

### KEY FEATURES

- 20MHz-40MHz crystal oscillation
- High stability of  $\pm 30$ ppm
- Low Integrated RMS jitter: 250fS from 1KHz to 1MHz
- Frequency programmable to 1ppm accuracy
- Frequency programmability range of  $\pm 30$ ppm
- Differential and single-ended outputs
- Power-supply voltage 2.25V-3.6V
- Optional DNWELL noise isolation
- Chartered 65LPE, 2.5V IO, DNWELL optional

### OVERVIEW

CC40030XOSC-C65LPE is a stable programmable crystal oscillator that works from 20MHz to 40MHz. It operates with a supply range of 2.25V-3.6V generating accurate clock. The oscillator produces a differential output with a minimum swing of 800mV p-p as well as a single-ended output with rail-to-rail swing.

The frequency of oscillation is programmable in steps of  $\pm 1$ ppm. The output frequency is stable to  $\pm 30$ ppm.

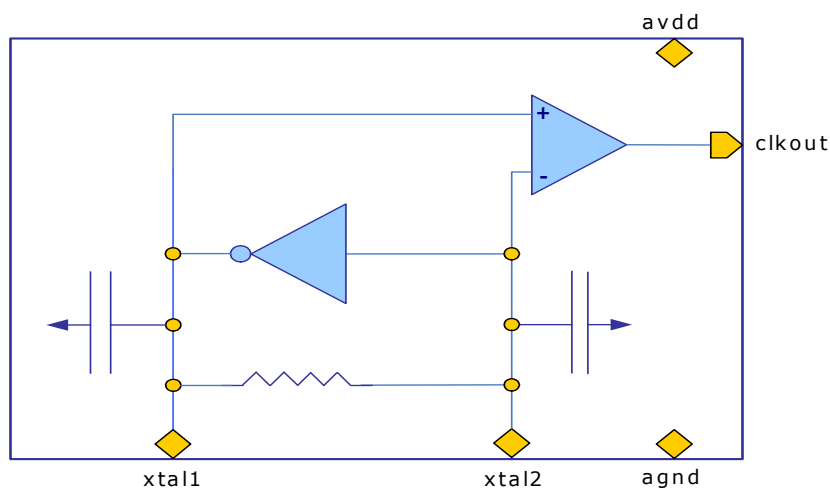
### DIFFERENTIATION

- Wide supply range from 2.25V to 3.6V allows operation in various environments
- Programmability of frequency aids real-time calibration with 1ppm resolution
- Stability of  $\pm 30$ ppm
- Very low integrated rms jitter from 1KHz to 1MHz
- DNWELL noise isolation support for very low-noise applications
- Both differential and single-ended outputs

### APPLICATIONS

- Wireless
- Low-noise RF

### BLOCK DIAGRAM



## SPECIFICATIONS TABLE

Parameter	Condition	Value			Units
		Min	Nom	Max	
Operating voltage		2.25	2.5	3.6	V
Operating Temperature		-40		125	°C
Oscillation Frequency					
Range		20		40	MHz
Stability	Across temperature For specific crystal types	-30		+30	ppm
Frequency Programmability					
Range		-30		+30	ppm
Step-size			1		ppm
Jitter long-term rms	1KHz – 1MHz integrated, Differential Output			250	fS
Output Voltage levels	Differential Output pk-pk		800		mV
	Single-ended Output		Rail-to-Rail		V
Startup time				10	mS
Duty cycle		45		55	%
Process		Chartered 65nm LPE 1P6M, 2.5 I/O			
Status		GDS Available			

**Note-1:** Product specifications are subject to change without notice. No responsibility is assumed for use of information herein.

**Note-2:** Products specifications such as that described above can typically be altered and customized for specific applications. Contact Cosmic Circuits for more information.

### ABOUT COSMIC CIRCUITS

Cosmic Circuits is a provider of differentiated and complex Analog, Mixed-Signal & RF Silicon IP cores. We create and provide IP cores that are best-in-class and thereby make our customers' solutions differentiated and low-cost.

Cosmic Circuits has quickly grown to be a company with the potential to become the destination of choice for world-wide customers for their complex and differentiated Analog, Mixed-Signal & RF Intellectual Property needs.

### DIFFERENTIATED IPS

We endeavor to create and provide Analog-IP solutions that are unique in functionality, burn the least amount of power, and take up minimal silicon die-area. 'Best-in-Class' is our Mantra. By using our analog-IP cores, our customers can expect their solution not to be disadvantaged because of analog, and even better, let the analog stand-out as a differentiating factor for the entire solution.

We value our unique blend of deep and broad analog skills and understanding of systems. Our customers can engage with our experts on the type of customization that needs to be done, or the kind of trade-offs to make, and expect the interaction to be a rewarding experience.

### DELIVERABLES

We provide the following deliverables to aid quick and reliable integration into the design flow. Please contact us for any additional views.

- ✓ GDSII
- ✓ Netlist (Spice format for LVS)
- ✓ Footprint (LEF format)
- ✓ User documentation
- ✓ Module integration guidelines
- ✓ Datasheet
- ✓ Silicon validation report (where available)
- ✓ Evaluation board (where available)

### LICENSING AND CUSTOMIZATION

Our engagements-models includes single-use and multi-use licensing of our IP-cores, Customization of IP-cores, Process porting of the cores to the customers' target process, turn-key development and licensing of customized IP cores and full-chip solutions, as well as supply of Known-Good-Dies (KGD) of full-chip ICs.

### SUPPORT

We consider ourselves successful when our customers succeed. We offer active support, both during the chip integration phase and during the product-ramp phase. We offer on-site support when needed. With Cosmic Circuits, our customers can be assured of a reliable partner interested in the success of the end product.

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