Polymer or High Cap MLCC?

Fast Facts

One Amp or More

Higher current applications favor polymer caps due to the higher delivered capacitance.

What is that Noise?

Polymer is the ideal choice for applications sensitive to MLCC acoustic noise issues.

Lowest BOM Cost

$33 = > $2

High Cap MLCC banks exceeding 3-4 pos will typically exceed the cost of a polymer solution.

Less Is More

\[ 100\mu F = 33\mu F \]

When replacing MLCCs with polymer, less than half to one third of the MLCC’s cap value is needed.

Improved Voltage Stability

GREEN = 9mV Ripple
1x 100μF Polymer

RED = 15mV Ripple
3x 22μF MLCC

While MLCCs deliver lower ESR, the lower capacitance can result in higher ripple.

Getting 100μF of capacitance on the board

![Graph showing capacitance vs. temperature for polymer and MLCCs.]

Polymer, 1210, 100μF, 6V, 15mΩ

MLCC, 1206, X5R, 100μF, 6V

Bill of Material

<table>
<thead>
<tr>
<th>Part Number Option</th>
<th>#pcs</th>
<th>ASP</th>
<th>Total w/ Pick/Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLCC, 1206, X5R, 100μF, 6V</td>
<td>7</td>
<td>.04</td>
<td>.28</td>
</tr>
<tr>
<td>Polymer, 1210, 100μF, 6V</td>
<td>1</td>
<td>.14</td>
<td>.14</td>
</tr>
</tbody>
</table>

Broad Band Applications

MLCCs have a narrow “sweet spot” for low impedance while polymer has a wide frequency range an ideal choice for BB apps.