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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# 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 & $\overline{Out}$ ):	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 "0" (V <sub>IL</sub> < 0.3*V <sub>dd</sub> ) : High Z				
V <sub>control</sub> Range		0.00		V <sub>dd</sub>	Volts	For VCXO
Frequency Pull		±50			ppm	
Control Port Bandwidth		10			kHz	
Phase jitter RMS [ t <sub>jitter</sub> ] <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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CERTIFIED



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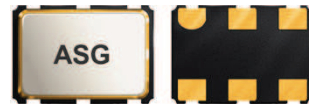
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# Programmable - High Performance SMD XO & VCXO

ASG-P Series

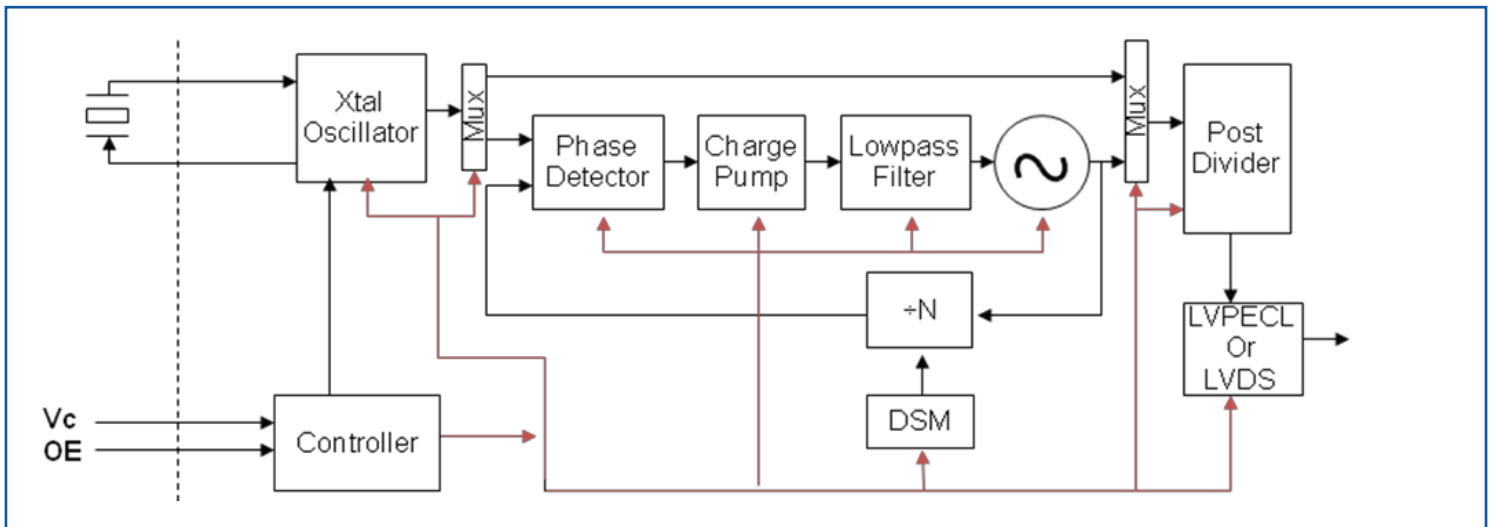


RoHS  
Compliant



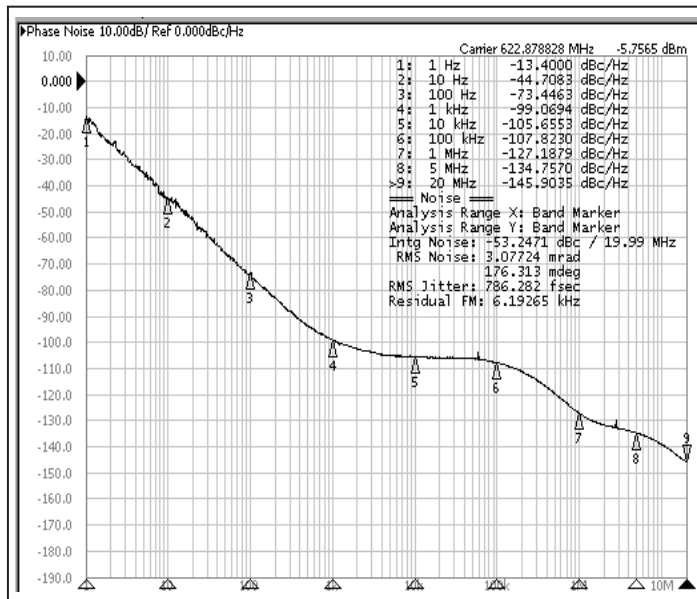
7.0 x 5.0 x 1.9mm

## OVERALL SYSTEM BLOCK DIAGRAM

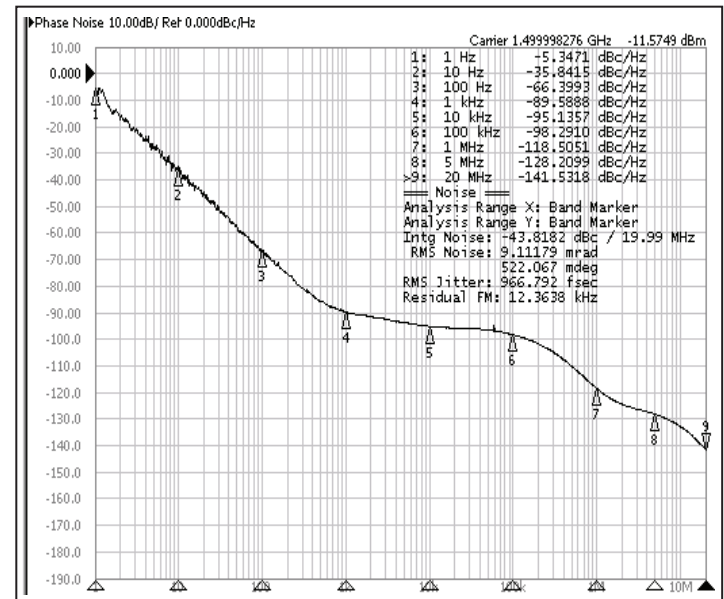


## PHASE NOISE & JITTER CHARACTERISTICS

622.88MHz Carrier



1.50GHz Carrier

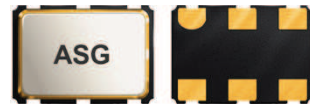


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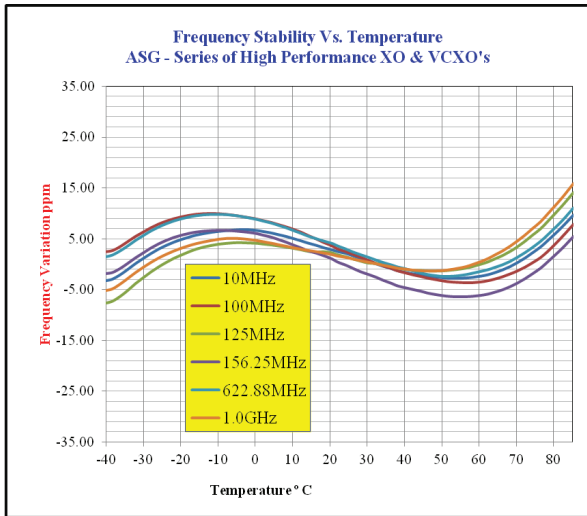


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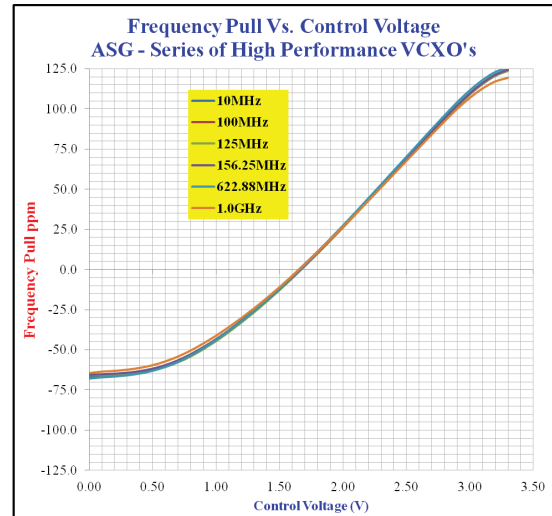


7.0 x 5.0 x 1.9mm

## FREQUENCY STABILITY VS. TEMPERATURE



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

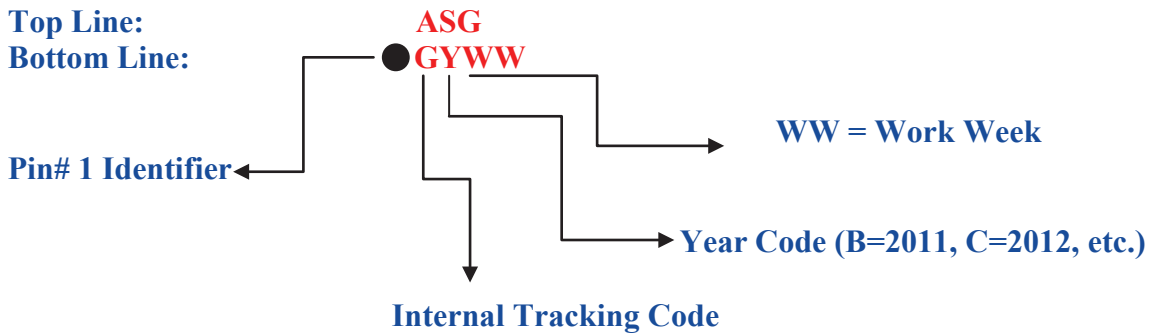


## PART IDENTIFICATION:

ASG - P - [ ] - [ ] - [ ] MHz - [ ]



## MARKING:



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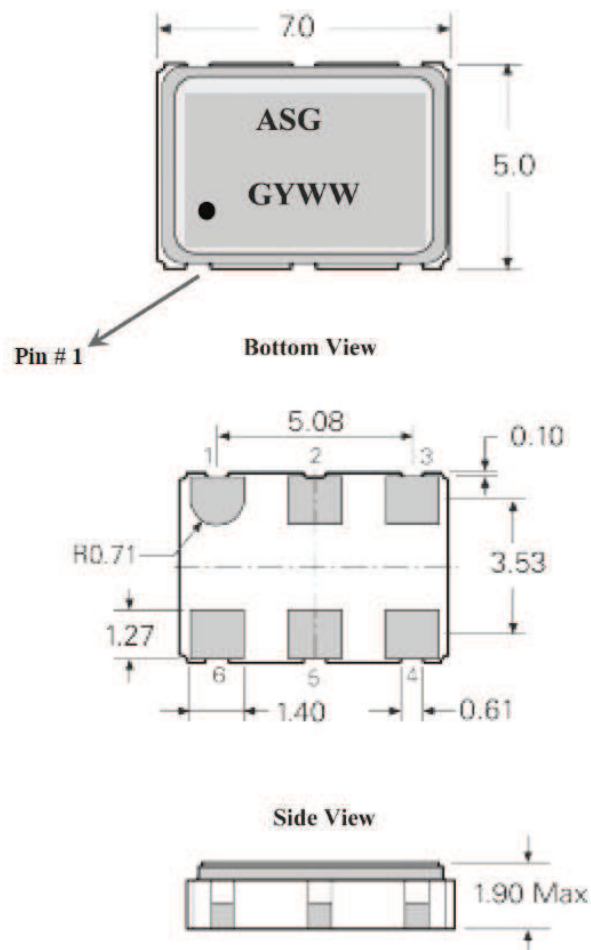


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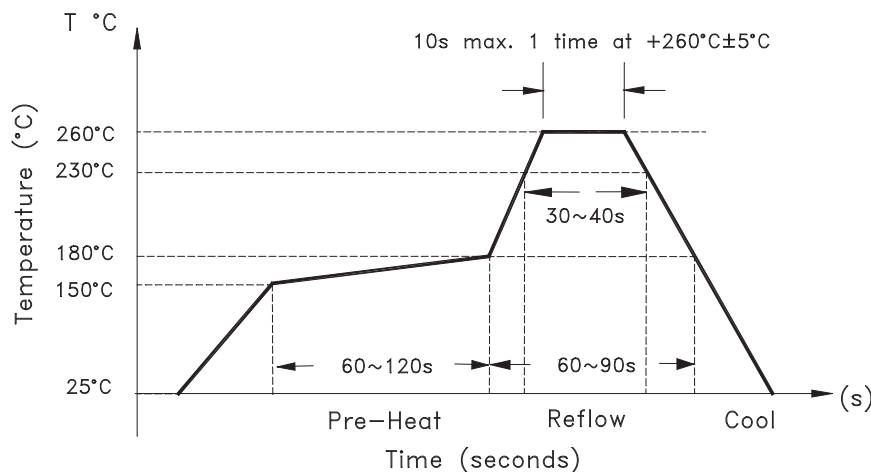
## OUTLINE DIMENSIONS:

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:

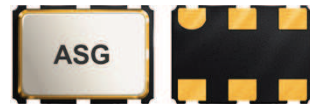


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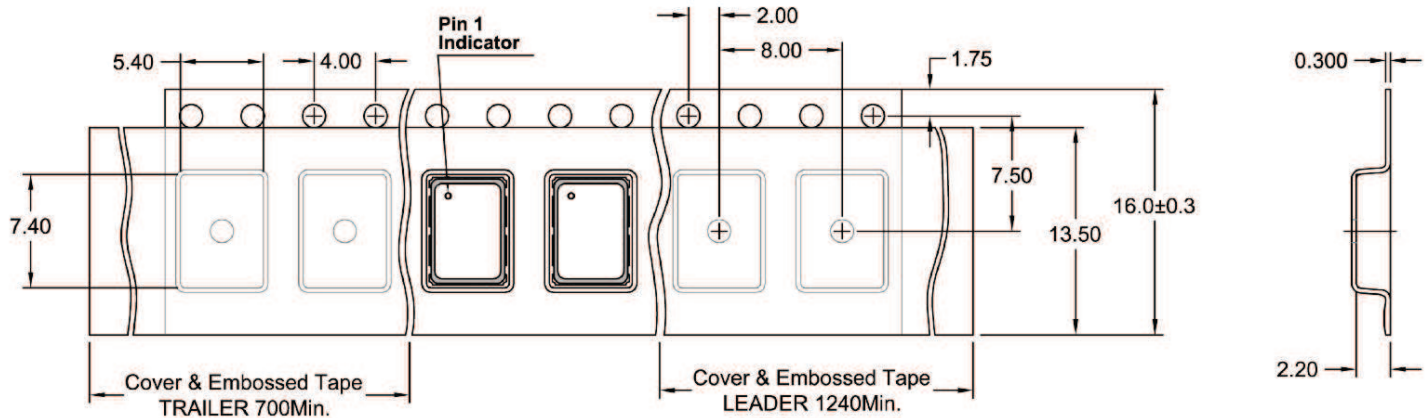


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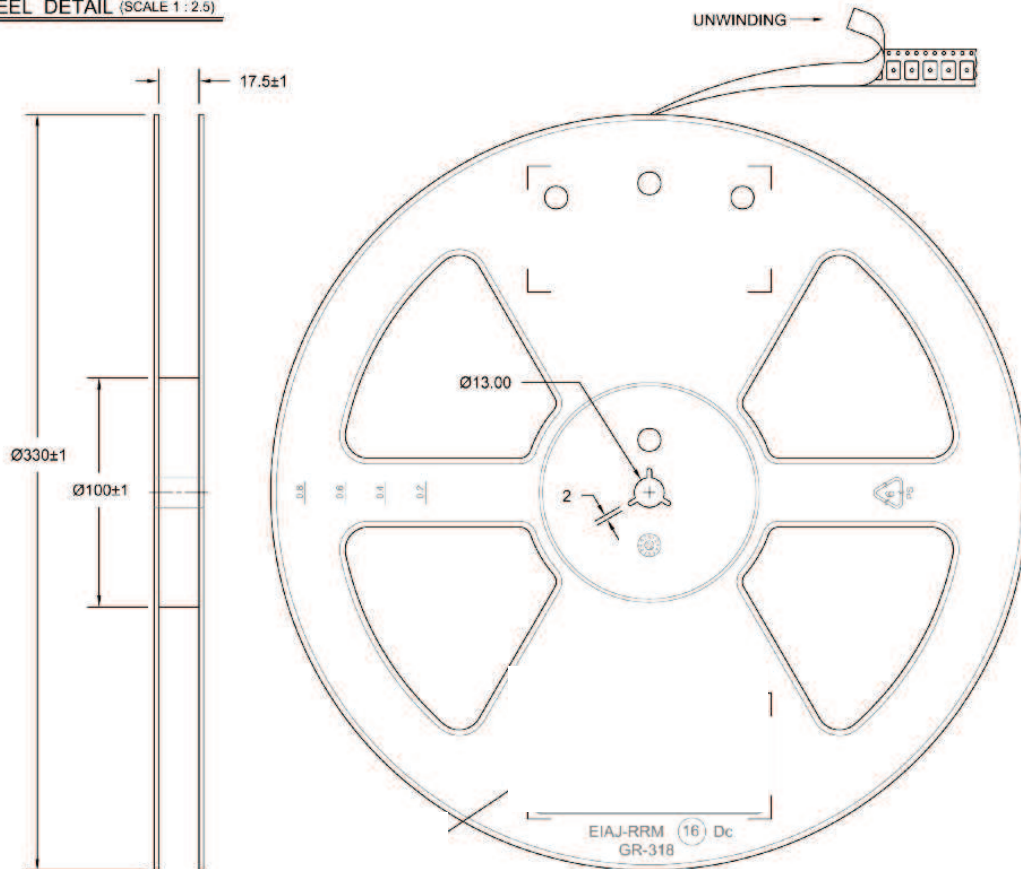
## TAPE & REEL:

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

### TAPE DETAIL (SCALE 2 : 1)



### REEL DETAIL (SCALE 1 : 2.5)



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