

LOW JITTER CRYSTAL OSCILLATOR



14.3 X 8.7 X 5.5 mm

ABLJO

RoHS/RoHS II Compliant and Pb free



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 (-40°C to +85°C) 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			25.00	mA	
100MHz ~ 149.999MHz			30.00	mA	
150MHz ~ 200MHz			40.00	mA	
Waveform	LVCMOS				
V _{OH}	0.1*V _{dd}			Volts	
V _{OL}			0.1*V _{dd}	Ω	
Symmetry	45	50	55	%	
Rise & Fall Times			3.0	ns	
Operating Temperature Range	-40		+85	°C	
Frequency Stability					
Over (-40° C to +85°C)			±25.00	ppm	
ALL effects, including Aging			±40.00	ppm	
Storage Temperature Range	-40		+85	°C	
Aging					
First Year			±2.00	ppm	
5-Years			±5.00	ppm	
10-Years			±7.00	ppm	
Phase Noise (100MHz Carrier)					V _{dd} =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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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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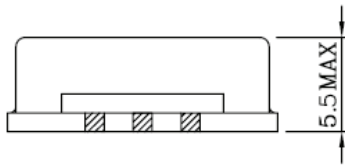
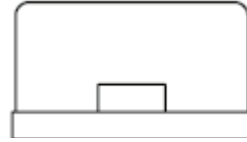
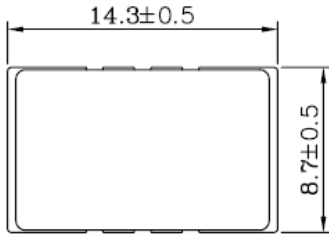
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OUTLINE DIMENSIONS:



Recommended Soldering Pattern



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

Dimensions: inches (mm)

REFLOW PROFILE:



T _S max to T _L (Ramp-up Rate)	3°C/second max.
Preheat	
Temperature Min. (T _S Min.)	150°C
Temperature Typical (T _S Typ.)	175°C
Temperature Max. (T _S Max.)	200°C
Time (t _s)	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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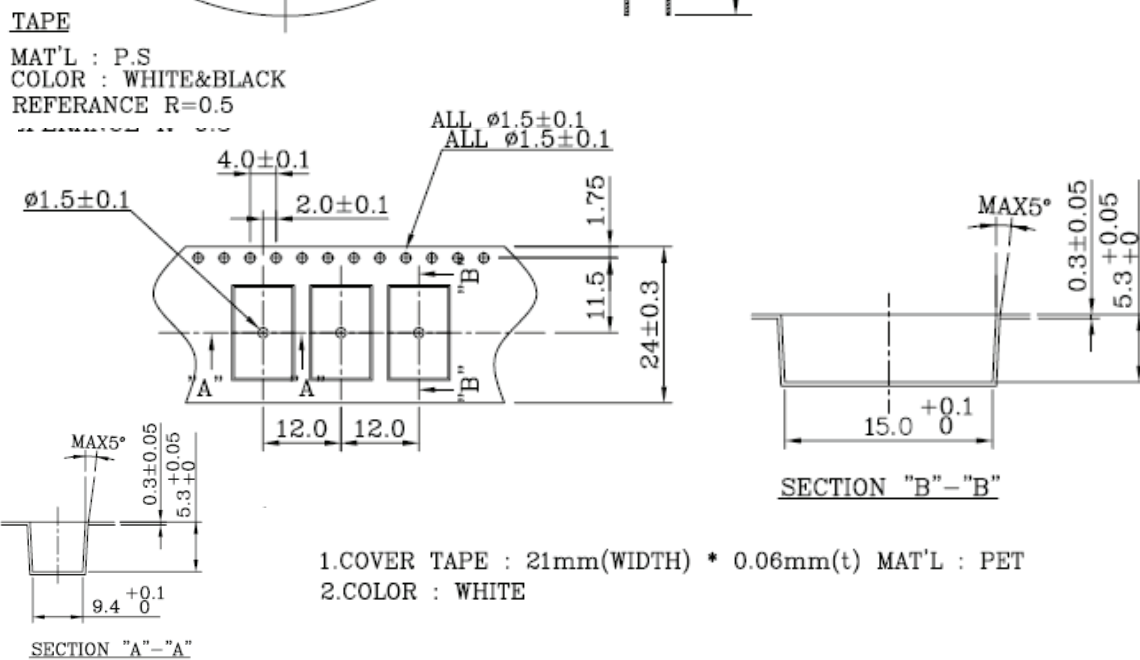
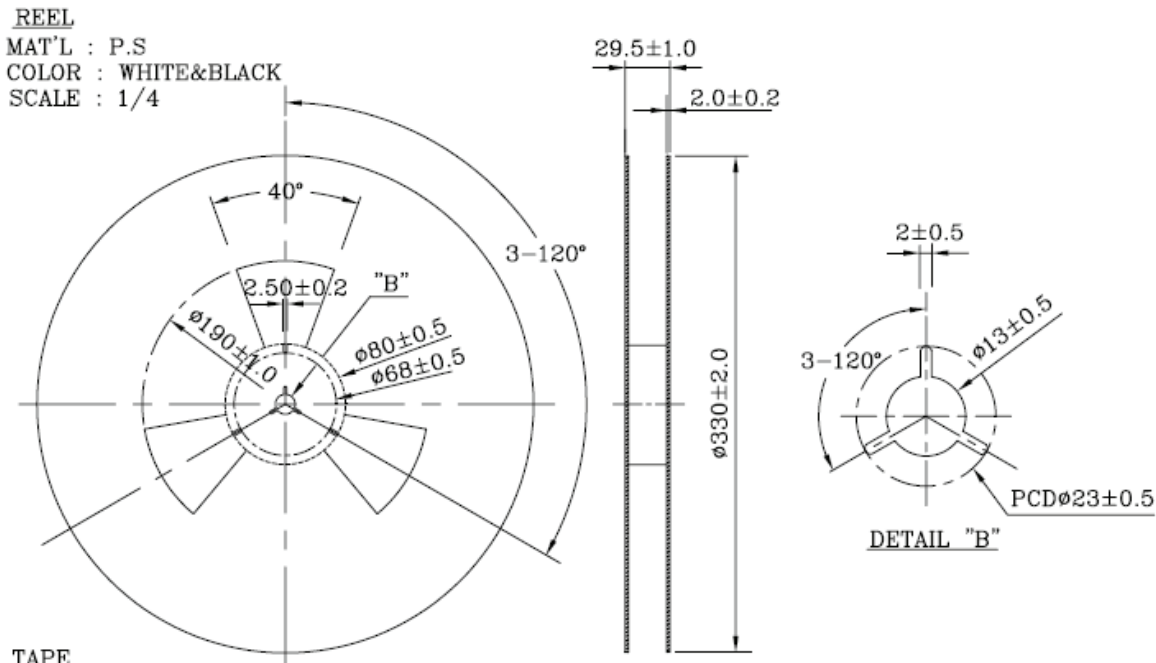
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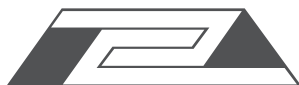
TAPE & REEL:

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



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