

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>

#### Marking & Specification Code Format

Type	Voltage Code	OTR/Stability	Frequency	WWYY
H*431	2 or 3	See Above	ie 175.0000	1611

#### Operating Conditions

Storage Temp	-55°C to +125°C
Option Codes	
Supply Voltage	Option Code
+3.3V DC	3
+2.5V DC *	2

\* HF431 Series Only

#### Electrical Characteristics Ta = +25°C, <sup>Note1</sup>Inclusive of V<sub>DD</sub> ±10%, Load Change ±10%, Ageing, Shock & Vibration

Parameter	Condition	Value		
Model		<b>AEL HF431</b>	<b>AEL HW431</b>	<b>AEL HL431</b>
Technology		<b>Ultra-Low Jitter</b>	Moderate Jitter	<b>Low Cost</b>
High-Q Fundamental Crystal with Multiplier Circuit				
Frequency Range		125.0 - 300.0MHz	125.0 - 800.0MHz	125.0 - 200.0MHz
Duty Cycle	@50% V <sub>DD</sub> Level	50% ±5%		
Output Voltage	"1" Level	90% of V <sub>DD</sub> Min.		
	"0" Level	10% of V <sub>DD</sub> Max.		
Input Current		Frequency dependant		40mA Max.
Rise/Fall Time	0.3V to 3.0V & 15pF Load	0.7ns Typical	2.4ns Typical	2.4ns Typical
Start Up Time	0V to V <sub>DD</sub>	10ms Max.		
Integrated Phase Jitter	12kHz to 20MHz	0.4ps Typ.	2.6ps Typ.	2.3ps Typ.
Period Jitter RMS	Decoupling capacitor	3.0ps Typ.	4.3ps Typ.	4.0ps Typ.
Period Jitter p-p	V <sub>DD</sub> to GND	20ps Typ.	27ps Typ.	27ps Typ.
Load		15pF		
Ageing		±3PPM 1st year Max	±2PPM/Yr Max after 1st year	
Input Static Protection		+2kV Min.		
Reflow Solder Condition		260°C 10 seconds Max.		
SSB Phase Noise (Typical)	<b>Offset</b>	<b>Freq 156.250 MHz</b>	<b>Freq 155.520 MHz</b>	<b>Freq 155.520 MHz</b>
	10 Hz	-62dBc/Hz	-65dBc/Hz	-65dBc/Hz
	100 Hz	-92dBc/Hz	-95dBc/Hz	-95dBc/Hz
	1 kHz	-120dBc/Hz	-120dBc/Hz	-120dBc/Hz
	10 kHz	-132dBc/Hz	-125dBc/Hz	-128dBc/Hz
	100 kHz	-128dBc/Hz	-121dBc/Hz	-122dBc/Hz
	1 MHz	-140dBc/Hz	-120dBc/Hz	-120dBc/Hz
	10 MHz	-150dBc/Hz	-140dBc/Hz	-140dBc/Hz

#### Dimensions (mm)

**1,000pcs/Reel**

