Arrow Custom Power

Modular power design Benefits: Modules Vs Discrete

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John Ashley



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Agenda

- Arrow Custom Power Introduction
- Quick survey of audience
 - Participation needed
- Power modules simplify design
 Benefits: Modules Vs Discrete
- Modular power design
- Summary of benefits
 - Development time
 - Risks
 - Approvals and qualification assuranc





Arrow Custom Powe EMEA

- John Ashley : Head of Engineeri
- Located in UK : Swindon
- What do we do ??
- PSU Design and development
 - Make custom PSUs with COTS modules to customer requirements
 - From simple 'PSU in a box' to full discrete design.
 - Electrical, Mechanical, EMC, Environmental, Approvals
- Production
 - Assembly, test
- ISO9001; ISO14001







Quick survey of audience

Questions :

Who uses discrete design? What power levels ? AC-DC ? DC-DC ?





Power modules simplify design Benefits: Modules Vs

Discrete :

- Smaller size
- Minimal external components
- Pre-qualified
 - Thermal and EMI
- Easy to use
- High Reliability
- Fast road to production



- Less design iterations (~3 times)*
- Higher board density
- Limited component obsolescence



Power modules simplify layouts Benefits: Modules Vs

Discrete :

- Layout and EMI improved
- Reduce current paths
- Return paths reduced
- Thermals improved with optimum placement of components





Mix and Match modules and knowledge

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How can we help?





Arrow power partners





Typical PSU topology – Discrete design



- Approvals



Typical PSU layout – Modular mix



- Pre- compliance to EMC
- OTS PFC stage
- Compact DC-DC
- Isolation built in
- Assurance of clearances
- Safety certified
- Approvals support
- Fast development
 cycle

Packaging of Modular Power





PSU qualification and approvals

Typical PSUs minimum of

- DoC provided with PSUs
- LVD compliance
- EN60950
- RoHS : WEEE : REACH
- Enhanced Approvals
 - TUV : UL : CSA
 - + MORE !







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Custom PSUs Extended properties

- Design IN
 - Mechanical
 - EMC
 - Thermal
- Create control / IO
- Multi vendors
 - Artesyn / Delta / Vicor
- Extended Approvals
 NNUW

Summary

- Reduced design time
- Reduced risks
- Approvals
- EMI compliance
- Safety

Customised mechanical packaging

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Quick survey of audience 2

Question:

Who would still use discrete design? If yes, discuss







