Core Solder "Products for Minimizing Tip Erosion"

Problems involving iron tip erosion when using lead-free solder have been largely overcome. Both the flux and the alloy of the core solder play a part in ensuring ideal soldering conditions.

SR-37 / BT-19 LFM-48S
SR-37 LFM-22S / SR-37 LFM-41S

1. Tip erosion problems when using lead-free solder are almost entirely overcome through a combination of flux with good wetting properties and the alloys designed to minimize its erosion.
2. As a result of tip exchange reduction, substantial cost reduction is possible.

Examples of application: Soldering, Coating, Robotic soldering machines, soldering with specialized tips

Reasons for excessive tip erosion with lead-free soldering operation

Reason 1
Higher tip temperature

Reason 2
Increases in soldering time

Reason 3
Higher Sn content in the solder

Tip erosion leads to cost increase!
Changes of tip shape due to tip erosion cause the imperfect soldering. As a result, increases in times of tip changes and cost.

Development of the soldering system, such as the combination of flux and tip alloy, designed to minimize tip erosion

(Alloy)
LMF-48S
(LFM-22S / LFM-41S)

(Flux)
SR-37

Perfect soldering at low temperatures

Perfect soldering is achieved with less soldering operation time.

Additional metal has no effect on reliability and workability

Tip Erosion Durability Test

Initial Condition of Tip

Soldering

Cross-section

Depth of Tip erosion: 310.49μm

Appearance

Depth of Tip erosion: 41.49μm

Product name component for Core Solder

(Example) SR-37 LFM-48S 3.5% 0.30

Flux name, alloy type, flux content, core solder diameter

Core Solder products specification

<table>
<thead>
<tr>
<th>Flux name</th>
<th>Alloy type</th>
<th>Flux content</th>
<th>Melting temperature</th>
<th>Core solder diameter (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR-37</td>
<td>LFM-38S (Sn0.3,Mg0.9,Cr=0.5)</td>
<td>3.5%</td>
<td>217-221°C</td>
<td>0.3, 0.39, 0.5, 0.65, 0.8, 1.0, 1.2, 1.4</td>
</tr>
<tr>
<td>BT-19</td>
<td>LFM-22S (Sn0.27,Cr=0.5)</td>
<td>3.5%</td>
<td>227-229°C</td>
<td>0.5, 0.65, 0.8, 1.0, 1.2, 1.4</td>
</tr>
<tr>
<td></td>
<td>LFM-41S (Sn0.3,Mg0.2,Cr=0.5)</td>
<td>3.5%</td>
<td>217-270°C</td>
<td>0.5, 0.65, 0.8, 1.0, 1.2, 1.4</td>
</tr>
</tbody>
</table>

*LMF-48S has been supplemented for US PAT No. 6,293,691 B1. LFM-48S is compatible with other fluxes such as SR-34 Super. SR-37 LFM-41S is effective in minimizing Cu erosion.

If the ordered core solder diameter is out of stock, please contact our sales representative.