



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



ECSpresS^{CON}™

ECX-L LVDS OSCILLATOR

ECX-L2 (2.5V) and ECX-L3 (3.3V) low jitter, low current
Frequency Configurable SMD crystal controlled oscillators.

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-L2 (+2.5V)			ECX-L3 (+3.3V)			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
Frequency Range		10.0		1500.0	10.0		1500.0	MHz
Operating Temperature	Standard	0		+70	0		+70	°C
	Extended (N Option)	-40		+85	-40		+85	°C
Storage Temperature		-55		+125	-55		+125	°C
Supply Voltage	VDD	+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 to 100.0			16			18	mA
	100.1 to 250.0			18			20	mA
	250.1 to 500.0			21			22	mA
	500.1 to 1500.0			26			28	mA
Output Symmetry	@ 50% VDD level			45/55			45/55	%
Output Load	Load between each Output			100			100	Ω
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
Differential Output Voltage		175	350		175	350		mV
Offset Voltage			1.25			1.25		V
Rise and Fall Times	10% VDD to 90% level	150	350	500	150	350	500	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	3 kV Max.						

* Note: Inclusive of +25°C tolerance, operating temperature, input voltage change, load change, shock and vibration.

**Note: Internal pull-up resistor allows active output in pin 1 is left open.

Part Number Guide						
Series	Voltage	Package	Stability	Operating Temperature	-	Frequency (MHz)
ECX-L (LVDS Output)	2 = +2.5V 3 = +3.3V	2 = 2.5 x 2 mm 3 = 3.2 x 2.5 mm 5 = 5 x 3.2 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

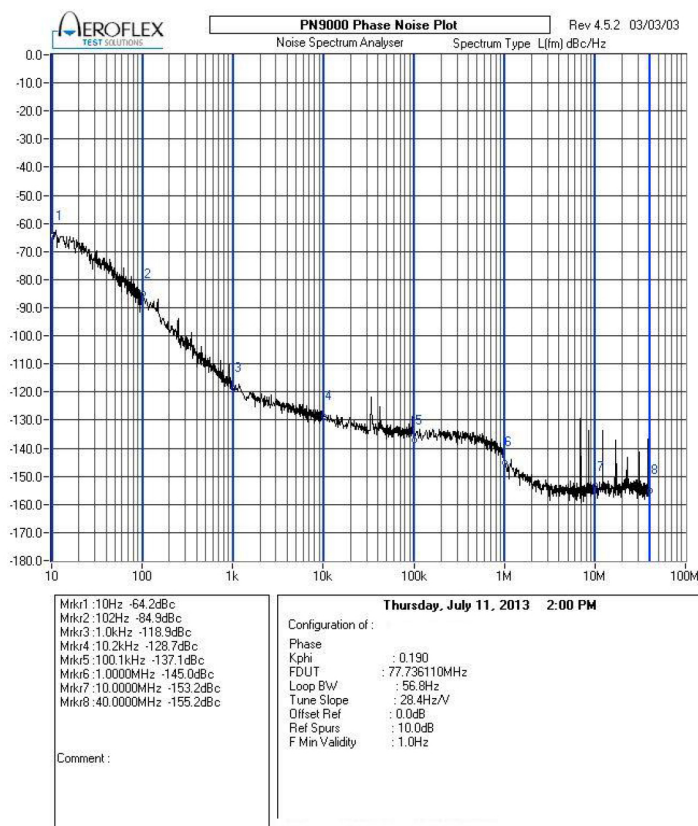
Example ECX-L35BN-156.250



Phase Noise and Jitter Data (typical)

SSB Phase Noise Data (dBc/Hz typical)	Frequency (offset)	77.760	122.880	125.000	156.250	212.5	491.520	622.080	1000	1250
	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-L35BN-77.760 (typical)



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

ECX-L LVDS OSCILLATOR

Dimensions (mm)

7 = 7x5 Package

5 = 5x3.2 Package

3 = 3.2x2.5 Package

2 = 2.5x2 Package

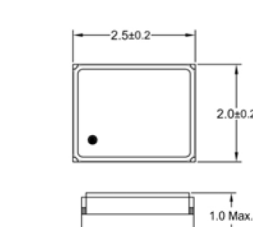
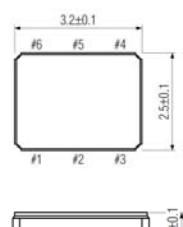
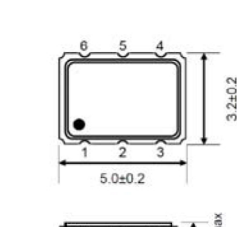
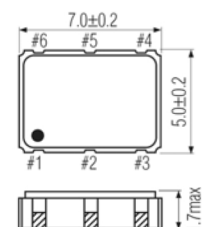


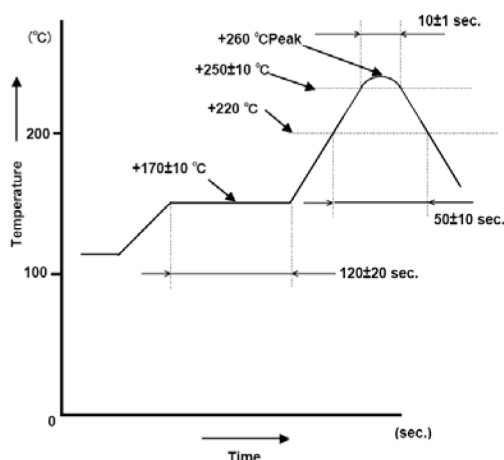
Figure 1) Top, Side, Bottom & Land

Figure 2) Top, Side, Bottom & Land

Figure 3) Top, Side, Bottom & Land

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