



**THE DATASHEET OF  
ECS-1633-480-BN-TR**



ECS-1633 (3.3V) subminiature SMD oscillators. Ideal for today's high density applications.

Request a Sample

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS



- RoHS Compliant
- MSL 1
- Lead Finish Au

Parameters	Conditions	ECS-1633 (+3.3V)			Units
		MIN	TYP	MAX	
Frequency Range		1.500		80.000	MHz
Operating Temperature	Standard	-10		+70	°C
	Extended (N Option)	-40		+85	°C
Storage Temperature		-55		+100	°C
Input Voltage	VDD	+3.135	+3.3	+3.465	VDC
Frequency Stability*	Option A			±100	PPM
	Option B			±50	PPM
	Option C			±25	PPM
Input Current	1.500 ~ 19.90 MHz			6.0	mA
	20.0 ~ 39.9 MHz			7.0	mA
	40.0 ~ 49.9 MHz			8.0	mA
	50.0 ~ 80.0 MHz			9.0	mA
Stand-by Current	Pin 1 = VIL			10	µA
Output Symmetry	@50% VDD Level			45/55	%
Rise and Fall Times	10% VDD to 90% Level			5	ns
"0" Level	VOL			10% VDD	VDC
"1" Level	VOH	90% VDD			VDC
Output Load	CMOS			15	pF
Disable Delay				150	ns
Startup Time				10	ms
Aging				±5	PPM

\* Note: Inclusive of 25°C tolerance, operating temperature, input voltage change, load change, shock and vibration.

### Part Numbering Guide: Example ECS-1633-200-BN-TR

ECS - Series - Frequency Abbreviations - Stability Tolerance - Temperature - Packaging

ECS

1633 = 3.3V

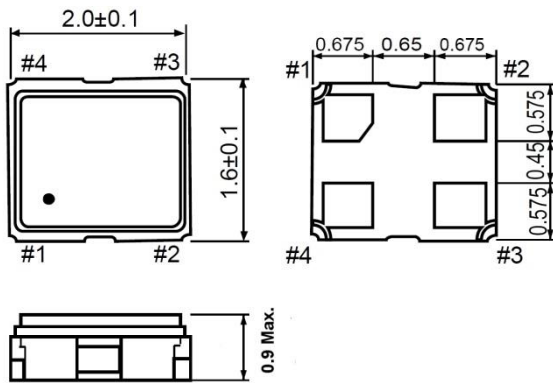
200 = 20 MHz

A = ±100 ppm  
B = ±50 ppm  
C = ±25 ppm

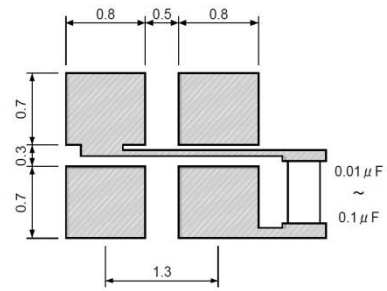
Blank = -10 ~ 70°C  
M = -20 ~ +70°C  
N = -40 ~ +85°C

TR = Tape & Reel

**Package Dimensions (mm)**



*Figure 1) Top, Side, and Bottom views*



*Figure 2) Land Pattern*



Pin Connections	
#1	Tri-State
#2	Ground
#3	Output
#4	VDD

Tri-State Control Voltage	
Pad 1	Pad 3
Open	Oscillation
V <sub>IH</sub> 70% VDD Min.	Oscillation
V <sub>IL</sub> 30% VDD Max.	No Oscillation

*Note: Internal crystal oscillation to be halted (Pin #1=VIL)*

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