

Frequency Stability Options

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

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

* HPF431 Series Only

Electrical Characteristics Ta = +25°C, ^{Note}Inclusive of V_{DD} ±10%, Load Change ±10%, Ageing, Shock & Vibration

Parameter	Condition	Value	
Model		AEL HPF-431	AEL HPW-431
Technology		Ultra -Low Jitter	Low Cost
		High-Q Fundamental Crystal with Multiplier Circuit	
Frequency Range		38.0 - 640.0MHz	750kHz - 800.0MHz
Duty Cycle	@50% V _{DD} Level	50% ±5%	
Output Voltage	"1" Level	V _{DD} - 1.025V Min. Termination RL=50Ω to (V _{DD} -2.0V)	
	"0" Level	V _{DD} - 1.620V Min. Termination RL=50Ω to (V _{DD} -2.0V)	
Input Current		38.0 - 100.0MHz : 65mA Max.	<24.0MHz : 25mA Max.
		100.01 - 320.0MHz : 80mA Max.	24.01 - 96.0MHz : 65mA Max.
		320.01 - 640.0MHz : 90mA Max.	96.01 - 800.0MHz : 100mA Max.
Rise/Fall Time	20%-80% of PECL Wave	0.4ns Typ. for 156.25MHz	27ns Typ. for 155.52MHz
Start Up Time	0V to V _{DD}	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 _{DD} to GND	20ps Typ. for 156.250MHz	27ps Typ. for 155.520MHz
Load		RL=50Ω to (V _{DD} -2.0V)	
Ageing		±3PPM 1st year Max	±2PPM/Yr Max after 1st year
SSB Phase Noise (Typical)	Offset	Freq 156.250MHz	Freq 155.250MHz
	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

Reflow Solder Profile (260°C) Pin Connections

