

# 3.3V LOW EMI SMD SPREAD SPECTRUM CLOCK OSCILLATOR



7.0 x 5.0 x 1.8mm

ASSV SERIES



RoHS  
Compliant

## FEATURES:

- Integrated spread spectrum technology
- EMI reduction up to 20dB
- Solve EMI failures as a drop in replacement for std. 5x7mm Osc.
- Cost effective EMI reduction

## APPLICATIONS:

- Printers, Digital Copy Machines, Scanners, Projectors, Modems, LAN, WAN, Navigation Equipment, Automotive, Audio, Medical Electronics, Hand-held readers, Industrial Automation

## STANDARD SPECIFICATIONS:

PARAMETERS	
ABRACON P/N	ASSV
Frequency Range	5.000 MHz to 160.000 MHz
Spread Type	±0.5 (see table 1 for options)
EMI Reduction (reduction is applied to the entire frequency spectrum)	-7dBc min. 100MHz at C0.25; -9dBc min. 100MHz at C0.5 -15dBc min. 100MHz at C1.5 With respect to the dB level when no modulation.
Operating Temperature	0°C to + 70°C (see options)
Storage Temperature	- 65°C to + 150°C
Frequency Stability	± 100 ppm (see options)
Supply Voltage (Vdd)	3.3 Vdc ± 5%
Start-up Time	2ms typ, 5ms max.
Stabilization Time	2ms max.
Rise time / Fall time	4n sec. max. (10% VDD <-> 90% VDD)
Load	15pF
Current Consumption	20mA max.
Duty Cycle	50% ± 5% (CL = 15pF at 50% VDD)
Output Logic	CMOS Square wave
Cycle to cycle Jitter	±250ps typ; ±300ps max.
Output Impedance	40Ω
Static Discharge Voltage	>2,000V (per MIL-STD-883, method 3015)
Aging	±5ppm per year max.; Ta=+25°C
Output Voltage "High"; "1"	2.0V min.; 3.2V typ (at 90% VDD)
Output Voltage "Low"; "0"	0.8V max. ; 0.2V typ (at 10% VDD)
Modulation Carrier Freq. (Dither rate)	6.9KHz min.; 55.5KHz max; Freq dependent call for details.
Pin 1 Function	Output is high impedance when taken low. Output enable/disable time: 100 ns max.

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## OPTIONS & PART IDENTIFICATION:

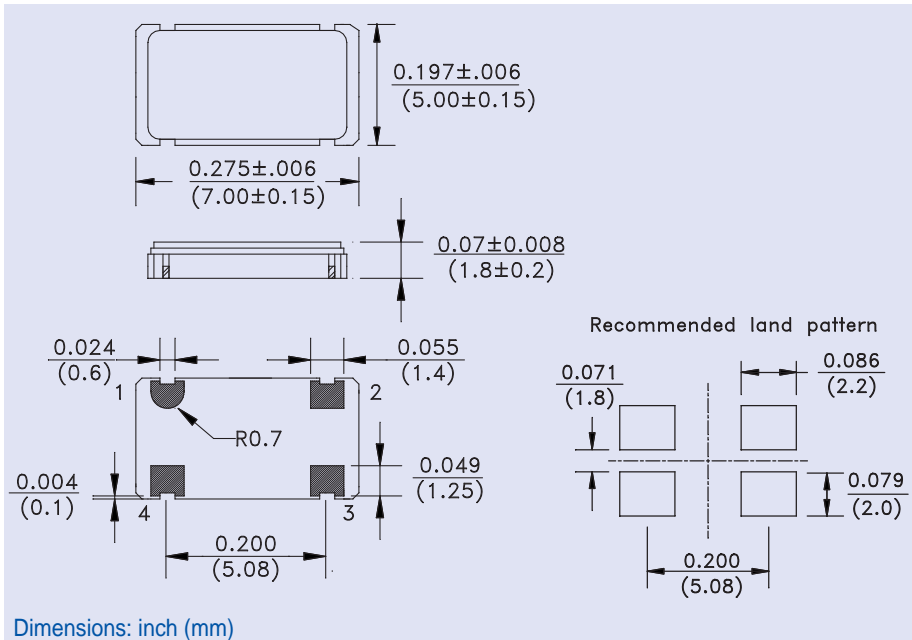
(Left blank if standard)

ASSV - Frequency - □ - □ - □ - □

Operating Temperature		Frequency Stability		Spread Type		Packaging	
Blank	0°C to +70°C	Blank	±100ppm	Down Spread		T	Tape & Reel
L	-40°C to +85°C	R	±25ppm	D1	-1%		
		C	±50ppm	D3	-3%		
				Center Spread			
				C0.5	±0.5%		
				C1.5	±1.5%		

← Standard

## OUTLINE DRAWING:

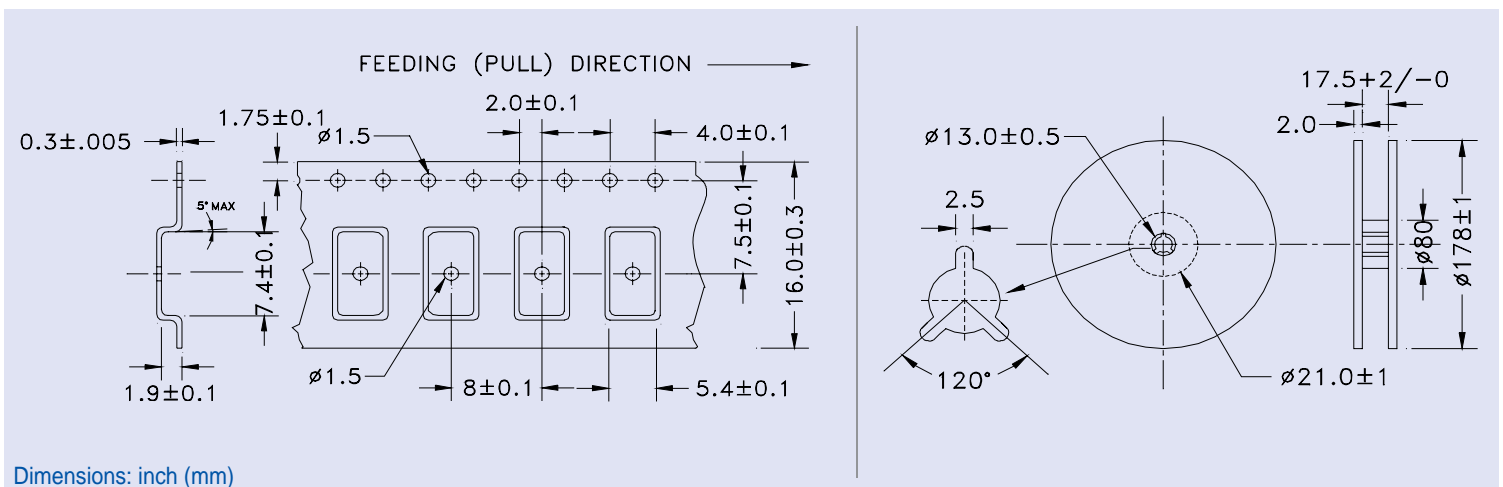


Dimensions: inch (mm)

PIN	FUNCTION
1	Tri-state
2	Ground
3	Output
4	Vdd

**Note:** It is recommended to use an approximately 0.01uF bypass capacitor between PIN 2 and 4.

## TAPE & REEL:



Dimensions: inch (mm)

ABRACON IS  
ISO 9001 / QS 9000  
CERTIFIED



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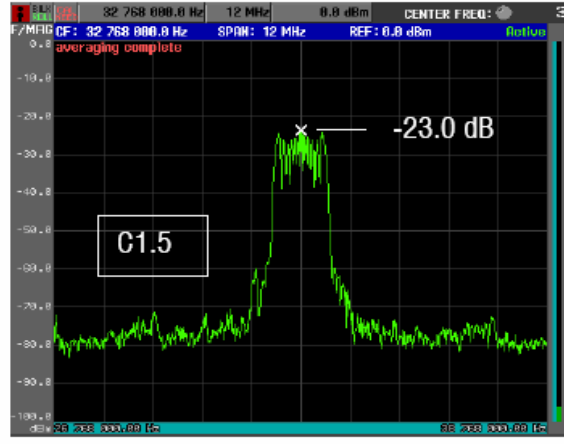
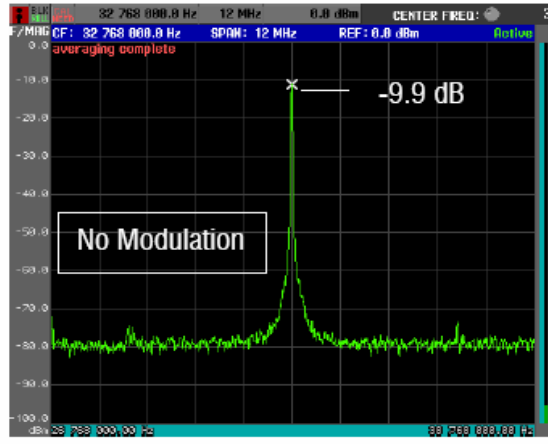
7.0 x 5.0 x 1.8mm

ASSV SERIES



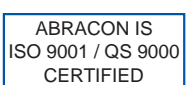
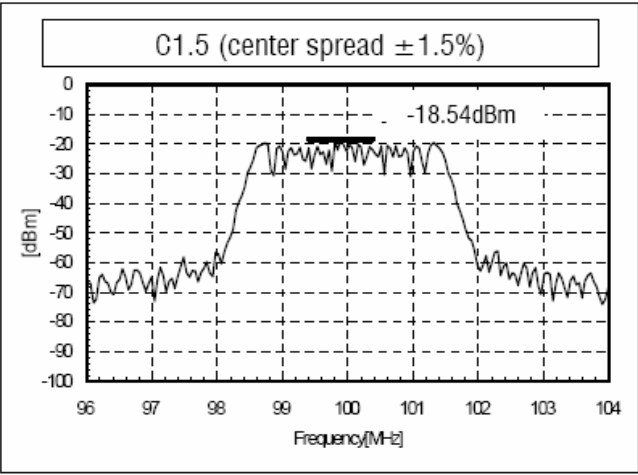
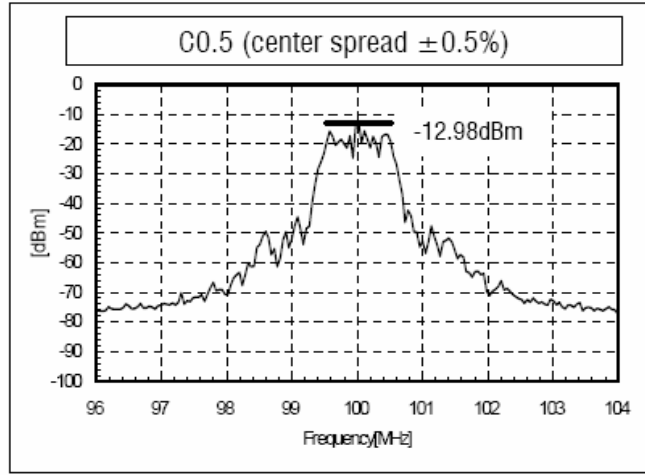
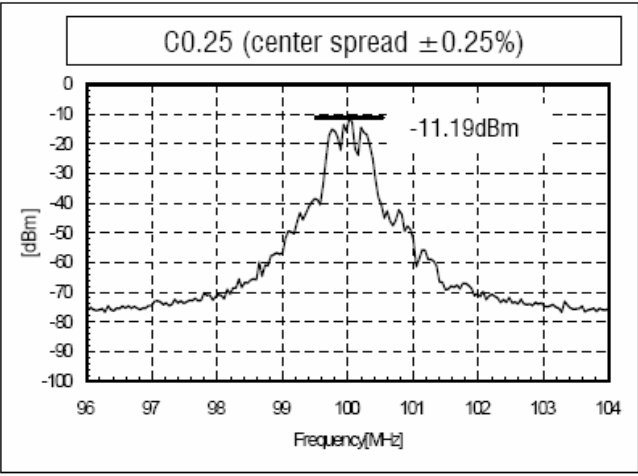
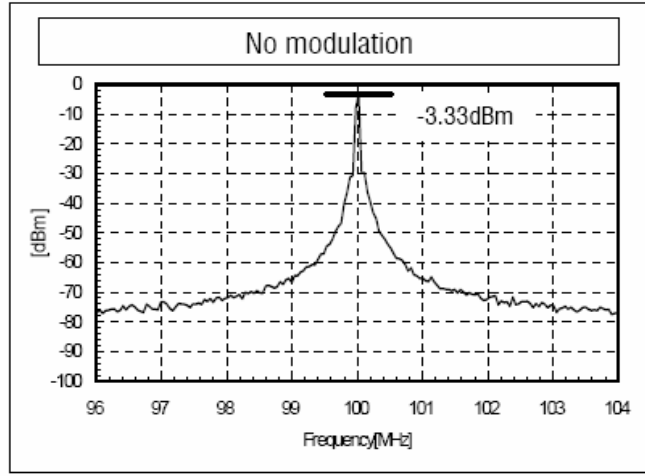
## Modulation and EMI Reduction:

**ASSV-32.768MHz at No Modulation and at Center Spread 1.5%: 13.1 dBc EMI reduction**



## EMI Reduction of ASSV-100 MHz at C0.5 and C1.5 (main mode only)

Modulation Carrier Frequency = 34.687 KHz



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## EMI Reduction:

### EMI Reduction of ASSV-100 MHz at C0.5 and C1.5 (the whole spectrum)

