12 MHZ TEMPERATURE STABLE RC OSCILLATOR

Name	Description		
CCOSC12M40A	12 MHz temperature stable RC Oscillator		
Category	**Type**	**Status**	
Clock Synthesis	RC Oscillator	GDS	
Foundry	**Technology**	**Process Node**	**Year**
TSMC	CMOS	40 nm	2025
Deliverables (preferable IP merge model)			
♦ Datasheet ♦ Characterization report ♦ Encrypted Flat Extracted netlist with parasitic ♦ Behavioral models		♦ Abstract View ♦ Timing View ♦ DRC, LVS and antenna report ♦ Integration guidelines and support	

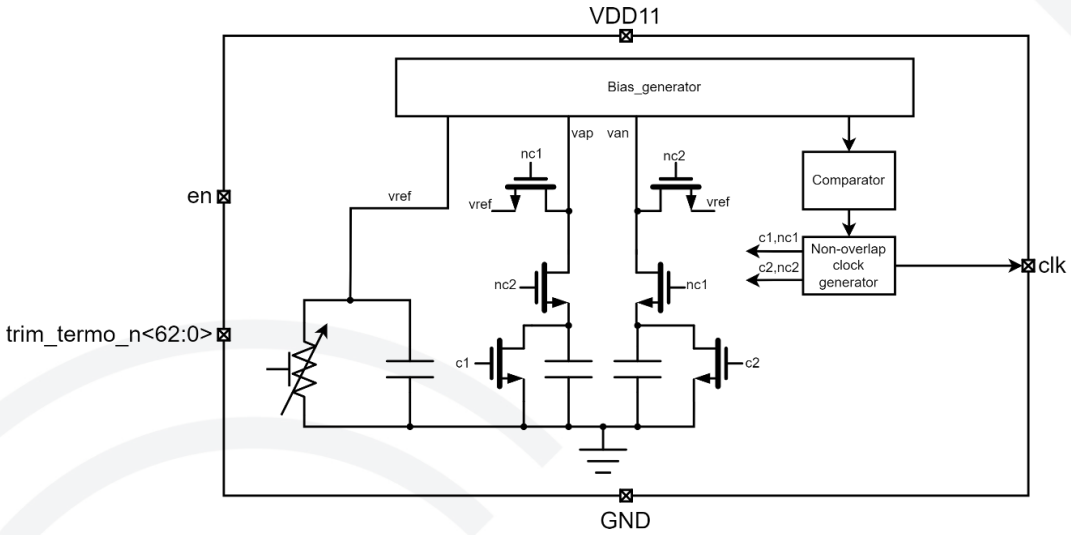

Figure 1. Simplified block diagram.

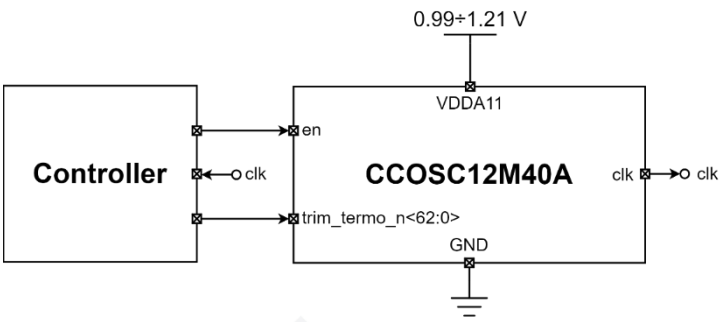

Figure 2. Typical use case.

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Table 1. Pin description.

Pin name	Direction	Type	Active	Description
VDDA11	I/O	Power		1.1 V supply
GND	I/O	Power		Ground
en	I	Digital		Enable signal (1.1 V domain)
trim_termo_n <62:0>	I	Digital		Trimming input for regulating frequency to mitigate process corner effects (1.1 V domain)
clk	O	Digital		Output clock signal (1.1 V domain)

Table 2. Specification.

Parameter	Description	Min.	Typ.	Max.	Unit
T_j	Operating junction temperature	-40	27	85	°C
V_{DDA11}	Supply voltage	0.99	1.1	1.21	V
F_{out}	Output frequency – after factory trimming	11.5	12	12.5	MHz
	Duty cycle	48	50	52	%
Active current consumption		60	70	90.2	µA
Power down current consumption		50	110	1330	nA

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