



### 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 LVCMS 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	<a href="#">See Note # 1</a>
Initial Set Tolerance		-5.00	$\leq \pm 1.00$	+5.00	ppm	
Stability over operating temperature		-35.00	$\leq \pm 20.00$	+35.00	ppm	
Aging @ 25°C over 10-years		-7.00		+7.00	ppm	
Frequency variation over supply voltage change ( $\pm 5\%$ )		-2.00		+2.00	ppm	
Frequency variation over load variation (15pF $\pm 5\%$ )		-1.00		+1.00	ppm	
Supply Voltage (Vdd):	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		< 25	40	mA	Frequency dependent
	V <sub>dd</sub> = 2.5V		< 25	35	mA	Frequency dependent
LVDS Output (Out & $\overline{Out}$ ):	Differential Output Voltage	175	350		mV	V <sub>OD</sub>
	V <sub>OD</sub> Magnitude Change			50	mV	$\Delta V_{OD}$
	Offset Voltage		1.25		V	V <sub>OS</sub>
	V <sub>OS</sub> Magnitude Change			50	mV	$\Delta V_{OS}$
	Duty Cycle	45	48/52	55	%	ODC <sub>LVDS</sub>
	Rise Time	125		350	ps	t <sub>R</sub>
	Fall Time	150		450	ps	t <sub>F</sub>
Start-up Time:			$\leq 2.0$	3.0	ms	
Enable/Disable Function :		"1" (V <sub>IH</sub> $\geq 0.7 * V_{dd}$ ) or Open: Oscillation "0" (V <sub>IL</sub> $< 0.3 * V_{dd}$ ) : High Z				
Vcontrol Range		0.00		V <sub>dd</sub>	Volts	For VCXO
Frequency Pull		$\pm 50$			ppm	
Control Port Bandwidth		10			kHz	
Phase jitter RMS [ t <sub>jit</sub> ( $\phi$ ) ] <a href="#">See Note # 2</a>	Integer Mode		< 0.60	1.60	ps	12kHz to 20MHz
	Fractional Mode		< 0.90	1.60	ps	12kHz to 20MHz

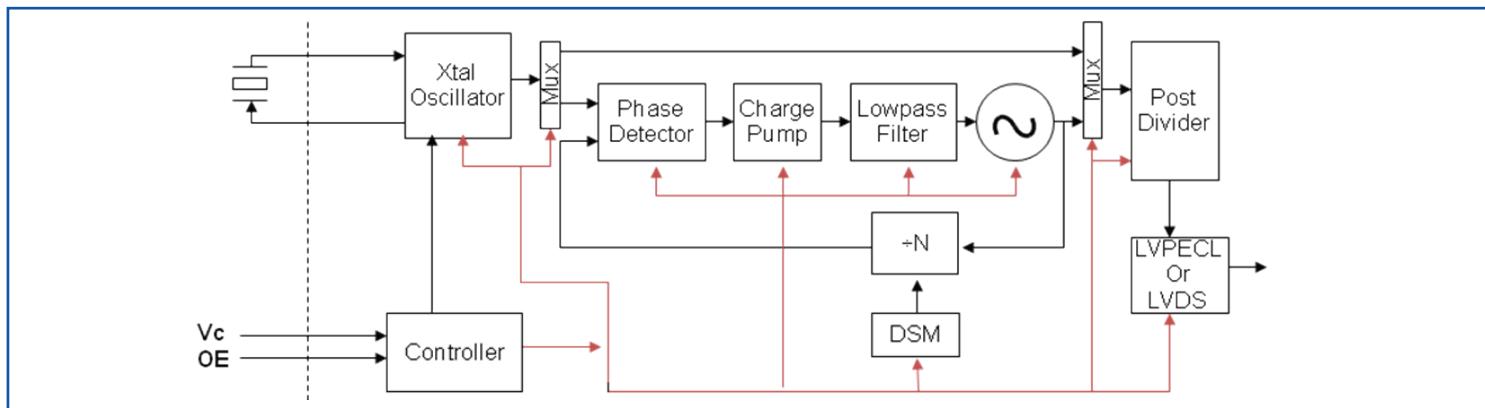
Note #1: Inclusive of initial tolerance at 25°C  $\pm 3^\circ C$ , operating temperature range, input voltage variation, load variation & aging.

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



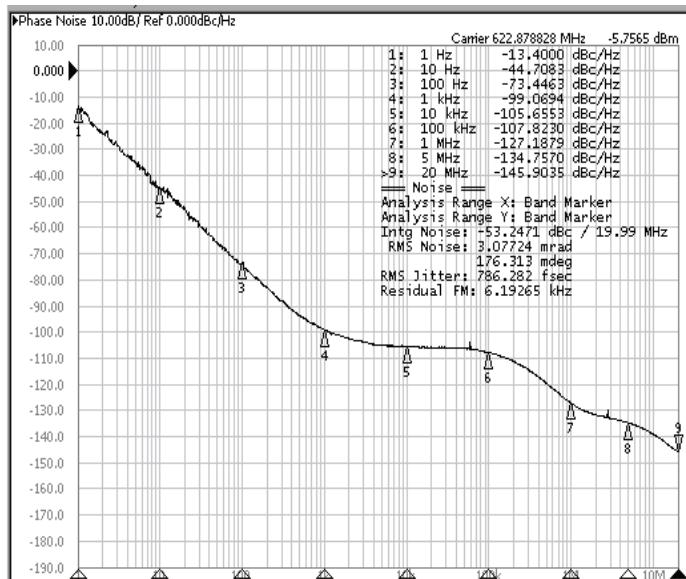
7.0 x 5.0 x 1.9mm

### ► OVERALL SYSTEM BLOCK DIAGRAM

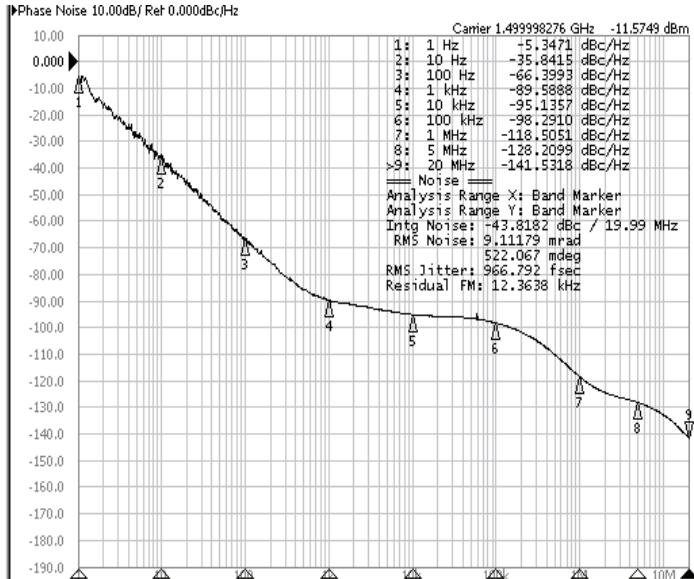


### ► PHASE NOISE & JITTER CHARACTERISTICS

#### 622.88MHz Carrier



#### 1.50GHz Carrier



# Programmable - High Performance SMD XO & VCXO

ASG-D Series



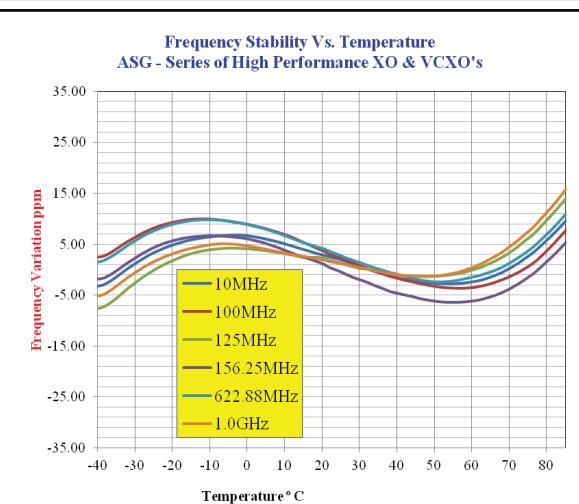
RoHS  
Compliant



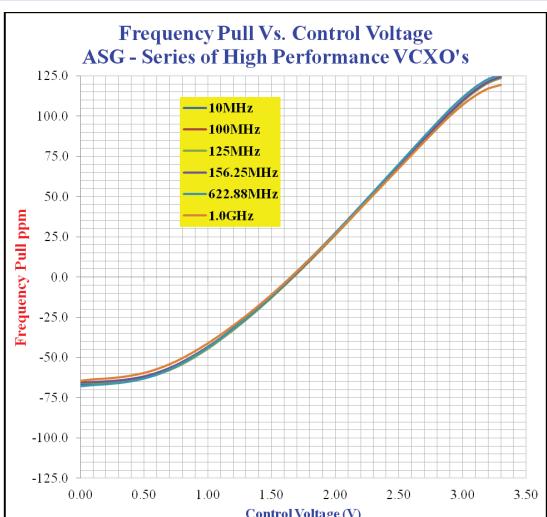
ASG

7.0 x 5.0 x 1.9mm

## 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:

ASG

GYWW

Pin# 1 Identifier

WW = Work Week

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

Internal Tracking Code

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Compliant

ASG

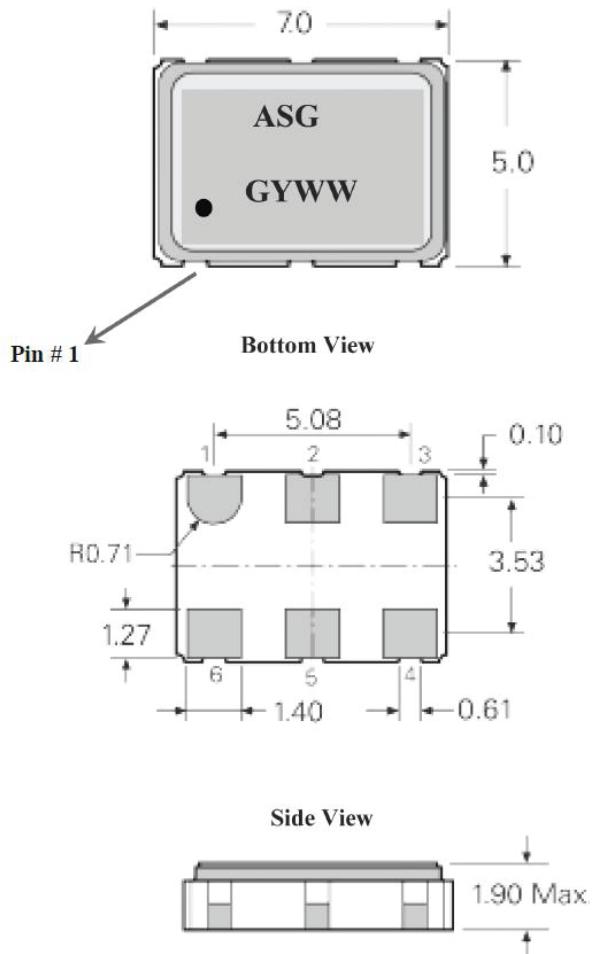


7.0 x 5.0 x 1.9mm

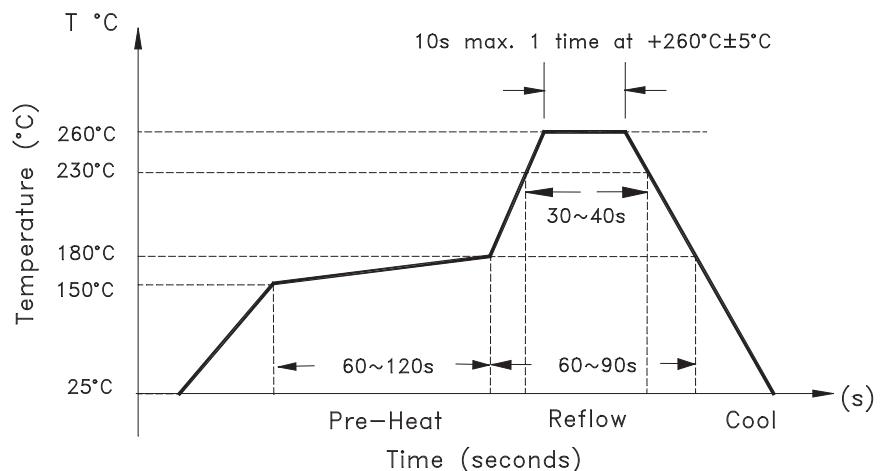
## OUTLINE DIMENSIONS:

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:



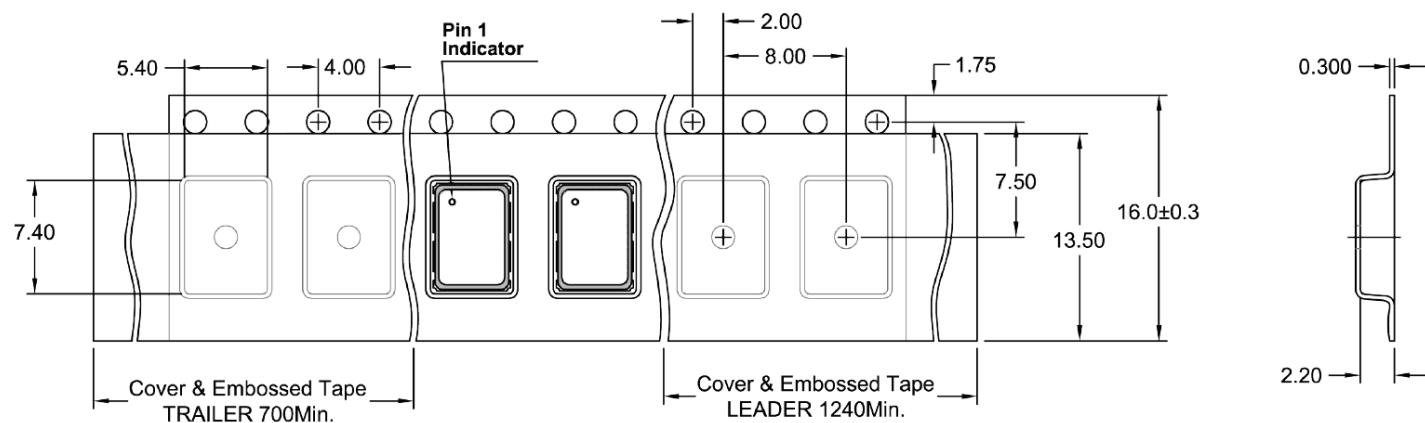


7.0 x 5.0 x 1.9mm

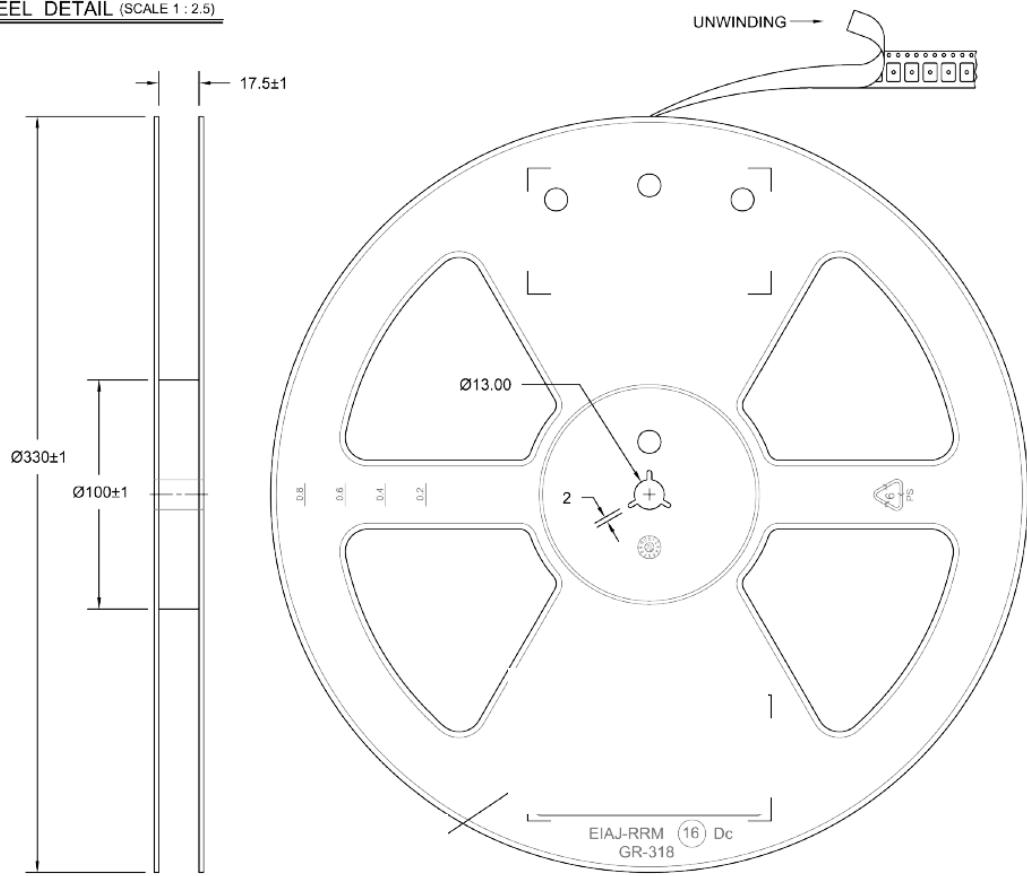
### TAPE & REEL:

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

#### TAPE DETAIL (SCALE 2 : 1)



#### REEL DETAIL (SCALE 1 : 2.5)



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