

Are you at the sharp end of the procurement pyramid?

It is a truth universally acknowledged that those applications operating in the most extreme conditions also tend to have the lowest production volumes. There are, for example, significantly more mobile phones than there are trains; more trains than there are fighter jets; and more jets than there are satellites. Each additional step up the reliability pyramid places greater commercial pressures on component manufacturers by lowering demand and increasing manufacturing and quality costs. This often results in longer lead-times and, crucially, a smaller range of components.

Gauge the stage

The first priority for any buyer is to understand the level of reliability required for each component at each stage of the design and production process. This is more than good procurement practice and it can have a significant impact on both time-to-market and the sustainability of the final design.

Due to the long lead-times for assured-reliability devices, designers may use parts with lower reliability ratings at the beginning of the design process. So, for a space-grade design, it will be faster and more economical to buy a commercial-grade component for prototyping; a military-standard version for pre-production; and European Space Agency approved components for the final production run.

For buyers, the starting point for checking price and availability should always be the version of the product that will be used in the final production run. This is because it is not unusual for component manufacturers to produce a significantly smaller range of high-reliability

devices compared to the commercial variants. In some cases, the high-reliability range may offer only half of the number of capacitance values, voltages or case sizes compared to the commercial range.

Prioritise part numbers

There are certainly ways in which lead-times can be reduced without compromising the long-term sustainability of the design. Paying attention to the suffixes in part numbers can help to ease procurement and prototyping issues. Suffixes which denote mini-reels of 500 components can help to overcome the problem of minimum order quantities for low-volume products. The suffix which determines the lead length and style may also allow a short-lead version to be used as a replacement for prototyping, if the long-lead devices are not immediately available.

For passive components in particular, designers should be encouraged to specify components by the number of the standard, such as CECC, EN or ESA number, rather than by a specific manufacturer part number. This will automatically increase the number of approved manufacturers and make procurement significantly easier throughout the life of the design.

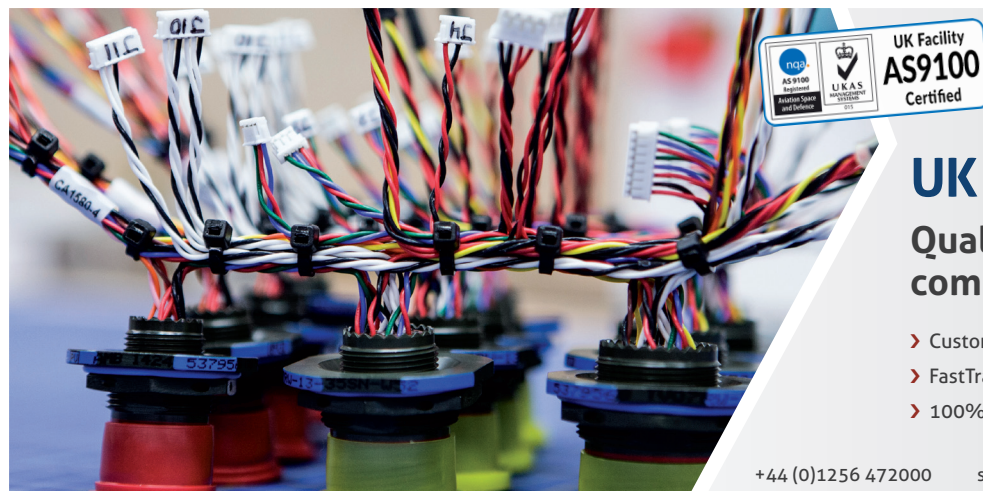
Understanding every detail of a product and its part number often provides the flexibility to simplify even the toughest procurement process. It can certainly help to remove some of the complexity of sourcing components for harsh applications.

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Harsh applications place demands on buyers just as they do on components and, as the level of reliability increases, so does procurement complexity, says Charcroft director, Debbie Rowland



Director, Charcroft Electronics,
Debbie Rowland



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