

3.3Vdc HCMOS SMD Crystal Clock Oscillator

ASV SERIES



ESD Sensitive



RoHS/RoHS II compliant



7.0 x 5.08 x 1.8 mm

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

FEATURES:

- HCMOS, 3.3Vdc, 2.5Vdc, & 1.8Vdc options
- Suitable for RoHS reflow
- Seam sealed package assures high reliability
- High output drive capability (up to 50pF)

APPLICATIONS:

- Clock signaling for μ Processors, PC Motherboards & Graphic Cards

STANDARD SPECIFICATIONS:

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency Range	0.312		200	MHz	
Operating Temperature	-10		+70	°C	See options
Storage Temperature	-55		+125	°C	
Overall Frequency Stability	-100		+100	ppm	See options
Supply Voltage (Vdd)	+2.97	3.3	+3.63	V	See options
Supply Current (Idd)		2.0	10.0	mA	0.312 ~ 14.9 MHz
		3.6	15.0		15.0 ~ 29.9 MHz
		5.6	20.0		30.0 ~ 39.9 MHz
		7.2	25.0		40.0 ~ 49.9 MHz
		13.3	30.0		50.0 ~ 59.9 MHz
		19.0	35.0		60.0 ~ 79.9MHz
		20.2	45.0		80.0 ~ 99.9 MHz
		23.7	50.0		100.0 ~ 125.0MHz
		27.2	65.0		125.1 ~ 165 MHz
Symmetry @ 1/2Vdd	40	50	60	%	See options
Rise and Fall Time (Tr/Tf)		3.0	5.0	ns	0.312 ~ 14.9 MHz
		2.8	4.0		15.0 ~ 29.9 MHz
		2.6	4.0		30.0 ~ 39.9 MHz
		2.4	4.0		40.0 ~ 49.9 MHz
		2.2	4.0		50.0 ~ 59.9 MHz
		2.2	4.0		60.0 ~ 79.9MHz
		2.0	4.0		80.0 ~ 99.9 MHz
		1.8	4.0		100.0 ~ 125.0MHz
		1.5	4.0		125.1 ~ 165 MHz
Output Load			15	pF	See options
Output Voltage	V _{OH}	0.9 x Vdd		V	
	V _{OL}		0.4	V	



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(Continued)

Parameters	Minimum	Typical	Maximum	Units	Notes
Start-up Time		0.4	4.0	ms	0.312 ~ 14.9 MHz
		0.4	4.0		15.0 ~ 29.9 MHz
		2.0	4.0		30.0 ~ 39.9 MHz
		1.5	4.0		40.0 ~ 49.9 MHz
		2.9	5.0		50.0 ~ 59.9 MHz
		1.5	5.0		60.0 ~ 79.9MHz
		1.3	5.0		80.0 ~ 99.9 MHz
		1.8	5.0		100.0 ~ 125.0MHz
		2.7	5.0		125.1 ~ 165 MHz
Tri-state function	"1" ($V_{IH} \geq 0.7 \cdot V_{DD}$) or Open: Oscillation "0" ($V_{IL} < 0.3 \cdot V_{DD}$) : Hi Z				
Period Jitter One Sigma (RMS):		2.5		ps	0.312 ~ 14.9 MHz
		3.2			15.0 ~ 29.9 MHz
		3.2			30.0 ~ 39.9 MHz
		3.2			40.0 ~ 49.9 MHz
		3.2			50.0 ~ 59.9 MHz
		3.2			60.0 ~ 79.9MHz
		3.0			80.0 ~ 99.9 MHz
		2.9			100.0 ~ 125.0MHz
		2.9			125.1 ~ 165 MHz
Aging at 25°C (first year)	-5		+5	ppm	
Disable Current			10	uA	
Enable Time		3.5	5	ms	
Disable Time			100	ns	



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➤ OPTIONS & PART IDENTIFICATION: (Left blank if standard)

ASV - [] - [] MHz - [] [] [] - [] - []

P/N and Vdd (V)

Blank: 3.3 ± 10%
25: 2.5 ± 10%
18: 1.8 ± 10%

Frequency in MHz

e.g. 0.312MHz
14.31818MHz
26.000MHz
200.000MHz

Operating Temp.

I: 0°C ~ +50°C
D: -10°C ~ +60°C
E: -20°C ~ +70°C
F: -30°C ~ +70°C
N: -30°C ~ +85°C
L: -40°C ~ +85°C

Overall Freq. Stability

J: ±20ppm
R: ±25ppm
K: ±30ppm
H: ±35ppm
C: ±50ppm

Output Load *

Blank: 15pF
50: 50pF

Symmetry

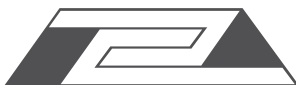
Blank: 40/60% @ 1/2 Vdd
S: 45/55% @ 1/2 Vdd

Packaging

Blank: Bulk
T: 1000pcs/Reel
T5: 500pcs/Reel

Note *: See Table below for the Output Load option availability

Output Load	Supply Voltage		
	Vdd=3.3V	Vdd=2.5V	Vdd=1.8V
15pF max	√	√	√
50pF max	√	Available for Freq. ≤ 70MHz	Not Available



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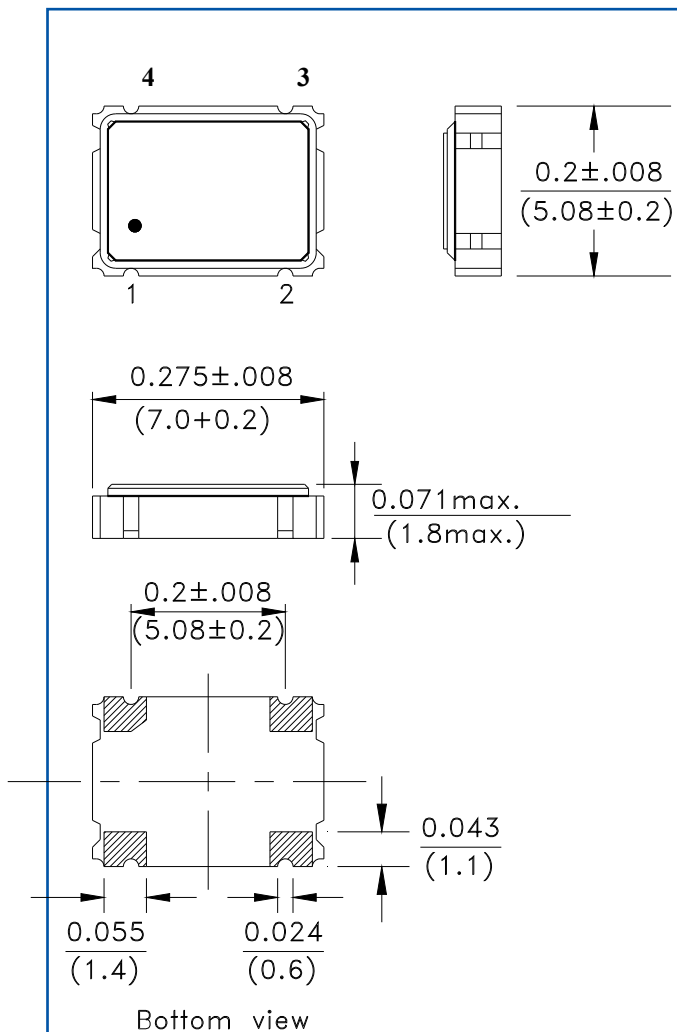


ESD Sensitive



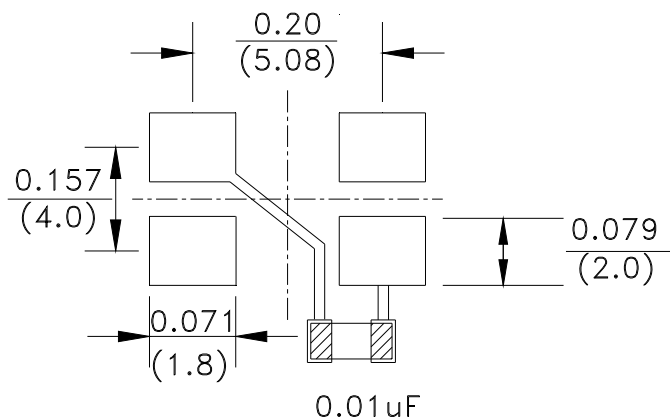
RoHS/RoHS II compliant

OUTLINE DIMENSION:

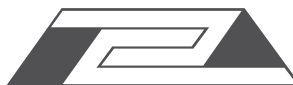


Dimension: Inches (mm)

Recommended land pattern



Pin	Function
1	Tri-State Enable/Disable
2	GND/Case
3	Output
4	Vdd





7.0 x 5.08 x 1.8 mm

Figure 1 is a typical reflow profile graph. The Y-axis represents Temperature in degrees Celsius (°C), with marked values at 25°C, 150°C, 180°C, 230°C, and 260°C. The X-axis represents Time in seconds (s). The profile is divided into three main phases: Pre-Heat, Reflow, and Cool. The Pre-Heat phase starts at 25°C and ramps up to 150°C, with a time interval of 60~120s. The Reflow phase starts at 150°C, ramps up to 260°C, and then holds at 260°C for 30~40s. A note above the 260°C plateau indicates '10s max. 1 time at +260°C±5°C'. The Cool phase starts at 260°C and ramps down to 25°C, with a time interval of 60~90s.

FEEDING (PULL) DIRECTION →

0.3±0.005

1.75±0.1

$\phi 1.5$

2.0±0.1

4.0±0.1

5° MAX

Pin 1

7.4±0.1

7.5±0.1

16.0±0.3

$\phi 1.5$

8±0.1

5.4±0.1

2.0±0.1

17.5+2/-0

2.0

$\phi 13.0 \pm 0.5$

2.5

120°

$\phi 21.0 \pm 1$

$\phi 80$

$\phi 178 \pm 1$

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