



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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The ECS-2016MV is a miniature SMD HCMOS Oscillator with Multi Volt capability of 1.6 ~ 3.6 V. The 2.0 x 1.6 x 0.85 mm ceramic package is ideal for Low Power/Portable, Industrial and IOT.

[Request a Sample](#)



- 2.5 x 2.0 mm Footprint
- Extended Temp Range
- RoHS Compliant
- Wide Supply Voltage
- Low Jitter

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECS-2016MV			UNITS
		MIN	TYP	MAX	
Frequency Range		1.500		54.000	MHz
* Frequency Stability	-40 ~ +85°C (CN Opt)			±25	ppm
Supply Voltage		1.6		3.6	V
Output Load	CMOS			15	pF
Output voltage Level	VOL:10%V <sub>dd</sub> max./VOH:90%V <sub>dd</sub> min.V DC				
Rise & Fall time	10%V <sub>dd</sub> - 90%V <sub>dd</sub>			6.5	ns
Start Up Time	@90%V <sub>dd</sub>			5	mS
Phase Jitter	12 KHz to 5 MHz			1	pS
Duty Cycle	@ 1/2 V <sub>dd</sub>			45/55	%
Standby Current				10	µA
Operating Temp*		-40		+85	°C
Storage Temp		-55		+125	°C

### DIMENSIONS (mm)

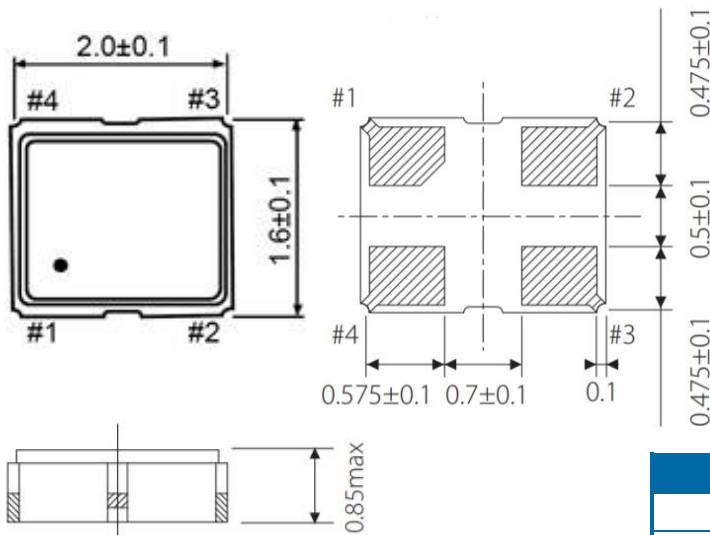


Figure 1) Top, Side, and Bottom views

### CURRENT CONSUMPTION mA Max

FREQ.	~ 19 MHz	~ 39.9 MHz	~ 50 MHz	~ 60 MHz
+1.8V	2.5	3.0	3.5	4.0
+2.5V	4.5	5.5	6.5	7.0
+3.3V	6.0	7.0	8.0	8.5

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

Tri State Function	
Pin 1	Output
0.7 * V <sub>dd</sub> Min OR NC	Active
0.3 * V <sub>dd</sub> Max.	High Impedance

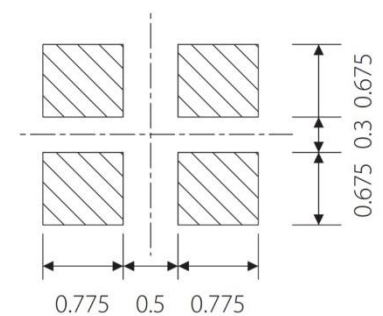


Figure 2) Suggested Land Pattern

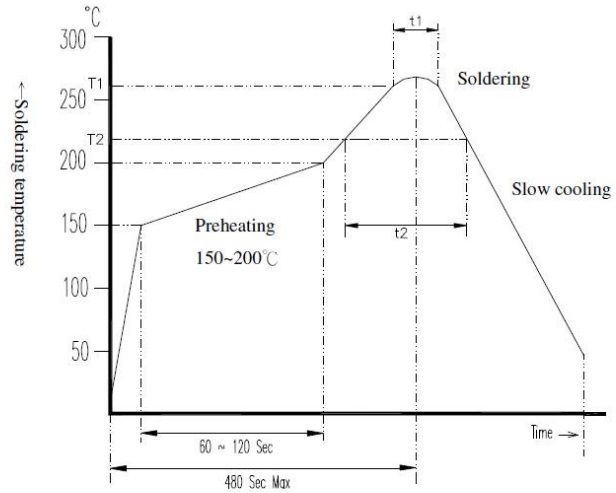
### PART NUMBERING GUIDE: Example ECS-2016MV-250-BN-TR

ECS	SERIES	FREQUENCY ABBREVIATION	* STABILITY	TEMP RANGE	PACKAGING
	2016MV 2.0 x 1.6 mm Multi Volt Oscillator	250 = 25.000 MHz See Developed Frequencies Pg.2	A = ±100 ppm B = ±50 ppm C = ±25 ppm D = ±20 ppm	M = -20 ~ +70°C N = -40 ~ +85°C	-TR = Tape & Reel 1K/Reel

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

## DEVELOPED FREQUENCIES

FREQUENCY MHz	CODE
12.000	120
24.000	240
25.000	250
26.000	260
33.3333	333.3
48.000	480
50.000	5000

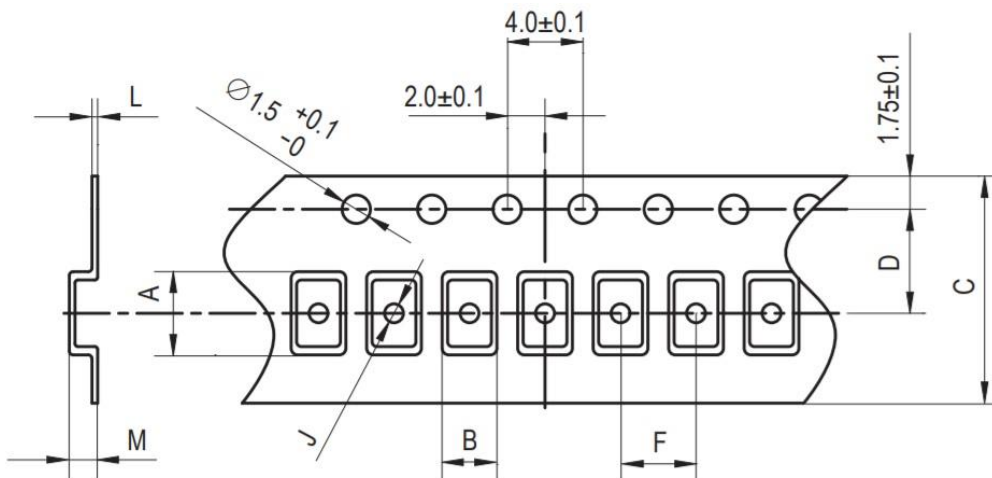


Application\Temperature	Time	T1 / t1	T2 / t2
Lead Free	260±5°C / 10±5 Sec Max	217°C Min / 60~150 Sec	
Non Lead Free	240±5°C / 10±5 Sec Max	183°C Min / 60~150 Sec	

Figure 1) Suggested Reflow Profile

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

## POCKET TAPE DIMENSIONS (mm)



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
2.2	1.8	8.0	3.5	4.0	1.0	0.25	1.0	180	1000pcs