

# Programmable - High Performance SMD XO & VCXO

## ASG-P Series

**Moisture Sensitivity Level (MSL) - This product is Hermetically Sealed and not Moisture Sensitive; therefore MSL = N/A (Not Applicable)**



**RoHS**  
Compliant



7.0 x 5.0 x 1.9mm

### FEATURES:

- ASG series is a High Performance crystal based oscillator; available either as an XO or a VCXO
- Frequency range from 10MHz to 250MHz with LVCMOS output
- Available from 10MHz to 1.50GHz with LVDS or LVPECL output
- Offered with either 2.50V or 3.30V bias voltage
- Quick turn, 1~5 business days for small quantity orders

### APPLICATIONS:

- Networking, SONET/SDH
- WiMax / WLAN
- Computing
- Phase Locked Loops
- Direct Digital Synthesis (DDS)
- DSL/ADSL
- Base Terminal Stations

### STANDARD SPECIFICATIONS:

| Parameters                                                       |                                     | Minimum                                                                                                                    | Typical  | Maximum                | Units | Notes                  |
|------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------|------------------------|-------|------------------------|
| Frequency Range:                                                 | V <sub>dd</sub> = 3.3V              | 10                                                                                                                         |          | 1500                   | MHz   |                        |
|                                                                  | V <sub>dd</sub> = 2.5V              | 10                                                                                                                         |          | 1500                   | MHz   |                        |
| Operating Temperature:                                           |                                     | -40                                                                                                                        |          | +85                    | °C    |                        |
| Storage Temperature:                                             |                                     | -55                                                                                                                        |          | +125                   | °C    |                        |
| Overall Frequency Stability:                                     |                                     | -50                                                                                                                        |          | +50                    | ppm   | <i>See Note # 1</i>    |
| Initial Set Tolerance                                            |                                     | -5.00                                                                                                                      | ≤ ±1.00  | +5.00                  | ppm   |                        |
| Stability over operating temperature                             |                                     | -35.00                                                                                                                     | ≤ ±20.00 | +35.00                 | ppm   |                        |
| Aging @ 25°C over 10-years                                       |                                     | -7.00                                                                                                                      |          | +7.00                  | ppm   |                        |
| Frequency variation over supply voltage change (±5%)             |                                     | -2.00                                                                                                                      |          | +2.00                  | ppm   |                        |
| Frequency variation over load variation (15pF ± 5%)              |                                     | -1.00                                                                                                                      |          | +1.00                  | ppm   |                        |
| Supply Voltage (V <sub>dd</sub> ):                               | V <sub>dd</sub> = 3.3V              | 3.135                                                                                                                      | 3.300    | 3.465                  | V     |                        |
|                                                                  | V <sub>dd</sub> = 2.5V              | 2.375                                                                                                                      | 2.500    | 2.625                  | V     |                        |
| Input Current:                                                   | V <sub>dd</sub> = 3.3V              |                                                                                                                            | < 54     | 60                     | mA    | Frequency dependent    |
|                                                                  | V <sub>dd</sub> = 2.5V              |                                                                                                                            | < 50     | 60                     | mA    | Frequency dependent    |
| LVPECL Output (Out & $\overline{\text{Out}}$ ):                  | Output High Voltage V <sub>OH</sub> | V <sub>dd</sub> - 1.03                                                                                                     |          | V <sub>dd</sub> - 0.60 | V     | V <sub>OH</sub>        |
|                                                                  | Output Low Voltage V <sub>OL</sub>  | V <sub>dd</sub> - 1.85                                                                                                     |          | V <sub>dd</sub> - 1.60 | V     | V <sub>OL</sub>        |
|                                                                  | Differential Duty Cycle             | 45                                                                                                                         | 48/52    | 55                     | %     | DODC <sub>LVPECL</sub> |
|                                                                  | Rise Time                           | 150                                                                                                                        |          | 350                    | ps    | t <sub>R</sub>         |
|                                                                  | Fall Time                           | 150                                                                                                                        |          | 350                    | ps    | t <sub>F</sub>         |
| Start-up Time:                                                   |                                     |                                                                                                                            | ≤ 2.0    | 3.0                    | ms    |                        |
| Enable/Disable Function :                                        |                                     | "1" (V <sub>IH</sub> ≥ 0.7*V <sub>dd</sub> ) or Open: Oscillation<br>"0" (V <sub>IL</sub> < 0.3*V <sub>dd</sub> ) : High Z |          |                        |       |                        |
| Vcontrol Range                                                   |                                     | 0.00                                                                                                                       |          | V <sub>dd</sub>        | Volts | For VCXO               |
| Frequency Pull                                                   |                                     | ±50                                                                                                                        |          |                        | ppm   |                        |
| Control Port Bandwidth                                           |                                     | 10                                                                                                                         |          |                        | kHz   |                        |
| Phase jitter RMS [ t <sub>jitt</sub> ( ) ]<br><i>See Note #2</i> | Integer Mode                        |                                                                                                                            | < 0.60   | 1.60                   | ps    | 12kHz to 20MHz         |
|                                                                  | Fractional Mode                     |                                                                                                                            | < 0.90   | 1.60                   | ps    | 12kHz to 20MHz         |

**Note #1:** Inclusive of initial tolerance at 25°C±3°C, operating temperature range, input voltage variation, load variation & aging.

**Note #2:** The rms jitter over 12kHz to 20MHz Bandwidth is dependent on the carrier and whether or not the final frequency is achieved without engaging the Fractional Mode

ABRACON IS  
ISO9001:2008  
CERTIFIED



**ABRACON**  
CORPORATION

Visit [www.abracon.com](http://www.abracon.com) for Terms & Conditions of Sale **Revised: 04.27.12**  
30332 Esperanza, Rancho Santa Margarita, California 92688  
tel 949-546-8000 | fax 949-546-8001 | [www.abracon.com](http://www.abracon.com)

# Programmable - High Performance SMD XO & VCXO

ASG-P Series

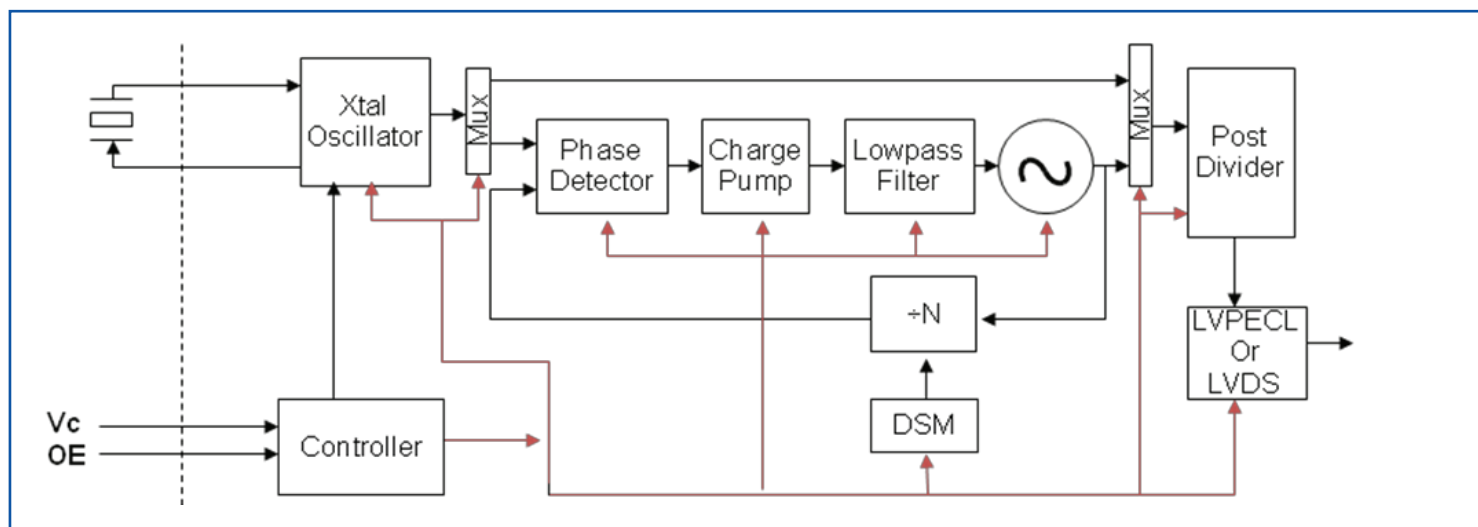


RoHS  
Compliant



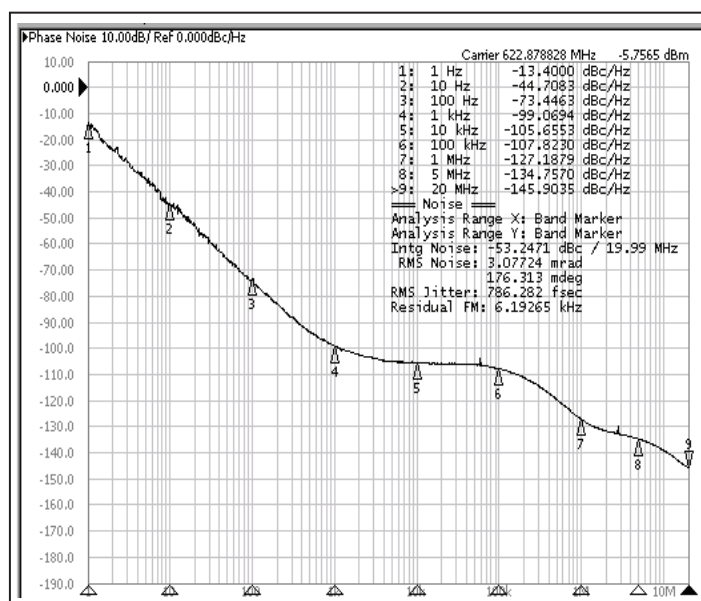
7.0 x 5.0 x 1.9mm

## OVERALL SYSTEM BLOCK DIAGRAM

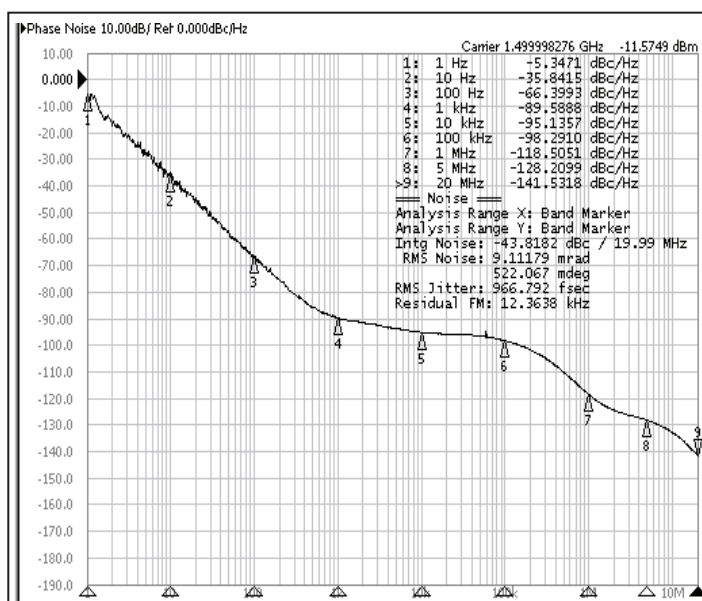


## PHASE NOISE & JITTER CHARACTERISTICS

622.88MHz Carrier



1.50GHz Carrier



# Programmable - High Performance SMD XO & VCXO

ASG-P Series

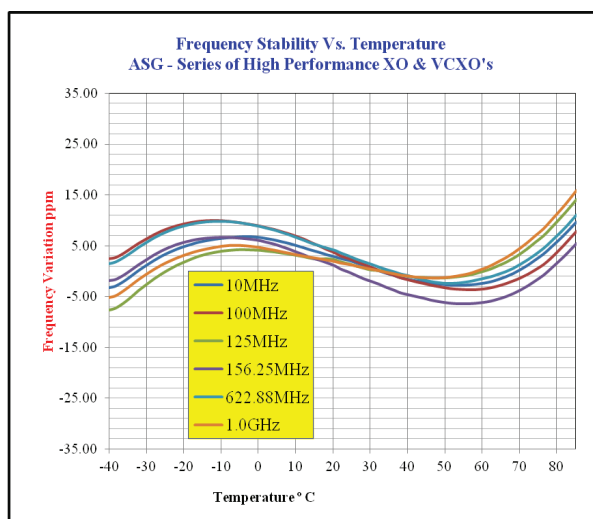


RoHS  
Compliant

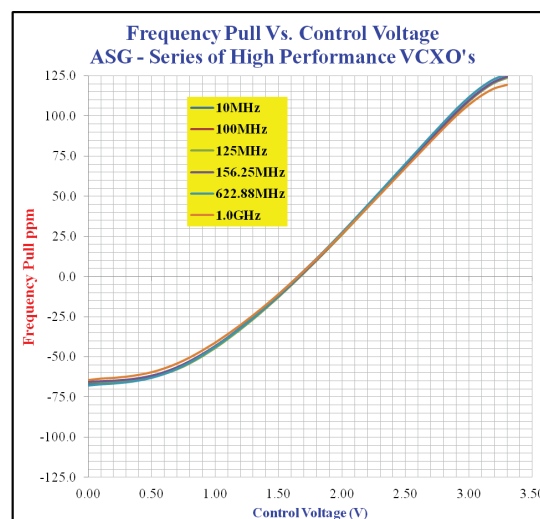


7.0 x 5.0 x 1.9mm

## FREQUENCY STABILITY VS. TEMPERATURE



## FREQUENCY PULLING VS. CONTROL VOLTAGE (VCXO MODE)



## PART IDENTIFICATION:

ASG - P -  -  -  MHz -

### Fixed or Pull-able

X = Fixed Oscillator

V = VCXO

### Operating Voltage

3.30V = A

2.50V = B

### Frequency in MHz

Please specify the  
Frequency in MHz  
e.g. 100.000 MHz

### Packaging

Blank = Bulk

T = Tape & Reel

## MARKING:

Top Line:  
Bottom Line:

Pin# 1 Identifier

ASG  
GYWW

WW = Work Week

Year Code (B=2011, C=2012, etc.)

Internal Tracking Code



ABRACON  
CORPORATION

# Programmable - High Performance SMD XO & VCXO

ASG-P Series



RoHS  
Compliant

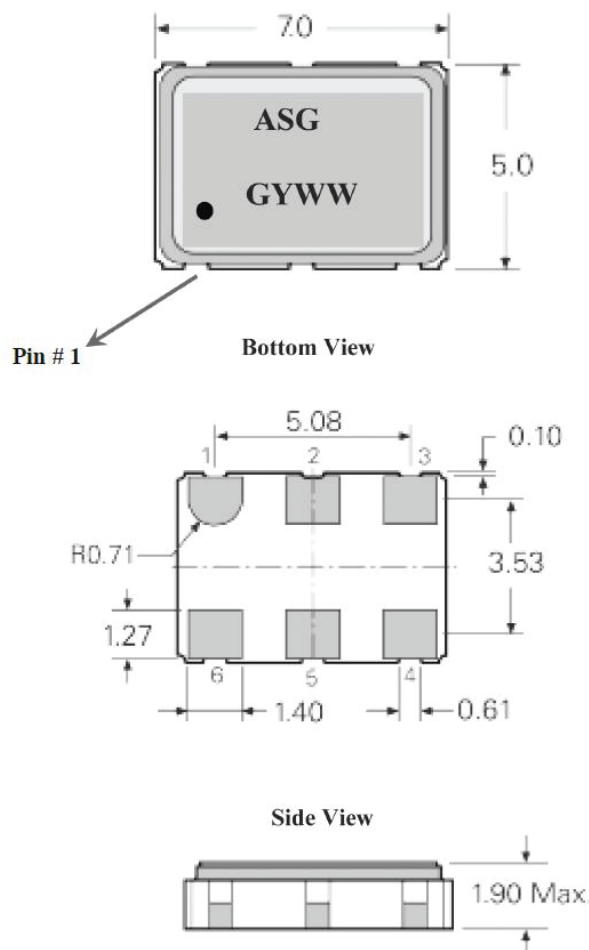


7.0 x 5.0 x 1.9mm

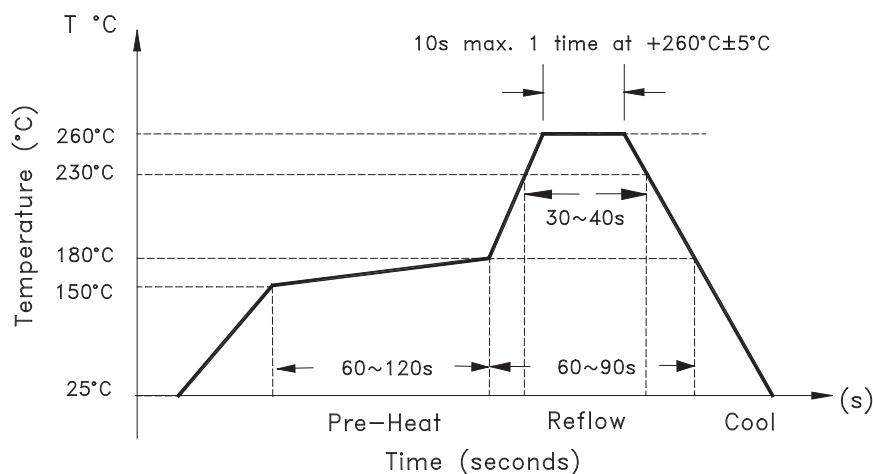
## OUTLINE DIMENSIONS:

| Pin # | Pin Description<br>For VCXO configuration |
|-------|-------------------------------------------|
| 1     | Voltage Control for VCXO                  |
| 2     | Output Enable (OE)                        |
| 3     | GND                                       |
| 4     | RF Output                                 |
| 5     | RF <i>Output</i>                          |
| 6     | Vdd                                       |

| Pin # | Pin Description<br>For XO configuration |
|-------|-----------------------------------------|
| 1     | Output Enable (OE)                      |
| 2     | N/C for XO                              |
| 3     | GND                                     |
| 4     | RF Output                               |
| 5     | RF <i>Output</i>                        |
| 6     | Vdd                                     |



## REFLOW PROFILE:

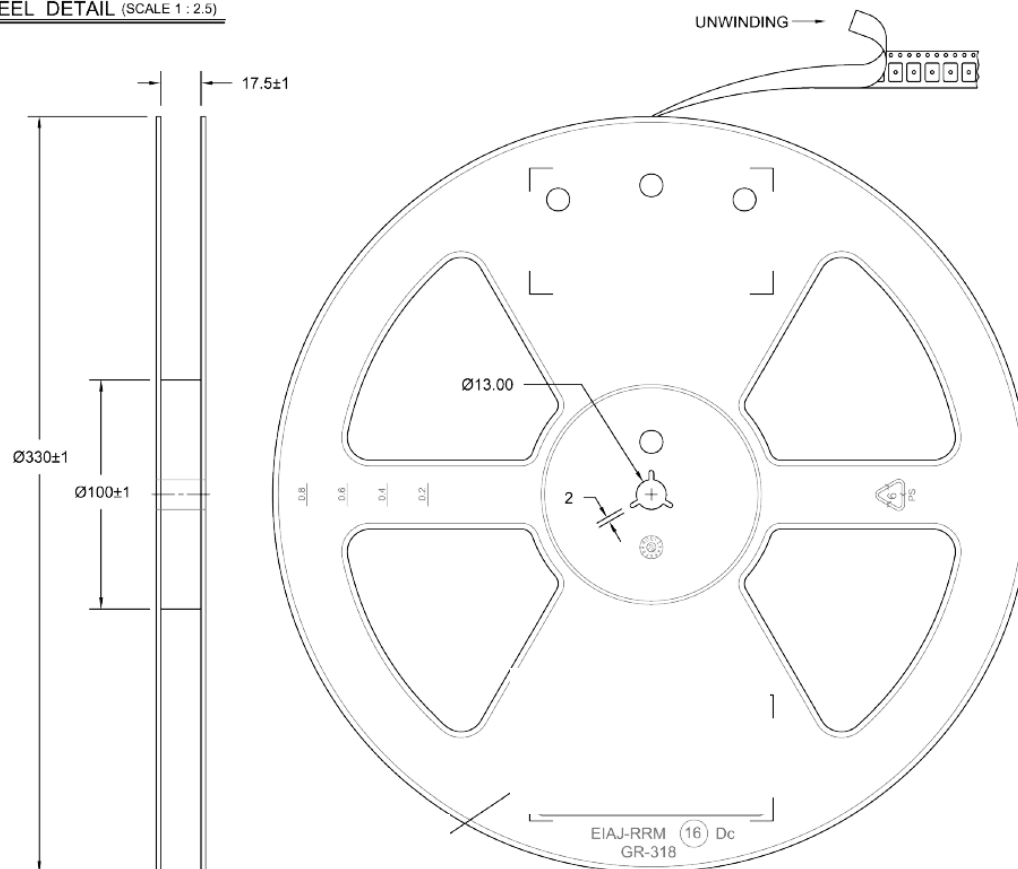


# ASG-P Series



## TAPE & REEL:

TAPE DETAIL (SCALE 2 : 1)



Visit [www.abracon.com](http://www.abracon.com) for Terms & Conditions of Sale **Revised: 04.27.12**  
30332 Esperanza, Rancho Santa Margarita, California 92688  
tel 949-546-8000 | fax 949-546-8001 | [www.abracon.com](http://www.abracon.com)

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9