RoHS COMPLIANT

ECS-P2 (2.5V) and ECS-P3 (3.3V) low jitter, low current Frequency Configurable SMD crystal controlled oscillators.

ECSpressCON™

ECX-P LVPECL Oscillator

Request a Sample

ECS INC INTERNATIONAL®

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

Parameters	Conditions	ECS-P2 (+2.5V)			ECS-P3 (+3.3V)			Units
		MIN	TYP	MAX	MIN	TYP	MAX	
Frequency Range		10.000		1500.0	10.000		1500.0	MHz
Operating Temperature	Standard	0		+70	0		+70	℃
	Extended (N Option)	-40		+85	-40		+85	℃
Storage Temperature		-55		+125	-55		+125	℃
Supply Voltage	V_{DD}	+2.375	+2.5	+2.625	+3.135	+3.3	+3.465	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 ~ 100.0 MHz			46			48	mA
	100.1 ~ 250.0 MHz			48			50	mA
	250.1 ~ 500 MHz			53			55	mA
	500.1 ~ 1500.0 MHz			65			68	mA
Output Symmetry	@ 50% V_{DD} level			48/52			48/52	%
Output Load	Differential							
Output Enable	Pin 1 **	0.7%			0.7%			Vdd
Output Disable	Pin 1			0.3%			0.3%	Vdd
Disable Current			16		16			mA
Output Enable Time				200			200	ns
Output Disable Time	Pin 1 = VIL			50			50	ns
"0" Level	VOL	Vdd-1.85V		Vdd-1.6V	Vdd-1.85V		Vdd-1.6V	V
"1" Level	VOH	Vdd-1.03V		Vdd-0.6V	Vdd-1.03V		Vdd-0.6V	V
Rise and Fall Times	10% V_{DD} to 90% Level	150		250	150		250	ps
Aging	@ +25°C (first year)			±2			±2	PPM
Start-up Time	@ +25°C (first year)			10			10	ms
Phase Jitter, rms	12 KHz to 20 MHz band		1.0			1.0		pS
Absolute Voltage Range				+3.63			+3.63	VDC
Moisture Sensitivity Level		1						
Termination Finish		Au						
ESD Sensitivity	Human Body Model	3kV Max.						

**Note: Inclusive of 25℃ 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: Example ECX-P35BN-156.250

Series	Voltage	Package Size (mm)	Stability	Operating Temperature	Frequency	Packaging
ECX-P (LVPECL 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)

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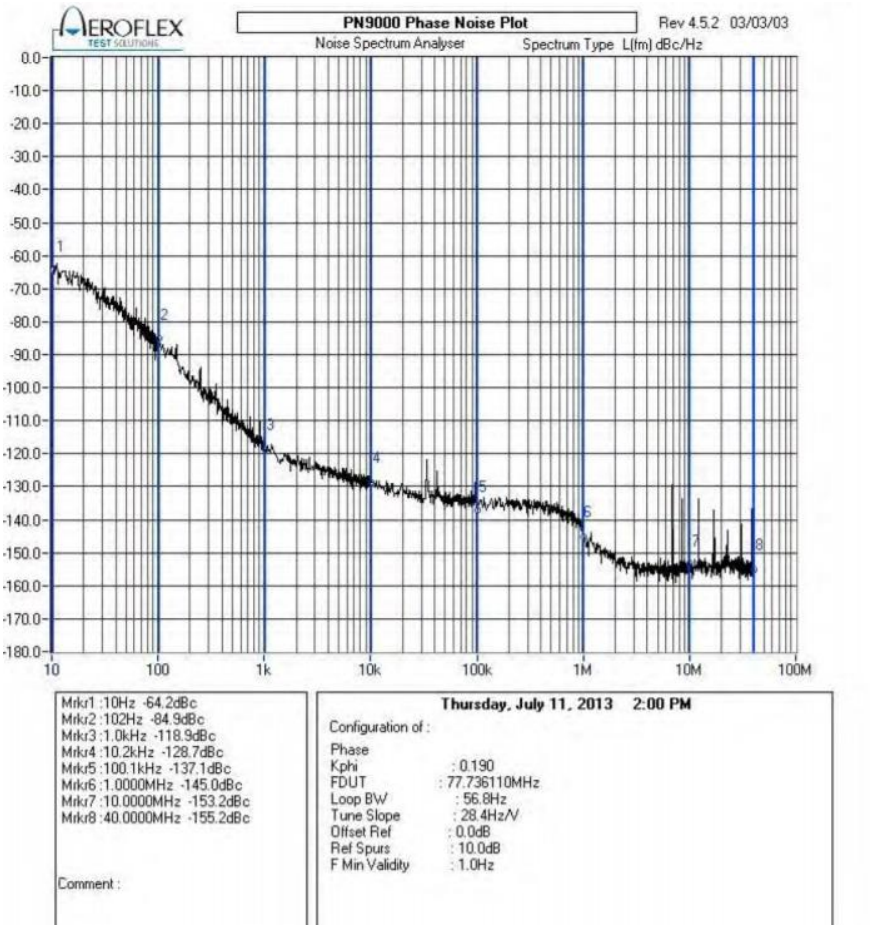
Phase Noise and Jitter Data (typical)

	Frequency (offset)	77.760	122.880	125.000	156.250	212.5	491.520	622.080	1000	1250
SSB Phase Noise Data (dBc/Hz typical)	10 Hz	-64	-68	-63	-55	-62	-61	-48	-52	-42
	100 Hz	-84	-99	-94	-85	-93	-86	-85	-82	-81
	1 KHz	-118	-113	-113	-109	-105	-100	-101	-93	-93
	10 KHz	-128	-119	-118	-116	-113	-105	-102	-97	-96
	100 KHz	-137	-120	-119	-118	-115	-105	-103	-97	-97
	1 MHz	-145	-140	-137	-139	-135	-126	-124	-116	-119
	5 MHz	-152	-142	-146	-146	-143	-137	-133	-127	-129
Phase Jitter pS 12 KHz ~ 20 MHz, RMS		0.9	0.8	1.1	0.9	1.0	1.1	1.2	1.5	1.1

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



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

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Dimensions (mm)

7 = 7x5 Package

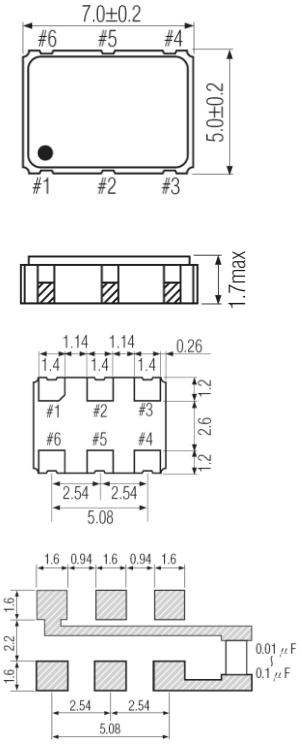


Figure 1) Top, Side, Bottom & Land

5 = 5x3.2 Package

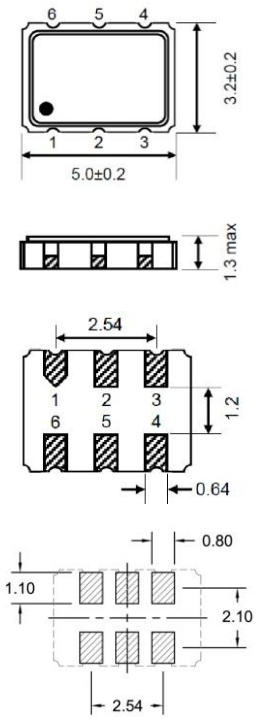


Figure 2) Top, Side, Bottom & Land

3 = 3.2x2.5 Package

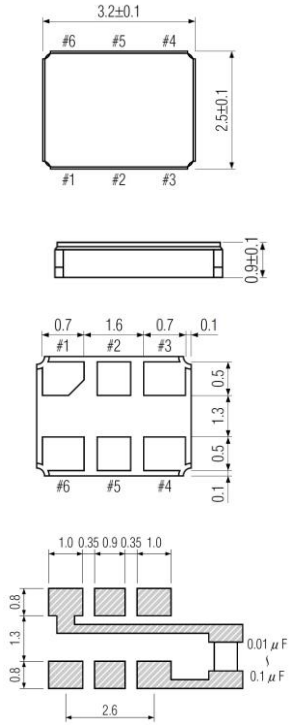


Figure 3) Top, Side, Bottom & Land

2 = 2.5x2 Package

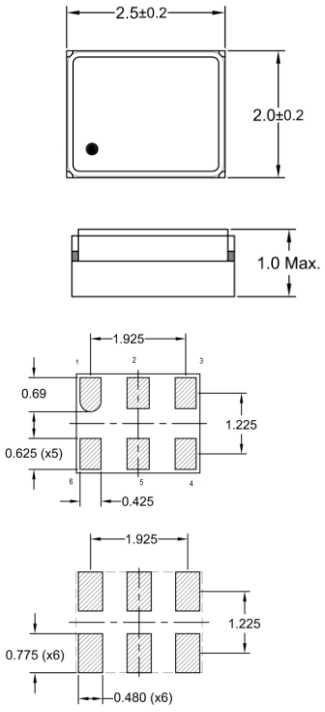
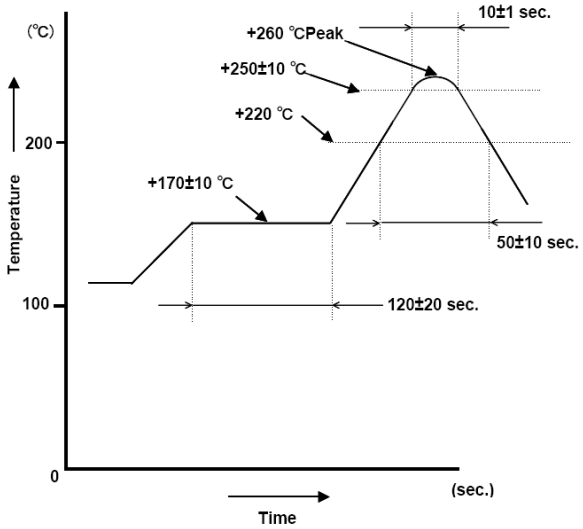


Figure 4) Top, Side, Bottom & Land

Suggested Reflow Profile



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