

The ECS-3215MV-327KE miniature 32.768 kHz low current consumption MultiVolt™ CMOS Oscillator with improved stability vs. un-compensated tuning fork Crystals/XO's. The 3.2 x 1.5 x 0.9 mm ceramic package is ideal for Smart Meter, Wearable device, Industrial, and IoT applications.

[Request a Sample](#)

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS



- 3.2 x 1.5 mm Footprint
- Improved accuracy vs. uncompensated XO
- Low current consumption
- MultiVolt™ Compatible with 1.8V, 2.5V or 3.3V Power Supply

### DIMENSIONS (mm)

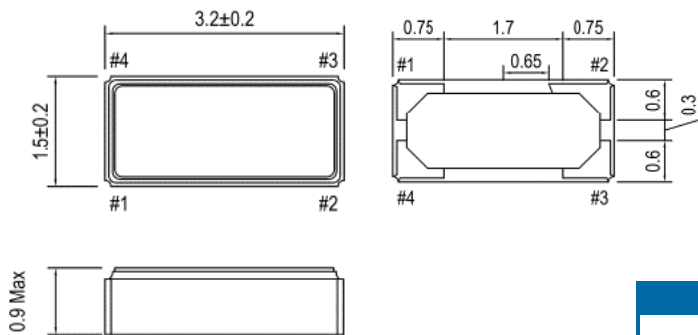


Figure 1) Top, Side, and Bottom views

PARAMETERS	CONDITIONS	ECS-3215MV-327KE			UNITS
		MIN	TYP	MAX	
Frequency			32.768		kHz
Frequency Tolerance	+25°C			±5	ppm
* Frequency Stability	-40 ~ +85°C (BN Opt.)			±50	ppm
Supply Voltage		1.62		3.63	V
Frequency voltage coefficient				±1	ppm/V
Output Load	CMOS			30	pF
Output voltage Level	VOL: 10% Vdd max. / VOH: 90% Vdd min. V DC				
Current Consumption			1.3	2.5	µA
Standby Current	+1.8V -40 ~ +85°C			2.0	µA
Rise & Fall time	10% Vdd – 90% Vdd			40	ns
Start Up Time	+25°C, 3.3V			0.5	sec
Duty Cycle	@ ½ Vdd			40/60	%
Aging (1 <sup>st</sup> year)	+25°C, 3.3V			±3	ppm
Operating Temp*		-40		+85	°C
Storage Temp		-40		+105	°C

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

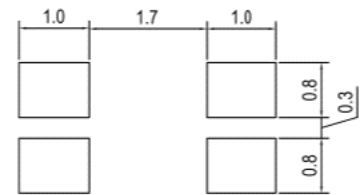


Figure 2) Suggested Land Pattern

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

## PART NUMBERING GUIDE: Example ECS-3215MV-327KE-BN-TR

ECS	SERIES	* STABILITY	TEMP RANGE	PACKAGING
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ECS

3215MV-327KE  
3.2 x 1.5 mm  
32.768 KHz  
Low current  
MultiVolt™ Oscillator

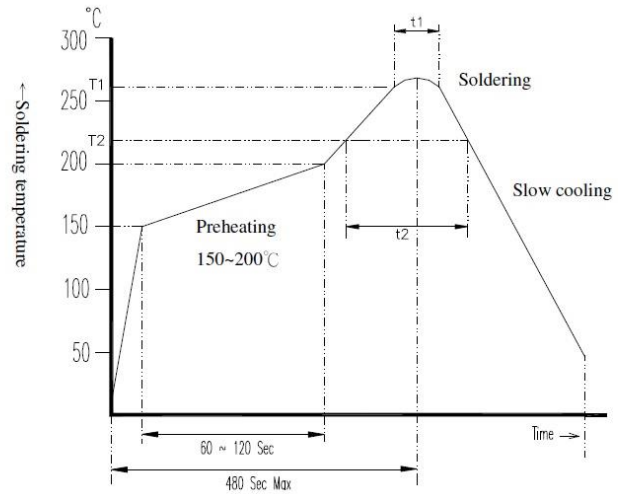
B=±50 ppm

M= -20 ~+70°C  
N= -40 ~ +85°C

TR = Tape & Reel  
3K/Reel

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

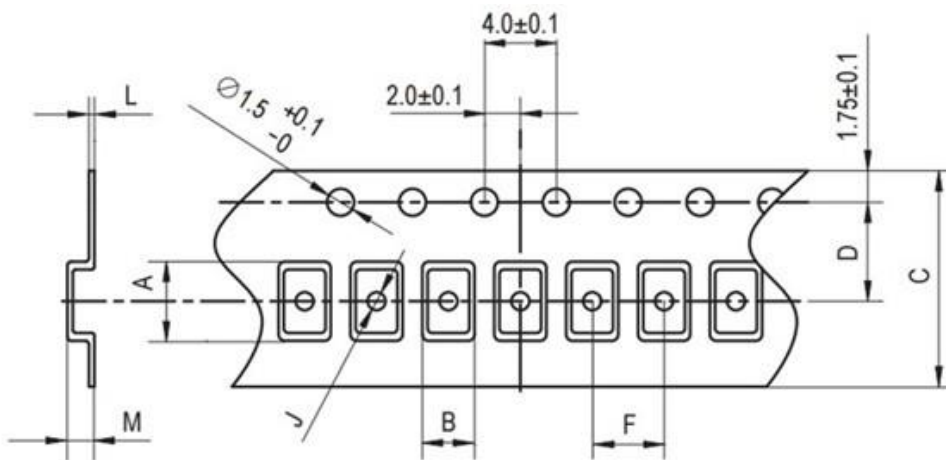
SOLDER PROFILE
Peak solder Temp +260°C ±5°C 10 ±5 Sec Max.
2 Cycles Max.
MSL 1, Lead Finish Au



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
3.4	1.7	12.0	5.5	4.0	1.0	0.3	1.2