

ACCELERATE THE SPEED OF CIRCUIT DESIGN...OSCILLATORS IN SECONDS, NOT DAYS!

The MEMSpeed Pro oscillators operate down to 4mA with 1uA standby current!



Introducing the MEMSpeed Pro, Low Power Oscillator Programmer. The Oscillator Programming Kit includes all hardware and software necessary for the user to easily program custom oscillator frequencies in the field, or in the lab.

FEATURES

 MEMS Oscillator Programming Kit featuring Discera Pure Silicon Resonator Technology.

Field Programmable Output Frequencies
User specified from 1 to 150MHz

Programmable Supply Voltage Range
1.8, 2.5, and 3.3v operation

Standard SMD Package Sizes
5.0 x 3.2mm and 3.2 x 2.5mm

PC/USB Interface
Microsoft Windows™ compatible software

Includes Programmer and All Hardware
QuickStart Guide, Socket Adapters, USB Cable, Tweezers, CD-ROM and Blank Oscillators.

SPECIFICATIONS

Frequency Range	1.0000 to 150.0000MHz
Power Supply	USB Driven
Programmable Operating / Supply Voltage Range	1.8v, 2.5v, and 3.3v
Oscillator Packages	5.0 x 3.2 mm SMD 3.2 x 2.5 mm SMD
Oscillator Blank Part Number	ASFLM-Blank ASEM-Blank ASDM-Blank
Socket Adapters (ZIF)	ASFLM-Adapter ASEM-Adapter ASDM-Adapter
Programming Time	Approx. 1 sec / pc
User Interface	USB (MS Windows XP & Vista) - or - Stand Alone (display menu)
Programmer Size	6" x 3.5" x 1"

For ordering information, contact:



REVISION: 02/06/09

30332 Esperanza, Rancho Santa Margarita, California 92688
tel 949-546-8000 fax 949-546-8001 | www.abracon.com



MEMSPEED PRO™

Clock Oscillator Programmer

Looking for the lowest power oscillators?...

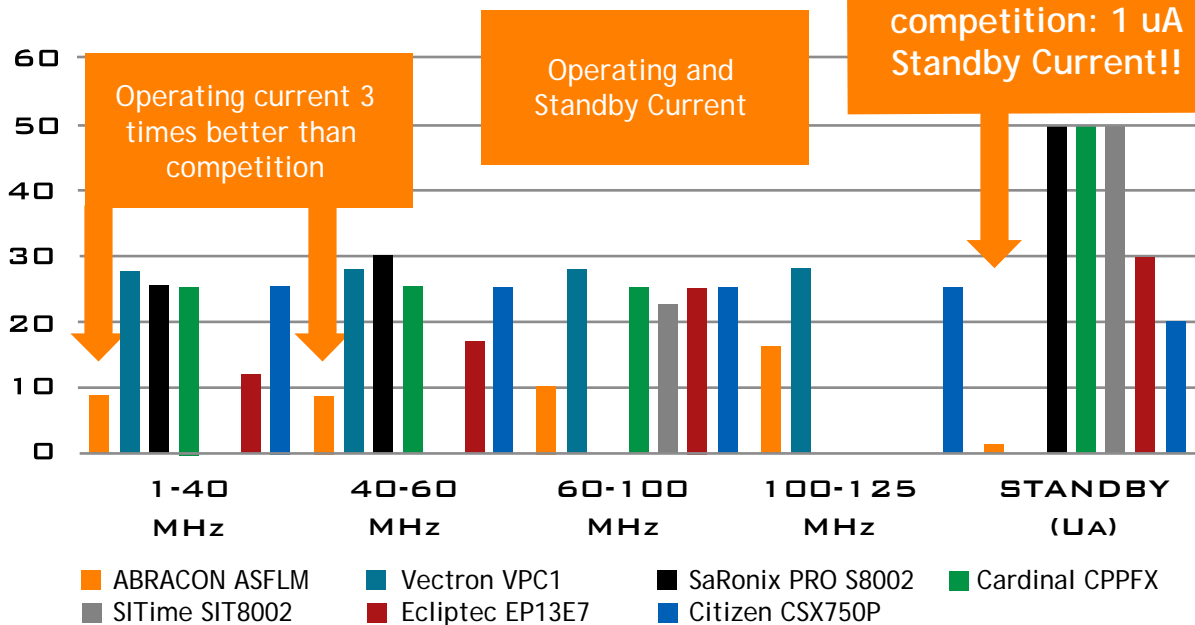
New programming kit allows you to program parts to any frequency between 1 and 150 MHz In 1 second!!!

\$499 MEMSpeed Pro™ Deluxe Kit includes:

- MEMSpeed Pro
- Two Socket Adapters (5.0 x 3.2 and 3.2 x 2.5mm)
- USB Cable
- Tweezers
- Quickstart Guide and CD-ROM for PC Installation
- 200 unprogrammed blank oscillators - \$500 value! (100 ASFLM-5032 **and** 100 ASEM-3225)

\$319 MEMSpeed Pro™ Standard Kit includes:

- MEMSpeed Pro
- One Socket Adapter (5.0 x 3.2 or 3.2 x 2.5mm)
- USB Cable
- Tweezers
- Quickstart Guide and CD-ROM for PC Installation
- 50 unprogrammed blank oscillators - \$125 value! (50 ASFLM-5032 **or** 50 ASEM-3225)



* Information provided is based on published specification data and is provided for reference only. No warranty is implied.

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ULTRA MINIATURE PLASTIC PACKAGE PURE SILICON™ CLOCK OSCILLATOR

ASEM



Life Size

3.2 x 2.5 x 0.85mm

ASEM



RoHS
Compliant

FEATURES:

- Ultra Miniature Pure Silicon™ Clock Oscillator
- MEMS Technology by Discera
- Low Power Consumption <10mA
- Exceptional Stability Over Temp. at -40 to +85°C.
- Available over Extended Operating Temperature
- Available in 30kG Shock Resistance Configuration
- Low Cost-Compact QFN Plastic Packaging
- Compact Package design

APPLICATIONS:

- CCD Clock for VTR Camera
- Equipment Connected to PCs
- Low Profile Equipment
- Lower Cost Crystal Oscillator Replacement
- Computers and Peripherals
- Portable Electronics (MP3 Players, Games)
- Consumer Electronics such as TV's, DVR's, etc.
- Vibrant, Shock-Prone & Humid Environments for Industrial Equipment
- Demanding Military & Automotive Electronics

MEMSPEED PRO™
Clock Oscillator Programmer
AVAILABLE NOW!

STANDARD SPECIFICATIONS:

PARAMETERS

ABRACON P/N:	ASEM Series
Frequency range:	1.000 MHz - 150 MHz
Operating temperature:	0°C to + 70°C (see options)
Storage temperature:	-40°C to +155°C
Overall Frequency Stability:	± 100 ppm max. (see options)
Supply Voltage (Vdd):	3.3 V ± 0.3 V (see options)
Supply Current (No Load)	6.0mA max (1.0 to 39.9999MHz) 7.0mA max (40.0 to 79.9999MHz) 9.0mA max (80.0 to 125MHz) (T=-40 to +85°C, Vdd=3.3 ± 0.3V, 2.5 ± 0.2V, 1.8 ± 0.15V)
Supply Current: (Full Load)	9.0mA max (1.0 to 39.9999MHz) 10.0mA max (40.0 to 79.9999MHz) 16.0mA max (80.0 to 125MHz) (T=-40 to +85°C, Vdd=3.3 ± 0.3V, 2.5 ± 0.2V, 1.8 ± 0.15V CL=15pF, RL=10kΩ)
Symmetry	45/55 % max. @ 1/2Vdd
Rise and fall time (Tr/Tf)	5ns max. (+25°C, 15pF output load, 10/90% Vdd.)
Output load	15 pF max., 10k ohms min.
Output voltage	VOH = 0.9* Vdd min. ; VOL = 0.1* Vdd max.
Input voltage	VIH = 0.9* Vdd min. ; VIL = 0.1* Vdd max.
Start-up time	10ms max.
Enable time	10ms max.
Disable time	100ns max.
Tri-State function (Stand-by)	"1" or open: Oscillation; "0" : No oscillation/Hi Z
Stand-by Current	1uA max. (T= +25°C, Vdd=3.0 ± 0.3V, 2.5 ± 0.2V, 1.8 ± 0.2V)
Aging at +25°C/year	± 5ppm max.
Jitter (reference only)	1MHz: 176ps typ.(RMS Jitter); 1.7ns typ.(Pk-Pk Jitter) 26MHz: 19ps typ.(RMS Jitter); 147ps typ.(Pk-Pk Jitter) 100MHz: 8ps typ.(RMS Jitter); 77ps typ.(Pk-Pk Jitter) 150MHz: 10ps typ.(RMS Jitter); 82ps typ.(Pk-Pk Jitter)

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ASEM



Life Size



3.2 x 2.5 x 0.85mm

ASEM



RoHS
Compliant

OPTIONS AND PART IDENTIFICATION:

ASEM□□ - Frequency - □ - □ - □

Programmable		Supply Voltage		Frequency	Operating Temp.		Freq. Stability		Packaging	
B**	Blank Unprogrammed	1	3.3 ± 0.3V (std)	XXX.XXX MH	Blank	0°C to +70°C	Blank	± 100 ppm	Blank	Tube (114pcs/tube)
		3	2.5 ± 0.2V		M	-20°C to +85°C	C	± 50 ppm	T	Tape and Reel (1000pcs/reel)
		4	1.8 ± 0.15V		L*	-40°C to +85°C				

* Please contact Abracon for Temperature Option Availability.

Specify "B" option in part number when ordering blank unprogrammed oscillators e.g., ASEM-B.

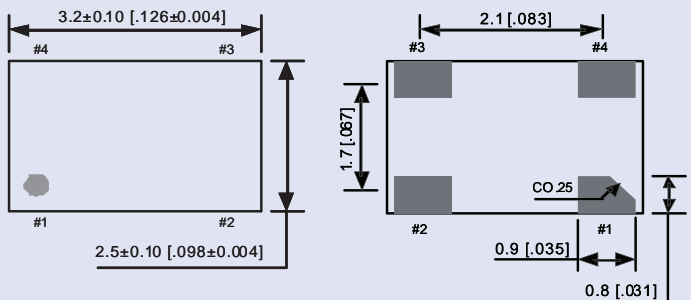
** Blank un-programmed oscillators and our low cost portable programmer is available for quick turn engineering requirements. Please call or visit www.abracon.com for more information. Please contact Abracon for order assistance for high shock application.

MEMSPEED PRO™ Clock Oscillator Programmer

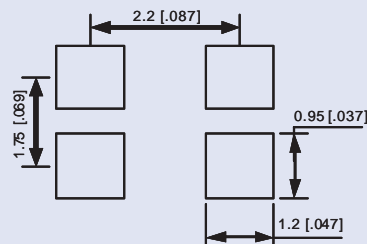
Our new MEMSpeed Pro Clock Oscillator Programmer allows you to program parts yourself to any frequency between 1 and 150 Mhz in 1 second! For ordering information go to www.abracon.com, or call 949.546.8000.



OUTLINE DRAWING:



Recommended Land Pattern

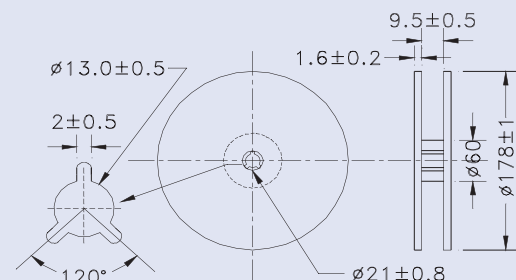
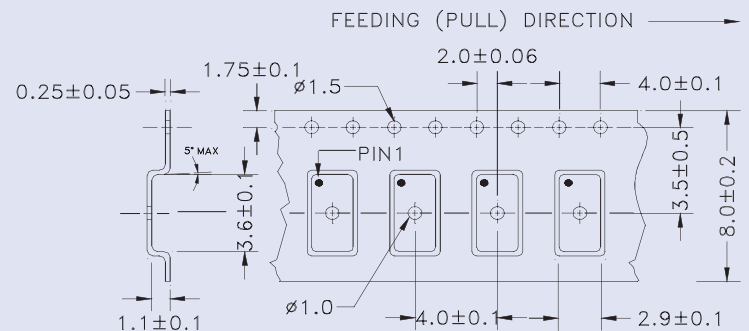


Note: Recommend using an approximately 0.01uF bypass capacitor between PIN 2 and 4.

No.	Pin terminal
1	Tri-state
2	Gnd
3	Output
4	V _{DD}

Dimensions: Inches (mm)

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



Dimensions: mm

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ASFLM



Life Size 

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- Low Stand by Current <1uA
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- Low Cost-Compact QFN Plastic Packaging
- Compact Package design

APPLICATIONS:

- CCD Clock for VTR Camera
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STANDARD SPECIFICATIONS:

PARAMETERS

ABRACON P/N	ASFLM Series
Frequency range	1.000 MHz - 150 MHz
Operating temperature	0°C to + 70°C (see options)
Storage temperature	-40°C to +155°C
Overall Frequency Stability	± 100 ppm max. (see options)
Supply Voltage (Vdd)	3.0 V ± 0.3 V (see options)
Supply Current (No Load)	6.0mA max (1.0 to 39.9999MHz) 7.0mA max (40.0 to 79.9999MHz) 10.0mA max (80.0 to 125MHz) (T=-40 to +85°C, Vdd=3.3 ± 0.3V, 3.0 ± 0.3V, 2.5 ± 0.2V, 1.8 ± 0.15V CL=15pF, RL=10kΩ)
Supply Current: (Full Load)	9.0mA max (1.0 to 39.9999MHz) 10.0mA max (40.0 to 79.9999MHz) 16.0mA max (80.0 to 125MHz) (T=-40 to +85°C, Vdd=3.3 ± 0.3V, 3.0 ± 0.3V, 2.5 ± 0.2V, 1.8 ± 0.15V CL=15pF, RL=10kΩ)
Symmetry	45/55 % max. @ 1/2Vdd
Rise and fall time (Tr/Tf)	5ns max. (+25°C, 15pF output load, 10/90% Vdd.)
Output load	15 pF max., 10k ohms min.
Output voltage:	VOH = 0.9* Vdd min. ; VOL = 0.1* Vdd max.
Input voltage:	VIH = 0.9* Vdd min. ; VIL = 0.1* Vdd max.
Start-up time	10ms max.
Enable time	5ms max.
Disable time	100ns max.
Tri-State function (Stand-by)	"1" or open: Oscillation; "0" : No oscillation/Hi Z
Stand-by Current	1uA max. (T= +25°C, Vdd=3.0 ± 0.3V, 2.5 ± 0.2V, 1.8 ± 0.2V)
Aging at +25°C/year	± 5ppm max.
Jitter	1MHz: 181ps typ.(RSM Jitter); 1.6ns typ.(Pk-Pk Jitter) 26MHz: 17.8ps typ.(RSM Jitter); 138ps typ.(Pk-Pk Jitter) 100MHz: 8.4ps typ.(RSM Jitter); 106ps typ.(Pk-Pk Jitter) 150MHz: 9.9ps typ.(RSM Jitter); 82ps typ.(Pk-Pk Jitter)

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ASFLM



Life Size 
5.0 x 3.2 x 0.85mm

ASFLM



➤ OPTIONS AND PART IDENTIFICATION:

ASFLM□□ - Frequency - □ - □ - □

Programmable		Supply Voltage		Frequency	Operating Temp.		Freq. Stability		Packaging	
B**	Blank Unprogrammed	1	3.3 ± 0.3V (std)	XXX.XXX MH	Blank	0°C to +70°C	Blank	± 100 ppm	Blank	Tube (114pcs/tube)
		3	2.5 ± 0.2V		M	-20°C to +85°C	C	± 50 ppm		
		4	1.8 ± 0.15V		L*	-40°C to +85°C				
									T	Tape and Reel (1000pcs/reel)

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Specify "B" option in part number when ordering blank unprogrammed oscillators e.g., ASFLM-B.

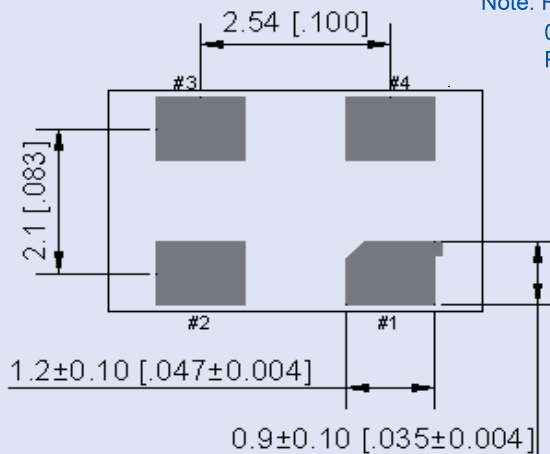
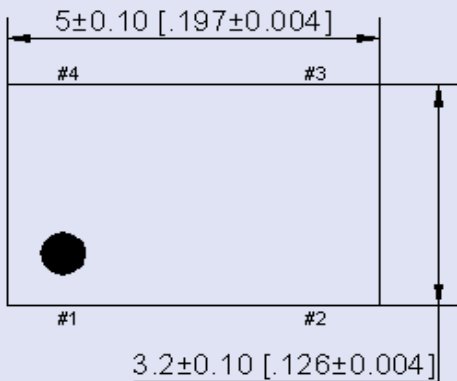
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Clock Oscillator Programmer

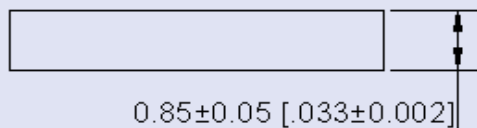
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➤ OUTLINE DRAWING:

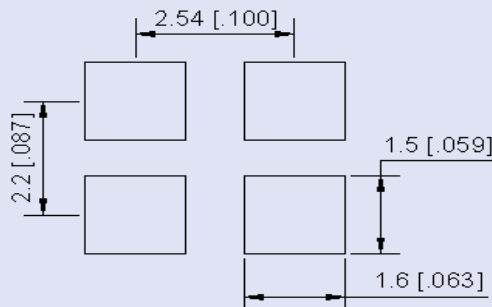


Note: Recommend using an approximately 0.01uF bypass capacitor between PIN 2 and 4.



No.	Pin terminal
1	Tri-state
2	Gnd
3	Output
4	V _{DD}

Recommended land pattern



Dimensions: Inches (mm)

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ASFLM



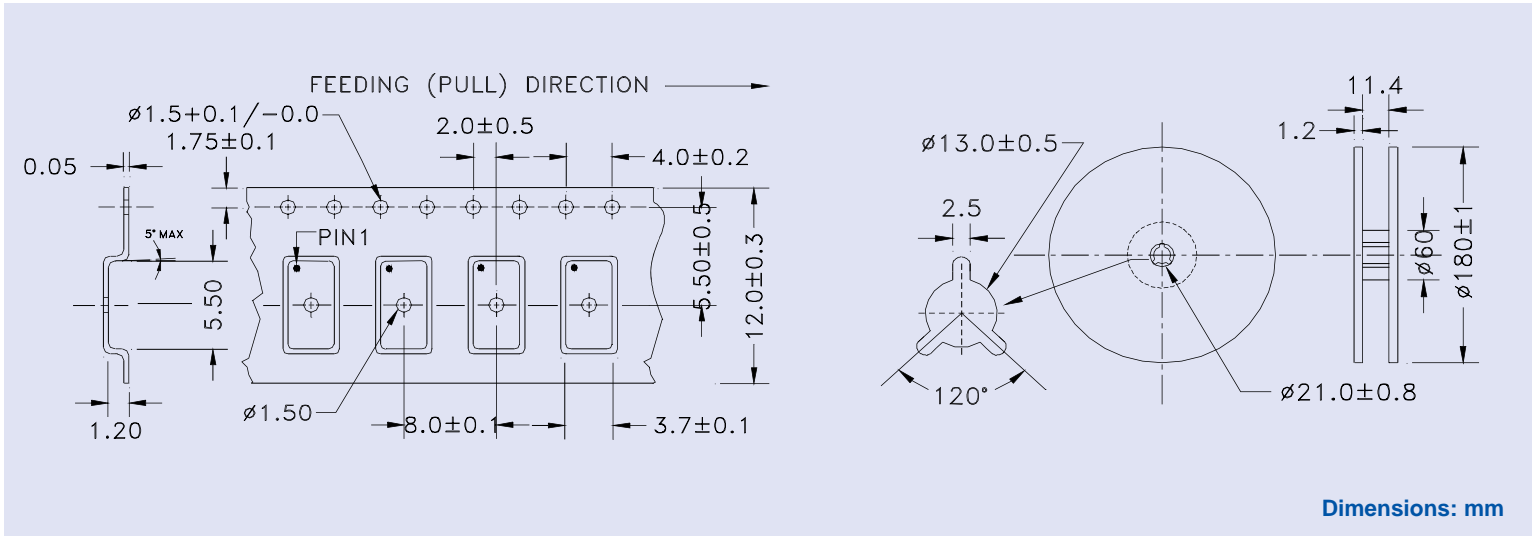
Life Size 
5.0 x 3.2 x 0.85mm

ASFLM



RoHS
Compliant

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



TUBE PACKAGING:

