

Static sensitive device

**Current part - Recommended for new designs**

Frequency Stability Options				
Operating Temperature Range		Frequency Stability (PPM)		
		±25	±50	±100
Standard	-0°C to +70°C	<b>AS</b>	<b>BS</b>	<b>CS</b>
Industrial	-40°C to +85°C	<b>AI</b>	<b>BI</b>	<b>CI</b>

Operating Conditions	
Storage Temp	-55°C to +125°C
Option Codes	
Supply Voltage	Option Code
+3.3V DC	3

Marking & Specification Code Format				
Type	Voltage Code	OTR/Stability	Frequency	WWYY
VCL*431	3	See Above	ie 175.0000	1611

**High-Q Fundamental Crystal with Multiplier Circuit**

**Electrical Characteristics Ta = +25°C, <sup>Note</sup>Inclusive of V<sub>DD</sub> ±10%, Load Change ±10%, Ageing, Shock & Vibration**

Parameter	Condition	Value	
Model		<b>AEL VCLF-431</b> Low Jitter	<b>AEL VCLW-431</b> Low Cost
Frequency Range		38.0 - 640.0MHz	750kHz - 800.0MHz
Duty Cycle	@50% V <sub>DD</sub> Level	50% ±5%	
Output Voltage	"1" Level	1.4V Typical : 1.6V Max.	
	"0" Level	0.9V Typ. : 1.1V Max.	
Input Current		38.0 - 100.0MHz : 45mA Max.	<24.0MHz : 25mA Max.
		100.01 - 320.0MHz : 60mA Max.	24.01 - 96.0MHz : 45mA Max.
		320.01 - 640.0MHz : 70mA Max.	96.01 - 800.0MHz : 80mA Max.
VCXO Characteristics	Pulling Range	±80PPM Min. 1.65V +0.3V to +3.0V	
	Linearity	6% Typ. - 10% Max.	
Differential O/P Voltage	V <sub>OD</sub>	247mV Min. : 355mV Typ. : 454mV Max. Output 1 - Output 2	
Differential O/P error	dV <sub>OD</sub>	-50mV Min. : 50mV Max.	
Output Offset Voltage	V <sub>OS</sub>	1.125V Min. : 1.200V Typ. : 1.375V Max.	
Offset Magnitude Error	dV <sub>OS</sub>	0mV Min. : 3mV Typ. : 25mV Max.	
Rise/Fall Time	20%-80% of PECL Wave	0.7ns Typ. : 1.0ns Max.	0.7ns Typ. : 1.0ns Max.
Start Up Time	0V to V <sub>DD</sub>	5ms Typ. 10ms Max.	
Integrated Phase Jitter	12kHz to 20MHz	0.4ps Typ. for 156.250MHz	2.6ps Typ. for 155.250MHz
Period Jitter RMS	Decoupling capacitor	3ps Typ. for 156.250MHz	4.3ps Typ. for 155.520MHz
Period Jitter p-p	V <sub>DD</sub> to GND	20ps Typ. for 156.250MHz	27ps Typ. for 155.520MHz
Load		RL=50Ω each Output	
SSB Phase Noise (Typical)	<b>Offset</b>	<b>Freq 156.250MHz</b>	<b>Freq 155.250MHz</b>
	10 Hz	-62dBc/Hz	-65dBc/Hz
	100 Hz	-92dBc/Hz	-95dBc/Hz
	1 kHz	-120dBc/Hz	-120dBc/Hz
	10 kHz	-132dBc/Hz	-125dBc/Hz
	100 kHz	-128dBc/Hz	-121dBc/Hz
	1 MHz	-140dBc/Hz	-120dBc/Hz
	10 MHz	-150dBc/Hz	-140dBc/Hz

**Dimensions (mm)**

