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12 bit, 60kSps Rad Hardened DAC

Product Brief 2013, Version 1.0

Technology

- UMC 0.18
- 3.3V supply
- Temp range: -40 .. 125˚C
- Radiation Hard: 100kRad TID, LET up to 60 MeV.cm^2/mg

Deliverables

- Datasheet
- Real number model (VerilogAMS-wreal)
- Encrypted Spectre netlist
- Integration guidelines

Status

- Design

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Specifications

The table below lists the most important specifications. The Digital-to-Analog Converter is a 12-bit resolution high-accuracy DAC with Dynamic Element Matching. The DAC can be used with a buffer or a resistor at its output. More specific information is available on request.

Spec	*Unit*	*Min*	*Typ*	*Max*	*Comment*
Area	mm^2	-	-	0.389	
Temperature	°C	-20	-	110	Optimal performance (relaxed performance in -40...125°C range)
Supply	V	2.97	3.3	3.63	
Current consumption	mA	-	4.23	4.5	
Resolution	bit	-	12	-	
LSB	uA		1		
Full scale	mA		4.1		
Data rate	kS			58.6	
DNL	LSB		0.75		
INL (output buffer)	LSB		1.0625	1.2625	
THD (output buffer+ filter)	dB		-82.78	-75.34	

Our service and support

Our service models include:

- Single-use, multi-use, one-time buy-off licensing models for our IP-cores according to IP model agreed with the European Space Agency
- Customization or porting of IP-cores to the customers target technology
- Custom development of analog, mixed-signal and high-voltage IP-cores
- Custom ASIC turnkey solutions

In all of these models, we are committed to provide pro-active support from idea to product. We always work closely together with our customers to come to the most optimal solutions for their systems.

About ICsense

ICsense is an ISO 9001:2008 certified IC design house offering analog, mixed-signal and high-voltage IC design services and ASIC turnkey solutions for the automotive, medical, industrial and consumer market.

ICsense provides best-in-class IC design from consultancy and building block/IP design up to complete mixed-signal ASICs or SoCs. Our philosophy is to deliver highly complex, innovative circuits at minimal risks through engineering excellence and close cooperation with our customers.

More information on www.icsense.com

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