

HCMOS SURFACE-MOUNT CRYSTAL CLOCK OSCILLATOR

ASA SERIES

Moisture Sensitivity Level (MSL) – This product is
Hermetically Sealed and not Moisture Sensitive -
MSL = N/A: Not Applicable



RoHS/RoHS II Compliant



2.0 x 1.6 x 0.7 mm

FEATURES:

- Ultra miniature package, 2.0 x 1.6 x 0.7mm
- Tri-state function
- Suitable for high density SMT
- Suitable for RoHS compliant reflow process
- Seam sealed package assures high reliability

APPLICATIONS:

- CCD clock for VTR camera
- Computers and peripherals
- Portable electronics
- Mobile communication, PDA

STANDARD SPECIFICATIONS:

Parameters		Minimum	Typical	Maximum	Units	Notes	
Frequency Range		1.0		80	MHz		
Operating Temperature		-10		+60	°C	See options	
Storage Temperature		-40		+85	°C		
Overall Frequency Stability*		-50		+50	ppm	See options	
Supply Voltage (Vdd)		2.97	3.3	3.66	V	Standard	
		2.25	2.5	2.75		Option 1 (CMOS)	
		1.62	1.8	1.98		Option 2 (CMOS)	
Supply Current (I _{dd}) into 15pF Load	Vdd = 3.3 V		2.0	5.0	mA	1MHz ≤ F ≤ 20 MHz	
			4.0	10.0		20 MHz < F ≤ 50 MHz	
			7.0	15.0		50 MHz < F ≤ 80 MHz	
	Vdd = 2.5 V		2.0	5.0		1MHz ≤ F ≤ 20 MHz	
			3.0	10.0		20 MHz < F ≤ 50 MHz	
			5.0	10.0		50 MHz < F ≤ 80 MHz	
	Vdd = 1.8 V		1.5	5.0		1MHz ≤ F ≤ 20 MHz	
			2.5	5.0		20 MHz < F ≤ 50 MHz	
			4.0	10.0		50 MHz < F ≤ 80 MHz	
	Output Load				15	pF	
					2	TTL	
Output Voltage	V _{OH}	0.9*Vdd			V	CMOS	
	V _{OL}			0.1*Vdd		CMOS	
	V _{OH}	2.4				TTL	
	V _{OL}			0.4		TTL	
Tri-state function		"1" (VIH≥0.7*Vdd) or Open : Oscillation "0" (VIH<0.3*Vdd) : Hi Z					
Aging		-3.0		+3.0	ppm	@+25°C First year	
Symmetry @1/2Vdd		40	50	60	%	Standard	
		45	50	55		Option S	
Start-up Time				10.0	ms		
Rise/Fall Time (Tr/Tf)				10.0	ns		

*Overall frequency stability includes initial frequency tolerance @+25°C and stability over the operating temperature.

OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)

ASA - MHz - - - -

Supply Voltage
Blank: 3.3V±10%
1: 2.5 V±10%
2: 1.8 V±10%

Packaging
Blank: Bulk
T: Tape & Reel (1kpcs)
T3: Tape & Reel (3kpcs)

Frequency in MHz
Please specify the frequency in MHz. e.g. 14.31818MHz

Operating Temp.
Blank: -10°C ~ +60°C
E: -20°C ~ +70°C
L: -40°C ~ +85°C

Overall Freq. Stability
Blank: ±50ppm
R**: ±25ppm
K***: ±30 ppm

Symmetry
Blank: 40/60% @1/2Vdd
S: 45/55% @1/2Vdd

**Available for -10 to +60°C only

***Available for -10 to +60°C, option E only

Contact Abracon for tighter frequency stability options

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 **RoHS/RoHS II Compliant**

[illegible]

PIN #	Name
1	Tri-state
2	GND
3	Output
4	Vdd

Technical drawing of a PCB showing top, side, and detail views with dimensions.

Top View Dimensions:

- Overall width: 8.0 ± 0.2
- Overall length: 18.5 ± 0.1
- Distance from left edge to first component: 0.25 ± 0.05
- Distance between components: 2.0 ± 0.05
- Distance from last component to right edge: 4.0 ± 0.1
- Component width: $1.5 \pm 0.1 / 0$
- Component height: 2.25 ± 0.1
- Pin 1 location: 0.95 ± 0.1 from left edge, 3.5 ± 0.5 from bottom edge.
- Pin diameter: $\phi 1.05$
- Pin pitch: 4.0 ± 0.1
- Distance from component center to right edge: 1.85 ± 0.1

Side View Dimensions:

- Overall thickness: 9.0 ± 0.3
- Distance from top surface to component: 1.2
- Component height: 6.0
- Component width: $\phi 6.0$
- Overall diameter: $\phi 18.0 \pm 0 / -3$

Detail View Dimensions:

- Overall diameter: $\phi 13.0 \pm 0.5$
- Distance from center to edge: 2 ± 0.5
- Angle: 120°
- Overall diameter: $\phi 21 \pm 0.8$

The graph plots Temperature (°C) on the y-axis against Time (seconds) on the x-axis. The temperature profile is as follows:

- Pre-Heat:** Temperature rises from 25°C to 150°C. Duration: 60~120s.
- Reflow:** Temperature rises from 150°C to 260°C. Duration: 30~40s. A note indicates "5s max. 1 time at +260°C±5°C".
- Cool:** Temperature falls from 260°C to 25°C. Duration: 60~90s.



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