

The ECS-7050MV is a miniature SMD HCMOS Oscillator with MultiVolt™ capability of 1.6 ~ 3.6 V. The 7.0 x 5.0 mm ceramic package is ideal for Low Power/Portable, Industrial, and IoT applications.

[Request a Sample](#)

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS



- 7.0 x 5.0 mm Footprint
- Extended Temp Range
- RoHS Compliant
- Wide Supply Voltage
- Low Jitter
- Compatible with 1.8V, 2.5V or 3.3V Power Supply

PARAMETERS	CONDITIONS	ECS-7050MV			UNITS
		MIN	TYP	MAX	
Frequency Range		1.000		160.00	MHz
Frequency Stability*	-40 ~ +85°C (BN Opt)			±50	ppm
Supply Voltage		1.6		3.6	V
Output Load	CMOS			15	pF
Output voltage Level	VOL: 10% Vdd max. / VOH: 90% Vdd min. V DC				
Rise & Fall time	10% Vdd – 90% Vdd			10	ns
Start Up Time	@ 90% Vdd			5	mS
Phase Jitter	12 kHz to 20 MHz			1	pS
Duty Cycle	@ ½ Vdd			45/55	%
Standby Current				10	µA
Operating Temp*		-40		+85	°C
Storage Temp		-55		+125	°C

### DIMENSIONS (mm)

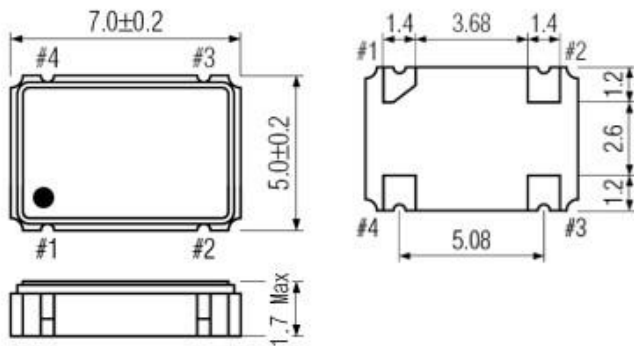


Figure 1) Top, Side, and Bottom views

### CURRENT CONSUMPTION mA Max

FREQ.	~ 19 MHz	~ 39.9 MHz	~ 50 MHz	~ 60 MHz	~ 100 MHz	~ 160 MHz
+1.8V	2.5	3.0	3.5	4.0	35.0	40.0
+2.5V	4.5	5.5	6.5	7.0	35.0	40.0
+3.0V	5.5	6.5	7.5	8.0	35.0	40.0
+3.3V	6.0	7.0	8.0	8.5	35.0	40.0

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

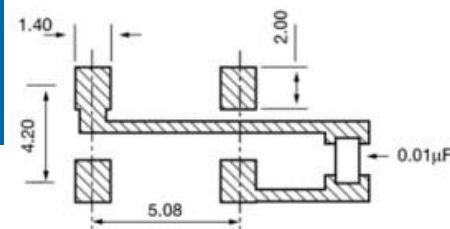


Figure 2) Suggested Land Pattern

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

## PART NUMBERING GUIDE: Example ECS-7050MV-250-BN-TR

ECS	SERIES	FREQUENCY ABBREVIATION	* STABILITY	TEMP RANGE -	PACKAGING
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ECS	7050MV 7.0 x 5.0 mm MultiVolt™ 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
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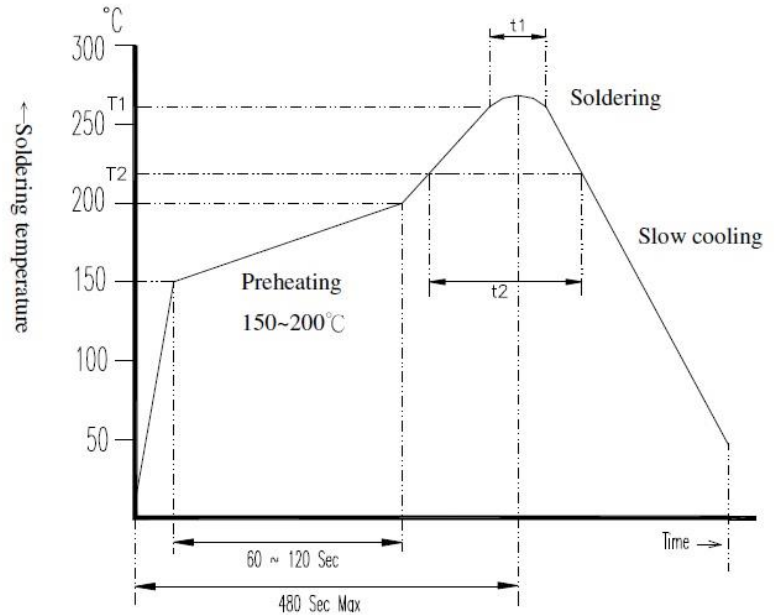
\* Frequency Stability includes initial tolerance, temperature, supply voltage and load change reflow frequency shift, and aging.

### DEVELOPED FREQUENCIES

FREQUENCY MHz	CODE	FREQUENCY MHz	CODE
1.000	010	25.000	250
8.000	080	27.000	270
10.000	100	32.000	320
12.000	120	33.33333	333.3
12.288	122.8	40.000	400
14.31818	143	48.000	480
16.000	160	50.000	500
20.000	200	100.000	1000
24.576	245.7	125.000	1250

### SOLDER PROFILE

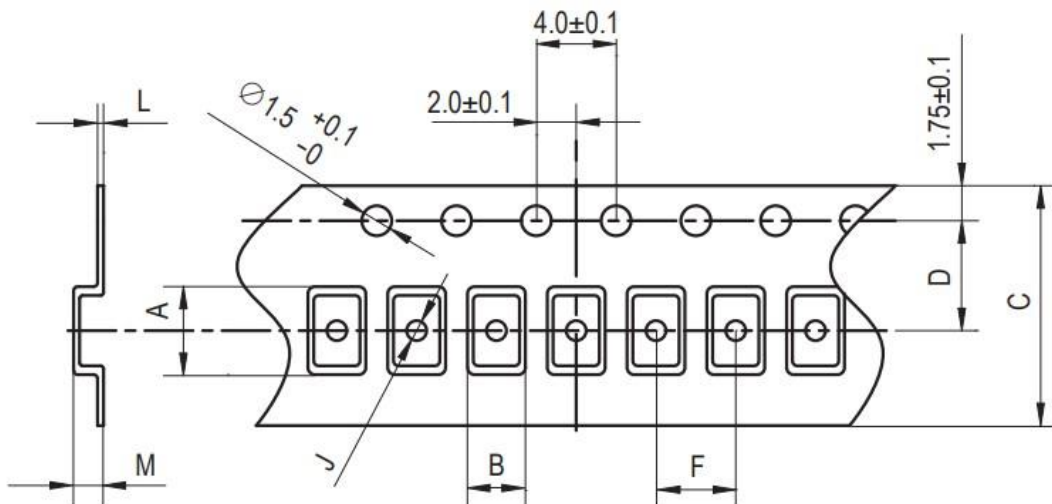
Peak solder Temp +260°C ±5°C 10 ±5 Sec Max.
2 Cycles Max.
MSL 1, Lead Finish Au



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.	Qty/Reel
7.4	5.4	16.0	7.5	8.0	1.5	0.3	1.9	180	1000pcs