



Session 1

ARCHIVE 2007

DESIGNING FOR SOCKET ELECTRICAL INTEGRITY

"Determining Inductance In Contactors"

Ryan Satrom Everett Charles Technologies STG

"Evaluation of a New Low Inductance Socket Technology - For High Speed Memory Device Testing"

Joachim Moerbt Advantest (Europe) GmbH

"Socket Life Cycle RF Testing"

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| ⁸ Inductance in Contactors |
|---|
| Inductance in contactors is: |
| Defined in a loop |
| Signal-Ground loop for Signals |
| Power-Ground loop for Power Delivery |
| Power pins are the signal path for power delivery nets |
| A function of pitch |
| A function of ground proximity and number of <u>adjacent</u> ground pins |
| The quantity and positioning of ground probes is best evaluated through 3D simulation |
| Loop inductance can be optimized for the application and cost trade-offs |



















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ADVANTEST

Evaluation of a new low inductance socket technology

- for high speed memory device testing

2007 Burn-in and Test Socket Workshop March 11 - 14, 2007



Joachim Moerbt Advantest (Europe) GmbH













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| Evaluation Phases | | |
|--|---|--|
| I. Electrical parameters Self inductance Bandwidth Contact resistance, force - travel II. Mechanical reliability Contact resistance versus contact cycles Scratch mark III. Device under test on new socket IV. Yield evaluation under full production | | |
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Conclusion

- Very good electrical parameters
- Long term reliability acceptable for production – to be improved after field experiences
- Long term production evaluation ongoing
- Contact reliability improved
- Reliable handling solution available
- Yield increase and improved speed sorting can be expected

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| Test Protocol | Test / 1 | # Cycle # 0 |
|---|------------------------|----------------|
| | 2 | 0 |
| Doute was initial above staving time | | 0 |
| Perform Initial characterization | 4 | 0 |
| | 5 | 8192 |
| Perform 4 successive measurements | 6 | 8192 |
| (DUT probe engages/disengages) | 7 | 8192 |
| Run prescribed cycle number | 8 | 8192 |
| | 9 | 65536 |
| (exchange of surrogates as needed) | 10 | 65536 |
| . Porform poyt sot of 1 mossurements | | 65536 |
| | 12 | 65536 |
| | 13 | 262144 |
| Continue sequences until 1M cycles | 14 | 262144 |
| is reached | | 262144 |
| | | 262144 |
| | 17 | 1048576 |
| | 18 | 1048576 |
| | 19 | 1048576 |
| | 20 | 1048576 |
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Session I







Session I









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