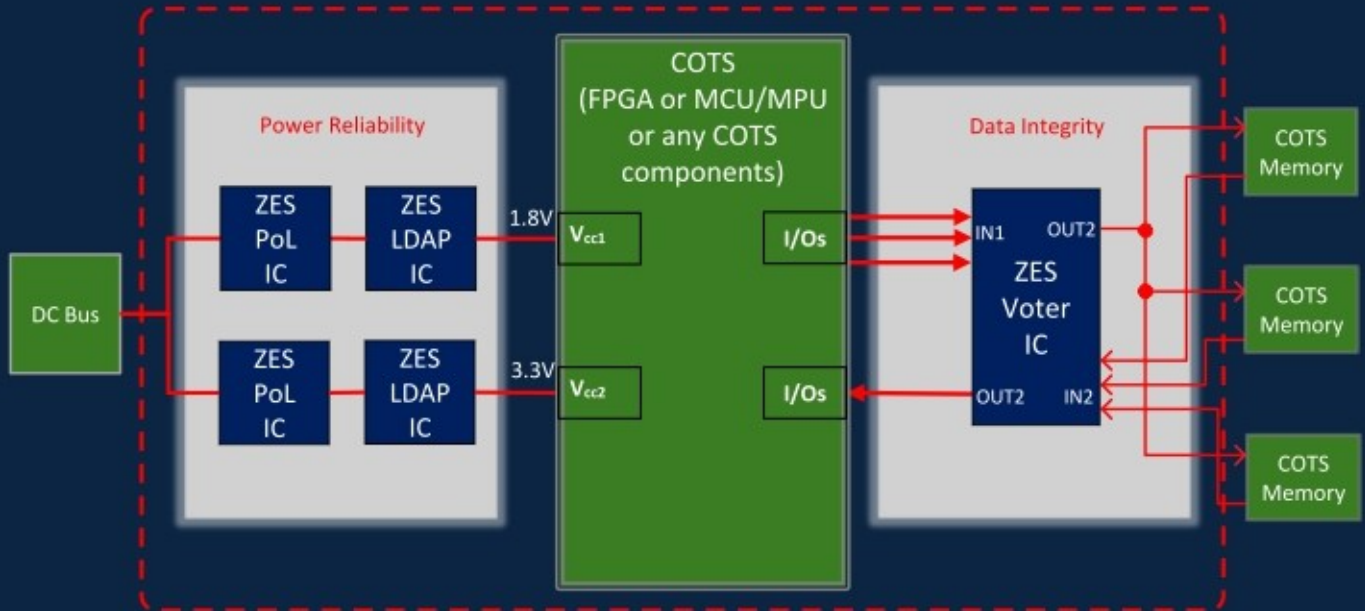




Hi-Reliability Semiconductors for Power & Data Management



Radiation-Tolerant System-on-Module (ZSOM™)

Radiation Qual: LET = 110MeV·cm²/mg TID = 300krad

Latchup Detection & Protection (LDAP)

- Unique Identification of SEL & Micro SEL
- Fast Response (~0.1μs)
- Easy & Fast implementation

Point of Load (PoL)

- High Power Efficiency at all loading condition.
- Redundancy Ideal for Reliability in Space
- Small Form Factor

Voter

- Protect Memory from Data Corruption
- High Speed Memory Support
- Enabling Multi-Bits Error Correction
- EDAC algorithm

System-on-Module (ZSoM™)

- ZSoM™-M01: radiation-tolerant ARM Cortex-M0+ SOM
- ZSoM™-F01: radiation-tolerant Zynq® UltraScale+™ MPSoC XCZU3EG SOM
- Radiation Characterized
 - Proton test up to 200MeV
 - TID 20krad

Components



Product		Key Specification	
[LDAP] Latchup Detection & Protection	Input	1.2V~5V	
	Output	500mA, higher with ext. MosFET	
	SEL Response	~ 0.1uS	
	Rad. Perf.	TID= 300krad, LET= 110MeVcm ² /mg	
Product		Key Specification	
[PoL] Point of Load	Input	3V~5V	
	Output	0.8V to P _{Vin} -0.8V, 3A	
	Efficiency	High Eff. Across all loads	
	Rad. Perf.	TID= 300krad, LET= 110MeVcm ² /mg	
Product		Key Specification	
Voter	Input Voltage	1.8V – 5V	
	Voters	4-CH, 3-input Majority	
	Rad. Perf.	TID= 300krad, LET= 110MeVcm ² /mg	

System-on-Module ZSoM™

TMR-based FRAM memory with ZES Voter-IC to protect Data



ZES LDAP-IC to protect COTS

ZES EDAC code to be installed on the microcontroller

Product	
ZSoM™-M01	ARM Cortex-M0+ Microcontroller
	TID: 20K Rad, Proton test: 200 MeV
	External FRAM, TMR Enabled (Voter)
Product (available in Q4'24)	
ZSoM™-F01	Zync UltraScale+ XCZU3EG FPGA*
	TID: 20K Rad, Proton test: 200 MeV (Target)
	External FRAM, TMR Enabled (Voter)

Key Features:

- Power Reliability Protection (Single-Event-Latchup Protection) → ZES LDAP-IC
- Data Integrity Protection (Single-Event-Upset Protection) with TMR-based FRAM → ZES Voter-IC + ZES EDAC
- ZSoM™-M01 compatible to Arduino Integrated Design Environment (Simple Programming)

Laser Testing & Advisory Services



- Leading laser test platform to stimulate SEE
- High-energy laser source, up to 5nJ
- High-speed screening and diagnosis

IP Licensing & Design Services

- Rad. hard by Design (RHBD) philosophy from conceptualization to product development
- Custom-IC Design and IP partnerships with semiconductor value-chain partnership



〒163-0023 東京都新宿区西新宿3-2-11
新宿三井ビルディング二号館904

Tel. 03-5322-7191 (代) Fax. 03-5322-7790
Email. sales@chronix.co.jp https://www.chronix.co.jp