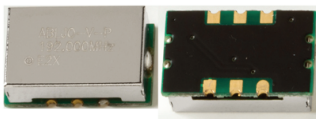
LOW JITTER CRYSTAL OSCILLATOR

ABLJO

RoHS/RoHS II Compliant and Pb free



14.3 X 8.7 X 5.5 mm

FEATURES:

- High "Q", 3rd Overtone Crystal Technology
- Ultra Low Jitter performance 0.10 ps Max. (12kHz to 20MHz)
- Standard LVCMOS RF Output
- Wide Operating Temperature (-40ºC to +85ºC) standard
- ±40 ppm Max. All inclusive Stability (including Aging) over 10-years
- (17) Standard Frequencies between 80MHz & 200MHz
- 9x14mm RoHS Compliant SMT package

APPLICATIONS:

- Avionics
- COTS - Military communications
- Low Phase Noise Signal Sources
- High Definition TV
- Test & Measurement
- Ultra Low Jitter RF Communication Circuitry

STANDARD SPECIFICATIONS

Parameters	Minimum	Typical	Maximum	Units	Notes
RF Output Frequency Range	80.00		200.00	MHz	
Standard Available Frequencies	80.00MHz, 81.920MHz, 92.160MHz, 96MHz, 98.304MHz, 100MHz, 106.250MHz, 120MHz, 122.880MHz, 125MHz, 150MHz, 155.520MHz, 156.250MHz, 160MHz, 184.32MHz, 187.5MHz, and 200MHz				
Supply Voltage	3.135	3.300	3.465	Volts	
Current Drain 80MHz ~ 99.999MHz 100MHz ~ 149.999MHz 150MHz ~ 200MHz			 25.00 30.00 40.00	 mA mA mA	
Waveform		**LVCMOS**			
V_{OH}	0.1*Vdd			Volts	
V_{OL}			0.1*Vdd	Ω	
Symmetry	45	50	55	%	
Rise & Fall Times			3.0	ns	
Operating Temperature Range	-40		+85	ºC	
Frequency Stability					
Over (-40º C to +85ºC)			±25.00	ppm	
ALL effects, including Aging			±40.00	ppm	
Storage Temperature Range	-40		+85	ºC	
Aging					
First Year			±2.00	ppm	
5-Years			±5.00	ppm	
10-Years			±7.00	ppm	
Phase Noise (100MHz Carrier)					**Vdd=3.3V**
@ 10 Hz offset		**-70**		**dBc/Hz**	
@ 100 Hz offset		**-105**		**dBc/Hz**	
@ 1,000 Hz offset		**-135**		**dBc/Hz**	
@ 10,000 Hz offset		**-144**	**-140**	**dBc/Hz**	
@ 25,000 Hz offset		**-150**	**-145**	**dBc/Hz**	
@ 100,000 Hz offset		**-155**	**-150**	**dBc/Hz**	
Integrated RMS Phase Jitter (12kHz ~ 20MHz BW)		**75**	**100**	**Femto Seconds**	**0.10 ps Max.**

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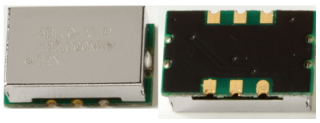
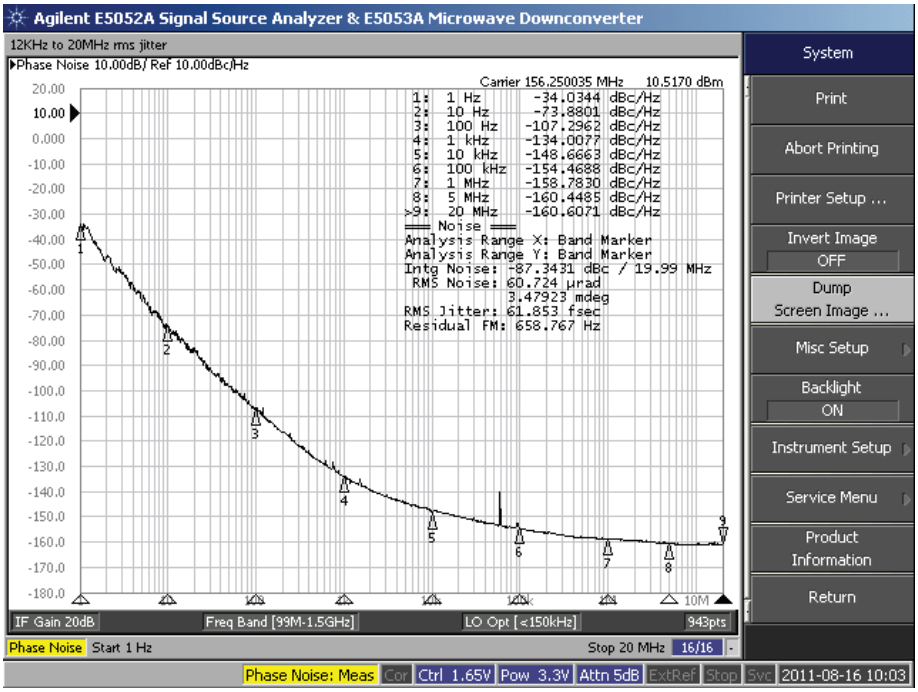


14.3 X 8.7 X 5.5 mm

STANDARD SPECIFICATIONS - continued

Parameters	Minimum	Typical	Maximum	Units	Notes
Electrical Frequency Adjustment					
Control Voltage Range (Vc)	0.0		3.30	**Volts**	
Frequency Pull Range	±45.00			**ppm**	
Frequency Pull Slope		Positive			
Control Voltage Port Impedance	10			**kΩ**	
Center Control Voltage	1.45	1.65	1.85	**Volts**	
Control Port Linearity			±10	**%**	

TYPICAL PHASE NOISE PERFORMANCE @ 156.25MHZ CARRIER



OPTIONS AND PART IDENTIFICATION:

ABLJO - ☐ - Frequency (MHz) - ☐☐

Frequency Pull Option	
Blank	XO (Fixed Frequency
V	VCXO (±45 ppm min.)

Tape & Reel Options	
Blank	< 250 units on cut tape
T	1,000 units per reel
T2	250 units per reel

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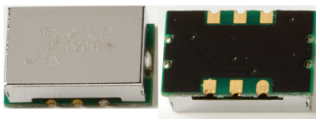

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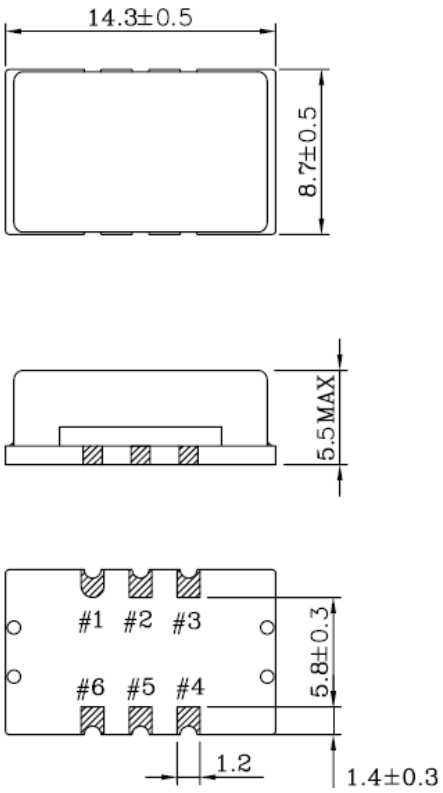
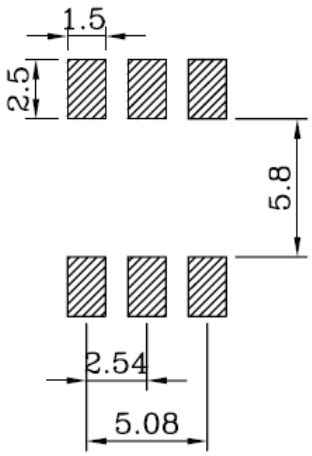
OUTLINE DIMENSIONS:



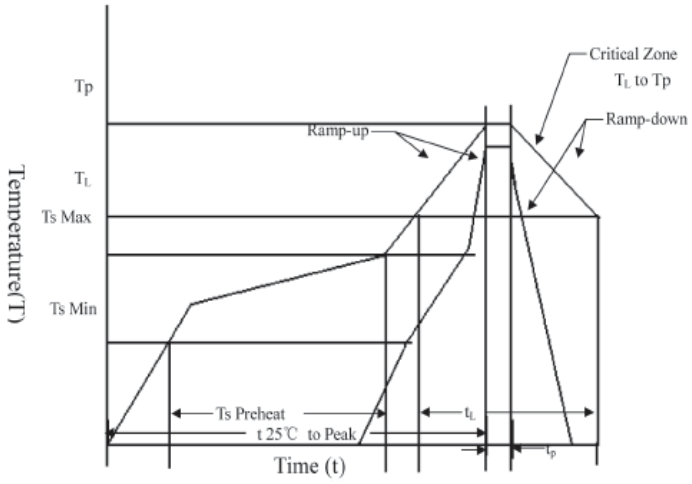
Pin	Function	
	VCXO	XO
1	Vc	N.C.
2	N.C.	
3	GND	
4	Output	
5	N.C.	
6	Vdd	

Recommended Soldering Pattern



Dimensions: inches (mm)

REFLOW PROFILE:



T_S max to T_L (Ramp-up Rate)	3°C/second max.
Preheat Temperature Min. (T_S Min.) Temperature Typical (T_S Typ.) Temperature Max. (T_S Max.) Time (t_S)	 150°C 175°C 200°C 60 ~ 180 seconds
Ramp-up rate (T_L to T_p)	3°C/second max.
Time Maintained Above: --Temperature (T_L)/Time (T_L)	 217°C/60 ~ 150 seconds
Peak Temperature (T_p)	250°C max. for 10 seconds
Target Peak Temperature (T_p Target)	250°C +0/-5°C
Time within 5°C of actual peak (t_p)	20 ~ 40 seconds
Ramp-down Rate	6°C/second max.
Tune 25°C to Peak Temperature (t)	8 minutes max.

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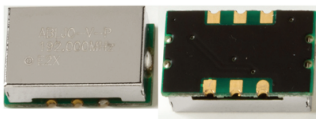

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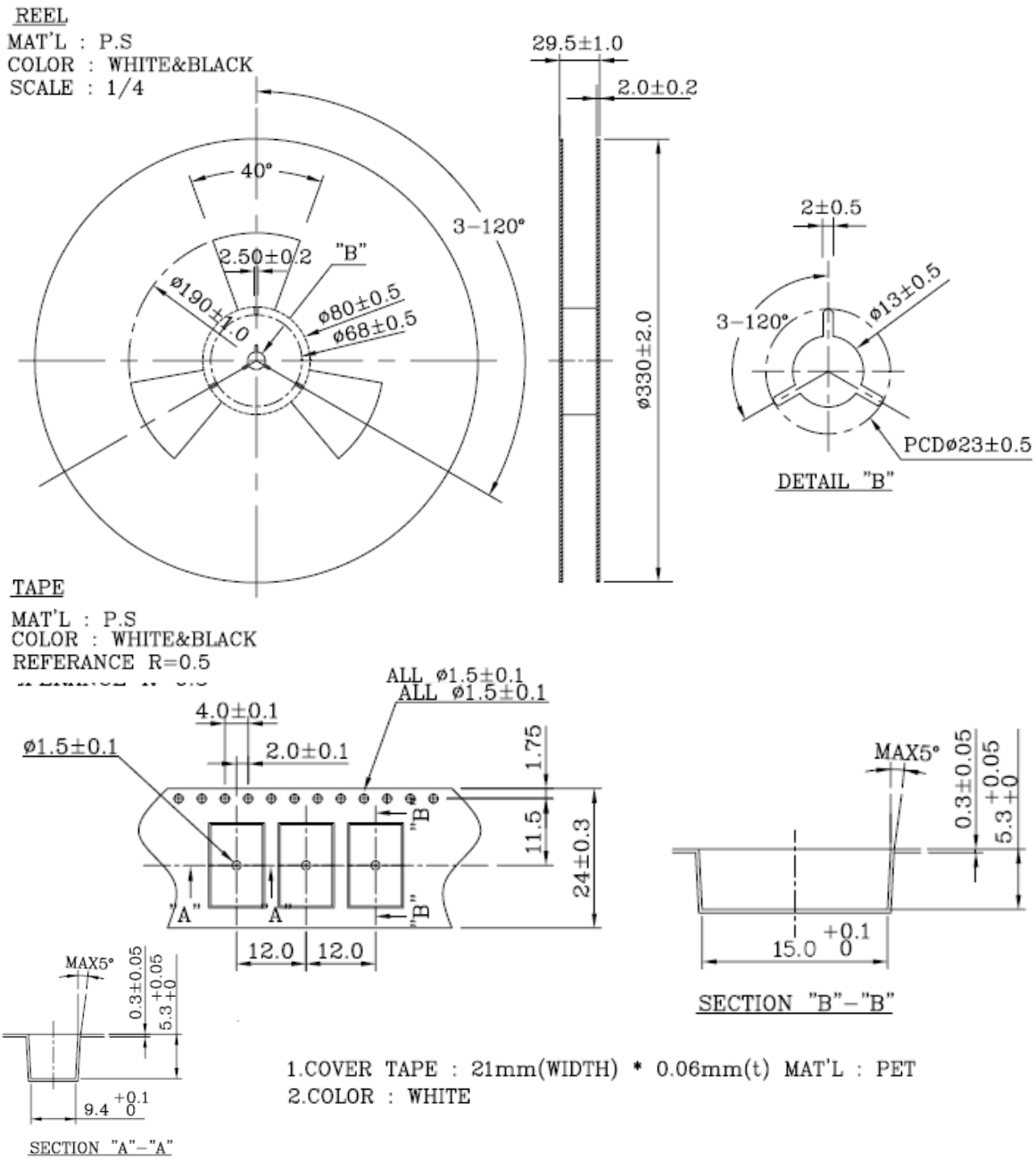
TAPE & REEL:

Packaging: (1,000) units per reel standard, (250) units per reel available (option # T2)



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