

ECX-L32CM-12.000 Datasheet

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DiGi Electronics Part Number	ECX-L32CM-12.000-DG
Manufacturer	ECS Inc.
Manufacturer Product Number	ECX-L32CM-12.000
Description	XTAL OSC XO 12.0000MHZ LVDS SMD
Detailed Description	12 MHz XO (Standard) LVDS Oscillator 3.3V Enable/Disable 6-SMD, No Lead

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Tel: +00 852-30501935

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Manufacturer Product Number:

ECX-L32CM-12.000

Series:

ECX-L ECSpresCON™

Base Resonator:

Crystal

Frequency:

12 MHz

Output:

LVDS

Frequency Stability:

±25ppm

Operating Temperature:

-20°C ~ 70°C

Current - Supply (Max):

18mA

Mounting Type:

Surface Mount

Size / Dimension:

0.098" L x 0.079" W (2.50mm x 2.00mm)

Current - Supply (Disable) (Max):

-

Manufacturer:

ECS Inc.

Product Status:

Active

Type:

XO (Standard)

Function:

Enable/Disable

Voltage - Supply:

3.3V

Absolute Pull Range (APR):

-

Spread Spectrum Bandwidth:

-

Ratings:

-

Package / Case:

6-SMD, No Lead

Height - Seated (Max):

0.039" (1.00mm)

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8542.39.0001

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99



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

ECSpresCON™

ECX-L LVDS Oscillator

Request a Sample



OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

Parameters	Conditions	ECX-L2 (+2.5V)			ECX-L3 (+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	°C
	Extended (N Option)	-40		+85	-40		+85	°C
Storage Temperature		-55		+125	-55		+125	°C
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			16			18	mA
	100.1 ~ 250.0 MHz			18			20	mA
	250.1 ~ 500 MHz			21			22	mA
	500.1 ~ 1500.0 MHz			26			28	mA
Output Symmetry	@ 50% V _{DD} 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% V _{DD} 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
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°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: Example ECX-L35BN-156.250

Series	Voltage	Package Size (mm)	Stability	Operating Temperature	Frequency	Packaging
ECX-L (LVDS 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)



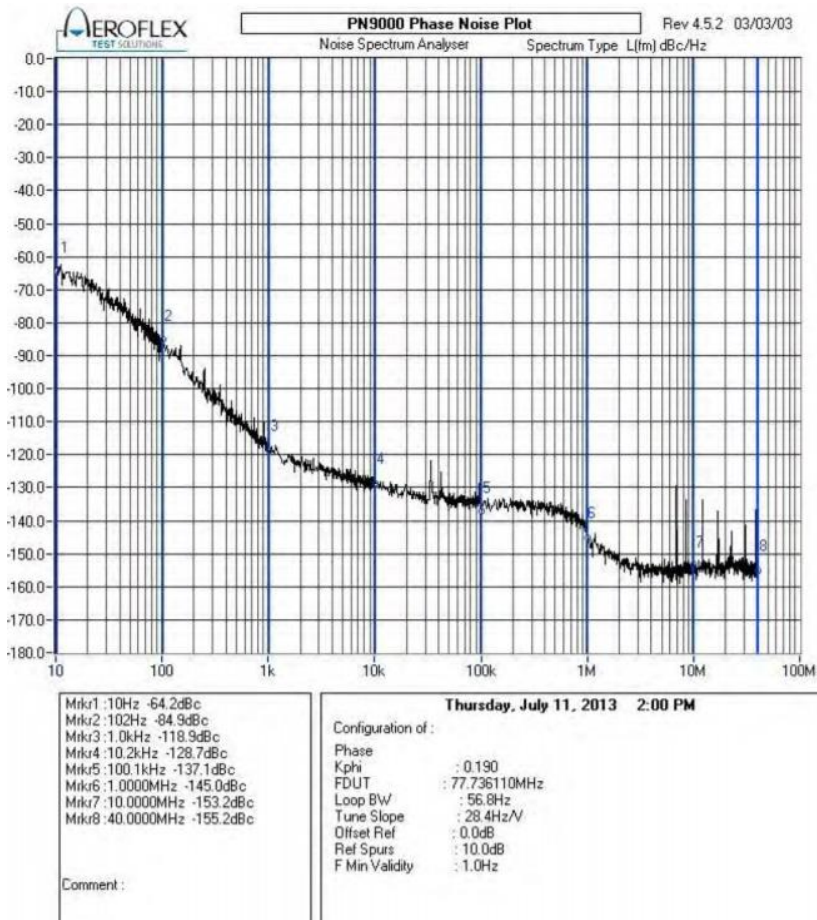
ECSpresCON™ ECX-L LVDS Oscillator



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

ECSpresCON™

ECX-L LVDS Oscillator

Dimensions (mm)

7 = 7x5 Package

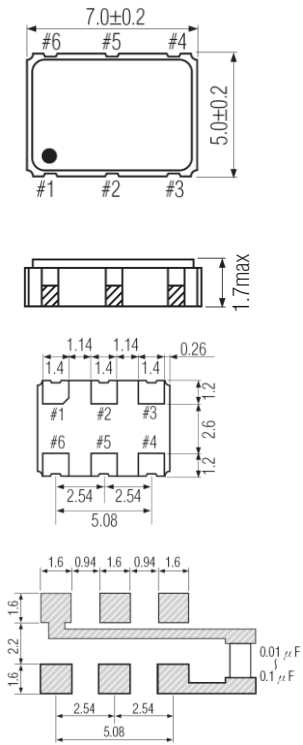


Figure 1) Top, Side, Bottom & Land

5 = 5x3.2 Package

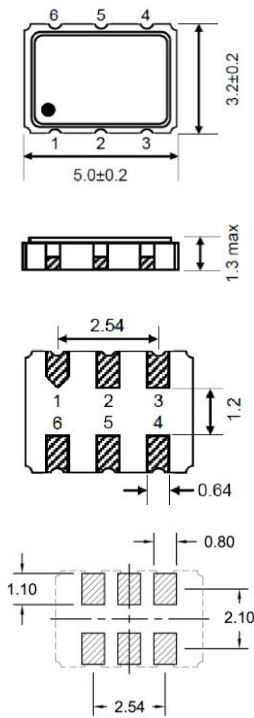


Figure 2) Top, Side, Bottom & Land

3 = 3.2x2.5 Package

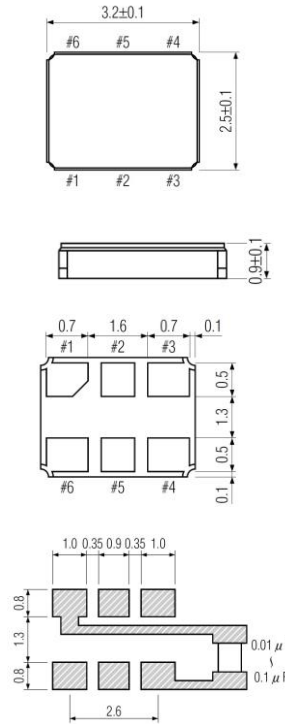


Figure 3) Top, Side, Bottom & Land

2 = 2.5x2 Package

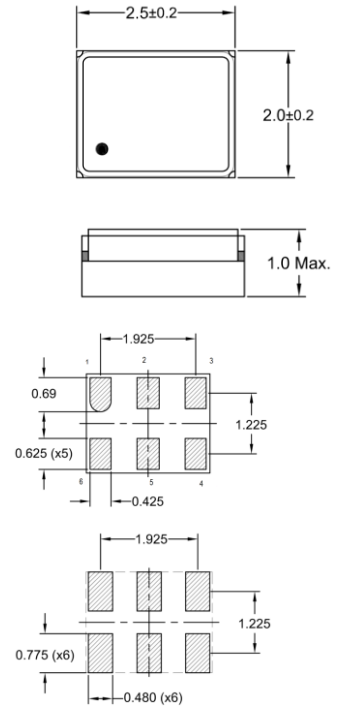
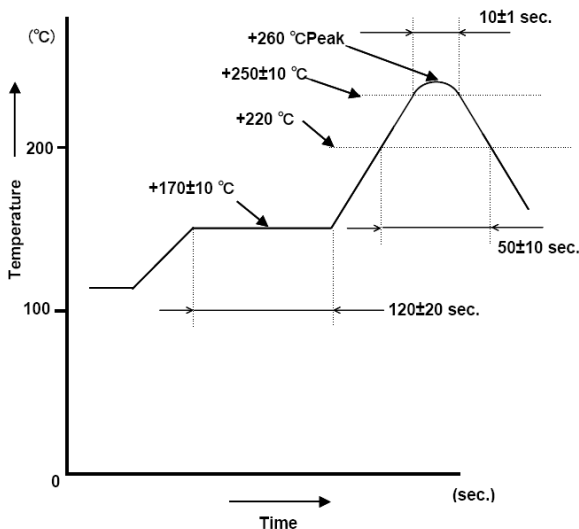


Figure 4) Top, Side, Bottom & Land

Suggested Reflow Profile



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

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