. Examples include:

- Vishay GA series
- Toshiba MG series
- Ixys MIO series
- Infineon FF series
- IR GA series
- Microsemi APT series
- Powerex CM series

In order to recommend the best Snubber capacitor, ask these simple questions
1. Are you using IGBT modules in your power electronics equipment?
   Are they with screw or pin connections?

(If you are selling the modules you will already know.)
2. Will the snubber capacitor be used by itself?

Or with a diode in a network?
3. What is the current rating of the IGBT?

(100A, 200A, etc.)
With the answers a recommendation can be made

<table>
<thead>
<tr>
<th>Screw connections</th>
<th>Pin connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Snubber by itself</strong></td>
<td></td>
</tr>
<tr>
<td>Series C4BS, C4BT direct mount</td>
<td>Cap value = 1uF per 100A IGBT rating</td>
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<tr>
<td><strong>Snubber with diode</strong></td>
<td></td>
</tr>
<tr>
<td>Series C4AS, C4AT PC board mount</td>
<td>Cap value = 1uF per 100A IGBT rating</td>
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<tr>
<td></td>
<td>Cap value = 0.25uF per 100A IGBT rating</td>
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<tr>
<td>Cap value = 0.25uF per 100A IGBT rating</td>
<td>Wyd value = 0.25uF per 100A IGBT rating</td>
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</tbody>
</table>

This is a starting point. The engineer will pick the capacitor voltage and final cap value.
Competition to Kemet Snubbers

- ASC
- AVX
- Cornell Dublier
- Electronic Concepts
- Wima
Summary

- Ask the Questions
- Show Engineering the Sheet
- Order a Sample
- Book the Order

PDF Sales questions and file can be downloaded at this time.