



**THE DATASHEET OF  
ASV-20.000MHZ-EJ-T**



# 3.3Vdc HCMOS SMD Crystal Clock Oscillator



7.0 x 5.08 x 1.8 mm

ASV SERIES

ESD Sensitive

RoHS/RoHS II compliant

**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  $\mu$ 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 <sub>OH</sub>	0.9 x Vdd		V	
	V <sub>OL</sub>		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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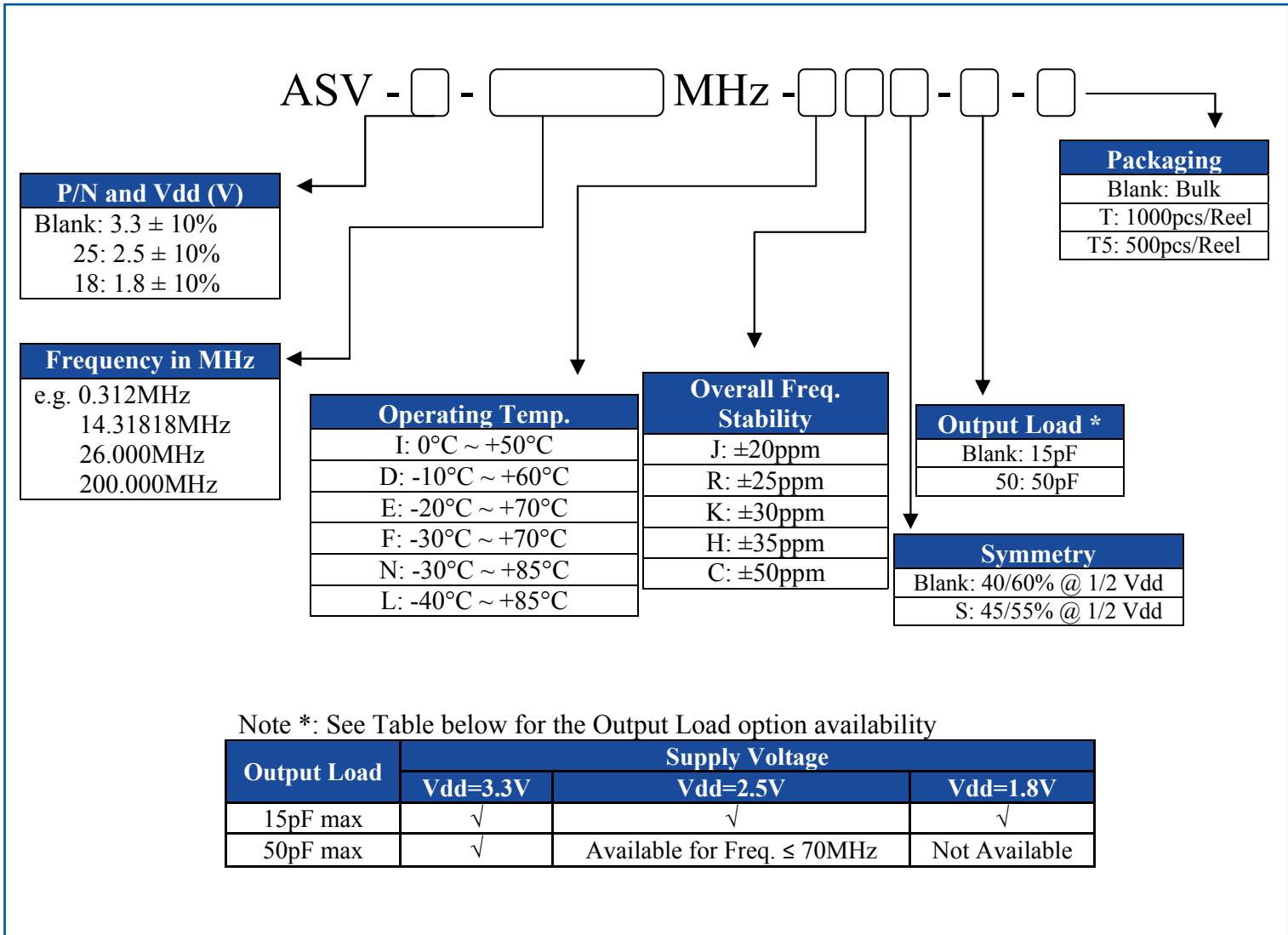
7.0 x 5.08 x 1.8 mm

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



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**OUTLINE DIMENSION:**

Top view dimensions: 0.275±.008 (7.0±0.2) inches, 0.2±.008 (5.08±0.2) mm. Pin 1 is at the top-left corner.

Side view dimensions: 0.2±.008 (5.08±0.2) mm height, 0.071 max. (1.8 max.) mm thickness.

Bottom view dimensions: 0.055 (1.4) inches, 0.024 (0.6) inches, 0.043 (1.1) mm. Pin 2 is at the bottom-left corner.

Recommended land pattern dimensions: 0.20 (5.08) mm pad width, 0.157 (4.0) mm pad length, 0.071 (1.8) mm pad width, 0.079 (2.0) mm pad length, 0.01µF capacitor.

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

**Dimension: Inches (mm)**

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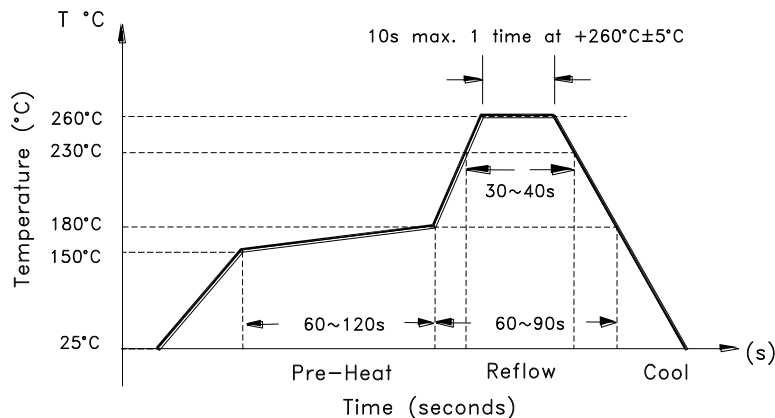
7.0 x 5.08 x 1.8 mm

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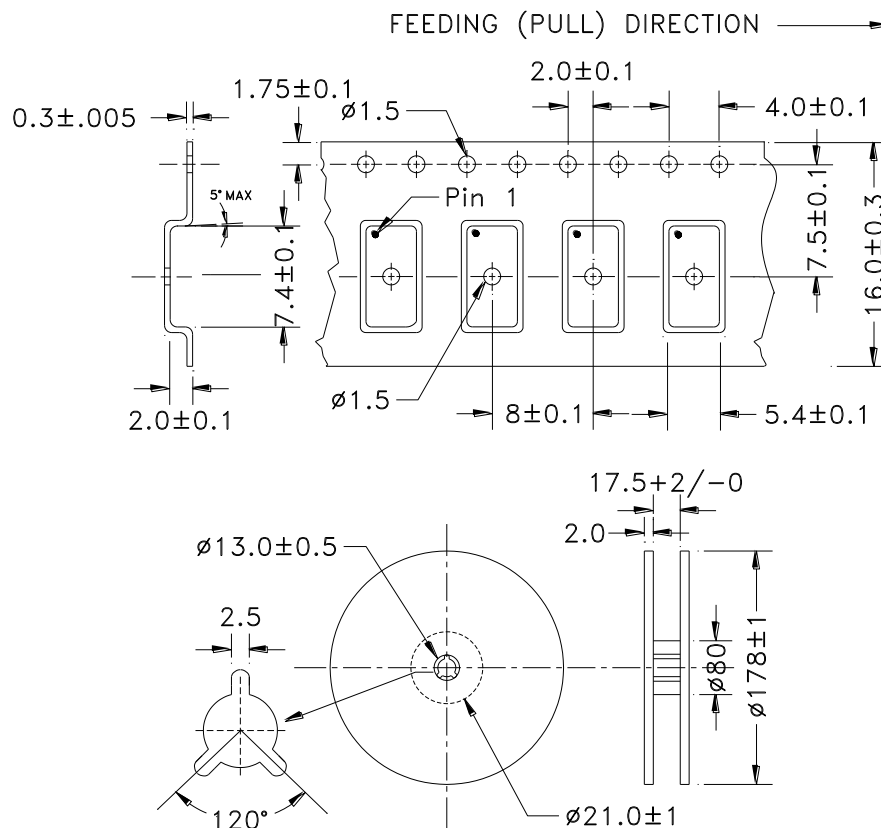
RoHS/RoHS II compliant

## REFLOW PROFILE:



## TAPE & REEL:

T: 1000pcs/reel  
T5: 500pcs/reel



Dimension: mm

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