RoHS COMPLIANT

ECX-H2 (2.5V) and ECX-H3 (3.3V) low jitter, low current Frequency Configurable SMD crystal controlled oscillators.

ECSpressCON™

ECX-H HCMOS Oscillator

Request a Sample

ECS INC INTERNATIONAL®

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

Parameters	Conditions	ECX-H2 (+2.5V)			ECX-H3 (+3.3V)			Units
		MIN	TYP	MAX	MIN	TYP	MAX	
Frequency Range		10.000		250.00	10.000		250.00	MHz
Operating Temperature	Standard	-10		+70	-10		+70	ºC
	Extended (N Option)	-40		+85	-40		+85	ºC
Storage Temperature		-55		+125	-55		+125	ºC
Supply Voltage		+2.375	+2.5	+2.625	+2.97	+3.3	+3.63	VDC
Frequency Stability *	Option A			±100			±100	ppm
	Option B			±50			±50	ppm
	Option C			±25			±25	ppm
	Option D			±20			±20	ppm
Input Current	10.0 to 50.0 MHz			20			25	mA
	50.1 to 150.0 MHz			25			30	mA
	150.1 to 250 MHz			35			40	mA
Output Symmetry	@ 50% Vcc level			48/52			48/52	%
Aging	@ +25ºC (first year)			±2			±2	ppm
Rise and Fall Times	10% Vdd to 90% level	600		1500	600		1500	ps
"0" Level	VOL			10% Vdd			10% Vdd	VDC
"1" Level	VOH	90% Vdd			90% Vdd			VDC
Output Load	HCMOS			15			15	pF
Output Enable	Pin 1 **	0.7%			0.7%			Vdd
Output Disable	Pin 1			0.3%			0.3%	Vdd
Output Enable Times				200			200	ns
Output Disable Times				50			50	ns
Phase Jitter, rms	12 KHz to 20 MHz		1.0			1.0		pS
ESD Sensitivity	Human Body Model	3 kV Max.						
Absolute Voltage Range				+3.63			+3.63	VDC
Moisture Sensitivity Level		1						
Termination Finish		Au						

*Note: Inclusive of 25^{0}C tolerance, operating temperature, input voltage change, load change, shock and vibration.
**Note: Internal pull-up resistor active output if pin 1 is left open.

Part Numbering Guide

Series	Voltage	Package Size (mm)	Stability	Operating Temperature	Frequency	Packaging
ECX-H (HCMOS Output)	2 = +2.5V 3 = +3.3V	2 = 2.5 x 2 3 = 3.2 x 2.5 5 = 5 x 3.2 7 = 7 x 5	A = ± 100 ppm B = ± 50 ppm C = ± 25 ppm D = ± 20 ppm	L = -10 ~ +70°C M = -20 ~ +70°C N = -40 ~ +85°C P = -40 ~ +105°C	Customer Specified	Blank =(Bulk) -TR=Tape & Reel (1K Min/Mult)

Example: ECX-H35BN-156.250

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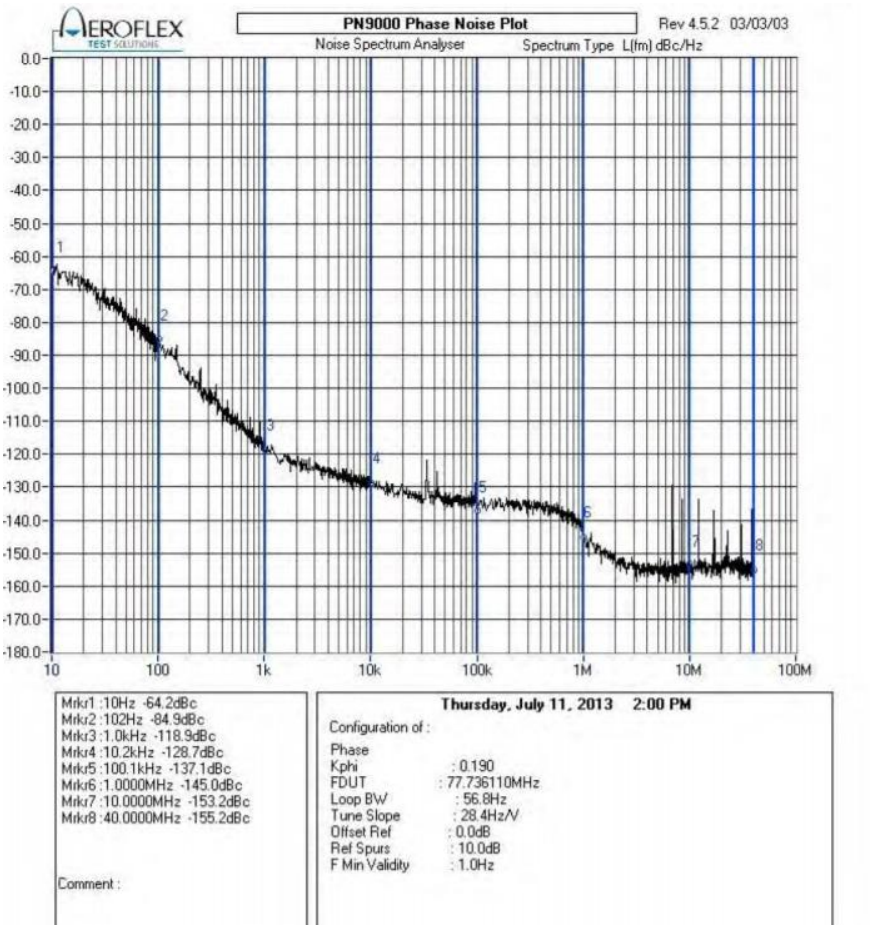
Phase Noise and Jitter Data (typical)

	Frequency (offset)	10.000	20.000	25.000	27.000	40.000	50.000	80.000	155.520	212.500
SSB Phase Noise Data (dBc/Hz typical)	10 Hz	-93.4	-86.2	-85.2	-86.5	-87	-84.4	-87.1	-87.8	-84.7
	100 Hz	-118	-114.2	-110	-108.7	-107.1	-106.8	-103	-95.5	-96
	1 KHz	-135.4	-129.7	-125.6	-125.5	-125.4	-122	-118	-112.4	-109.1
	10 KHz	-140.7	-133.8	-132.3	-134.7	-129.5	-127.1	-120.5	-116.4	-115
	100 KHz	-137.1	-131.2	-130.2	-131.1	-121	-123.9	-119.5	-108.2	-105.7
	1 MHz	-155.9	-153.2	-148.8	-146.1	-145.8	-144.9	-142.7	-136.9	-133.2
	10 MHz						-155	-151.6	-146	-145.8
Phase Jitter pS 12 KHz ~ 20 MHz, RMS		0.94	0.96	0.93	0.94	1.03	0.98	1.13	1.27	1.34

Phase Noise Plot of ECX-H35BM-77.760 (typical)



Package Data	
Item	Description
Lid	Metal
Base	Ceramic
Plating	Gold/Nickel Surface/Under

ECSpressCON™
ECX-H HCMOS Oscillator

Dimensions (mm)

7 = 7x5 Package

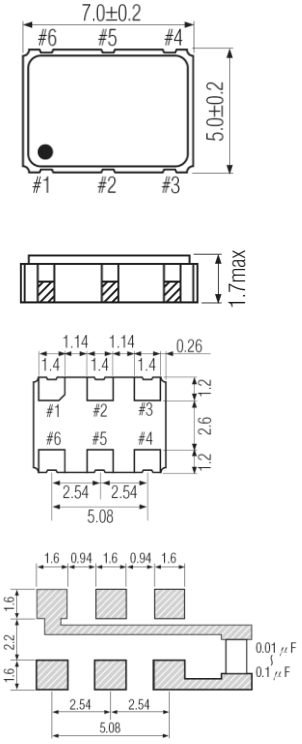


Figure 1) Top, Side, Bottom & Land

5 = 5x3.2 Package

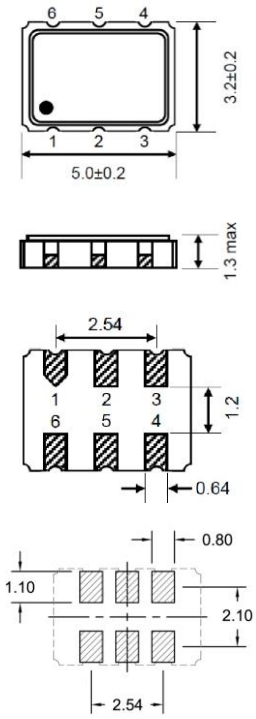


Figure 2) Top, Side, Bottom & Land

3 = 3.2x2.5 Package

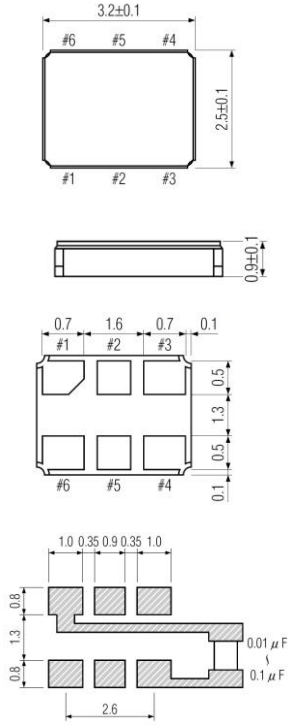


Figure 3) Top, Side, Bottom & Land

2 = 2.5x2 Package

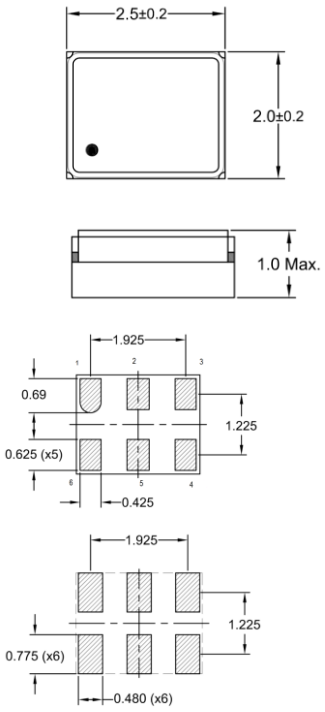
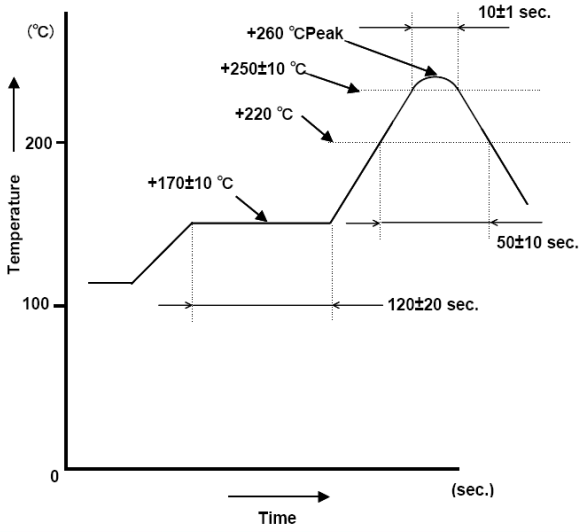


Figure 4) Top, Side, Bottom & Land

Suggested Reflow Profile



Pin Connections	
Pin #	Function
1	O/E or No Connect
2	No Connect
3	Ground
4	Output
5	No Connect
6	Supply Voltage

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ECS:

ECX-H37BN-16.000 ECX-H37BN-62.500 ECX-H37BN-24.576 ECX-H37BN-12.288 ECX-H37BN-14.31818 ECX-H37BN-75.000 ECX-H33BN-20.000 ECX-H33BN-66.666 ECX-H35BN-27.000 ECX-H35BN-200.000 ECX-H35BN-33.000 ECX-H33BN-16.000 ECX-H35BN-100.000 ECX-H33BN-125.000 ECX-H33BN-32.000 ECX-H33BN-33.000 ECX-H33BN-27.000 ECX-H35BN-80.000 ECX-H37BN-25.000 ECX-H37BN-48.000 ECX-H33BN-106.250 ECX-H32BN-125.000 ECX-H35BN-16.000 ECX-H35BN-24.000 ECX-H35BN-32.768 ECX-H33BN-14.31818 ECX-H33BN-33.333 ECX-H35BN-30.000 ECX-H33BN-150.000 ECX-H33BN-156.250 ECX-H33BN-48.000 ECX-H35BN-125.000 ECX-H35BN-14.31818 ECX-H35BN-50.000 ECX-H37BN-32.000 ECX-H33BN-24.000 ECX-H35BN-10.000 ECX-H33CM-12.000 ECX-H37BN-30.000 ECX-H37BN-33.333 ECX-H35BN-25.000 ECX-H32BN-50.000 ECX-H33BN-50.000 ECX-H27BN-25.000 ECX-H37BN-200.000 ECX-H37BN-27.000 ECX-H37BN-155.520 ECX-H37BN-16.384 ECX-H37BN-77.760 ECX-H37CN-100.000 ECX-H37BN-80.000 ECX-H33BN-100.000 ECX-H33BN-24.576 ECX-H35BN-155.520 ECX-H33BN-40.000 ECX-H35BN-20.000 ECX-H37BN-10.000 ECX-H37BN-24.000 ECX-H37BN-12.000 ECX-H37BN-18.432 ECX-H37BN-50.000 ECX-H35BN-48.000 ECX-H35BN-12.288 ECX-H33BN-12.000 ECX-H33BN-25.000 ECX-H33BN-30.000 ECX-H33BN-10.000 ECX-H35BN-40.000 ECX-H37BN-33.000 ECX-H37BN-60.000 ECX-H37BN-40.000 ECX-H37BN-150.000 ECX-H37BN-14.7456 ECX-H37BN-20.000 ECX-H37CM-100.000 ECX-H37BN-32.768 ECX-H37BN-125.000 ECX-H37BN-100.000 ECX-H37BN-106.250 ECX-H35CM-100.000 ECX-H35BM-11.0592 ECX-H35BM-12.288 ECX-H35BM-133.330 ECX-H35BN-101.000 ECX-H35BN-33.330 ECX-H35DM-10.000 ECX-H35AN-33.330 ECX-H35AN-20.000 ECX-H35AN-40.000 ECX-H35AN-48.000 ECX-H35AN-33.000 ECX-H35AM-10.000 ECX-H35AN-45.1584 ECX-H37BM-28.63636 ECX-H35AN-13.500 ECX-H35AM-24.000 ECX-H35AN-66.666 ECX-H35AM-19.6608 ECX-H35AN-10.700 ECX-H35AN-16.000