- Very low RMS jitter
- Short Lead time
- Pb Free/RoHS2 Compliant
- MSL 1
- Peak solder temp +260°C (10 sec)

ECSpressCON™
ECX-H HCMOS OSCILLATOR

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

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECS-H2 (+2.5V)			ECS-H3 (+3.3V)			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
Frequency Range		10.000		250.00	10.000		250.000	MHz
Operating Temperature	Standard	-10		+70	-10		+70	°C
	Extended (N Option)	-40		+85	-40		+85	°C
Storage Temperature		-55		+125	-55		+125	°C
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	@ +25°C (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 Time				200			200	ns
Output Disable Time				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°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.

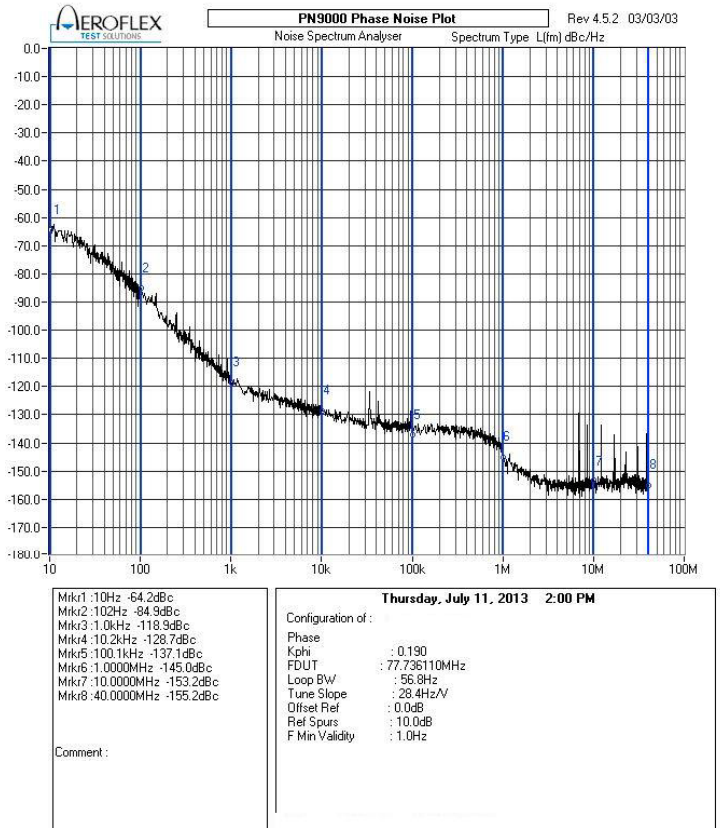
Part Number Guide					
Series	**Voltage**	**Package**	**Stability**	**Operating Temp**	**Frequency**
ECX-H (HCMOS Output)	2 = +2.5V 3 = +3.3V	2 = 2.5 x 2 mm 3 = 3.2 x 2.5 mm 5 = 5 x 3.25 mm 7 = 7 x 5 mm	A = ±100 ppm B = ±50 ppm C = ±25 ppm D = ±20 ppm	L = -10 ~ +70°C M = -20 ~ +70°C N = -40 ~ +85°C P = -40 ~ +105°C	Customer Specified

Example ECX-H35BN-156.250

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

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Dimensions (mm)

7 = 7x5 Package

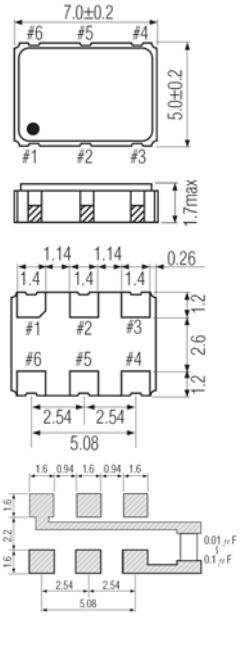


Figure 1) Top, Side, Bottom & Land

5 = 5x3.2 Package

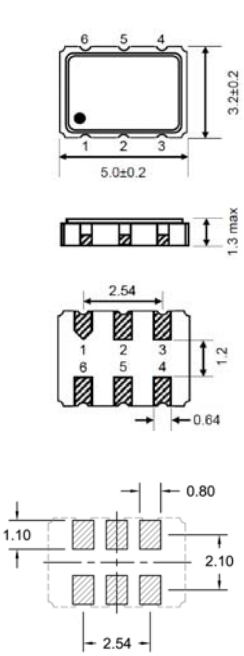


Figure 2) Top, Side, Bottom & Land

3 = 3.2x2.5 Package

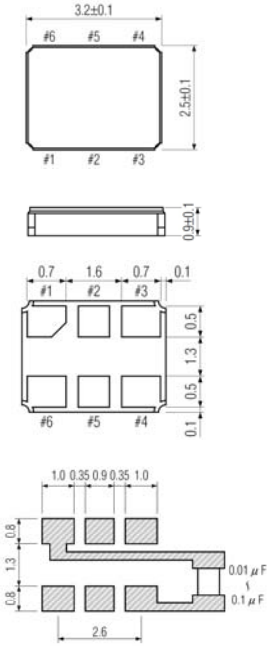


Figure 3) Top, Side, Bottom & Land

2 = 2.5x2 Package

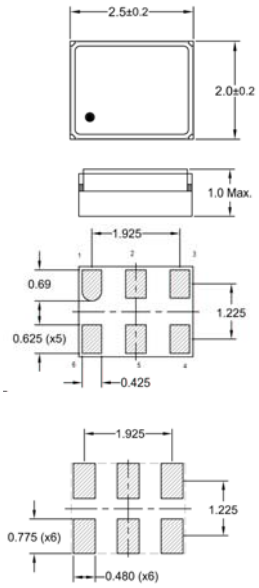
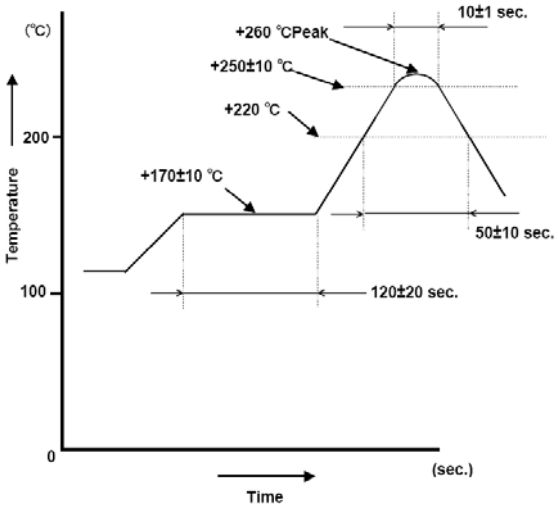


Figure 4) Top, Side, Bottom & Land

Suggested Reflow Profile



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

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