



- ▶ Low Current 1.5 μ A
- ▶ 4 x 2.5 mm Footprint
- ▶ 1.3 to 5.5V
- ▶ Pb Free/RoHS Compliant
- ▶ -40 ~ +85°C Operating Temp

ECS-327KO

SMD CLOCK OSCILLATOR

ECS-327KO 32.768 KHz low power CMOS subminiature SMD oscillator. Ideal for today's high density low power applications.

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECS-327KO			UNITS
		MIN	TYP	MAX	
Frequency			32.768		KHz
Frequency Tolerance	VDD = +3.3V at +25°C	-10		+30	ppm
Frequency Stability	-20 ~ +70°C	-100		+30	ppm
	-40 ~ +85°C	-200		+30	ppm
Operating Temperature		-40		+85	°C
Storage Temperature		-55		+125	°C
Input Voltage		+3.0	+3.3	\pm 3.6	VDC
Absolute Supply Voltage		+1.3		+5.5	VDC
Input Current (-40~ +85°C)	at VDD=+3.3V, no load		1	1.5	μ A
Standby Current (at +25°C)	No Load			200	nA
Output Symmetry	@ 50% VDD CL 15 pF @+25°C	40/60		60/40	%
Rise and Fall Times	CL 15 pF @+25°C (10% to 90% VDD)			200	ns
"0" level (VOL)	CL 15 pF @ +25°C			+0.4	VDC
"1" level (VOH)	CL 15 pF @ +25°C	VDD-0.4V			VDC
Output Load	CMOS			15	pF
Disable delay time				100	nS
Enable delay time	VDD = +3.3V @ +25°C			3	S
Startup time	VDD = +3.3V @ +25°C			3	S
Aging (first year)	@ +25°C \pm 3°C			\pm 5	ppm

DIMENSIONS (mm)

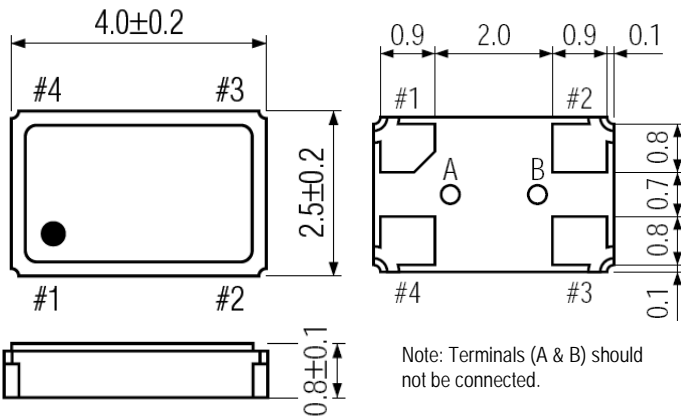


Figure 1) Top, Side and Bottom views

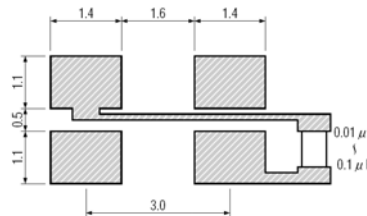


Figure 2) Suggested Land Pattern

Pin Connections

Pin #1	Tri-State
Pin #2	Ground
Pin #3	Output
Pin #4	VDD

Tri-State Control Voltage

Pad 1	Pad 3
Open	Oscillation
V _{IH} 90% VDD Min	Oscillation
V _{IL} 10% VDD Max	High Impedance

Note: Internal crystal oscillation to be halted (Pin #1=VIL)

PART NUMBER: ECS-327KO-TR

ECS - Series - Packaging

ECS-327KO

TR = Tape & Reel
1K/Reel

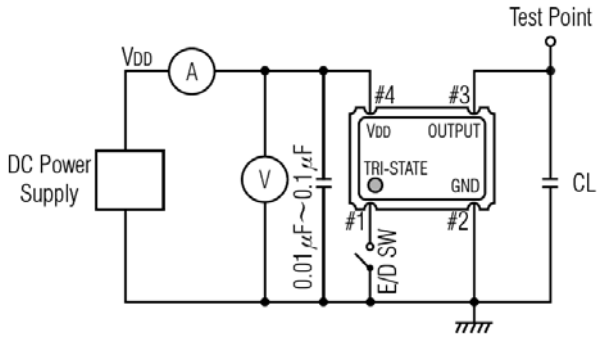


Figure 1) Test Circuit

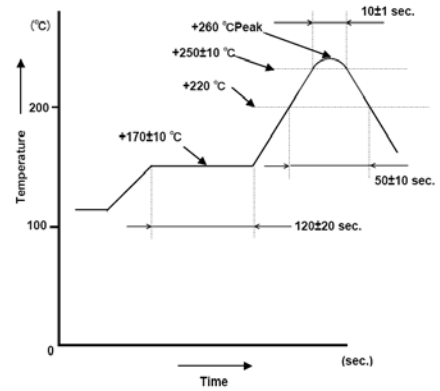
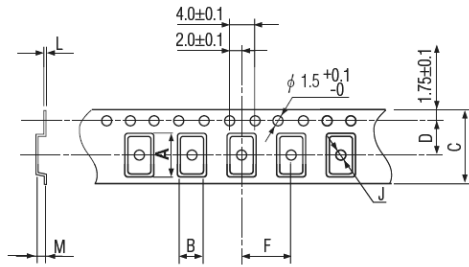


Figure 3) Suggested Reflow Profile



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
4.4	2.9	12.0	5.5	4.0	1.5	0.3	1.2	180	1000pcs

Figure 2) Pocket Tape Dimensions

Package Data	
Item	Description
Lid	Metal
Base	Ceramic
Sealing	AuSn
Terminal	Tungsten (metallized)
Plating	Gold/Nickel (Surface)/(Under)
RoHS	Compliant (Pb Free)