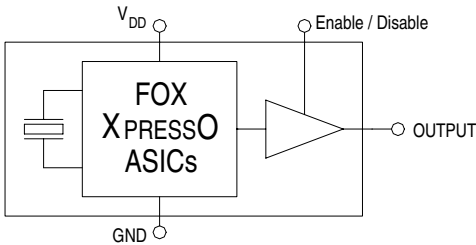


**HCMOS 7 x 5mm 3.3V 50ppm XO Freq: 156.25MHz**

**Features**

- ✔ Low Jitter
- ✔ Low Cost
- ✔ Tri-State Enable / Disable Feature
- ✔ Industry Standard Package
- ✔ Gold over Nickel Termination Finish



**Electrical Characteristics**

Parameters	Symbol	Condition	Maximum Value (unless otherwise noted)
Frequency	F <sub>O</sub>		156.25 MHz
Frequency Stability 1			50 ppm
Temperature Range	T <sub>O</sub> T <sub>STG</sub>	Standard operating Storage	-40°C to +85°C -55°C to +125°C
Supply Voltage	V <sub>DD</sub>	Standard	3.3V ± 5%
Input Current	I <sub>DD</sub>	Standard Load	55 mA
Output Load	HCMOS	Standard	15 pF
Start-Up Time	T <sub>S</sub>		10 mS
Output Enable / Disable Time			100 nS
Moisture Sensitivity Level	MSL		1
Termination Finish			Au

Note 1 – Stability is inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, aging, shock and vibration.

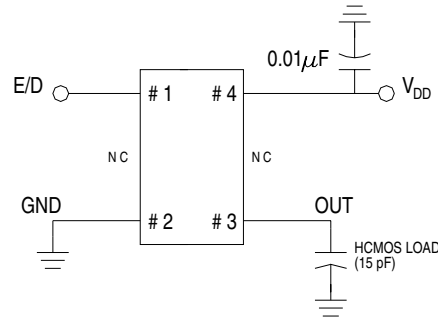
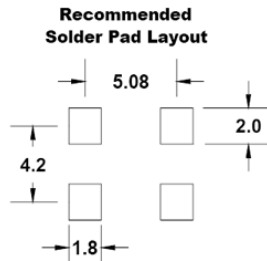
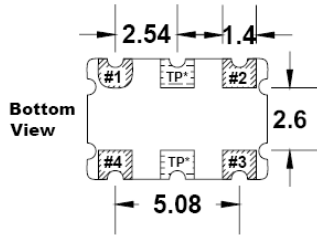
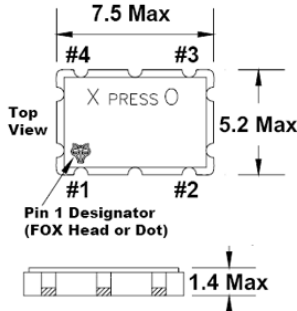
**Output Wave Characteristics**

Parameters	Symbol	Condition	Maximum Value
Output LOW Voltage	V <sub>OL</sub>	Standard Load	20% V <sub>DD</sub>
Output HIGH Voltage	V <sub>OH</sub>	Standard Load	80% V <sub>DD</sub> MIN
Output Symmetry		@ 50% V <sub>DD</sub> Level	45% ~ 55%
Output Enable (PIN # 1) Voltage	V <sub>IH</sub>		≥70% V <sub>DD</sub>
Output Disable (PIN # 1) Voltage	V <sub>IL</sub>		≤ 30% V <sub>DD</sub>
Cycle Rise Time	T <sub>R</sub>	20% ~ 80% V <sub>DD</sub>	3 nS
Cycle Fall Time	T <sub>F</sub>	80% ~ 20% V <sub>DD</sub>	3 nS

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**HCMOS 7 x 5mm 3.3V 50ppm XO Freq: 156.25MHz**

**Dimensional Drawing & Pad Layout**



Note: Xpresso HCMOS XO's are designed to fit on industry standard, 4 pad layouts.

**Pin Connections**  
 #1) E/D    #3 Output  
 #2 GND    #4 VDD  
 \*TP are test points and are NC

Actual marking is depicted.

Drawing is for reference to critical specifications defined by size measurements. Certain non-critical visual attributes, such as side castellations, reference pin shape, etc. may vary

**Phase Jitter & Time Interval Error (TIE) (Typical Measurements)**

Frequency	Phase Jitter (12kHz to 20MHz)	TIE (Sigma of Jitter Distribution)	Units
156.25 MHz	0.77	3.3	pS RMS

**Phase Jitter** is integrated from HP3048 Phase Noise Measurement System; measured directly into 50 ohm input;  $V_{DD} = 3.3V$ .

**TIE** was measured on LeCroy LC684 Digital Storage Scope, directly into 50 ohm input, with Amherst M1 software;  $V_{DD} = 3.3V$ .

Per *MJSQ spec (Methodologies for Jitter and Signal Quality specifications)*

**Random & Deterministic Jitter Composition (Typical Measurements)**

Frequency	Random (Rj) (pS RMS)	Deterministic (Dj) (pS P-P)	Total Jitter (Tj) (14 x Rj) + Dj
156.25 MHz	1.27	8.6	26.6 pS

**Rj and Dj**, measured on LeCroy LC684 Digital Storage Scope, directly into 50 ohm input, with Amherst M1 software.

Per *MJSQ spec (Methodologies for Jitter and Signal Quality specifications)*

**Pin Functional Description**

Pin #	Name	Type	Function
1	E / D <sup>1</sup>	Logic	Enable / Disable Control of Output (0 = Disabled)
2	GND	Ground	Electrical Ground for $V_{DD}$
3	Output	Output	HCMOS Oscillator Output
4	$V_{DD}$ <sup>2</sup>	Power	Power Supply Source Voltage
Test Points	N. C.	Hi Z	No Connection (Factory Use ONLY)

**NOTES:**

- <sup>1</sup> Includes pull-up resistor to  $V_{DD}$  to provide output when the pin (1) is No Connect.
- <sup>2</sup> Installation should include a 0.01µF bypass capacitor placed between  $V_{DD}$  (Pin 4) and GND (Pin 2) to minimize power supply line noise.