

The ECS-327ATQ2016MV is a miniature 32.768 kHz SMD AEC-Q200 Qualified HCMOS Oscillator with MultiVolt™ capability of 1.62 ~ 3.63 V. The 2.0 x 1.6 x 0.85 mm ceramic package is ideal for Low Power/Portable, Industrial, and IoT applications.

[Request a Sample](#)

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS



- 2.0 x 1.6 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-327ATQ2016MV			UNITS
		MIN	TYP	MAX	
Frequency Range			32.768		kHz
* Frequency Stability	-40 ~ +125°C (BS Opt.)			±50	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)

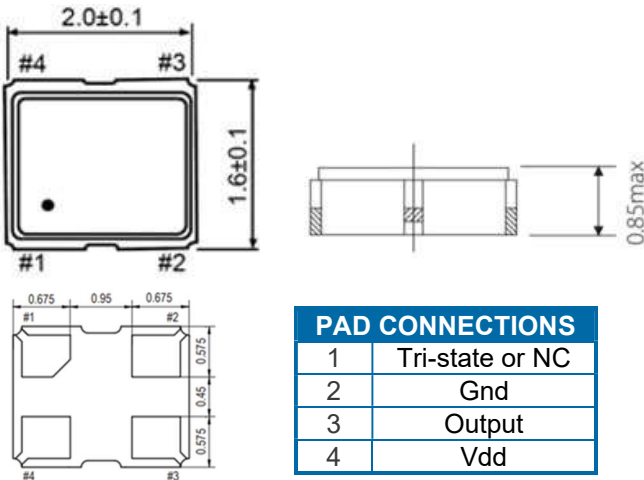


Figure 1) Top, Side, and Bottom views

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

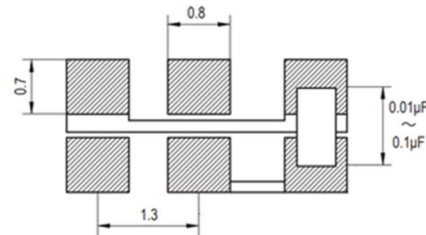


Figure 2) Suggested Land Pattern

### PART NUMBERING GUIDE: Example ECS-327ATQ2016MV-BS-TR

ECS	SERIES	* STABILITY	TEMP RANGE	PACKAGING
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ECS

327ATQ2016MV  
2.0 x 1.65 mm  
32.768 KHz  
AEC-Q200 Qualified  
MultiVolt™ Oscillator

A= ±100 ppm  
B=±50 ppm  
C=±25 ppm†

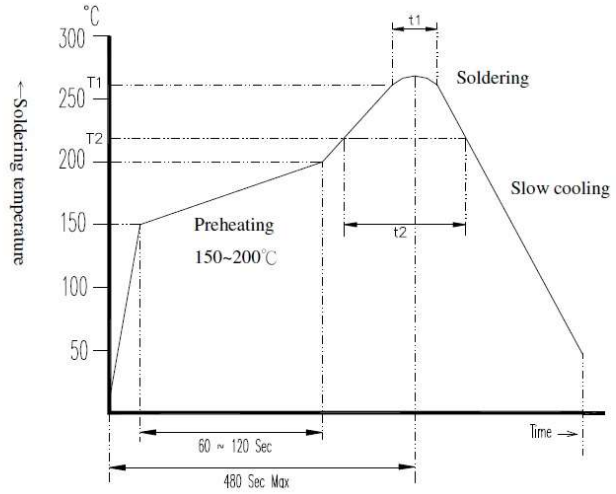
N= -40 ~ +85°C  
P= -40 ~ +105°C  
S = -40 ~ +125°C

TR = Tape & Reel  
3K/Reel

\* Frequency Stability includes initial tolerance, temperature, supply voltage and load change reflow frequency shift, and aging.  
†Stability available at -40 ~ +85°C.

### SOLDER PROFILE

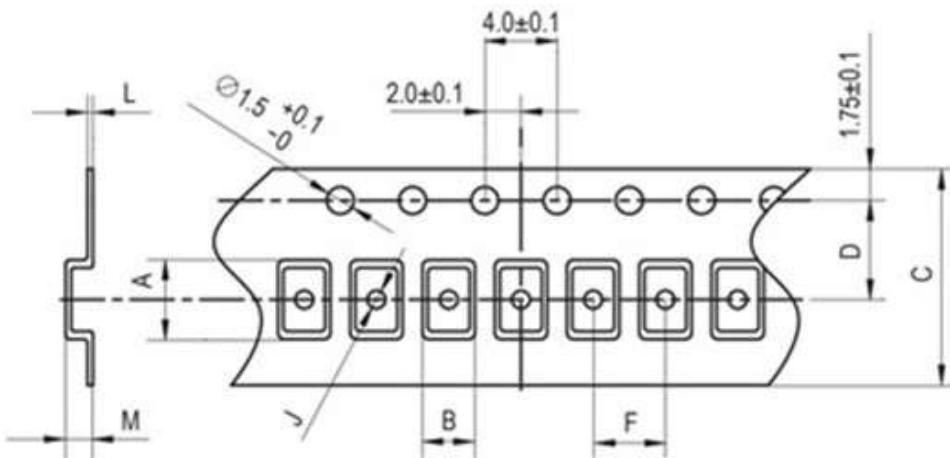
Peak solder Temp +260°C ±5°C 10 ±5 Sec Max.  
2 Cycles Max.  
MSL 1, Lead Finish Au



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)



A	B	C	D	F	J	L	M	Reel Dia.
2.2	1.8	8.0	3.5	4.0	1.0	0.25	1.0	180