

LOW VOLTAGE HCMOS SURFACE-MOUNT CRYSTAL CLOCK OSCILLATOR

ASD SERIES



RoHS
Compliant



2.5 X 2.0 X 0.95 mm

FEATURES:

- Low height 0.95mm max
- Low current consumption
- Tri-state function
- Suitable for RoHS compliant reflow
- Tight stability option
- Seam sealed package assures high reliability

APPLICATIONS:

- CCD clock for VTR Camera
- Equipment connected to PC or PC cards
- Thin equipment

STANDARD SPECIFICATIONS:

Parameters		Minimum	Typical	Maximum	Units	Notes	
Frequency Range		0.750	-----	75	MHz		
Operating Temperature		-20	-----	+70	°C	STD temp. Option code E (See options)	
Storage Temperature		-55	-----	+100	°C		
Overall Frequency Stability		-100	-----	+100	ppm	See options	
Supply Voltage (Vdd)		+3.135	+3.3	+3.465	V	ASD (Standard)	
		+2.85	+3.0	+3.15		ASD1	
		+2.375	+2.5	+2.625		ASD2	
		+1.71	+1.8	+1.89		ASD3	
		+0.95	+1.0	+1.05		ASD6	
Input Current (Idd)	ASD (3.3V)	-----	2.5	5	mA	0.750~15.999 MHz	
		-----	4	7		16.000~39.999 MHz	
		-----	9	13		40.000~66.666 MHz	
	ASD1 (3.0V)	-----	2.5	4	mA	0.750~15.999 MHz	
		-----	3.5	6		16.000~39.999 MHz	
		-----	8	12		40.000~66.666 MHz	
	ASD2 (2.5V)	-----	2	3.5	mA	0.750~15.999 MHz	
		-----	3	5		16.000~39.999 MHz	
		-----	7	10		40.000~66.666 MHz	
	ASD3 (1.8V)	-----	1	2.5	mA	0.750~15.999 MHz	
		-----	2	4		16.000~39.999 MHz	
		-----	4	7		40.000~66.666 MHz	
	ASD6 (1.0V)	-----	1.0	2.5	mA	25.000 MHz	
	Symmetry @ 1/2Vdd		40	-----	60	%	STD (See option)
	Output Load:		-----	-----	15	pF	CMOS
Output Voltage (VOH):		0.9* Vdd	-----	-----	V		
Output Voltage (VOL):		-----	-----	0.1* Vdd	V		



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2.5 X 2.0 X 0.8mm

STANDARD SPECIFICATIONS... continued:

Parameters	Minimum	Typical	Maximum	Units	Notes
Rise and Fall Time (Tr/Tf):	ASD (3.3V)	-----	3	ns	0.750~15.999 MHz
		-----	2.5		16.000~39.999 MHz
		-----	2		40.000~66.666 MHz
	ASD1 (3.0V)	-----	3	ns	0.750~15.999 MHz
		-----	2.5		16.000~39.999 MHz
		-----	2		40.000~66.666 MHz
	ASD2 (2.5V)	-----	4	ns	0.750~15.999 MHz
		-----	3		16.000~39.999 MHz
		-----	2.5		40.000~66.666 MHz
	ASD3 (1.8V)	-----	5	ns	0.750~15.999 MHz
		-----	3.5		16.000~39.999 MHz
		-----	3		40.000~66.666 MHz
	ASD6 (1.0V)	-----	1.9	ns	25.000 MHz
Start-up Time:	ASD (3.3V)	-----	6	ms	0.750~15.999 MHz
		-----	6		16.000~39.999 MHz
		-----	5		40.000~66.666 MHz
	ASD1 (3.0V)	-----	6	ms	0.750~15.999 MHz
		-----	6		16.000~39.999 MHz
		-----	5		40.000~66.666 MHz
	ASD2 (2.5V)	-----	6	ms	0.750~15.999 MHz
		-----	6		16.000~39.999 MHz
		-----	5		40.000~66.666 MHz
	ASD3 (1.8V)	-----	6	ms	0.750~15.999 MHz
		-----	6		16.000~39.999 MHz
		-----	5		40.000~66.666 MHz
	ASD6 (1.0V)	-----	2.0	ms	25.000 MHz
Tri-state function (Stand-by) :		"1" (VIH≥0.7*Vdd) or Open: Oscillation; "0" (VIH<0.3*Vdd) : No oscillation/Hi Z			
Phase Jitter (12kHz to 20MHz)	ASD (3.3V)	-----	0.4	ps	0.750~15.999 MHz
		-----	0.4		16.000~39.999 MHz
		-----	0.3		40.000~66.666 MHz
	ASD1 (3.0V)	-----	0.4	ps	0.750~15.999 MHz
		-----	0.4		16.000~39.999 MHz
		-----	0.3		40.000~66.666 MHz
	ASD2 (2.5V)	-----	0.5	ps	0.750~15.999 MHz
		-----	0.5		16.000~39.999 MHz
		-----	0.5		40.000~66.666 MHz
	ASD3 (1.8V)	-----	0.5	ps	0.750~15.999 MHz
		-----	0.5		16.000~39.999 MHz
		-----	0.5		40.000~66.666 MHz
	ASD6 (1.0V)	-----	0.3	ps	25.000 MHz
Period Jitter RMS	ASD (3.3V)	-----	3.0	ps	0.750~15.999 MHz
		-----	3.0		16.000~39.999 MHz
		-----	3.0		40.000~66.666 MHz
	ASD1 (3.0V)	-----	3.0	ps	0.750~15.999 MHz
		-----	3.0		16.000~39.999 MHz
		-----	3.0		40.000~66.666 MHz
	ASD2 (2.5V)	-----	3.0	ps	0.750~15.999 MHz
		-----	3.0		16.000~39.999 MHz
		-----	3.0		40.000~66.666 MHz
	ASD3 (1.8V)	-----	3.0	ps	0.750~15.999 MHz
		-----	3.0		16.000~39.999 MHz
		-----	3.0		40.000~66.666 MHz
	ASD6 (1.0V)	-----	4.8	ps	25.000 MHz
Aging at 25°C/year		-5	-----	+5	ppm
Disable Current:		-----	-----	10	μA



Pb

2.5 X 2.0 X 0.8mm

(Left blank if standard)



Packaging
Blank: Bulk
T: 1000pcs/Reel
T2: 250pcs/Reel
T3: 3000pcs/Reel

Operating Temp.
E: -20°C ~ +70°C (STD)
F: -30°C ~ +70°C
N: -30°C ~ +85°C
L: -40°C ~ +85°C
M(***): -40°C ~ +105°C
V(***): -40°C ~ +125°C

Overall Freq. Stability
J(*): $\pm 20\text{ppm}$
R(**): $\pm 25\text{ppm}$
K: $\pm 30\text{ppm}$
H: $\pm 35\text{ppm}$
C: $\pm 50\text{ppm}$

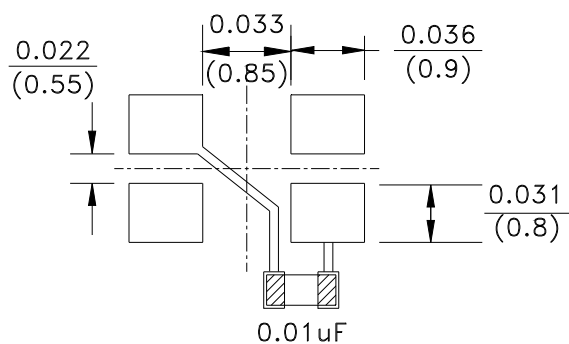
Duty Cycle
Blank : 40/60% @ 1/2Vdd
S: 45/55% @ 1/2Vdd

*: Standard only
 **: E, F, N, and L only
 ***: ± 100 ppm only

Technical drawings of a rectangular component with dimensions and tolerances:

- Top View:** Shows a rectangle with overall dimensions 0.098 ± 0.004 (width) and 2.5 ± 0.1 (length). The width is divided into segments of 4 and 3. The length is divided into segments of 1 and 2. A small circular feature is located in the bottom-left corner.
- Side View:** Shows the component's profile with a total height of 0.079 ± 0.004 (2.0 ± 0.1). It features a central slot with a width of 0.015 and a depth of 0.4 . The slot is flanked by segments of 0.037 max (0.95 max) on each side.
- Bottom View:** Shows the component's base with four corner features labeled 1, 2, 3, and 4. The distance between the centerlines of the corner features is 0.037 (0.95). The overall width is 0.0267 (0.68) and the overall length is 0.025 (0.65). The corner features have a radius of $R0.3$.

Recommended land pattern



PIN	FUNCTION
1	Tri-State (STBY)
2	GND/Case
3	Output
4	Vdd

Note1: Recommend using an approximately 0.01uF bypass capacitor between PIN 2 and 4.

Dimensions: inches (mm)

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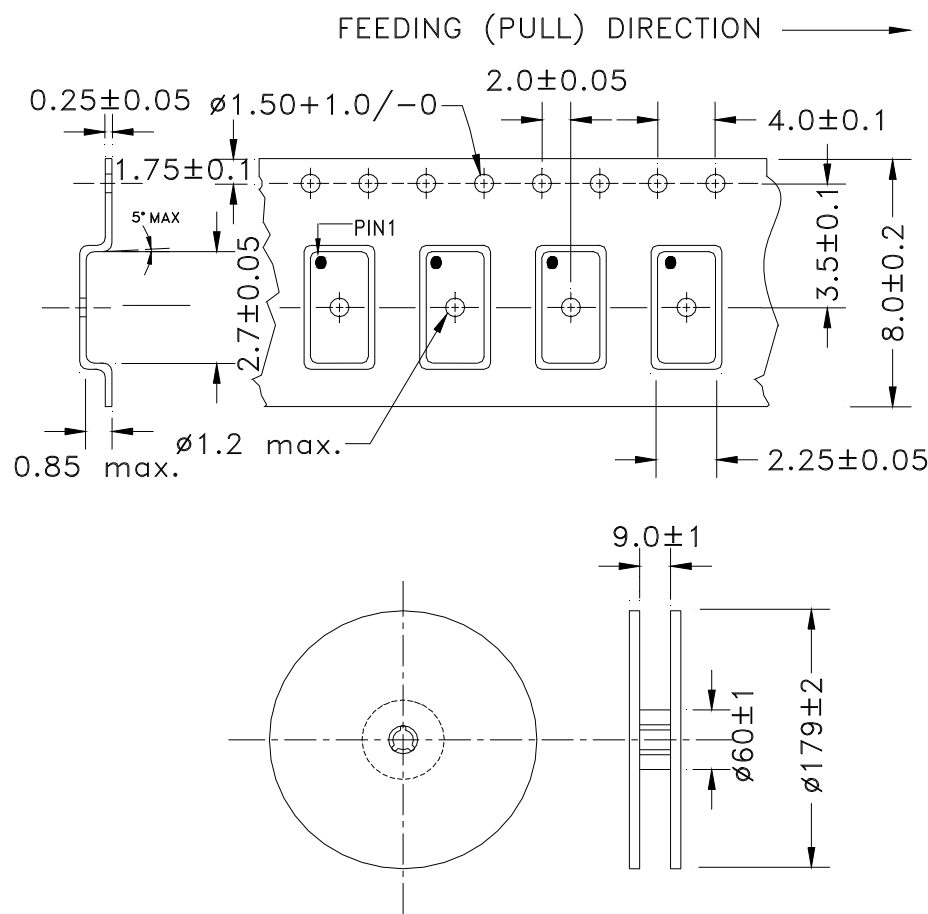
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2.5 X 2.0 X 0.8mm

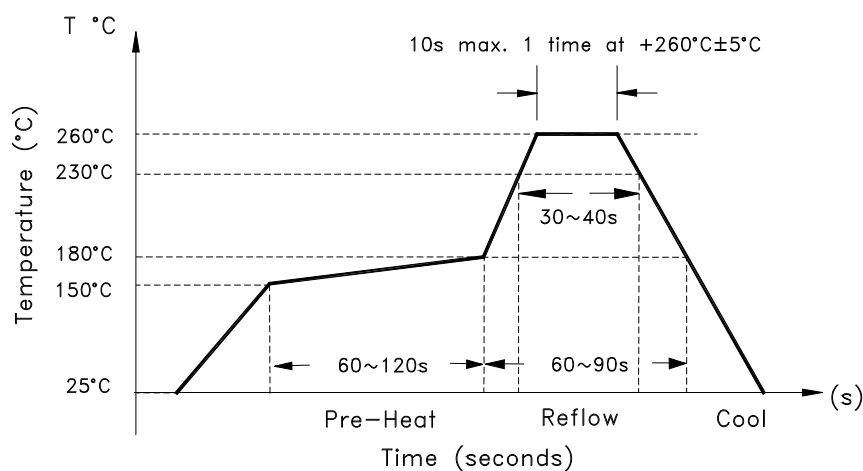
TAPE & REEL:

T: 1000pcs/reel
T2: 250pcs/reel
T3: 3000pcs/reel



Dimensions: mm

REFLOW PROFILE:



Need a test socket for the ASD Series? To view compatible **PRECISION TEST & BURN-IN SOCKETS** for these parts, [click here. P/N AXS-2520-04-01](#)

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