

Programmable - High Performance SMD XO & VCXO

ASG-D Series



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

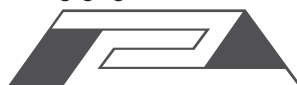
STANDARD SPECIFICATIONS:

| Parameters | | Minimum | Typical | Maximum | Units | Notes |
|---|----------------------------------|--|----------|-----------------|-------|---------------------|
| Frequency Range: | V _{dd} = 3.3V | 10 | | 1500 | MHz | |
| | V _{dd} = 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 _{dd}): | V _{dd} = 3.3V | 3.135 | 3.300 | 3.465 | V | |
| | V _{dd} = 2.5V | 2.375 | 2.500 | 2.625 | V | |
| Input Current: | V _{dd} = 3.3V | | < 25 | 40 | mA | Frequency dependent |
| | V _{dd} = 2.5V | | < 25 | 35 | mA | Frequency dependent |
| LVDS Output (Out & <i>Out</i>): | Differential Output Voltage | 175 | 350 | | mV | V _{OD} |
| | V _{OD} Magnitude Change | | | 50 | mV | ΔV _{OD} |
| | Offset Voltage | | 1.25 | | V | V _{OS} |
| | V _{OS} Magnitude Change | | | 50 | mV | ΔV _{OS} |
| | Duty Cycle | 45 | 48/52 | 55 | % | ODC _{LVDS} |
| | Rise Time | 125 | | 350 | ps | t _R |
| | Fall Time | 150 | | 450 | ps | t _F |
| Start-up Time: | | | ≤ 2.0 | 3.0 | ms | |
| Enable/Disable Function : | | "1" (V _{IH} ≥ 0.7*V _{dd}) or Open: Oscillation "0" (V _{IL} < 0.3*V _{dd}) : High Z | | | | |
| V _{control} Range | | 0.00 | | V _{dd} | Volts | For VCXO |
| Frequency Pull | | ±50 | | | ppm | |
| Control Port Bandwidth | | 10 | | | kHz | |
| Phase jitter RMS [t _{jitt(φ)}] <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

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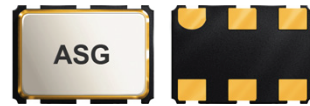
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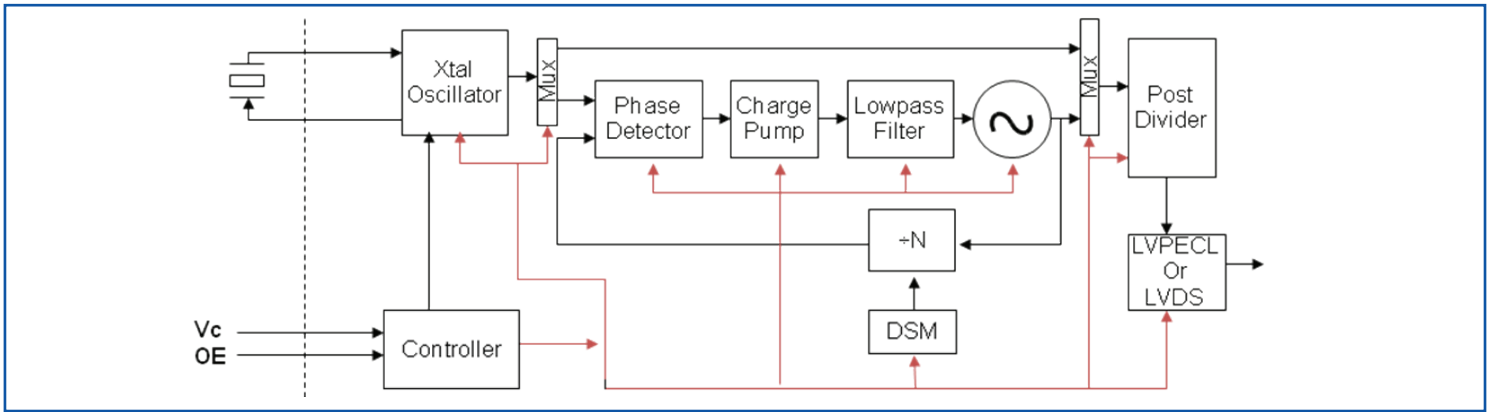


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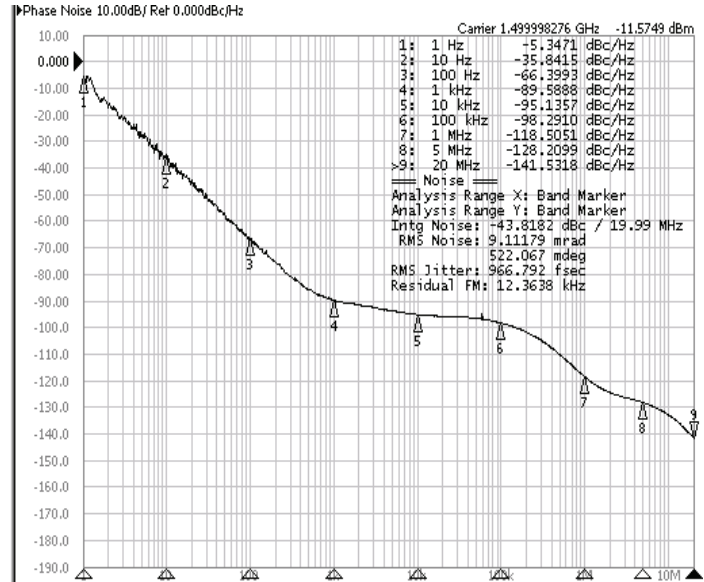
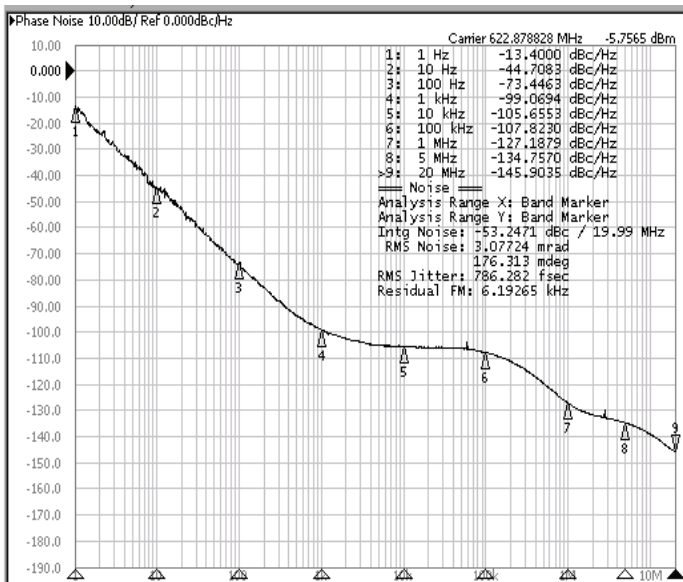
OVERALL SYSTEM BLOCK DIAGRAM



PHASE NOISE & JITTER CHARACTERISTICS

622.88MHz Carrier

1.50GHz Carrier



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FREQUENCY STABILITY VS. TEMPERATURE



FREQUENCY PULLING VS. CONTROL VOLTAGE (VCXO MODE)



PART IDENTIFICATION:

ASG - D - [] - [] - [] 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

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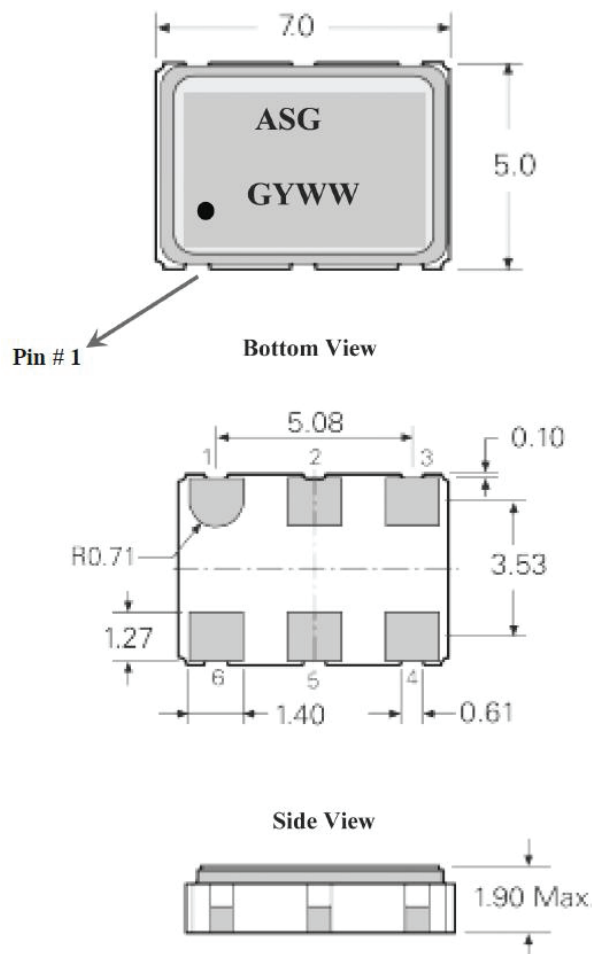


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OUTLINE DIMENSIONS:

| Pin # | Pin Description 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 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:



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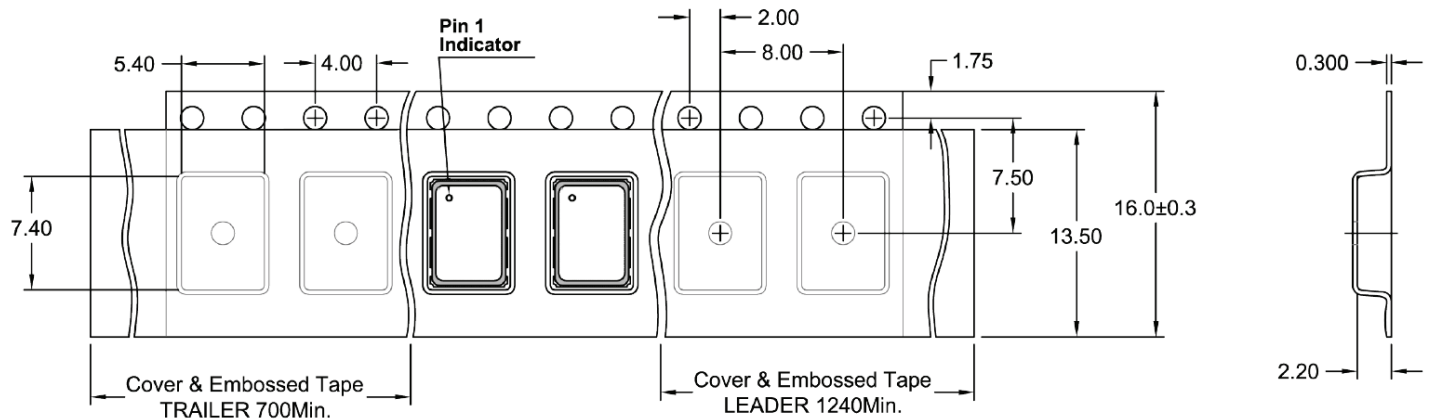


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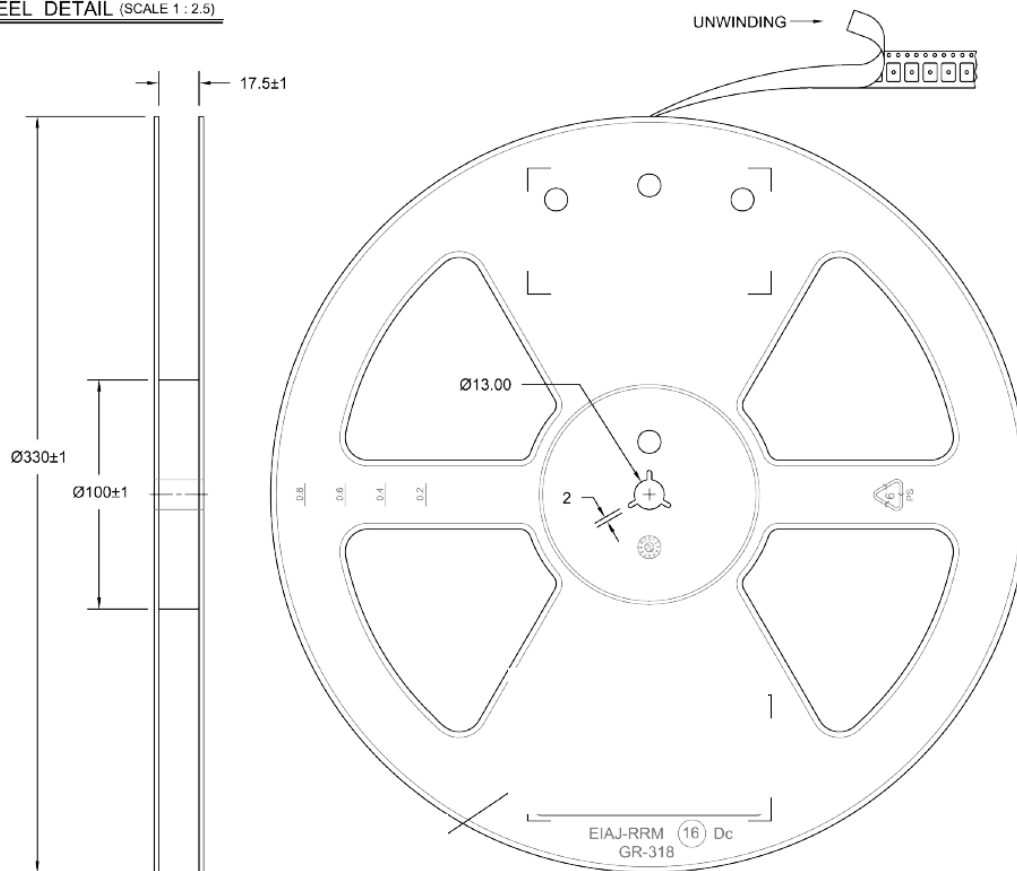
TAPE & REEL:

T= Tape and reel (2,000pcs/reel)

TAPE DETAIL (SCALE 2 : 1)



REEL DETAIL (SCALE 1 : 2.5)



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