

# Spread Spectrum HCMOS 5x3.2mm 3.3V SMD Oscillator



Model: FSS53 Series

RoHS Compliant / Pb Free

Rev. 12/9/2008

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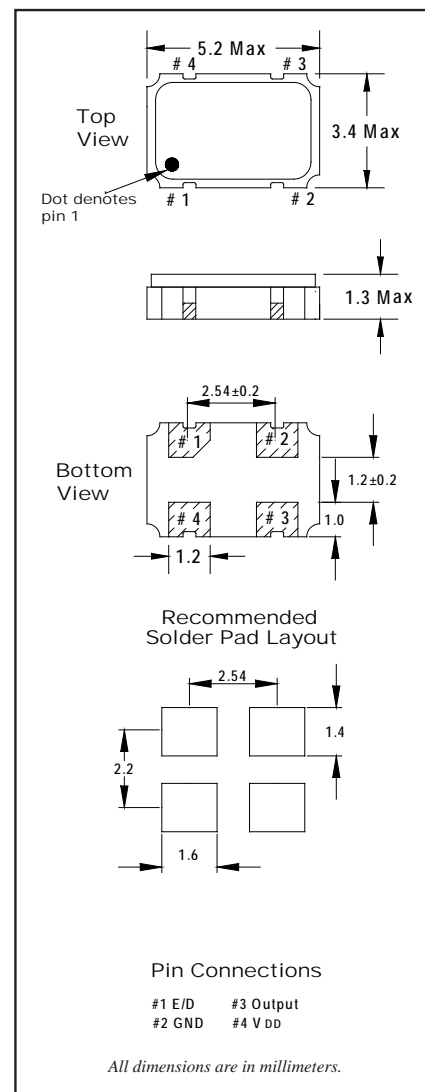
Fox Electronics Spread Spectrum Oscillators use industry-leading, proven, analog technologies which allows them to be used in a wide range of high-performance applications. These products offer various down-spread and center-spread options, enabling the customer to optimize the EMI reduction for their application requirements.

## • ELECTRICAL CHARACTERISTICS

PARAMETERS	MAX (unless otherwise noted)
Frequency Range (Fo)	13.000 ~ 160.000 MHz
Storage Temperature Range (TSTG)	-55°C ~ +125°C
Frequency Stability (demodulated frequency)	±100 PPM <sup>1</sup>
Supply Voltage (VDD)	3.3V ± 10%
Input Current (IDD)	
13.000000 ~ 49.999999 MHz	20mA
50.000000 ~ 79.999999 MHz	25mA
80.000000 ~ 99.999999 MHz	30mA
100.000000 ~ 160.000000 MHz	40mA
Rise Time (10% ~ 90% VDD) (TR)	
13.000000 ~ 49.999999 MHz	10nS
50.000000 ~ 79.999999 MHz	8nS
80.000000 ~ 99.999999 MHz	5nS
100.000000 ~ 160.000000 MHz	4nS
Fall Time (90% ~ 10% VDD) (TF)	
13.000000 ~ 49.999999 MHz	10nS
50.000000 ~ 79.999999 MHz	8nS
80.000000 ~ 99.999999 MHz	5nS
100.000000 ~ 160.000000 MHz	4nS
Output Symmetry (50% VDD)	40% ~ 60%
Output Voltage (HCMOS)	
Output Low (VOL)	10% VDD
Output High (VOH)	90% VDD Min
Output Current (IOL)	8mA Min
(IOH)	-8mA Min
Output Load	15pF
Standby Current (FSS53S)	10µA
Startup Time	10mS
Disable Time	100nS
Enable Time	
FSS53B (Tristate)	2mS
FSS53S (Standby)	10mS
Spread Spectrum Function (See Model Selection Guide, Page 2)	
Center Spread	±0.25% ~ ±2.0%
Down Spread	-0.5% ~ -4.0%
Aging	±3 PPM/Year
Maximum Soldering Temp / Time	260°C / 10 Seconds
Moisture Sensitivity Level (MSL)	1
Termination Finish	Au

<sup>1</sup> Inclusive of initial frequency tolerance and operating temperature range.  
(Other stabilities to ±20 PPM available.)

<sup>2</sup> An internal pullup resistor from pin 1 to pin 4 allows active output if pin 1 is left open.  
Note: 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. The above specifications, having been carefully prepared and checked, are believed to be accurate at the time of publication; however, no responsibility is assumed by Fox Electronics for inaccuracies. All specifications subject to change without notice.



## • ENABLE / DISABLE FUNCTION

INH (Pin 1)	OUTPUT (Pin 3)
OPEN <sup>2</sup>	ACTIVE
'1' Level V <sub>IH</sub> ≥ 70% V <sub>DD</sub>	ACTIVE
'0' Level V <sub>IL</sub> ≤ 30% V <sub>DD</sub>	High Z

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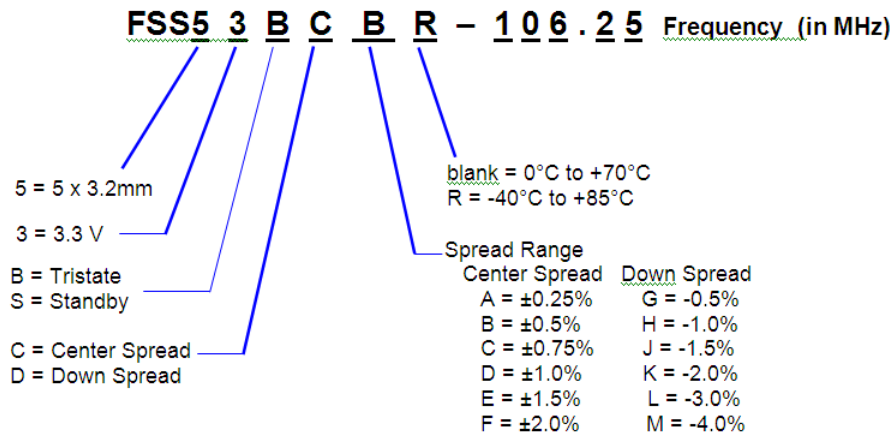
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## Model Selection Guide & Fox Part Number

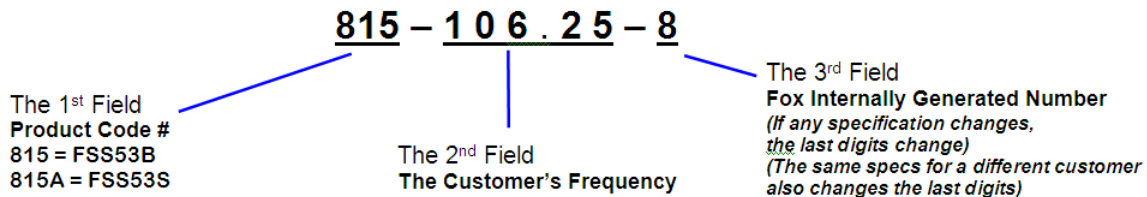
**STEP #1: Customer selects the Model Description and provides to Fox Customer Service**

Model Description



**STEP #2: The Fox Customer Service team provides a customer specific Part Number for use on their Bill Of Materials (BOM).**

Fox Part Number (The assigned Fox Part Number must be on the BOM – not the above Model Description)  
(This will ensure receipt of the proper part)



This example: **FSS53BCBR-106.25** = 5 x 3.2mm Package, 3.3V, Tristate, Center Spread, ±0.5% Modulation Rate, -40 to +85°C Temperature Range, at 106.25 MHz

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## FSS53 Series Marking Identification



\* Year / Month Date Codes

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Code	A	B	C	D	E	F	G	H	J	K	L	M
Month	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Code	A	B	C	D	E	F	G	H	J	K	L	M

### • TAPE SPECIFICATIONS (millimeters)

MODEL	A	B	C	D	E	F	STD Reel QTY
FSS53 Series	∅1.5	4.0	8.0	5.5	12.0	1.4	1,000

### • REEL SPECIFICATIONS (millimeters)

MODEL	G	H	I	J	K	L	M
FSS53 Series	2.0	∅13	∅21	∅62	∅180	12.2	1.6

