

Fox *Rocks* Your Design World... *Again!!*

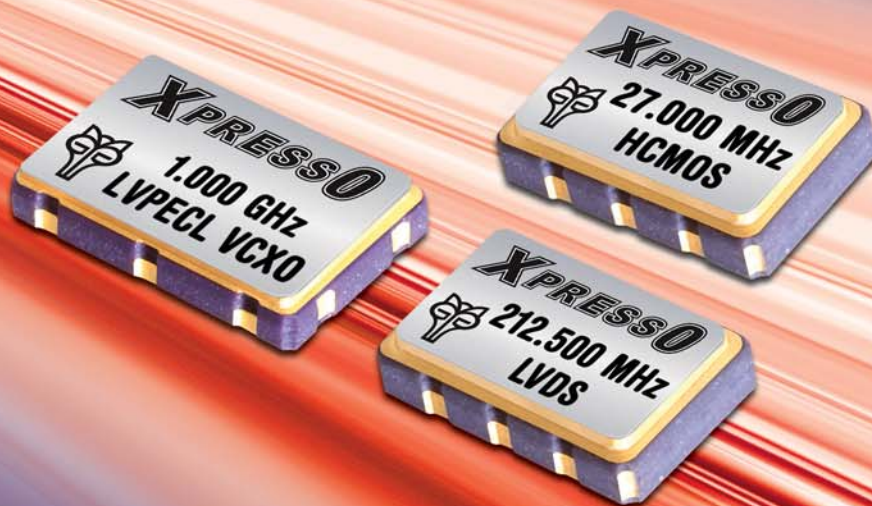
NOW-
2.5 V and
3.2 x 2.5 mm
package sizes!

INTRODUCING

XPRESSO[®]

Not just a new oscillator family,
but a new oscillator technology!

Over
25 Million
Shipped!



- Low jitter/noise
- Low cost
- Reduced lead times



Who says you can't have it all?

For a long time, the process of specifying and selecting oscillators for your equipment designs has involved balancing technical demands and practical considerations – in terms of physical performance, purchase cost, and delivery time. *Not any longer!*

The revolutionary new XpressO® crystal oscillator family from Fox provides a wider range of options, with fewer compensating factors, shorter lead times, and reduced pricing. Instead of being faced with crucial tradeoffs in cost, performance, or delivery times, you can have virtually the best of all worlds in one package.



XPRESSO®

✓ Great for your designs.

If an oscillator can't deliver the performance you need in your design, it doesn't matter how much it costs. But Fox XpressO oscillators with patented new technologies (*including proprietary ASICs with noise reduction silicon architectures and proven production techniques*) deliver accurate performance over an extremely wide range of parameters – all at a lower cost than conventional oscillators! Call today to compare XpressO's low pricing for the following performance options:

- **The exact frequency you need**, from 0.750 MHz to 1.350 GHz
- **Stabilities** as tight as ± 20 ppm
- **Low jitter and phase noise** characteristics to meet your toughest needs*
- **Choice** of HCMOS, LVDS, and LVPECL versions for both XO and VCXO product families
- **Choice** of 2.5 V or 3.3 V supply voltages
- **Choice** of 7 x 5 mm, 5 x 3.2 mm and 3.2 x 2.5 mm package sizes (*go to www.foxonline.com for details on 3.2 x 2.5 mm package sizes*)

✓ Great for your business, too!

Specifying the optimum oscillator for your design is only half the battle. Getting it delivered in time to meet the most pressing customer deadlines for engineering prototypes or full production models – without technical compromise and without paying a premium – can be the difference between a profitable contract and a lost opportunity. This is where XpressO really lives up to its name, with:

- **Next day shipment** of samples for prototyping
- **Mere days** for lead times on production quantities
- **A new pricing structure** that, unlike conventional oscillators, won't penalize you for requesting quick turnaround on unique frequencies



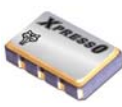

* If you have specific jitter or phase noise requirements please contact Fox Technical Support for availability.







XpressO Selection & Description Guides

Go to www.foxonline.com for details on 3.2 x 2.5 mm package sizes.

Crystal Oscillators (XO)



HCMOS – XO		
PACKAGE SIZE	5 x 3.2 mm	7 x 5 mm
SUPPLY VOLTAGE	2.5 V or 3.3 V	2.5 V or 3.3 V
MODEL	FXO-HC5	FXO-HC7
FREQUENCY RANGE	0.750 MHz ~ 250 MHz	0.750 MHz ~ 250 MHz
FREQUENCY STABILITY	± 20, 25, 50, 100 PPM	± 20, 25, 50, 100 PPM
TEMPERATURE RANGE	-20°C ~ +70°C R = -40°C ~ +85°C	-20°C ~ +70°C R = -40°C ~ +85°C



LVDS – XO		
PACKAGE SIZE	5 x 3.2 mm	7 x 5 mm
SUPPLY VOLTAGE	2.5 V or 3.3 V	2.5 V or 3.3 V
MODEL	FXO-LC5	FXO-LC7
FREQUENCY RANGE	0.750 MHz ~ 1.350 GHz	0.750 MHz ~ 1.350 GHz
FREQUENCY STABILITY	± 20, 25, 50, 100 PPM	± 20, 25, 50, 100 PPM
TEMPERATURE RANGE	-20°C ~ +70°C R = -40°C ~ +85°C	-20°C ~ +70°C R = -40°C ~ +85°C



LVPECL – XO		
PACKAGE SIZE	5 x 3.2 mm	7 x 5 mm
SUPPLY VOLTAGE	2.5 V or 3.3 V	2.5 V or 3.3 V
MODEL	FXO-PC5	FXO-PC7
FREQUENCY RANGE	0.750 MHz ~ 1.350 GHz	0.750 MHz ~ 1.350 GHz
FREQUENCY STABILITY	± 20, 25, 50, 100 PPM	± 20, 25, 50, 100 PPM
TEMPERATURE RANGE	-20°C ~ +70°C R = -40°C ~ +85°C	-20°C ~ +70°C R = -40°C ~ +85°C

Example: FXO-PC536R 212.500 MHz = LVPECL Output, Ceramic 5 x 3.2 mm Package, 3.3V, ±25 PPM Stability, -40 to +85°C Temperature Range, at 212.500 MHz

VCXOs

HCMOS – VCXO		
PACKAGE SIZE	5 x 3.2 mm	7 x 5 mm
SUPPLY VOLTAGE	2.5 V or 3.3 V	2.5 V or 3.3 V
MODEL	FVXO-HC5	FVXO-HC7
FREQUENCY RANGE	0.750 MHz ~ 250 MHz	0.750 MHz ~ 250 MHz
PULLABILITY (APR)	B = ± 50 PPM	B = ± 50 PPM
TEMPERATURE RANGE	-20°C ~ +70°C R = -40°C ~ +85°C	-20°C ~ +70°C R = -40°C ~ +85°C

LVDS – VCXO		
PACKAGE SIZE	5 x 3.2 mm	7 x 5 mm
SUPPLY VOLTAGE	2.5 V or 3.3 V	2.5 V or 3.3 V
MODEL	FVXO-LC5	FVXO-LC7
FREQUENCY RANGE	0.750 MHz ~ 1.350 GHz	0.750 MHz ~ 1.350 GHz
PULLABILITY (APR)	B = ± 50 PPM	B = ± 50 PPM
TEMPERATURE RANGE	-20°C ~ +70°C R = -40°C ~ +85°C	-20°C ~ +70°C R = -40°C ~ +85°C

LVPECL – VCXO		
PACKAGE SIZE	5 x 3.2 mm	7 x 5 mm
SUPPLY VOLTAGE	2.5 V or 3.3 V	2.5 V or 3.3 V
MODEL	FVXO-PC5	FVXO-PC7
FREQUENCY RANGE	0.750 MHz ~ 1.350 GHz	0.750 MHz ~ 1.350 GHz
PULLABILITY (APR)	B = ± 50 PPM	B = ± 50 PPM
TEMPERATURE RANGE	-20°C ~ +70°C R = -40°C ~ +85°C	-20°C ~ +70°C R = -40°C ~ +85°C

Example: FVXO-HC73BR 155.520 MHz = HCMOS Output, Ceramic 7 x 5 mm Package, 3.3 V, ±50 PPM APR, -40 to +85°C Temperature Range, at 155.520 MHz

XpressO XO Model Description Guide

FXO - P C 5 3 6 R - 212.500						
H	C	5	3	6	R	Frequency
H= HCMOS	C= Ceramic	3= 3.2 x 2.5 mm	2= 2.5 V	0= ±100 PPM	Blank= -20°C ~ +70°C	
L= LVDS		5= 5 x 3.2 mm	3= 3.3 V	5= ±50 PPM	R= -40°C ~ +85°C	
P= LVPECL		7= 7 x 5 mm		6= ±25 PPM		
X= Comp. HCMOS				8= ±20 PPM		

XpressO VCXO Model Description Guide

FVXO - H C 7 3 B R - 155.520						
H	C	7	3	B	R	Frequency
H= HCMOS	C= Ceramic	5= 5 x 3.2 mm	2= 2.5 V	B= ±50 PPM APR	Blank= -20°C ~ +70°C	
L= LVDS		7= 7 x 5 mm	3= 3.3 V		R= -40°C ~ +85°C	
P= LVPECL						
X= Comp. HCMOS						

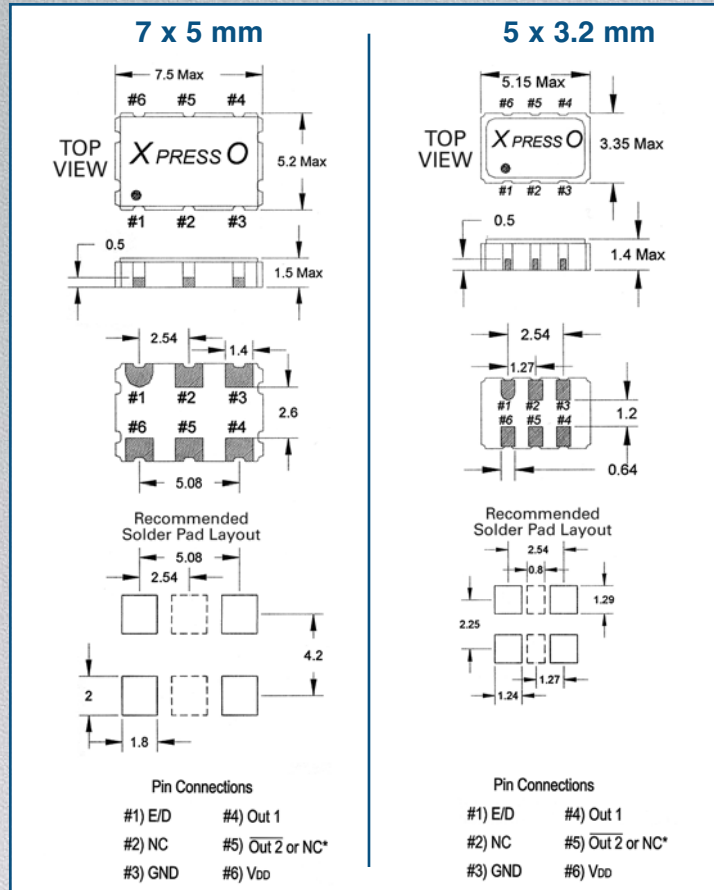
XpressO Jitter Characteristics

Unlike programmable oscillators, the jitter and noise characteristics of XpressO configurable oscillators are comparable to or better than those of fixed frequency oscillators in virtually all applications. You can choose the XpressO oscillator that's ideal for your specific application.

	MHz	Phase pS (RMS)	TIE pS (RMS)	Rj pS (RMS)	Dj pS (Mean)	Tj (Dj+14 Rj)
HCMOS	62.50	0.93	3.7	0.9	7.4	20.4
	106.25	0.85	3.6	1.0	7.7	21.7
	125.00	0.73	2.8	0.8	7.5	19.1
	156.25	0.89	3.3	0.9	7.6	20.4
LVDS	106.25	0.83	3.5	0.7	7.1	17.2
	156.25	0.85	3.6	1.3	5.8	23.6
	212.50	0.89	3.9	0.9	6.7	18.7
	622.08	0.99	3.2	1.1	5.3	20.7
LVPECL	62.50	0.77	3.0	1.3	7.0	24.9
	155.52	0.92	3.5	1.3	9.9	28.7
	156.25	0.96	3.4	1.4	9.1	28.7
	212.50	0.99	3.8	1.2	9.3	26.3
	312.50	0.98	3.8	1.3	8.3	26.4
	622.08	0.96	3.1	1.2	8.5	25.1

XpressO Package Dimensions, Marking & Labeling

Dimensions, marking patterns and product labeling for 7 x 5 mm and 5 x 3.2 mm Fox XpressO packages are shown below. Go to www.foxonline.com for details on 3.2 x 2.5 mm package size.

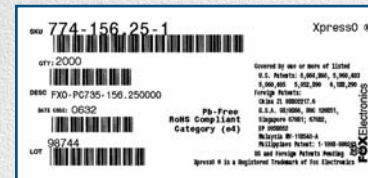


* Out 2 for LVPECL, LVDS, and complementary HCMOS. NC for single ended HCMOS. Pad 2 & 5 are optional for the single ended HCMOS

Typical XpressO marking configurations are illustrated below. Note that in all cases, Pin 1 is designated by either the Fox Head or a dot.



To help minimize both cost and lead times, XpressO packages are supplied with a separate label containing necessary product and production information, as shown below.



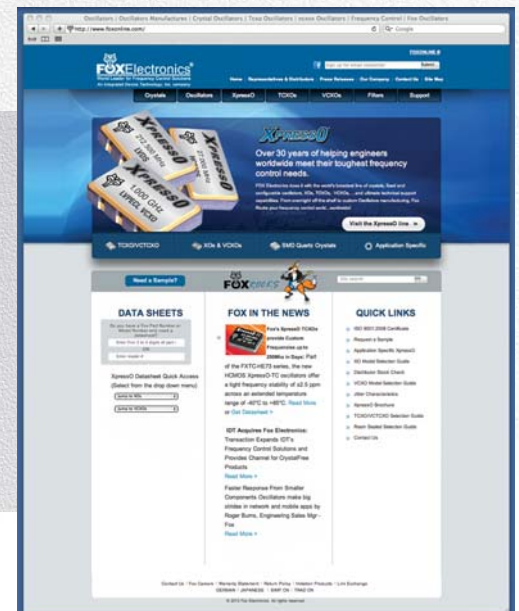
Learn More About The New Fox XpressO Family of Oscillators...

To learn more about the performance and business advantages of Fox XpressO oscillators, call us today at 888-GET-2-FOX (888-438-2369). Or visit us on line at www.foxonline.com for complete specifications and the industry's most comprehensive range of frequency control solutions.

Fox Electronics has a staff of application specialists ready to help you. Contact our technical support staff— www.foxonline.com/email.htm

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Office: 61 Lerin str.
1680 Sofia, Bulgaria
Call us: 029731195; 9734626
Send us email: office@famousconnections.eu
www.famousconnections.eu



FOX-G-3886 3/13 2.5M
Rev. 6