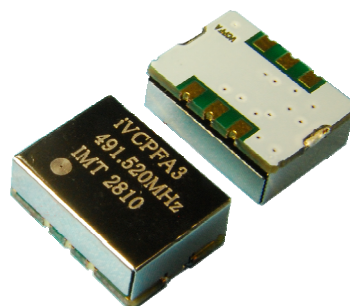


► Features

- Voltage Controlled Crystal Oscillator
- LVPECL Output TTL Output or LVDS output
- Surface Mount Package
- AT-Cut Crystal
- Tight Stability
- Fund, 3rd Oscillation Mode.
- 20to70°C, -40to85°C OPT Range.
- Low RMS Phase Jitter
- RoHS Compliant (pb-Free)



Dimensions(mm) 14.2 x 10.2 x 5.2max

► Typical Applications

- Switching
- Base Station
- Test Equipment
- SONET
- Ethernet
- Fiber Channel
- Any application requiring an VCXO

► Standard Frequency

2.048, 10, 13, 16.384, 32.768, 38.880, 51.840,
61.440, 64.000, 74.1758, 74.250, 77.760, 80.000,
100.000, 122.880, 125, 155.520, 156.250, 184.320,
245.760, 312.5, 491.520, 622.080, 625Mhz

Absolute Maximum Ratings *(For user guidelines only)*

Parameter	Maximum Value	Units	Condition
Supply voltage(Vdd)	7	Vdc	
Operating Temperature	-40 to 85	°C	
Storage Temperature	-50 to 120	°C	Max
ESD Sensitivity	1	kV	HBM

Supply Voltage & Consumption.

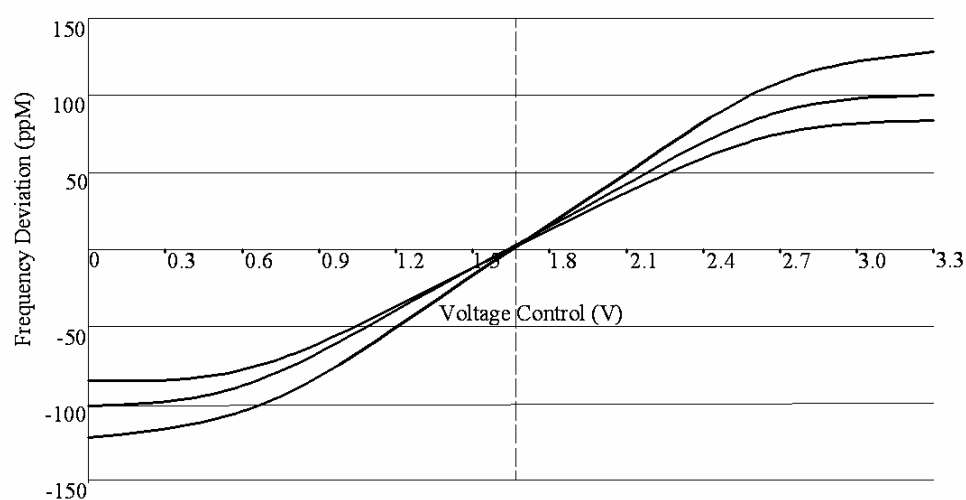
Parameter	Value	Units	Condition
Supply Voltage(Vdd)	5.0V ±5%	DC	
Current Consumption	40	mA Max	HCMOS

	120	mA Max	PECL
Supply Voltage(Vdd)	3.3V \pm 5%	DC	
Current Consumption	30	mA Max	HCMOS
	85	mA Max	LVPECL
	25	mA Max	LVDS
Start up Time(Ts)	5	mS	Max

Frequency Tuning(Vc), Input--pin #1

Parameter	Typical Value	Units	Condition
Vc. Turning Range	0V to Vdd	V	
Pulling	\pm 100	ppM min	\leq 40Mhz
	\pm 75	ppM min	\geq 40Mhz
Linearity	\pm 10.0	%	Max
NorminalCenterVoltage	50%of Vdd ¹	V	
Modulation Bandwidth	10	Khz	Min
Input impedance	10	Kohm	Min
Tuning slope	Positive		

¹ Other Center voltage is also available on your request.

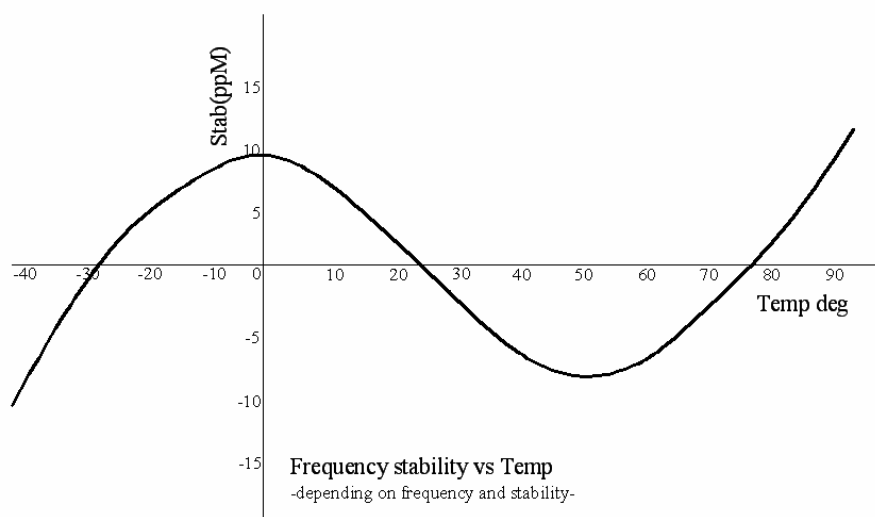


Typical Tuning Slope for iVPFA3
- depending on frequency and stability -

Frequency Stabilities¹

Parameter	Typical Value	Units	Condition
Vs. Temperature	±15	ppM max	-20to70℃
	±30	ppM max	-40to85℃
Vs. Calibration @25℃	±10	ppm max	±2℃
Vs. Vdd	±2	ppm max	±5% of Vdd
Vs. Load	±0.3	ppM max	±5% change
Aging 1 st year	±2	ppM max	

¹ Vc. condition is 50% of Vdd.



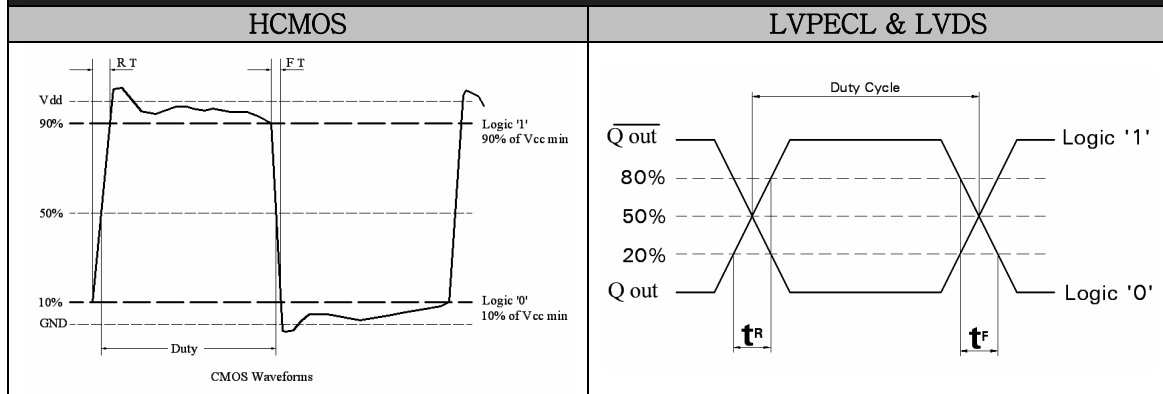
RF output¹

Parameter		Typical Value	Units	Condition
HCMOS	Output Load	15	pF	
	Rise(Tr),Fall(Tf) time	5	nS max	10to 90%
	Symmetry	50±10	%	50% of Vdd
LVPECL	Output Load	50 ohm into Vdd-2.0Vdc		
	Rise(Tr),Fall(Tf) time	1	nS max	20to 80%
	Symmetry	50±5	%	50% of Vdd

LVDS	Output Load	100	Ω	
	Rise(t_r), Fall(t_f) time	1	nS max	20to 80%
	Symmetry	50 \pm 10	%	50% of Vdd

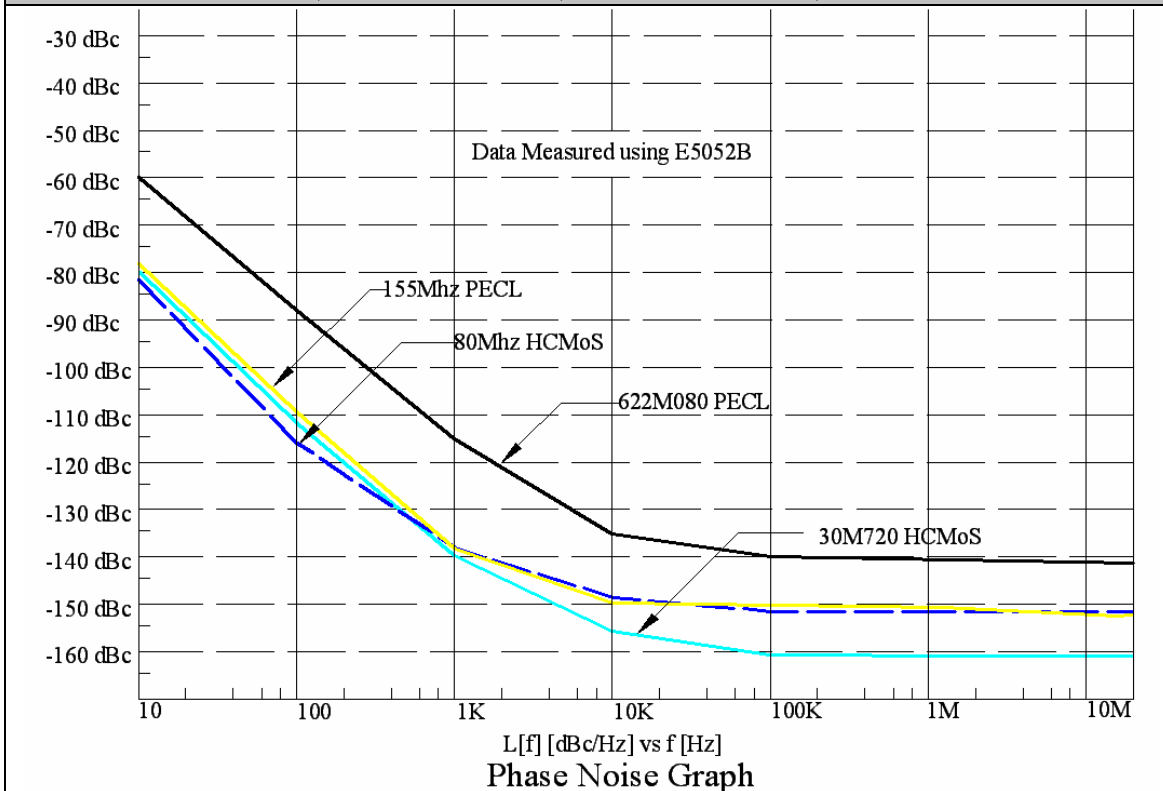
¹ About Test Condition Refer to Wave Form

Wave Form



Phase Noise

iVTFA5 30M720, iVTFA3 80M000, iVPFA3 155M520, iVPFA3 622M080

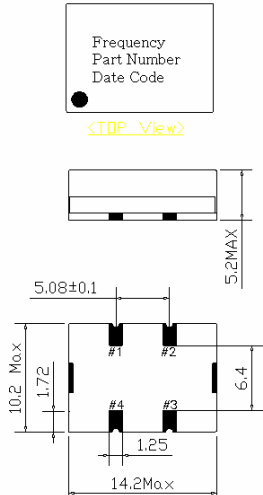
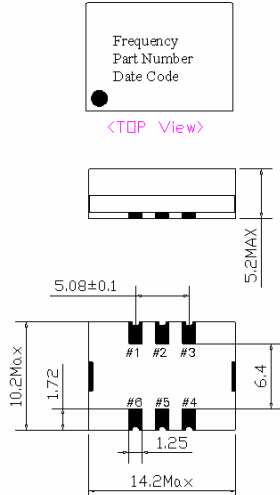


Phase jitter [Band range 12Khz to 20Mhz]

Frequency(Hz)	Value (fS RMS)	Frequency(Hz)	Value (fS RMS)
30M720	170	155M520	139
80M000	152	622M080	146

RMS Jitter is integrated Using E5052B Phase Noise Measurement Equipment

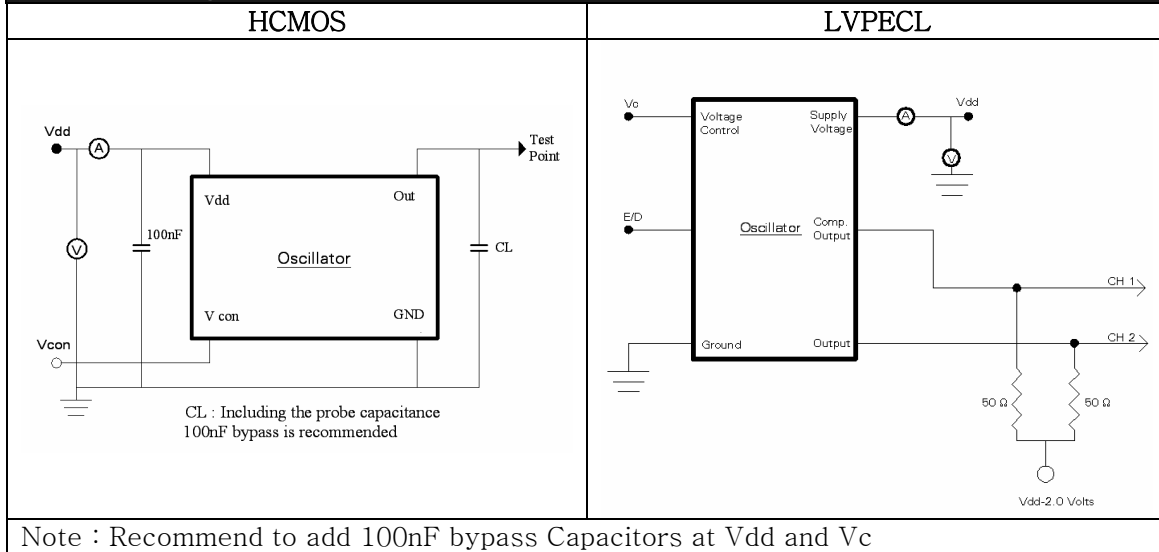
Mechanical Dimensions

FA 4PAD for HCMOS		FA 6PAD for PECL,HCMOS,LVDS				
 <p>iFA 4PAD Dimensions :mm</p> <p>Frequency Part Number Date Code</p> <p><TOP View></p>		 <p>iFA 6PAD Dimensions :mm</p> <p>Frequency Part Number Date Code</p> <p><TOP View></p>				
Code:FA4	Dimensions: 14 X 10 X 5.2	Code:FA6	Dimensions: 14 X 10 X 5.2			
Pin Connections		Pin Connection				
Pin1 : Voltage Control(Vc) Pin2 : Ground Pin3 : Output Pin4 : supply voltage(Vdd)		Pin1: Voltage Control (Vc) Pin2 : N/C or (Tri-State) Pin3 : Ground Pin4 : Output(Q) Pin5 : Complementary Output(Q̄) (for PECL and LVDS) Pin6 : supply Voltage(Vdd)				
		TRUTH TABLE	HCMOS	LVPECL,LVDS		
		Pin2	Q	Q̄	Q	Q̄
		"1"Level	Data	N.C	H.I	H.I
		"0"Level	High	N.C	Data	Data
		N/C	Data	N.C	Data	Data
		N/C : No Connect, H.I: High impedance.				

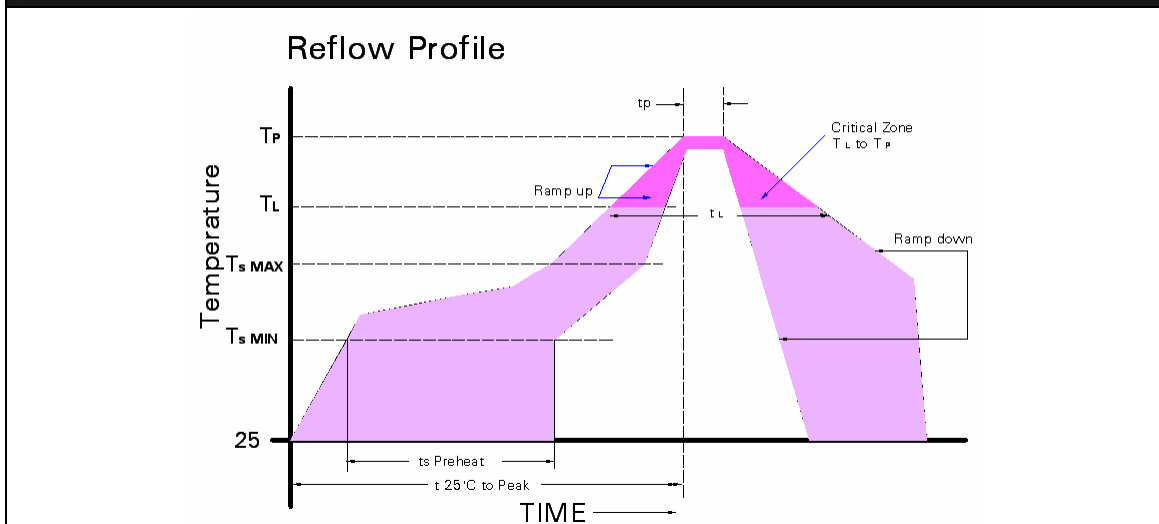
Marking

155.520Mhz	-Frequency
iVPFA3-ECO	-Part No.
● IMT wwyy	-week/year

Load Configuration



Recommended Reflow Profile



Note: Temperatures refer to body of device.
Oscillators must be on the top side of the PCB during the reflow process.

Ts max to Tl (Ramp-up rate)	3°C/second max
Preheat -Temperature Min(Ts min)	150°C
-Temperature Typical(Ts TYP)	175°C
-Temperature Max(Ts Max)	200°C
-Time(ts)	60-180 Seconds

Ramp-up Rate(TL to TP)	3°C/Second max
Time Maintained Above-Temperature(TL) -Time(TL)	217°C 60-150 Seconds
Peak Temperature(Tp)	260°C Max for 10 seconds Max
Target Peak Temperature(Tp Target)	250°C
Time within 5°C of actual peak(tp)	20-40 seconds
Ramp-down Rate	6°C/second max
Time 25°C to peak Temperature	8 minutes max

Part Numbering Guide & Code ...iVPFA3-EC0-155M520-T

iVPFA (LVPECL)

iVHFA (HCMOS)

iVLF A (LVDS)

Logic	Supply voltage	Operating Temperature	Stability	Frequency	Packaging Option
iVPFA	3	E	C0	155M520	T
P: LVPECL H: HCMOS L: LVDS	5:5.0V 3:3.3V	B: 0...70°C C:-20...70°C E:-40...85°C	A0: ±10ppM A5: ±15ppM C0: ±30ppM E0: ±50ppM	155.520Mhz	T: Tape & Reel B: Bulk

Above example, Voltage controlled, LVPECL output, FR4 6pAD package, 3.3V, -40to 85°C Temperature range, Overall ±30ppM, at 155.520Mhz.