

Component Obsolescence Solutions



Apta Group Ltd

- Advanced electronic component packaging solutions
- High Density, high speed substrate technologies
- System on Module solutions
- **High Reliability Memory Products**
- **Commercial and Industrial Memory Products**



High Reliability Memory Products

- Over 15 years design, development and manufacturing experience.
- Long term commitment to marketplace.
- Extensive standard product range.
- Continued support of trailing edge products.
- Designed in to range of high profile military and aerospace projects.



Capability

- Full 'Turnkey' service – Memory product design, manufacture, test
- Many years ceramic package and substrate design experience.
- Innovative packaging solutions
- Extensive, specialist processing experience.
- Custom packaging facility.
- Memory test specialists – 2x Teradyne memory testers.
- Long establish links with memory die and ceramic package suppliers.
- Extensive range of ceramic packages tooled over a 15 year period.



Standard Product Obsolescence

- Long term support of current standard product range.
- Die availability is the **KEY** issue.
- Ongoing package re-design process to accommodate latest die rev.
- Maximum possible notice of die obsolescence.
- Work with customers in advance of obsolescence to provide solutions.



Memory Obsolescence Solutions

- High reliability memory marketplace.
- Support of products made obsolete by other manufacturers
- Several options – Match solution to customers requirements.
- Full range of memory die.
- Memory test capability.
- Solutions for commercial marketplace under development.



Solutions

In priority order

- Form, fit and function replacement - Ceramic
- Die Banking
- Obsolete die sourcing
- Form, fit and function replacement - High Rel Plastic
- Plastic in ceramic



F.F.F Replacement - Ceramic

High reliability memory marketplace.

1. Use current memory technology to mimic performance of obsolete technology.

Example :

128Kx8 SRAM die used to manufacture 32Kx8 SRAM monolithic.

2. Source alternative memory die.

Identify existing package or custom package design

Test and qualify as valid replacement



Die Banking

- Die availability is the **KEY** obsolescence issue
- Die stored in protective environment.
- No evidence of die degradation over time.
- Die lot qualification service.
- Advise on yield expectations based on long term experience.
- Low storage cost but high initial investment in die.
- Requires accurate customer interpretation of long term requirements.



F.F.F Replacement – High Rel Plastic

- High reliability marketplace.
- Plastic parts availability often continues if die support is withdrawn.
- Range of solutions.
- Various established substrate and leadframe attach technologies.
- Designed to withstand military temperature extremes.
- Full parametric test capability over temperature extremes.



Plastic in Ceramic

- Specialist solution.
- Assumes plastic part available when die is not.
- Package plastic part into standard ceramic package cavity.
- Custom package design.
- Full military specification test and screening.
- Qualification test data available.
- Minimum order quantities apply.



Solutions - Commercial Memory

- Market development stage.
- Use latest technology die to mimic performance of obsolete die.
- Package into Chip Size Package (C.S.P).
- Fit C.S.P to appropriate substrate / leadframe combination.
- Fully tested solution.
- Minimum order quantities apply.
- Chip on Board (C.O.B) solutions also available.



Design Out Obsolescence.

- Design in obsolescence busting solutions.
- Memory modules footprints with identified upgrade path.
- Memory capacity may be upgraded within fixed footprint.
- Military and commercial variants.
- Various established footprints.
- Many years experience of marketplace.
- Example :

PUMA2 originally based on 4x8Kx8 SRAM in 1986.

Exactly the same footprint is available today based on 4x512Kx8 SRAM.



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