Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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- 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

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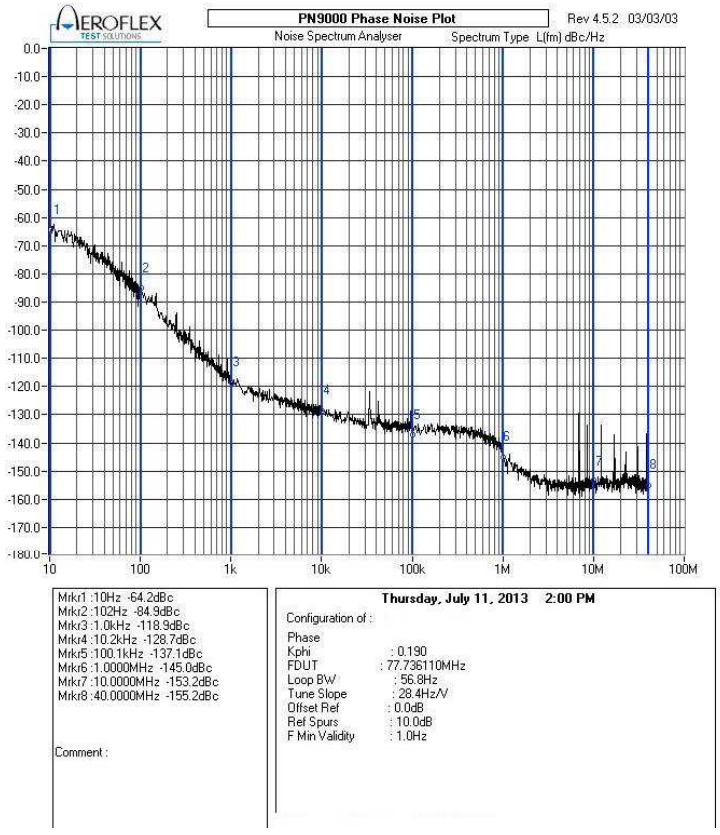
Phase Noise and Jitter Data (typical)

	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

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Dimensions (mm)

7 = 7x5 Package

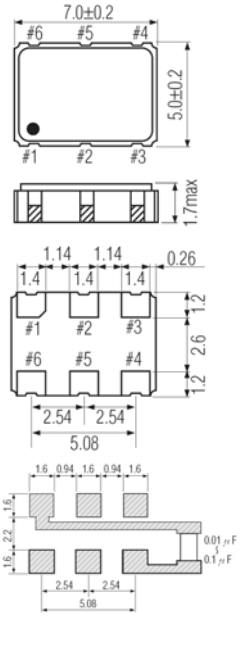


Figure 1) Top, Side, Bottom & Land

5 = 5x3.2 Package

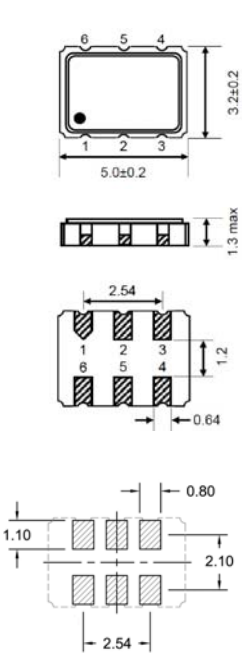


Figure 2) Top, Side, Bottom & Land

3 = 3.2x2.5 Package

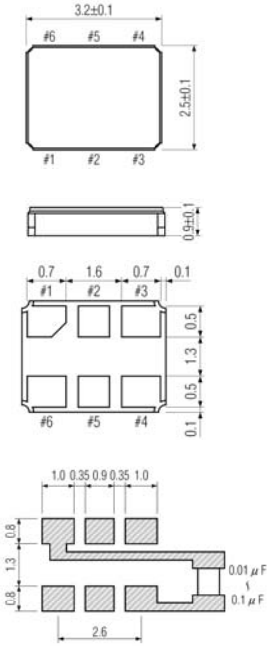


Figure 3) Top, Side, Bottom & Land

2 = 2.5x2 Package

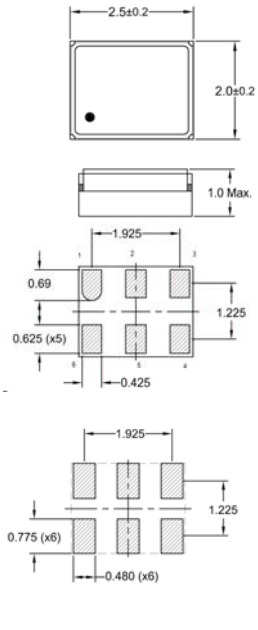
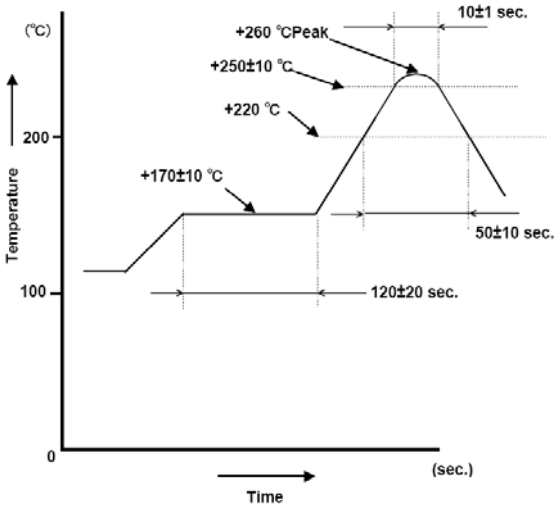


Figure 4) Top, Side, Bottom & Land

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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