

M102 Series

Master Clock Oscillators

The M102 Series Master Clock Oscillators range in frequency from 200MHz to 1GHz. These highly-stable, low-noise devices have on-board crystal references and provide complementary clock outputs with less than 3ps (RMS) typical jitter.

The M102 series was developed specifically to meet tough performance requirements found in today's high-end RISC-based Computers, Telecom Transmission, Base Station, ATE, and Datacom applications.

Packaged in small, 24-pin double-wide metal DIP packages, the M102 Series Master Clock Oscillators are available with either ECL or PECL output formats. These models operate from a single supply (+5V for PECL or -5V for ECL). Standard "K" models are specified for 0°C to +70°C operation. Extended temperature range "L" models are available for -25°C to +85°C operation.

Features:

- 200MHz to 1GHz Output Frequency
- Low 3ps Typical Phase Jitter
- 10, 25, and 40ppm Stability Options
- ECL/PECL Differential Outputs
- Single Supply Operation
- 24-pin DIP Package
- 0°C to +70°C and -25°C to +85°C Operation



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Absolute Maximum Ratings

Operating Temperature Range	-25°C to +85°C
Specified Temperature Range	
M102X-XXXX.XXXX X K	0°C to +70°C
M102X-XXXX.XXXX X L	-25°C to +85°C
Storage Temperature Range	-55°C to +125°C
Supply M102E	-7.0 to 0 Volts
Supply M102P	0 to +7.0 Volts

Ordering Information

Part Number	M102E0890.0000AK
Select device output format	
Specify "E" for ECL output format or "P"	
for PECL output format	
Select device output frequency XXXX.XXXXMHz	
Stability over temperature range:	
"A" = 10ppm	
"C" = 25ppm	
"D" = 40ppm	
Add "K" suffix for 0°C to +70°C operation	
Add "L" suffix to "C" for "D" models	
for -25°C to +85°C operation	

Specifications

Specifications @ $T_A = +25^\circ\text{C}$, Power Supply = nominal, unless otherwise indicated

	Min.	Typ.	Max.	Units
Output Frequency Range	200		1000	MHz
Frequency Stability over Temperature Range:				
M102X-XXXX.XXXX A X			± 10	ppm
M102X-XXXX.XXXX C X			± 25	ppm
M102X-XXXX.XXXX D X			± 40	ppm
Symmetry (Note 1)	45/55	50/50	55/45	%
Rise/Fall Time: (20% to 80%)		100		psec
Output Configuration: M102E		Differential ECL		
M102P		Differential PECL		
Output Voltage: M102P		PECL Compatible		
M102E		ECL Compatible		
Output Drive			50	mA
Output Phase Jitter		3	5	psec (rms)
Power Supply Voltage: M102E	-4.5	-5.00	-5.5	Volts
M102P	+4.5	+5.00	+5.5	Volts
Power Supply Current: M102E		-95		mA
M102P		+95		mA

Notes: 1. Symmetry is measured at $V_{BB} = -1.35\text{V}$ for M101E models and $V_{BB} = V_{CC} - 1.35\text{V}$ for M101P models.

2. The output is measured with a 50 Ohm termination resistor connected to -2V for M102E and +3V for M102P.



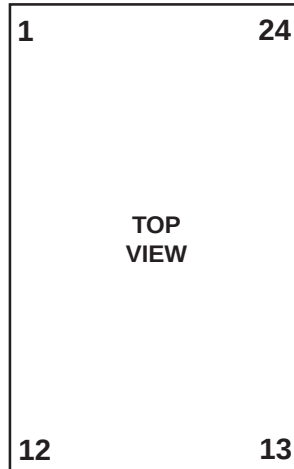
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Pin Designations

M102P Model

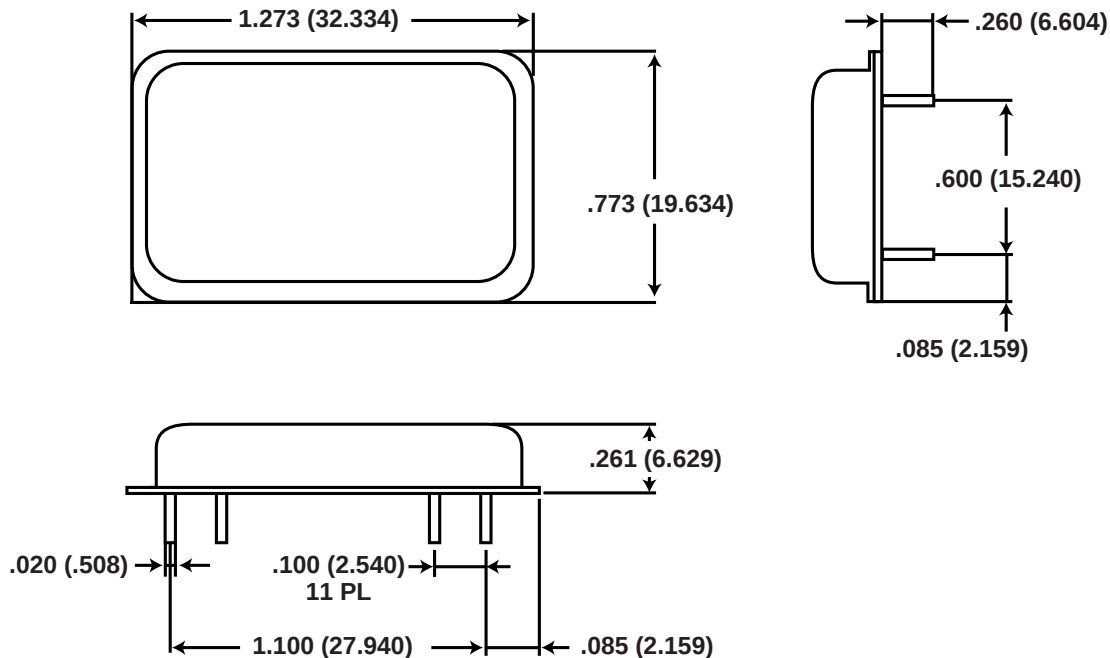
1. Ground	24. Ground
2. Ground	23. Ground
3. Ground	22. Ground
4. Ground	21. +5 Volts
5. +5 Volts	20. Ground
6. Ground	19. Test Point
7. +5 Volts	18. Ground
8. Ground	17. +5 Volts
9. +5 Volts	16. Ground
10. F Out $\bar{Q}$	15. Test Point
11. F Out Q	14. Ground
12. +5 Volts	13. +5 Volts



M102E Model

1. Ground	24. Ground
2. Ground	23. Ground
3. Ground	22. -5 Volts
4. -5 Volts	21. Ground
5. Ground	20. -5 Volts
6. -5 Volts	19. Test Point
7. Ground	18. -5 Volts
8. -5 Volts	17. Ground
9. Ground	16. -5 Volts
10. F Out $\bar{Q}$	15. Test Point
11. F Out Q	14. -5 Volts
12. Ground	13. Ground

Package Outline



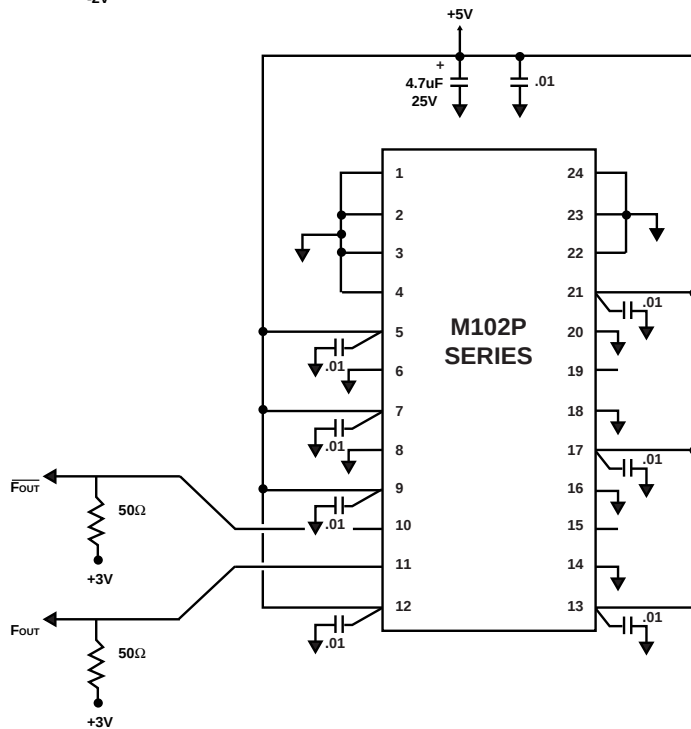
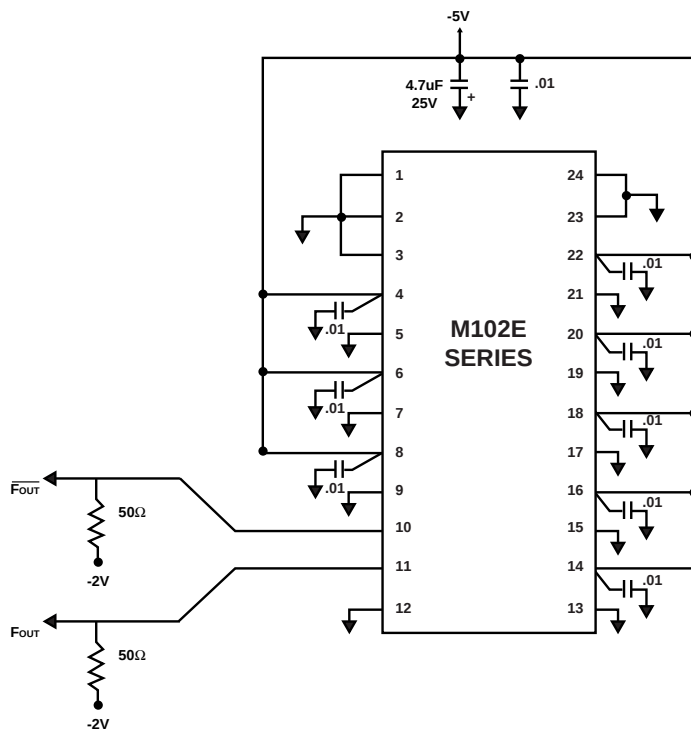
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Application Circuits



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