

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)

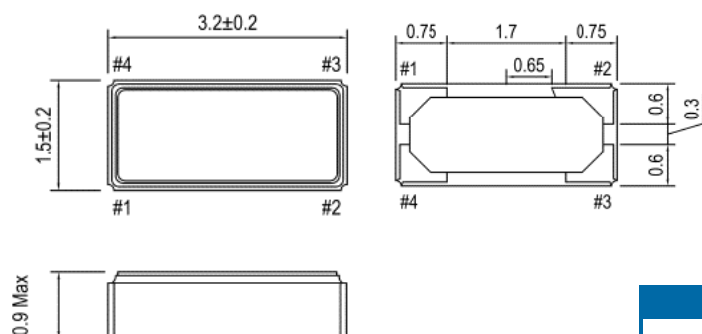


Figure 1) Top, Side, and Bottom views

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 st 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

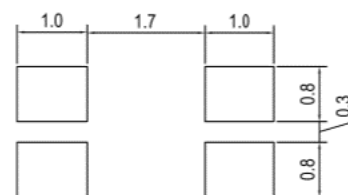


Figure 2) Suggested Land Pattern

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
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

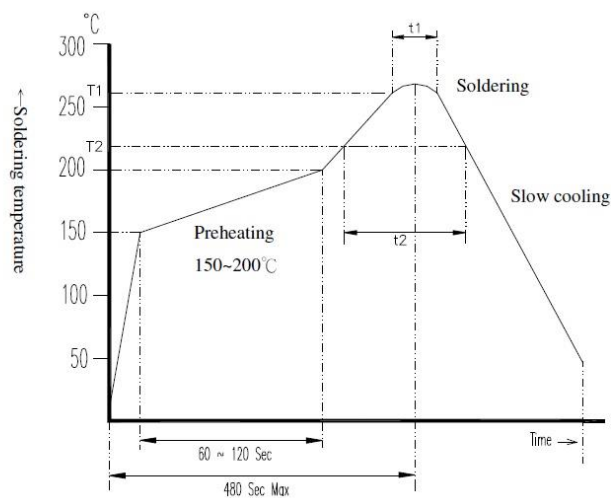
* Frequency Stability includes initial tolerance, temperature, supply voltage and load change and reflow frequency shift.

SOLDER PROFILE

Peak solder Temp $+260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 10 $\pm$ 5 Sec Max.

2 Cycles Max.

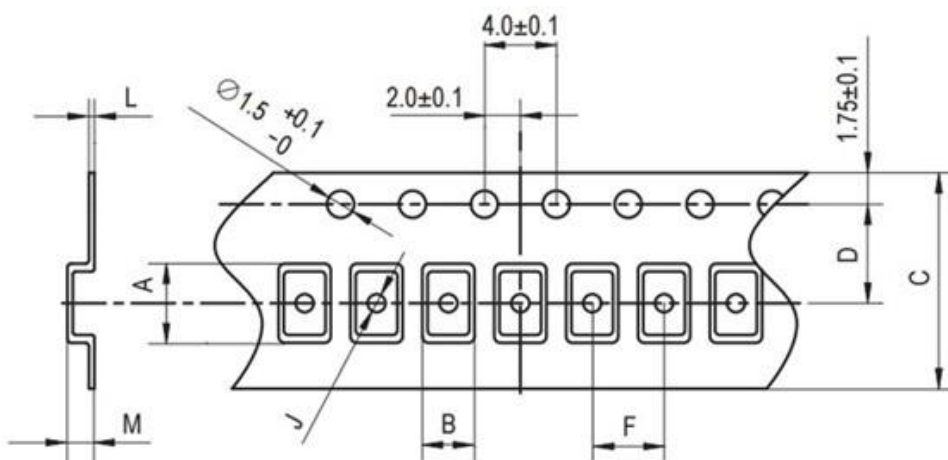
MSL 1, Lead Finish Au



Application / Temperature Time	T1 / t1	T2 / t2
Lead Free	$260 \pm 5^{\circ}\text{C} / 10 \pm 5$ Sec Max.	217°C Min / 60 ~ 150 Sec
Non-Lead Free	$260 \pm 5^{\circ}\text{C} / 10 \pm 5$ 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