

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.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



### Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China











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

# ECSpressCON<sup>TM</sup> ECX-P LVPECL OSCILLATOR

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

#### **OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS**

DADAMETERO	CONDITIONS	ECX-P2 (+2.5V)			ECX-P3 (+3.3V)			UNITS	
PARAMETERS	CONDITIONS	MIN	MIN TYP MAX M		MIN	TYP	MAX	UNITS	
Frequency Range		10.0		1500.0	10.0		1500.0	MHz	
Operating Temperature	Standard	0		+70	0		+70	°C	
Operating reinperature	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	
	Option A			± 100			± 100	ppm	
Frequency Stability *	Option B			± 50			± 50	ppm	
Frequency Stability	Option C			± 25			± 25	ppm	
	Option D			± 20			± 20	ppm	
	10.0 to 100.0			46			48	mA	
Input Current	100.1 to 250.0			48			50	mA	
I input current	250.1 to 500.0			53			55	mA	
	500.1 to 1500.0			65			68	mA	
Output Symmetry	@ 50% VDD 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	<b>V</b> dd-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% VDD 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	3 kV Max.							

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

<sup>\*\*</sup>Note: Internal pull-up resistor allows active output in pin 1 is left open.

Part Number Guide						
Series	Voltage	Package	Stability	Operating Temperature	-	Frequency
ECX-P (LVPEL Output)	2 = +2.5V 3 = +3.3V	3 = 3.2 x 2.5 mm 5 = 5 x 3.2 mm	B = ±50 ppm C = ±25 ppm	L = -10 ~ +70°C M = -20 ~ +70°C N = -40 ~ +85°C P = -40 ~ +85°C	-	Customer Specified

Example ECX-P35BN-156.250



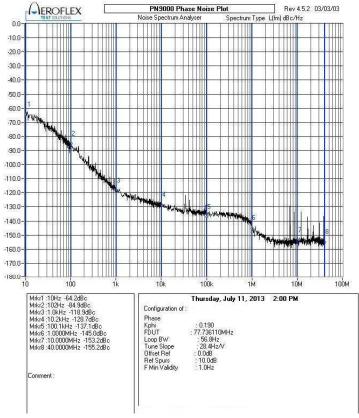


# ECSpressCON TM ECX-P LVPECL OSCILLATOR

### Phase Noise and Jitter Data (typical)

SSB	Frequency (offset)	77.760	122.880	125.000	156.250	212.5	491.520	622.080	1000	1250
Phase	10 Hz	-64	-68	-63	-55	-62	-61	-48	-52	-42
Noise	100 Hz	-84	-99	-94	-85	-93	-86	-85	-82	-81
Data	1 KHz	-118	-113	-113	-109	-105	-100	-101	-93	-93
(dBc/Hz	10 KHz	-128	-119	-118	-116	-113	-105	-102	-97	-96
typical)	100 KHz	-137	-120	-119	-118	-115	-105	-103	-97	-97
typicai)	1 MHz	-145	-140	-137	-139	-135	-126	-124	-116	-119
	5 MHz	-152	-142	-146	-146	-143	-137	-133	-127	-129
	se Jitter pS ~ 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-P35BN-77.760 (typical)



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

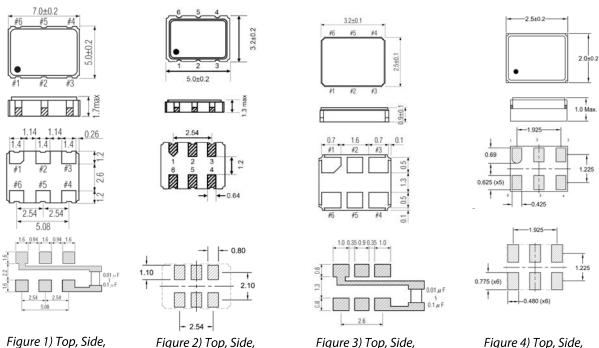


## **ECSpressCON**<sup>TM</sup>

### **ECX-P LVPECL OSCILLATOR**

### **Dimensions (mm)**

#### 7 = 7x5 Package 5 = 5x3.2 Package 3 = 3.2x2.5 Package 2 = 2.5x2 Package



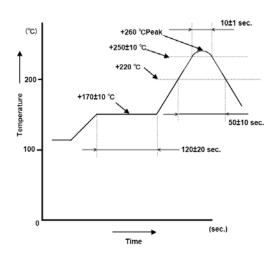
Bottom & Land

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				