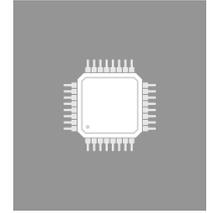


Electronic component technology

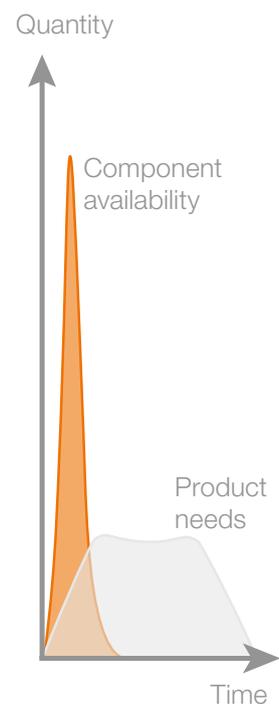


Electronic component obsolescence

If electronic component obsolescence is inevitable, its impact on products can at least be minimised or controlled. Just like for quality, EMC, testability... the earlier you do it, the less it will cost. Good obsolete component management bears fruit for years after. You need to be very convincing to have financiers accept this principle, unless they have already been faced with the issue or unless you preach the apocalypse, but avoiding problems is much more profitable than having to solve them.

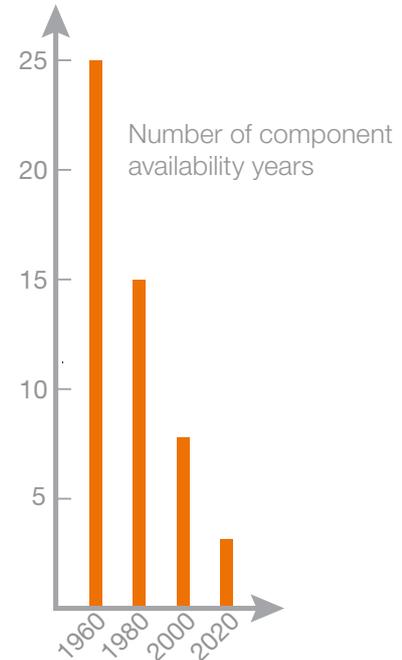
HOW DOES A COMPONENT BECOME OBSOLETE?

It is estimated that 90% of electronic components are used for consumer electronics, especially laptops, tablets etc., and 9% by the automotive industry. The remaining one percent is used in professional electronics. Positioning yourself in these categories gives an idea of its weight with component manufacturers. Like ourselves, their objective is to satisfy their clients, especially for innovation. The result is that the old references you use for a long time, disappear from most of their catalogues. The gradual disappearance of military components since the Perry amendment in the United States in 1995 has highlighted the phenomenon. Component manufacturers no longer have any interest in keeping modest quantities of components available for decades. Another source of the increased phenomenon is the change to hazardous materials regulations (REACH and RoHS). Even if some applications are outside the scope of the directives, it is fast becoming impossible to find components prior to them. In most cases, component obsolescence is announced by manufacturers about 6 months in advance in the form of a PDN (Product Discontinuance Notice) or EOL (End Of Life).



WHAT TO DO WITH AN OBSOLESCENCE?

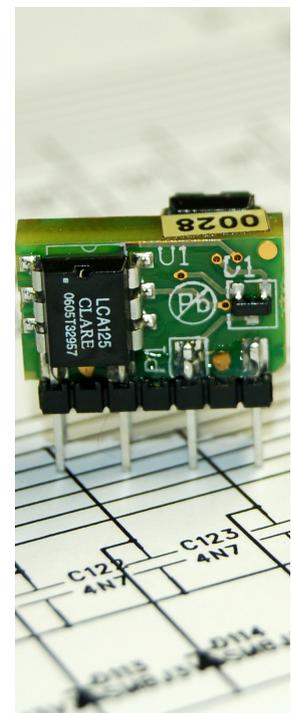
There are multiple solutions: use an equivalent, purchase stock, mezzanine, local or global redesign, purchase from a broker, etc. They must be considered compared to the need: ongoing production; maintenance only, product being revised, number of impacted products, number of obsolete components in the product, re-qualification costs, cost of ownership, new potential markets, etc. There is not just one equation and it requires highly varied skills. The problem is not only in the hands of the buyers. As the decision involves an increasing number of departments (procurement, sales, technical, quality, etc.), the creation of a sort of committee in which they are all represented is recommended. The earlier the obsolescence is detected, the less panic will be involved in finding a solution, and the more the risk/cost ratio will be interesting. The ideal is to consider the solution before the obsolescence is announced and, above all, to already have a budget assigned. Two processes can be set up with this in mind. The first is a passive process, leaving it up to the manufacturers and distributors to inform the purchasers of their products of an obsolescence. Beware in this case: in most cases distributors only commit to sending information on references ordered less than 2 years previously, which excludes high MOQ and low use components on the one hand, but also second source components which are almost never ordered. The other process is active: it involves regularly querying obsolescence databases and component manufacturers.



TOO LATE! WHAT ARE THE SOLUTIONS?

Whatever the reason (obsolescence notice not identified, not processed, not issued or issued at the last minute...) one day we will be faced with a component that is no longer available on the official market. Quick solutions, therefore excluding redesign, are few and far between. There are, however, some:

- The replacement of the component by an FFF equivalent (Form, Fit, Function). Depending on the importance of the component in the design, partial re-qualification may be required. Also, be careful of the forecast obsolescence of the replacement component.
- The adaptation of a different package component in the form of a mezzanine: the new component or a set of several components are assembled on a small PCB which is itself assembled to the original board. The precautions to take are the same as for the previous solution.
- Purchase components using outsourcing. In this case, plan tests to detect counterfeit components, manufacturing rejects, re-used components, etc.
- The recovery of components from old boards (unsold products, returns to customer service, etc.). This requires carrying out a test plan to make sure the stress suffered by the components during the different re-welding phases (including its initial assembly which could have been decades ago) is acceptable in terms of reliability.



STANDARDS

J-STD-048 Notification Standard for Product Discontinuance

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