

Product Change Notification

PCN Publish Date: 09/20/2005 (Revision 2)

PCN#: 223

Change Title: Product Process Change

Products Affected: Fox Pb (lead) containing product families:

HC49U, HC49S, HC49SS, HC49SD, HC49SSD, HC49SPX, FPX, FSM, FSR, FSX, NC15, NC26 Series, NC38, All Monolithic Crystal Filters, F1100E Series, F5C-2E Series, H5C-2E Series, FSO-2 Series, FSO-3 Series, F5L Series, VCXO-B Series, VCXO-C Series, VCXO-D Series, VCXO-CH Series, VCXO-DH Series, F7250 Series, F7350 Series, FOX801 Series.

See the attached list of all affected model numbers and corresponding Fox smart part numbers.

Description of Change to the Customer: In an effort to make our product line more environmentally compatible and in compliance with regulatory guidelines, we are changing the volume manufacturing processes for the above products to a Pb free process*.

*(Once the manufacturing process has been changed to a Pb free process, it may still be possible to manufacture product with the Pb process; however product manufactured with the Pb process may be more expensive due to cost increases associated with older, low volume, raw materials.)

Model numbers for product manufactured with the Pb free process will have an "LF" suffix added: HC49ULF, F1100ELF, etc. The attached list gives all the Pb free model numbers and Fox smart part numbers.

All Pb free products should be backward compatible to the Pb/Sn solder process with the following exceptions: FSMLF, FSMLF, FSRLF, FSXLF.

The manufacturing process for these products is being changed to a 100% Sn (matte tin) process which is backward compatible to the Pb/Sn solder process. See PCN220 <u>http://www.foxonline.com/pcn220.htm</u> for details.

Schedule of Change:

Start of change-over is July 1, 2005 Last buy date for product manufactured with volume manufacturing Pb process is December 31, 2005.

Customer Impact and Response: We sincerely hope this change will have minimal impact on our customers. If you have any questions, please contact Fox Technical Support at <u>www.foxonline.com/email.htm</u> or call 239-693-0099.

This table list products currently manufactured with a Pb process and the corresponding model and part numbers for the Pb free manufacturing process.

Pb Process		Pb Free/RoHS Compliant Process	
Fox Model No.	Fox Part No. ¹ (xxxxx = random no. ²⁾	Fox Model No.	Fox Part No. ¹ ($xxxxx = random no.^{2}$)
HC49U	281-freq-xxxx ²	HC49ULF	281LF-freq-xxxxx ²
HC49S	277-freq-xxxx ²	HC49SLF	277LF-freq-xxxxx ²
HC49SS	279-freq-xxxx ²	HC49SSLF	279LF-freq-xxxx ²
HC49SD	278-freq-xxxx ²	HC49SDLF	278LF-freq-xxxx ²
HC49SSD	280-freq-xxxx ²	HC49SSDLF	280LF-freq-xxxx ²
HC49SPX	448-freq-xxxx ²	HC49SPXLF	448LF-freq-xxxx ²
FPX	256-freq-xxxx ²	FPXLF	256LF-freq-xxxxx ²
FSM	258-freq-xxxx ²	FSMLF	258LF-freq-xxxx ²
FSR	414-freq-xxxx ²	FSRLF	414LF-freq-xxxx ²
FSX	501-freq-xxxx ²	FSXLF	501LF-freq-xxxx ²
NC15	298-freq-xxxx ²	NC15LF	298LF-freq-xxxx ²
NC26	299-freq-xxxx ²	NC26LF	299LF-freq-xxxxx ²
NC26S	416-freq-xxxx ²	NC26SLF	416LF-freq-xxxxx ²
NC38	300-freq-xxxx ²	NC38LF	300LF-freq-xxxx ²
F1100E Series			
F1100E	049-freq-xxxx ²	F1100ELF	049LF-freq-xxxxx ²
F1100ER	343-freq-xxxx ²	F1100ERLF	343LF-freq-xxxxx ²
F1145E	060-freq-xxxx ²	F1145ELF	060LF-freq-xxxx ²
F1145ER	061-freq-xxxx ²	F1145ERLF	061LF-freq-xxxxx ²
F1144	055-freq-xxxx ²	F1144ELF	055LF-freq-xxxxx ²
F1144ER	465-freq-xxxx ²	F1144ERLF	465LF-freq-xxxxx ²
F1148E	512-freq-xxxx ²	F1148ELF	512LF-freq-xxxxx ²
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F5C-2E Series			
F5C-2E	147-freq-xxxx ²	F5C-2ELF	147LF-freq-xxxxx ²
F5C-2ER	326-freq-xxxx ²	F5C-2ERLF	326LF-freq-xxxxx ²
F6C-2E	180-freq-xxxx ²	F6C-2ELF	180LF-freq-xxxx ²
F6C-2ER	181-freq-xxxx ²	F6C-2ERLF	181LF-freq-xxxx ²
F7C-2E	199-freq-xxxx ²	F7C-2ELF	199LF-freq-xxxxx ²
F7C-2ER	330-freq-xxxx ²	F7C-2ERLF	330LF-freq-xxxx ²
F8C-2E	513-freq-xxxx ²	F8C-2ELF	513LF-freq-xxxxx ²
H5C-2E Series			
H5C-2E	267-freq-xxxx ²	H5C-2ELF	267LF-freq-xxxx ²
H5C-2ER	347-freq-xxxx ²	H5C-2ERLF	347LF-freq-xxxx ²
H6C-2E	271-freq-xxxx ²	H6C-2ELF	271LF-freq-xxxx ²
H6C-2ER	335-freq-xxxx ²	H6C-2ERLF	335LF-freq-xxxx ²
H7C-2E	275-freq-xxxx ²	H7C-2ELF	275LF-freq-xxxx ²
H7C-2ER	336-freq-xxxx ²	H7C-2ERLF	336LF-freq-xxxx ²

This table list products currently manufactured with a Pb process and the corresponding model and part numbers for the Pb free manufacturing process.

H8C-2E	342-freq-xxxx ²	H8C-2ELF	342LF-freq-xxxx ²
Pb Process		Pb Free/RoHS Compliant Process	
Fox Model No.	Fox Part No. ¹ (xxxxx = random no. ²⁾	Fox Model No.	Fox Part No. ¹ (xxxxx = random no. ²⁾
F5C-2E3 Series			
F5C-2E3	148-freq-xxxx ²	F5C-2E3LF	148LF-freq-xxxx ²
F5C-2E3R	355-freq-xxxx ²	F5C-2E3RLF	355LF-freq-xxxx ²
F6C-2E3	328-freq-xxxx ²	F6C-2E3LF	328LF-freq-xxxx ²
F6C-2E3R	356-freq-xxxx ²	F6C-2E3RLF	356LF-freq-xxxx ²
F7C-2E3	329-freq-xxxx ²	F7C-2E3LF	329LF-freq-xxxx ²
F7C-2E3R	358-freq-xxxx ²	F7C-2E3RLF	358LF-freq-xxxx ²
F8C-2E3	567-freq-xxxx ²	F8C-2E3LF	567LF-freq-xxxx ²
H5C-2E3 Series			
H5C-2E3	350-freq-xxxx ²	H5C-2E3LF	350LF-freq-xxxx ²
H5C-2E3R	351-freq-xxxx ²	H5C-2E3RLF	351LF-freq-xxxx ²
H6C-2E3	272-freq-xxxx ²	H6C-2E3LF	272LF-freq-xxxx ²
H6C-2E3R	352-freq-xxxx ²	H6C-2E3RLF	352LF-freq-xxxx ²
H7C-2E3	354-freq-xxxx ²	H7C-2E3LF	354LF-freq-xxxx ²
H7C-2E3R	353-freq-xxxx ²	H7C-2E3RLF	353-freq-xxxx ²
H8C-2E3	566-freq-xxxx ²	H8C-2E3LF	566LF-freq-xxxx ²
FSO Series			
FSO-2	259-freq-xxxx ²	FSO-2LF	259LF-freq-xxxx ²
FSO-2R	547-freq-xxxx ²	FSO-2RLF	547LF-freq-xxxxx ²
FSO-25	432-freq-xxxx ²	FSO-25LF	432LF-freq-xxxx ²
FSO-3	433-freq-xxxx ²	FSO-3LF	433LF-freq-xxxx ²
FSO-3R	543-freq-xxxx ²	FSO-3RLF	543LF-freq-xxxx ²
FSO-35	434-freq-xxxx ²	FSO-35LF	434LF-freq-xxxx ²
F5L Series			
F5L-B	165-freq-xxxx ²	F5L-BLF	165LF-freq-xxxx ²
F5L-BR	166-freq-xxxx ²	F5L-BRLF	166LF-freq-xxxx ²
F5L-E	169-freq-xxxx ²	F5L-ELF	169LF-freq-xxxx ²
F5L-ER	170-freq-xxxx ²	F5L-ERLF	170LF-freq-xxxx ²
F5L-C	167-freq-xxxx ²	F5L-CLF	167LF-freq-xxxx ²
F5L-CR	168-freq-xxxx ²	F5L-CRLF	168LF-freq-xxxx ²
F5L-F	171-freq-xxxx ²	F5L-FLF	171LF-freq-xxxx ²
F5L-FR	172-freq-xxxx ²	F5L-FRLF	172LF-freq-xxxx ²
F5L-H	175-freq-xxxx ²	F5L-HLF	175LF-freq-xxxx ²
F5L-HR	176-freq-xxxx ²	F5L-HRLF	176LF-freq-xxxx ²
F5L-G	173-freq-xxxx ²	F5L-GLF	173LF-freq-xxxx ²
F5L-GR	174-freq-xxxx ²	F5L-GRLF	174LF-freq-xxxx ²
F5L-4B	153-freq-xxxx ²	F5L-4BLF	153LF-freq-xxxxx ²
F5L-4BR	154-freq-xxxx ²	F5L-4BRLF	154LF-freq-xxxxx ²

This table list products currently manufactured with a Pb process and the corresponding model and part numbers for the Pb free manufacturing process.

F5L-4E	157-freq-xxxx ²	F5L-4ELF	157LF-freq-xxxx ²
F5L-4ER	158-freq-xxxx ²	F5L-4ERLF	158LF-freq-xxxx ²
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Pb Process		Pb Free/RoHS Compliant Process	
Fox Model No.	Fox Part No. ¹ (xxxxx = random no. ²⁾	Fox Model No.	Fox Part No. ¹ (xxxxx = random no. ²⁾
F5L Series			
F5L-4C	155-freq-xxxx ²	F5L-4CLF	155LF-freq-xxxx ²
F5L-4CR	156-freq-xxxx ²	F5L-4CRLF	156LF-freq-xxxx ²
F5L-4F	159-freq-xxxx ²	F5L-4FLF	159LF-freq-xxxx ²
F5L-4FR	160-freq-xxxx ²	F5L-4FRLF	160LF-freq-xxxx ²
F5L-4H	163-freq-xxxx ²	F5L-4HLF	163LF-freq-xxxxx ²
F5L-4HR	164-freq-xxxx ²	F5L-4HRLF	164LF-freq-xxxxx ²
F5L-4G	161-freq-xxxx ²	F5L-4GLF	161LF-freq-xxxx ²
F5L-4GR	162-freq-xxxx ²	F5L-4GRLF	162LF-freq-xxxx ²
VCXO-B			
Series			
VCXO-B1	312-freq-xxxx ²	VCXO-B1LF	312LF-freq-xxxx ²
VCXO-B1R	399-freq-xxxx ²	VCXO-B1RLF	399LF-freq-xxxx ²
VCXO-B2	313-freq-xxxx ²	VCXO-B2LF	313LF-freq-xxxx ²
VCXO-B2R	400-freq-xxxx ²	VCXO-B2RLF	400LF-freq-xxxx ²
VCXO-B3	314-freq-xxxx ²	VCXO-B3LF	314LF-freq-xxxx ²
VCXO-B3R	401-freq-xxxx ²	VCXO-B3RLF	401LF-freq-xxxx ²
VCXO-B4	315-freq-xxxx ²	VCXO-B4LF	315LF-freq-xxxx ²
VCXO-B4R	402-freq-xxxx ²	VCXO-B4RLF	402LF-freq-xxxx ²
VCXO-B5	316-freq-xxxx ²	VCXO-B5LF	316LF-freq-xxxx ²
-			
VCXO-C			
Series	2		2
VCXO-C2	458-freq-xxxx ²	VCXO-C2LF	458LF-freq-xxxx ²
VCXO-C2R	456-freq-xxxx ²	VCXO-C2RLF	456LF-freq-xxxx ²
VCXO-C3	317-freq-xxxx ²	VCXO-C3LF	317LF-freq-xxxx ²
VCXO-C3R	467-freq-xxxx ²	VCXO-C3RLF	467LF-freq-xxxx ²
VCXO-C4	318-freq-xxxx ²	VCXO-C4LF	318LF-freq-xxxx ²
VCXO-C4R	468-freq-xxxx ²	VCXO-C4RLF	468LF-freq-xxxx ²
VCXO-C7	319-freq-xxxx ²	VCXO-C7LF	319LF-freq-xxxx ²
VCXO-C7R	469-freq-xxxx ²	VCXO-C7RLF	$\frac{469 \text{LF-freq-xxxx}^2}{220 \text{km}^2}$
VCXO-C8	320-freq-xxxx ²	VCXO-C8LF	320LF-freq-xxxx ²
VCXO-C8R	470-freq-xxxx ²	VCXO-C8RLF	470LF-freq-xxxx ²
VCXO-D			
Series	450 5		450LE frage 2
VCXO-D3	$\frac{459 \text{-} \text{freq} \text{-} \text{xxxxx}^2}{462 \text{-} \text{freq} \text{-} \text{xxxxx}^2}$	VCXO-D3LF	$\frac{459 \text{LF-freq-xxxx}^2}{4621 \text{ F freq-xxxxx}^2}$
VCXO-D3R	$\frac{463-\text{freq}-\text{xxxxx}^2}{460-\text{freq}-\text{xxxxx}^2}$	VCXO-D3RLF	$\frac{463 \text{LF-freq-xxxx}^2}{460 \text{LF-freq-xxxxx}^2}$
VCXO-D4	$\frac{460\text{-freq-xxxx}^2}{671\text{-freq-wwww}^2}$	VCXO-D4LF	$\frac{460 \text{LF-freq-xxxx}^2}{6711 \text{ F freq ywww}^2}$
VCXO-D4R	$\frac{671 \text{-} \text{freq-xxxx}^2}{461 \text{ freq-xyyy}^2}$	VCXO-D4RLF	$\frac{671 \text{LF-freq-xxxx}^2}{4611 \text{ F freq xxxxx}^2}$
VCXO-D7	461-freq-xxxx ²	VCXO-D7LF	461LF-freq-xxxx ²

This table list products currently manufactured with a Pb process and the corresponding model and part numbers for the Pb free manufacturing process.

VCXO-D7R	722-freq-xxxx ²	VCXO-D7RLF	722LF-freq-xxxx ²
VCXO-D8	462-freq-xxxx ²	VCXO-D8LF	462LF-freq-xxxx ²
VCXO-D8R	464-freq-xxxx ²	VCXO-D8RLF	464LF-freq-xxxx ²
	Pb Process		ee/RoHS Compliant Process
Fox Model No.	Fox Part No. ¹ (xxxxx = random no. ²⁾	Fox Model No.	Fox Part No. ¹ (xxxxx = random no. ²⁾
VCXO-CH			
Series			
VCXO-CH4	318H-freq-xxxx ²	VCXO-CH4LF	318HLF-freq-xxxx ²
VCXO-CH8	320H-freq-xxxx ²	VCXO-CH8LF	320HLF-freq-xxxx ²
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VCXO-DH			
Series			
VCXO-DH4	611-freq-xxxx ²	VCXO-DH4LF	611LF-freq-xxxxx ²
	1		
FOX801 Series			
FOX801A	250-freq-xxxx ²	FOX801ALF	250LF-freq-xxxxx ²
FOX801AE	251-freq-xxxx ²	FOX801AELF	251LF-freq-xxxx ²
FOX801AH	252-freq-xxxx ²	FOX801AHLF	252LF-freq-xxxx ²
`FOX801B	253-freq-xxxx ²	`FOX801BLF	253LF-freq-xxxx ²
FOX801BE	254-freq-xxxx ²	FOX801BELF	254LF-freq-xxxx ²
FOX801BH	255-freq-xxxx ²	FOX801BHLF	255LF-freq-xxxx ²
FOX801BHC	255C-freq-xxxx ²	FOX801BHCLF	255CLF-freq-xxxx ²
F7250 Series			
F7250AC	504-freq-xxxx ²	F7250ACLF	504LF-freq-xxxx ²
F7250BC	505-freq-xxxx ²	F7250BCLF	505LF-freq-xxxx ²
F7350BC	542-freq-xxxx ²	F7350BCLF	542LF-freq-xxxx ²
Monolithic			
Crystal Filters			
10M7A	008-freq-xxxx ²	10M7ALF	008LF-freq-xxxx ²
10M7B	009-freq-xxxx ²	10M7BLF	009LF-freq-xxxx ²
10M7C	010-freq-xxxx ²	10M7CLF	010LF-freq-xxxx ²
10M7D	011-freq-xxxx ²	10M7DLF	011LF-freq-xxxx ²
10M12A	001-freq-xxxx ²	10M12ALF	001LF-freq-xxxx ²
10M12B	321-freq-xxxx ²	10M12BLF	321LF-freq-xxxx ²
10M12C	002-freq-xxxx ²	10M12CLF	002LF-freq-xxxx ²
10M12D	003-freq-xxxx ²	10M12DLF	003LF-freq-xxxx ²
10M15A	004-freq-xxxx ²	10M15ALF	004LF-freq-xxxx ²
10M15B	323-freq-xxxx ²	10M15BLF	323LF-freq-xxxx ²
10M15C	005-freq-xxxx ²	10M15CLF	005LF-freq-xxxx ²
10M15D	324-freq-xxxx ²	10M15DLF	324LF-freq-xxxx ²
10M20A	006-freq-xxxx ²	10M20ALF	006LF-freq-xxxx ²
10M20B	007-freq-xxxx ²	10M20BLF	007LF-freq-xxxx ²
16M15A	012-freq-xxxx ²	16M15ALF	012LF-freq-xxxx ²
16M15B	013-freq-xxxx ²	16M15BLF	013LF-freq-xxxx ²

This table list products currently manufactured with a Pb process and the corresponding model and part numbers for the Pb free manufacturing process.

16M15C	014-freq-xxxx ²	16M15CLF	014LF-freq-xxxx ²	
16M15D	015-freq-xxxx ²	16M15DLF	015LF-freq-xxxxx ²	
	Pb Process		Pb Free/RoHS Compliant Process	
Fox Model No.	Fox Part No. ¹ (xxxxx = random no. ²⁾	Fox Model No.	Fox Part No. ¹ (xxxxx = random no. ²⁾	
Monolithic				
Crystal Filters				
21M7A	028-freq-xxxx ²	21M7ALF	028LF-freq-xxxx ²	
21M7B	029-freq-xxxx ²	21M7BLF	029LF-freq-xxxx ²	
21M7C	030-freq-xxxx ²	21M7CLF	030LF-freq-xxxxx ²	
21M7D	031-freq-xxxxx ²	21M7DLF	031LF-freq-xxxxx ²	
21M12A	016-freq-xxxx ²	21M12ALF	016LF-freq-xxxxx ²	
21M12B	017-freq-xxxx ²	21M12BLF	017LF-freq-xxxxx ²	
21M12C	018-freq-xxxx ²	21M12CLF	018LF-freq-xxxx ²	
21M12D	019-freq-xxxxx ²	21M12DLF	019LF-freq-xxxx ²	
21M15A	020-freq-xxxx ²	21M15ALF	020LF-freq-xxxx ²	
21M15B	021-freq-xxxxx ²	21M15BLF	021LF-freq-xxxx ²	
21M15C	022-freq-xxxx ²	21M15CLF	022LF-freq-xxxx ²	
21M15D	023-freq-xxxx ²	21M15DLF	023LF-freq-xxxx ²	
21M20A	024-freq-xxxxx ²	21M20ALF	024LF-freq-xxxx ²	
21M20B	025-freq-xxxx ²	21M20BLF	025LF-freq-xxxx ²	
21M30A	026-freq-xxxx ²	21M30ALF	026LF-freq-xxxx ²	
21M30B	027-freq-xxxx ²	21M30BLF	027LF-freq-xxxx ²	
45F15A	032-freq-xxxx ²	45F15ALF	032LF-freq-xxxx ²	
45F15B	033-freq-xxxx ²	45F15BLF	033LF-freq-xxxx ²	
45F20A	034-freq-xxxx ²	45F20ALF	034LF-freq-xxxx ²	
45F20B	035-freq-xxxx ²	45F20BLF	035LF-freq-xxxx ²	
45F30A	036-freq-xxxx ²	45F30ALF	036LF-freq-xxxx ²	
45F30B	037-freq-xxxx ²	45F30BLF	037LF-freq-xxxxx ²	
45M15A	038-freq-xxxx ²	45M15ALF	038LF-freq-xxxx ²	
45M15B	039-freq-xxxx ²	45M15BLF	039LF-freq-xxxx ²	
45M20A	040-freq-xxxx ²	45M20ALF	040LF-freq-xxxx ²	
45M20B	041-freq-xxxx ²	45M20BLF	041LF-freq-xxxx ²	
70M15A	042-freq-xxxx ²	70M15ALF	042LF-freq-xxxx ²	
70M15B	043-freq-xxxx ²	70M15BLF	043LF-freq-xxxx ²	
70M20A	044-freq-xxxx ²	70M20ALF	044LF-freq-xxxx ²	
70M20B	045-freq-xxxx ²	70M20BLF	045LF-freq-xxxx ²	