

The ECS-327ATQMV is a miniature 32.768 kHz SMD AEC-Q200 Qualified HCMOS Oscillator with MultiVolt™ capability of 1.62 ~ 3.63 V. The 3.2 x 2.5 x 0.9 mm ceramic package is ideal for Low Power/Portable, Industrial, and IoT applications.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS



- 3.2 x 2.5 mm Footprint
- AEC-Q200 Qualified
- AT Strip Crystal for tighter stability
- MultiVolt™ Wide Supply Voltage
- Compatible with 1.8V, 2.5V or 3.3V Power Supply

PARAMETERS	CONDITIONS	ECS-327ATQMV			UNITS
		MIN	TYP	MAX	
Frequency Range			32.768		kHz
* Frequency Stability	-40 ~ +125°C (AS Opt.)			±100	ppm
Supply Voltage		1.62		3.63	V
Output Load	CMOS			15	pF
Output voltage Level	VOL: 10% Vdd max. / VOH: 90% Vdd min. V DC				
Current Consumption				0.2	mA
Standby Current				20	µA
Rise & Fall time	10% Vdd – 90% Vdd			100	ns
Start Up Time	@ 90% Vdd			10	mS
Duty Cycle	@ ½ Vdd			45/55	%
Operating Temp*		-40		+125	°C
Storage Temp		-55		+125	°C

### DIMENSIONS (mm)

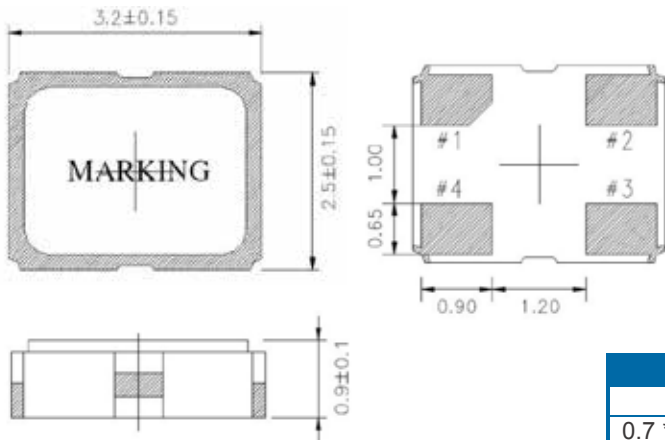


Figure 1) Top, Side, and Bottom views

PAD CONNECTIONS	
1	Tri-state or NC
2	Gnd
3	Output
4	Vdd

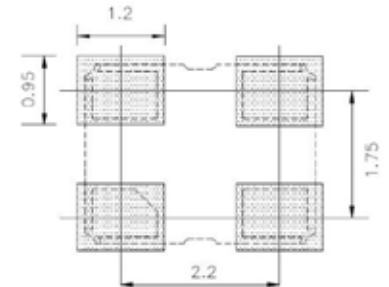


Figure 2) Suggested Land Pattern

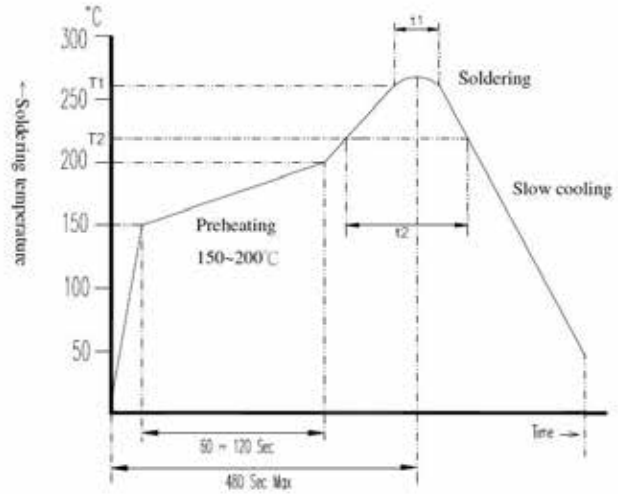
Tri State Function	
Pin 1	Output
0.7 * Vdd Min or NC	Active
0.3 * Vdd Max.	High Impedance

### PART NUMBERING GUIDE: Example ECS-327ATQMV-AS-TR

ECS	SERIES	* STABILITY	TEMP RANGE	PACKAGING
ECS	327ATQMV 3.2 x 2.5 mm 32.768 KHz AEC-Q200 Qualified MultiVolt™ Oscillator	A = ±100 ppm	S = -40 ~ +125°C	TR = Tape & Reel 3K/Reel

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

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



Application / Temperature Time	T1 / t1	T2 / t2
Lead Free	260 ± 5°C / 10 ± 5 Sec Max.	217°C Min / 60 ~ 150 Sec
Non-Lead Free	260 ± 5°C / 10 ± 5 Sec Max.	183°C Min / 60 ~ 150 Sec

Figure 3) Suggested Reflow Profile

**POCKET TAPE DIMENSIONS (mm)**

