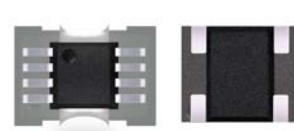


# TTL/CMOS SMD LOW EMI SPREAD SPECTRUM CRYSTAL CLOCK OSCILLATORS



7.43 x 5.34 x 2.6mm

ASSL1 or ASSV1



**RoHS**  
Compliant

## FEATURES:

- Integrated spread spectrum technology
- Standard TTL or CMOS output
- Meets jitter requirements for all major CISC, RISC & DSP processors
- 8 MHz to 128 MHz output frequency range
- Modulated clock reduces electromagnetic emissions up to 20dB
- Reduces engineering and compliance costs; Faster release time to market

## APPLICATIONS:

- Printers, Digital Copy Machines, Scanners, Modems, Navigation Equipment, Automotive, Audio, Medical Electronics, Telecommunications, Aerospace

Drop-in  
Replacement for  
Industry Standard  
7 x 5 mm  
Package!

## STANDARD SPECIFICATIONS:

### PARAMETERS

ABRACON P/N	ASSL1 or ASSV1 Series
Frequency Range	8MHz to 128MHz
Operating Temperature	0°C to + 70°C (see options)
Storage Temperature	- 60°C to + 150°C
Frequency Stability vs. Temp.	± 100 ppm (see options)
Supply voltage	ASSL1 (Vdd) = 5.0V ±5% ; ASSV1 (Vdd) = 3.3V ±5%
Supply Current (Idd)	30mA
Rise time / Fall time	5ns max., 3.5ns typ.
Load Capacitance CL	10pF TTL, 15pF typ.
Output Voltage (VOL) (VOH)	VOL1 @ 4mA = 0.4V max. ; VOL2 @ 10mA = 1.2V max. VOH1 @ 4mA = 2.4V min. ; VOH2 @ 6mA = 2.0V min.
Rise Time (Tr)	2nsec min, 5nsec max
Fall Time (Tf)	2nsec min, 4.4nsec max
Duty Cycle	40% to 60%, 50% typ.
Start-up Time	10ms max., 3ms typ.
Aging	±5ppm per year
Bandwidth Accuracy	±10% max.
Cycle to Cycle Jitter	8MHz = 450psec ; 16MHz = 400psec ; 32MHz = 380MHz psec ; 64MHz = 380psec ; 128MHz = 380psec

### Absolute Maximum Ratings

Supply Voltage (Vdd)	3.0VDC min. to 6.0VDC max.
Operating Temperature (TOPR)	-40°C to 85°C
Storage Temperature (TSTO)	-65°C to 150°C
Junction Temperature (TJUN)	+150°C

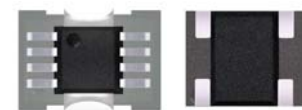
ABRACON IS  
ISO 9001 / QS 9000  
CERTIFIED



**ABRACON**  
CORPORATION

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tel 949-546-8000 | fax 949-546-8001 | [www.abracon.com](http://www.abracon.com)

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7.43 x 5.34 x 2.6mm

ASSL1 or ASSV1



## OPTIONS & PART IDENTIFICATION:

ASS □ 1 – Frequency – □ – □ – □ – □

P/N	Operating Temp.		Freq. Stability		SSBW	Packaging	
ASSL1(5V)	Blank	0°C to +70°C	Blank*	±100ppm	C1, C3, D1 or D3 See table	T	Tape and Reel (1000pcs)
ASSV1(3.3V)	E	-20°C to +70°C	R	±25ppm			
	L	-40°C to +85°C	K	±30ppm	SSBW: Spread Spectrum Band Width		
			H	±35ppm			
			C	±50ppm			

## BANDWIDTH ORDERING CODE: SPREAD SPECTRUM BANDWIDTH SELECTION TABLE

FREQUENCY (MHZ)	CENTER SPREAD SELECTION CODE (%)		DOWN SPREAD SELECTION CODE (%)		MODULATION (kHz)
	C1	C3	D1	D3	
<b>Frequency range</b>	<b>C1</b>	<b>C3</b>	<b>D1</b>	<b>D3</b>	
8 ~ 10	± 1.4	± 0.5	- 3	- 1.9	31.25 ~ 39.06
10 ~ 12	± 1.3	± 0.4	- 2.7	- 1.7	39.06 ~ 46.88
12 ~ 14	± 1.2	± 0.4	- 2.5	- 1.5	46.88 ~ 54.69
14 ~ 16	± 1.1	± 0.3	- 2.3	- 1.4	54.69 ~ 62.50
16 ~ 20	± 1.4	± 0.5	- 3	- 1.9	31.25 ~ 39.06
20 ~ 24	± 1.3	± 0.4	- 2.7	- 1.7	39.06 ~ 46.88
24 ~ 28	± 1.2	± 0.4	- 2.5	- 1.5	46.88 ~ 54.69
28 ~ 32	± 1.1	± 0.3	- 2.3	- 1.4	54.69 ~ 62.50
32 ~ 40	± 1.4	± 0.5	- 3	- 1.9	31.25 ~ 39.06
40 ~ 48	± 1.3	± 0.4	- 2.7	- 1.7	39.06 ~ 46.88
48 ~ 56	± 1.2	± 0.4	- 2.5	- 1.5	46.88 ~ 54.69
56 ~ 64	± 1.1	± 0.3	- 2.3	- 1.4	54.69 ~ 62.50
64 ~ 80	± 1.4	± 0.5	- 3	- 1.9	31.25 ~ 39.06
80 ~ 96	± 1.3	± 0.4	- 2.7	- 1.7	39.06 ~ 46.88
96 ~ 112	± 1.2	± 0.4	- 2.5	- 1.5	46.88 ~ 54.69
112 ~ 128	± 1.1	± 0.3	- 2.3	- 1.4	54.69 ~ 62.50

# TTL/CMOS SMD LOW EMI SPREAD SPECTRUM CRYSTAL CLOCK OSCILLATORS

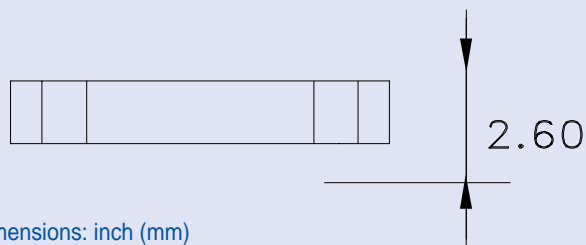
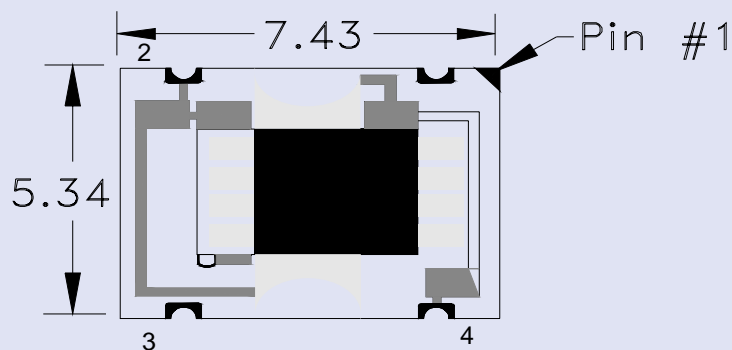
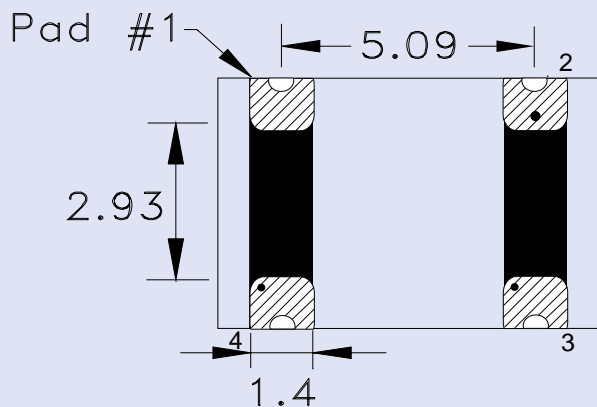


7.43 x 5.34 x 2.6mm

ASSL1 or ASSV1



## OUTLINE DRAWING:

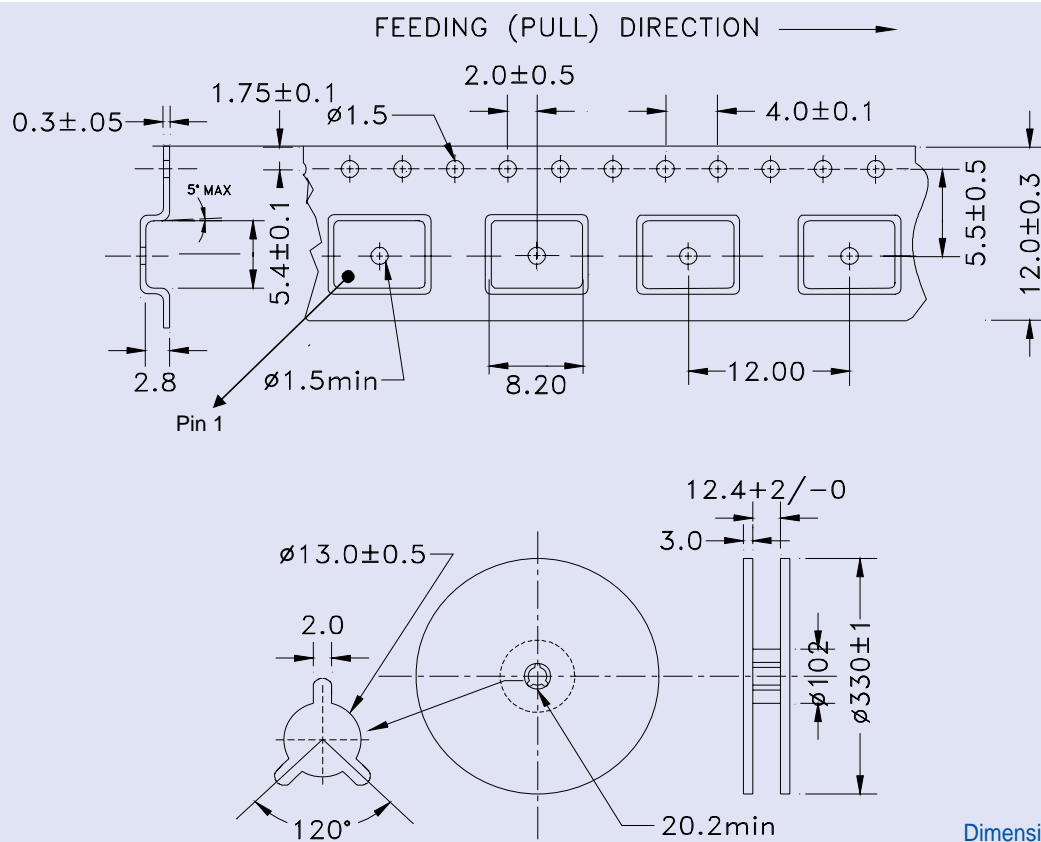


**Note:** It is recommended to use an approximately 0.01uF bypass capacitor between PIN 2 and 4.

PIN	FUNCTION
1	NC
2	GND
3	OUTPUT
4	VDD

Dimensions: inch (mm)

## TAPE & REEL: T = Tape and reel 1,000pcs/reel



Dimensions: mm

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