

The ECX2-LMV is SMD LVDS Oscillator with MultiVolt™ capability of 2.375 ~ 3.63 V. Lowest in-class jitter 50 fs at 156.250 MHz.

[Request a Sample](#)

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS



PARAMETERS	CONDITIONS	ECX2-LMV			UNITS
		MIN	TYP	MAX	
Frequency Range		100.000		320.000	MHz
* Frequency Stability	-40 ~ +85°C (CN Opt)			±25	ppm
Supply Voltage		2.375		3.63	V
Input Current	Pin 1 Open or ViH			24	mA
Stand-by Current	Pin 1 ViL			30	µA
Symmetry	@ crossing point		45/55		%
Rise & Fall time	20% Vdd – 80% Vdd			0.3	nS
“0” Level	VOL	0.9	+1.10		V
“1” Level	VOH		+1.43	+1.6	V
Output Load	LVDS			100	Ω
Differential Output Voltage		0.247	0.33	0.454	mV
Differential Output error				50	mV
Output offset voltage		0.247	0.33	0.454	mV
Output offset error				50	mV
Start Up Time				10	mS
Disable delay time				200	ns
Enable delay time				2	ms
Aging	1 st year			±5	ppm
RMS Jitter (12 kHz to 20 MHz Band)	@ 156.25 MHz 3.3V		50		fs
Operating Temp*	(N Opt)	-40		+85	°C
Storage Temp		-55		+125	°C

Features

- Ultra-low jitter: 50 fs at 156.25 MHz
- RoHS Compliant
- Tight Stability
- Wide Supply Voltage
- Compatible with +2.5V or +3.3V Power Supply
- Low Power consumption

Applications

- Networking & communications
- Optical Transceivers
- Fibre Channel
- Ethernet/Gbe/SyncE
- PON
- Test and measurement

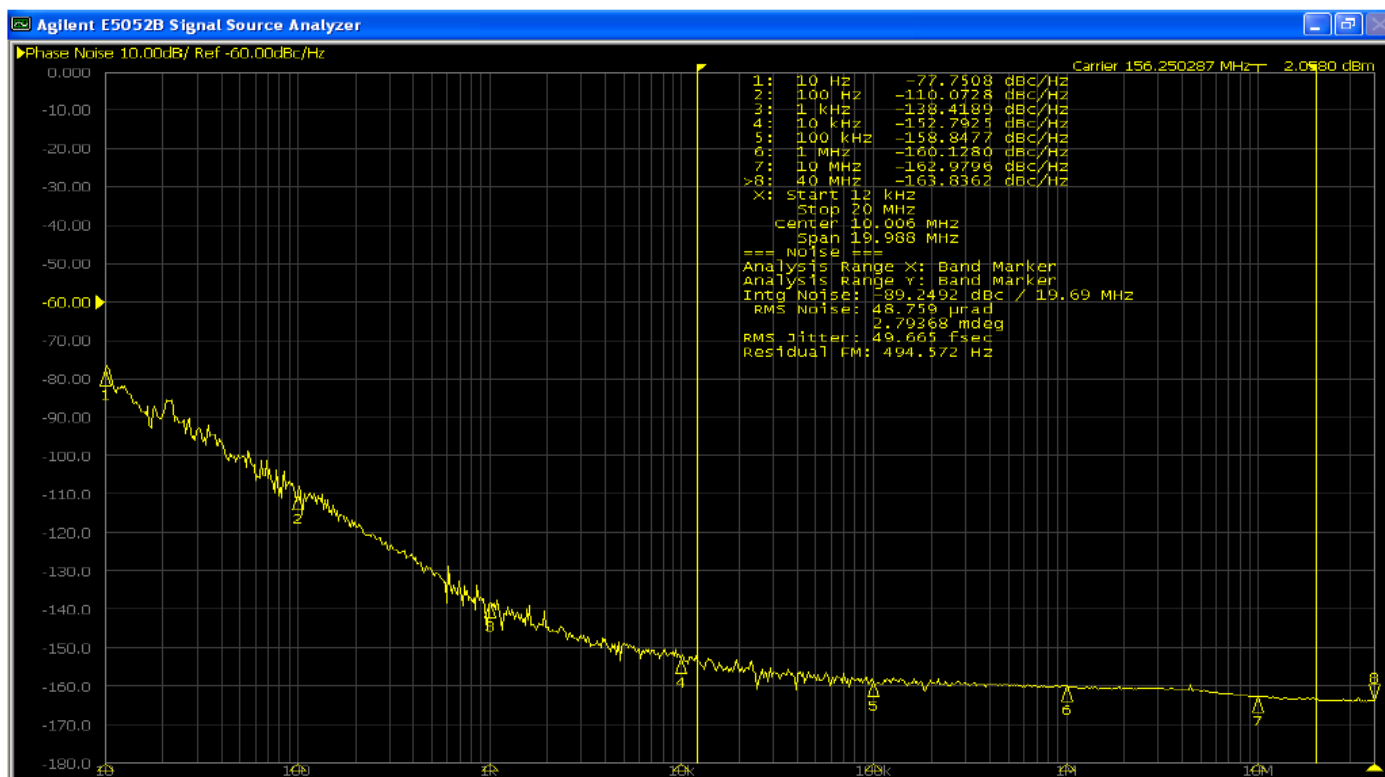
PART NUMBERING GUIDE: Example ECX2-LMV-3CN-156.250-TR

SERIES	-	Package Size (mm)	Stability	-	Temp Range	Frequency	-	PACKAGING
ECX2-LMV LVDS, Ultra Low Jitter MultiVolt™ Oscillator		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		M = -20 ~ +70°C N = -40 ~ +85°C	156.250 MHz		-TR = Tape & Reel

* Frequency Stability includes initial tolerance, temperature, supply voltage and load change reflow frequency shift.

** Contact ECS for availability over -40 ~ +85°C.

Typical Phase noise/Jitter



	Frequency (offset)	100.000	125.000	156.250	200.000	285.714	312.500
SSB Phase Noise Data (dBc/Hz typical)	10 Hz	-89.3	-76.7	-77.7	-74.0	-52.57	-45.2
	100 Hz	-118.2	-106.7	-110.0	-103.8	-84.2	-80.2
	1 KHz	-140.3	-135.6	-138.4	-130.7	-118.6	-112.7
	10 KHz	-154.2	-153.5	-152.7	-150.0	-146.4	-142.5
	100 KHz	-160.0	-159.7	-158.8	-158.4	-156.1	-153.8
	1 MHz	-162.6	-162.6	-160.1	-162.6	-160.5	-158.3
	10 MHz	-163.0	-163.0	-162.9	-163.9	-161.9	-159.4
	20 MHz	-163.2	-163.3	-163.8	-164.0	-162.3	-159.7
RMS Phase Jitter 12 KHz ~ 20 MHz		70.9 fs	56.9 fs	49.6 fs	33 fs	29.1 fs	35.2 fs

Table 1) Typical Phase Noise/Jitter

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SMD MultiVolt™ LVDS, low jitter
Crystal Oscillator



DIMENSIONS (mm)

3 = 3.2 x 2.5 Pkg

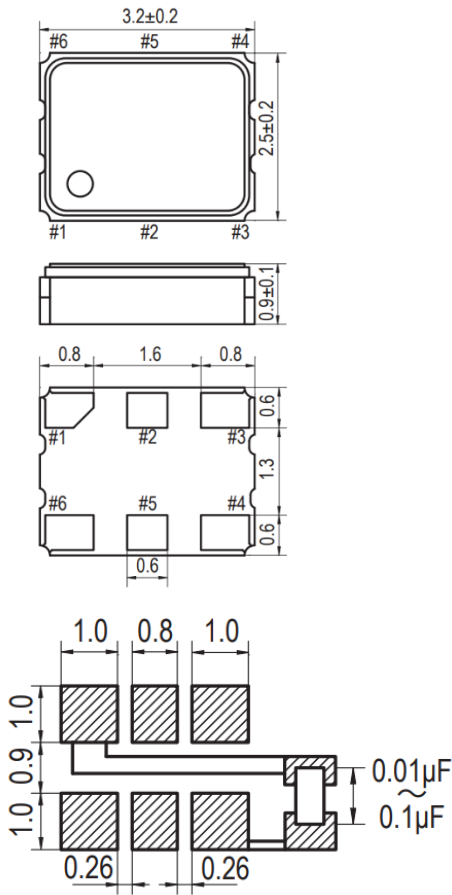


Figure 1) Top, Side,
Bottom & Land

5 = 5 x 3.2 Pkg

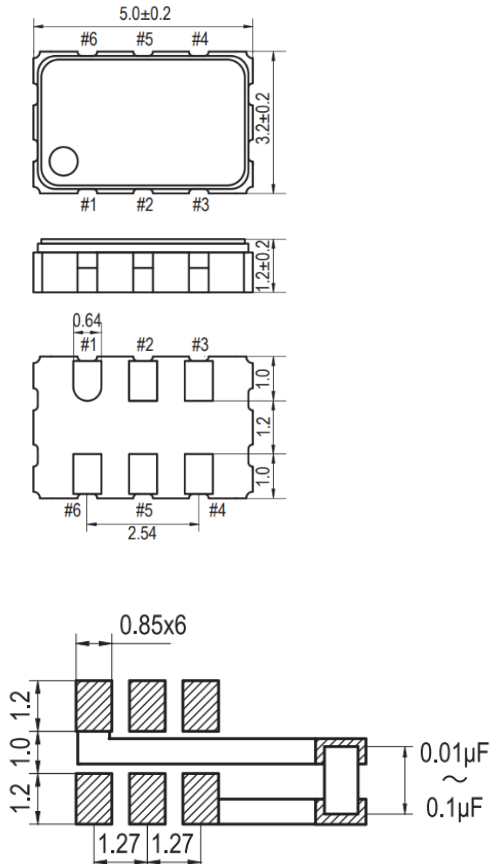


Figure 2) Top, Side,
Bottom & Land

7 = 7 x 5 Pkg

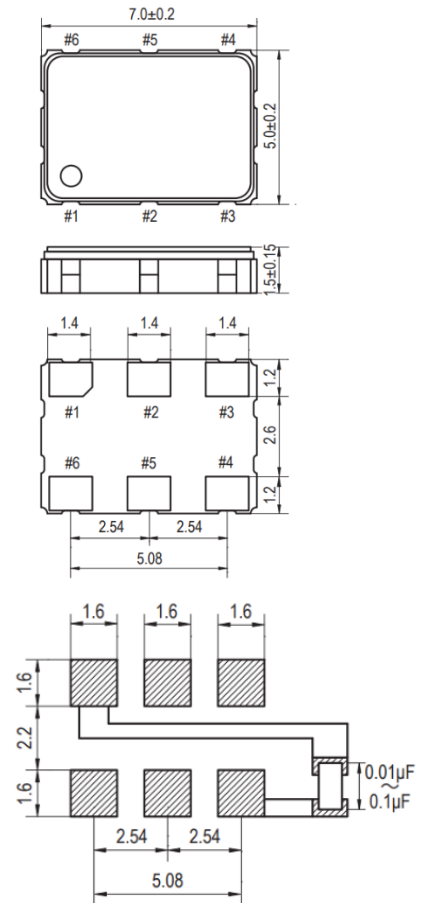


Figure 3) Top, Side,
Bottom & Land

PIN	CONNECTIONS	
1	"L"	OPEN or "H"
2		NC
3		Gnd
4	Z	OUTPUT
5	Z	C-OUTPUT
6		VDD

Z : High Impedance

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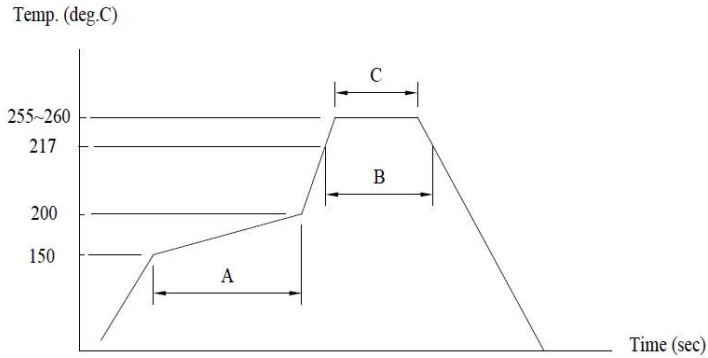


SOLDER PROFILE

Peak solder Temp +260°C ±5°C 10 ±5 Sec Max.
2 Cycles Max.
MSL 1, Lead Finish Au

Develop Frequencies

100.000 MHz
125.000 MHz
156.250 MHz
200.000 MHz
285.714 MHz
312.500 MHz

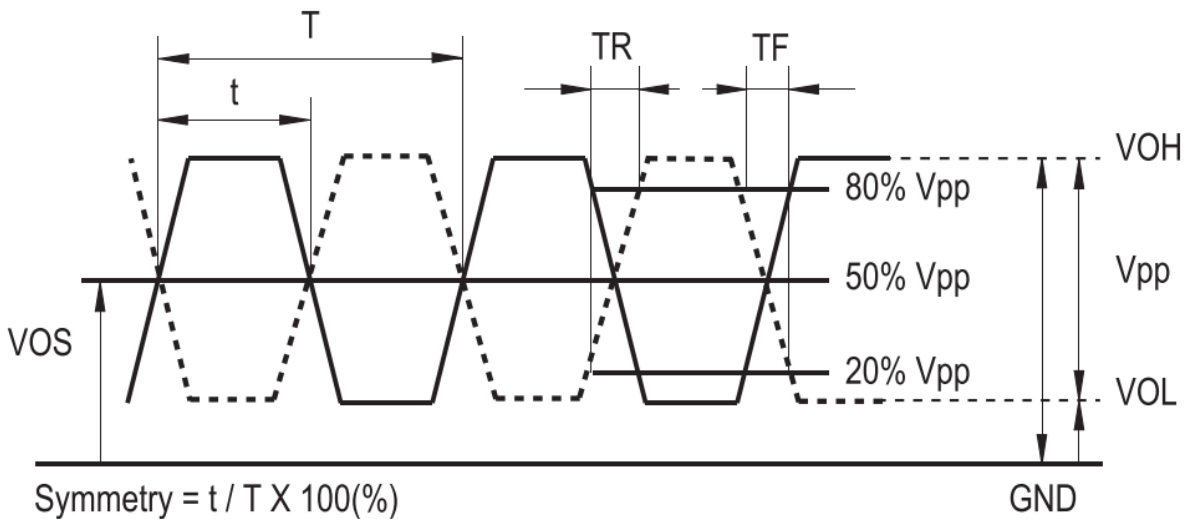


- (A)→Preheating area : 150~200°C, 60~120sec.
 (B)→Heating area : 217°C, 60~150sec.
 (C)→Peak temperature : 255~260°C, 30sec. Max.
 Ramp-up rate (217→260°C) : 3°C/sec. Max.
 Ramp-down rate (260→217°C) : 6°C/sec. Max.
 Time 25°C→260°C : 480sec. Max.

*Reference JEDEC J-STD-020

Figure 4) Suggested Reflow Profile

OUTPUT WAVEFORM

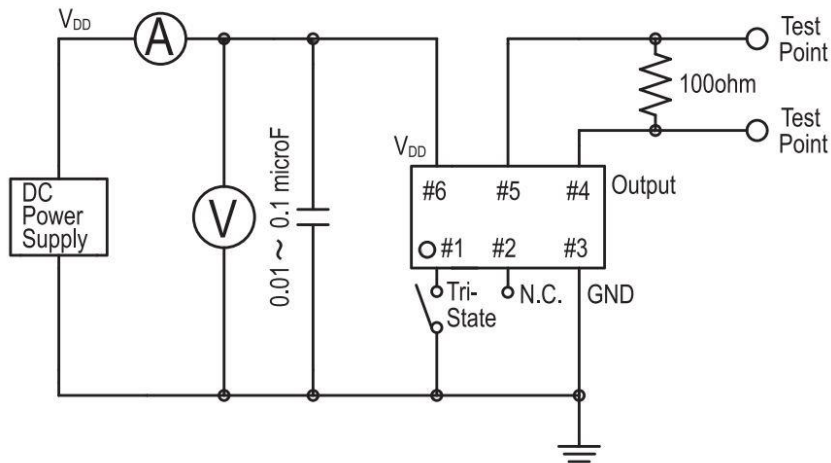


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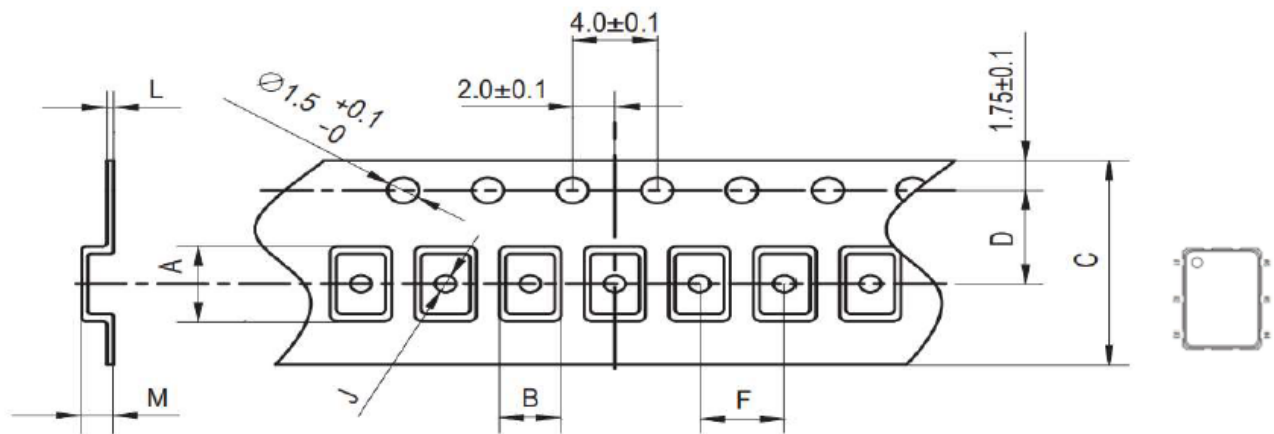
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TEST CIRCUIT



POCKET TAPE DIMENSIONS (mm)



Pkg	A	B	C	D	F	J	L	M	Reel Dia
3.2 x 2.5	3.5	2.8	8.0	3.5	4.0	1.0	0.25	1.4	180 mm
5 x 3.2	5.4	3.5	12.0	5.5	8.0	1.5	0.30	1.4	180 mm
7 x 5	7.4	5.4	16.0	7.5	8.0	1.5	0.30	1.9	180 mm