

A third way: the missing piece of the jigsaw

Component obsolescence is a challenge to both buyers and engineers. With pressure to prevent a line-stop, or to get a piece of legacy equipment back into service, it is hardly surprising that most companies see a redesign or sourcing from the grey market as the most viable options. Debbie Rowland, a director at Charcroft Electronics, talks about how the company can provide a third option which is both fast and cost-effective



Debbie Rowland, director at Charcroft Electronics

When a component is made obsolete, OEM or CEM customers are faced with a limited number of options. Once the inventory in the manufacturer's franchised distribution channel has been exhausted, customers are left with the choice of sourcing the part on the grey market, or undertaking a redesign to accommodate a different component. Whilst a redesign can be relatively slow and costly, sourcing components from the grey market is a fast but very high-risk solution.

The grey market offers no traceability and therefore there is no certainty that the components are genuine or that they have been stored in the appropriate conditions to ensure correct operation. There is also the possibility that the components may have been reclaimed from legacy equipment by disassembling a PCB.

As a company which specialises in supporting customers in sectors with extended product lifecycles, Charcroft sees

providing through-life support for legacy equipment as an essential part of a distributor's role.

Charcroft director, Debbie Rowland explains: "Going back a few years, the usual approach was for an OEM or CEM to try the franchised distributors first and then, if there was no inventory in the distribution channel, to look for the parts on the grey market. That was before the huge rise in counterfeit components which was driven, in part, by the off-shoring of manufacturing to China. Now, with the risk of counterfeit components increasing, OEMs and CEMs are closing the door on sourcing from the grey market."

This leaves buyers with fewer options for maintaining continuity of supply for

the components and engineers with very little choice but to redesign the board.

"One of the ways in which I believe that Charcroft is different from non-specialist distributors is that we have a narrow focus on servicing customers with comparatively low-volume production runs and long product life-cycles," says Rowland. "This specialist approach also applies to our product range which is focussed on passives, power, electromechanical and optoelectronic components. This specialisation means that, rather than simply closing the door and no-bidding on an obsolete component, we can ask the right questions to enable us to find out just what the customer needs to continue to produce, or maintain, their end-product. This not only works for obsolete components, but can also help customers to overcome issues with cost, short-term availability or even Minimum order Quantities (MoQs)."

According to Rowland, passive components are often seen as secondary to the active components on a PCB,

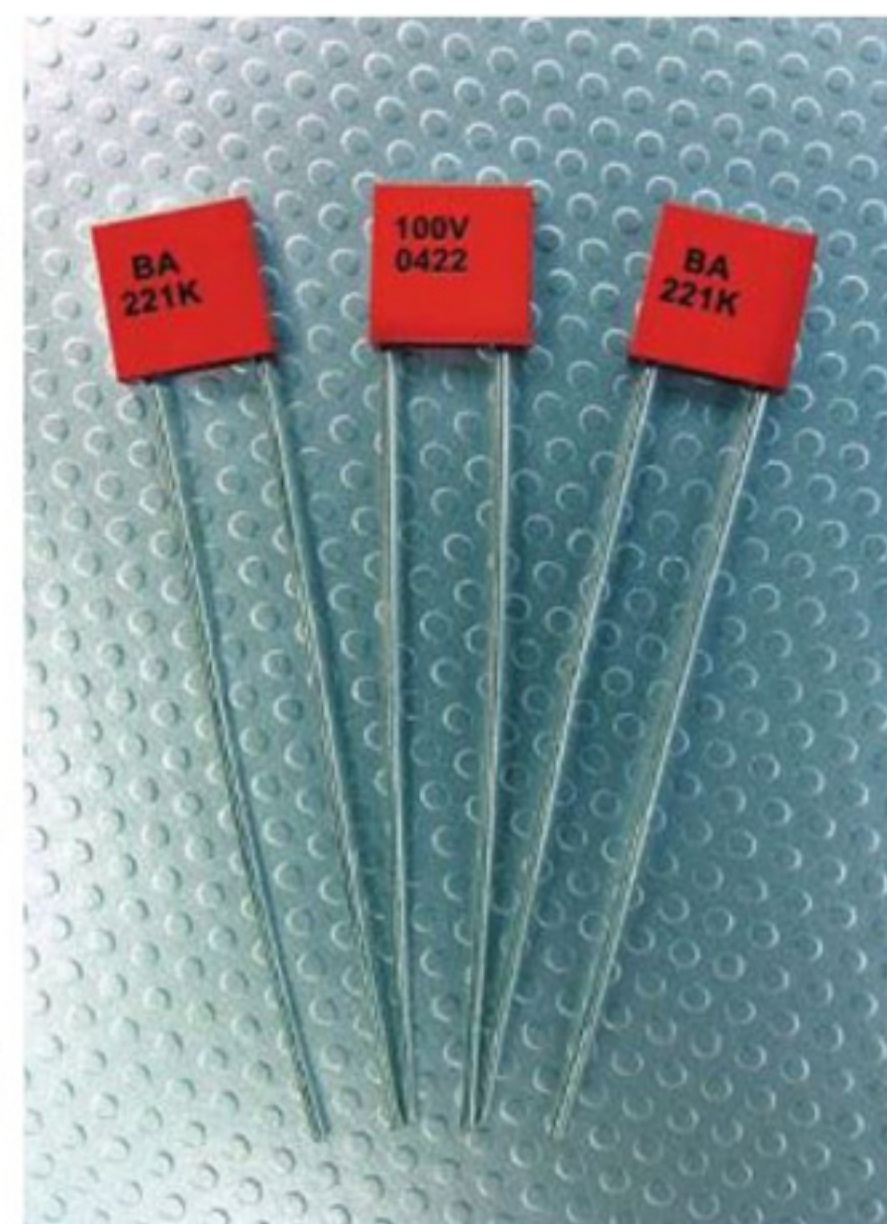


Figure 1: Once obsolete, VK series MLCCs are now manufactured by Charcroft

"Components such as capacitors and resistors are the lowest cost devices on the circuit board but an obsolete resistor can have the same devastating consequences as an obsolete microprocessor. The good news is that with the right knowledge-base, passive devices are one of the easiest types of components to replace with more modern alternatives."

"Over the decades, Charcroft has built a vast library of legacy datasheets in addition to encyclopaedic knowledge of our customers and their applications. This enables us to break down the original part number to identify the component's exact specifications. From this, we can work to find a new part which meets the same parameters. By talking to the customer's engineers we can also often ensure that the replacement component provides an identical form, fit and function on the board. As a last resort, Charcroft has bought the manufacturing rights to a number of obsolete passives and has manufactured custom passive assemblies to fit customers' boards."

Rowland believes that this approach can not only keep equipment in service, but can also help to increase the capabilities of the original board and reduce cost: "A



Figure 2: An obsolete resistor can have the same effect on production as an obsolete microprocessor

more modern passive can typically offer higher performance characteristics than the original obsolete part. It may also be possible to replace a high-cost mil-spec device in a non-critical system with a COTS alternative to reduce cost and the MoQ."

New designs

While helping customers to source alternatives to obsolete passives is an important role for Charcroft, Rowland also believes that there is a better way to support customers with new designs: "Charcroft's four main product areas are passive, optoelectronic, power and electromechanical components. In real-world design, however, all of the components on a PCB will be subject to the same design challenges, such as high temperature or other adverse operating conditions. It makes sense, therefore, for our specialists to support the customer's engineer from the perspective of a joint knowledge-base. If the design needs a rugged power supply, it is almost certain to need a rugged capacitor too."

Outlook for 2016

With this year's market forecast being flat, many companies will be looking at cost-effective ways to source their materials as well as other ways to improve overall profitability.

Rowland agrees that it is a strange time for the industry in this current market. "The military and aerospace market has been a major part of our business for decades, but in 2016 this sector is going to be flat or even shrink. At the same time, a higher overall awareness of the



Figure 3: Industrial OEMs are demanding higher levels of component traceability

need for traceability and rugged reliability means that Charcroft is seeing growth in other sectors such as rail and industrial applications as well as in the Oil and Gas market."

According to Rowland there will be a blurring of the lines between different sectors: "The military and aerospace sector used to be classed as a complicated market because of the high-reliability components it required. Now, other industries want the same sort of performance from their

components which means that they need higher levels of knowledge and support from the distribution partners."

"Helping customers to build more reliable and rugged systems is easier when you build a solid, long-term relationship with them," suggests Rowland. "This enables customers to have confidence in their distributor and that allows them to trust the distributor's recommendations, whether the recommendation is for an alternative for an obsolete passive, or for

determining the appropriate failure-rate level for a capacitor in a new design."

With companies such as Charcroft recognising the need to address component obsolescence and provide support from design-in to through-life management, fewer OEMs should feel the need to go to the grey market or struggle to address the challenge of designing for harsh environments.

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