

International electronic components markets

International statistical data for Q3 2018 is not yet available, but preliminary information suggests that sales in electronic components markets (excluding commodity memory) continue to be strong – with estimated growth of 12% in the US, 5% in Japan, 12% in China, and 7% in Asia-Pacific. Growth in the US was particularly strong in Q3 2018, as authorised distributors, OEMs and EMS providers increased their electronic components inventory in advance of possible increases in import duty.

Components shortages

Developments in electronic applications and continued, strong growth in international electronic components markets continues to depress availability of many electronic components. Exacerbated by limited production capacity, these factors have led to a 'new-normal' 8 to 12 week lead-time for the majority of electronic components. Of the over 1,000,000 high-volume electronic components on the market today, only a comparatively small number (under 2,500) are on lead-times of 26+ weeks; and of these, only a few hundred are effectively on allocation (delivery lead-time of 40 weeks or more). The problem is that these few hundred electronic components primarily comprise



larger case-sized multi-layer ceramic capacitors (MLCC) and chip resistors: components used in almost every application.

MLCCs are the epitome of 'commodity products': they are manufactured in their trillions each year, but by only a small number of vendors – none of whom can claim any 'ownership' of the market. These companies have to be content with merely selling their MLCC production output into the market at the best price available at the time, and hope for a profitable outcome. And because customer loyalty is low to non-existent, manufacturers of these parts have no incentive to support legacy products.

Current economics of MLCC manufacture are that a single large '1206' case-size product has the same substrate requirement as 128 off '0402' small case-size products. The exponential increase in demand for smaller-cased products by mobile phone manufacturers makes it fairly obvious that passive components

manufacturers will continue to focus their capacity towards this end of the market – at least until the price of a '1206' device significantly exceeds 128 off '0402's. It's no surprise, then, that of the small number of companies still manufacturing '1206' large case-size MLCC devices, most are now quoting lead-times in excess of 40 weeks – while others are declining to quote at all. The restricted availability of larger case-sized MLCC and chip resistors is not going to be resolved quickly. It is very unlikely that the availability of these components will return to 'normal' market lead-times (8 to 10 weeks) until at least 2020 – if at all.

A short-term fix for customers may be to ask their engineering team to explore the use of tantalum and electrolytic capacitors; but peace of mind might only come from designing-in smaller case-size '0201's in place of the difficult-to-source '1206' case-size MLCCs. Good practice would suggest having a discussion with an application engineer at your authorised distributor of choice, who will be best placed to provide knowledgeable advice.

This is, however, not an easy solution, as most electronic equipment designed and manufactured in Europe and the USA is primarily destined for industrial, automotive, telecom or medical applications – and often has a manufacturing lifetime of 5 to 7 years (sometimes longer). Any changes made to components within the equipment design may require extensive industry-standard testing or market-specific re-qualification prior to sale, which is a time-consuming and expensive process.

Smaller scale acquisition activity

M&A activity among the most notable semiconductor manufacturers continues to dominate the headlines, but it's smaller-scale acquisition activity that perhaps should demand our interest. For instance, Renesas recently spent \$6.7 billion acquiring IDT, in order to increase its access to the fast-growing data centre and communications infrastructure market. Wingtech (a Chinese EMS provider) has bid \$3.6Bn to acquire the remaining 76% of Nexperia, a Dutch-based semiconductor manufacturer of discrete components, logic and MOSFETs. The bid is subject to US regulatory approval (which I suspect may not be forthcoming, as it appears to be rather strangely financed).

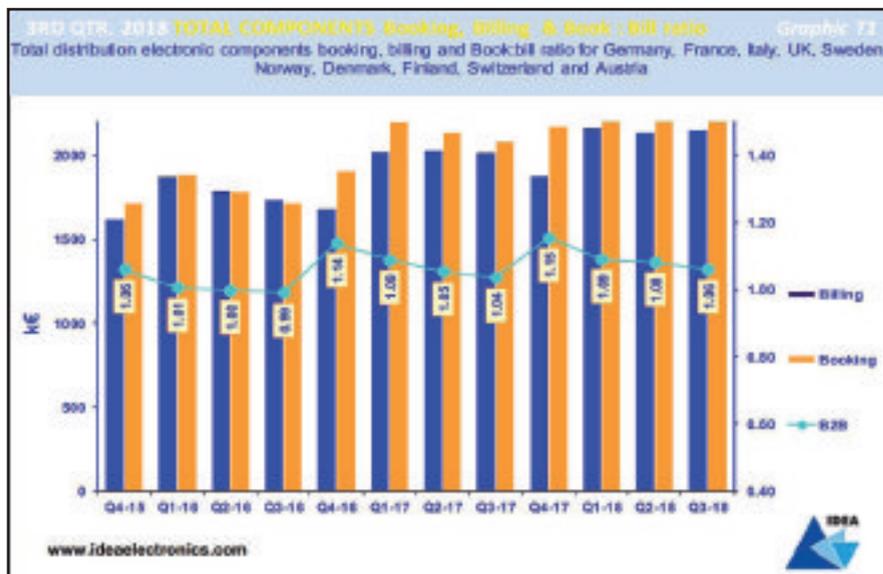


Figure 2. IDEA total quarterly electronic components sales for Europe 2015-2018

The restricted availability of larger case-sized MLCC and chip resistors is not going to be resolved quickly. It is very unlikely that the availability of these components will return to normal market lead-times until at least 2020 – if at all.