



**THE DATASHEET OF
ECS-2333-147.4-BN-TR**



ECS-2325 (2.5V) and ECS-2333 (3.3V) subminiature SMD oscillators. Ideal for today's high density applications.

[Request a Sample](#)

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS



- Low Voltage HCMOS
- 3.2 x 2.5 mm Footprint
- Low current consumption
- PbFree/RoHS Compliant

Parameters	Conditions	ECS-2325 (+2.5V)			ECS-2333 (+3.3V)			Units
		MIN	TYP	MAX	MIN	TYP	MAX	
Frequency Range		1.000		95.000	1.000		95.000	MHz
Operating Temperature	Standard	-10		+70	-10		+70	°C
	Extended (N Option)	-40		+85	-40		+85	°C
Storage Temperature		-55		+125	-55		+125	°C
Supply Voltage	VDD	+2.25	+2.5	+2.75	+2.97	+3.3	+3.63	VDC
Frequency Stability*	Option A			±100			±100	PPM
	Option B			±50			±50	PPM
	Option C			±25			±25	PPM
Input Current	0.75 ~ 20.0 MHz			5			7	mA
	20.1 ~ 40.0 MHz			9			13	mA
	40.1 ~ 60.0 MHz			11			19	mA
	60.1 ~ 95.0 MHz			14			24	mA
Stand-by Current	Pin 1 = VIL			10			10	µA
Output Symmetry	@50% VDD Level			40/60			45/55	%
	@50% VDD Level (**T Option)			45/55			-	
Rise and Fall Times	10% VDD to 90% Level			10			10	ns
"0" Level	VOL			10% VDD			10% VDD	VDC
"1" Level	VOH	90% VDD			90% VDD			VDC
Output Load	CMOS			15			15	pF
Disable Delay Time				150			150	ns
Enable/Startup Time				10			10	ms
Aging				±5			±5	PPM

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

** Symmetry "T" option applies to ECS-2325 Series only.

Part Numbering Guide: Example ECS-2333-200-BN-TR

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

ECS

2325 = +2.5V
2333 = +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
P = -40 ~ +105°C

Blank = Standard
**T = 45/55

TR = 1K/Reel
TR3 = 3K/Reel
Qty/Reel

Package Dimensions (mm)

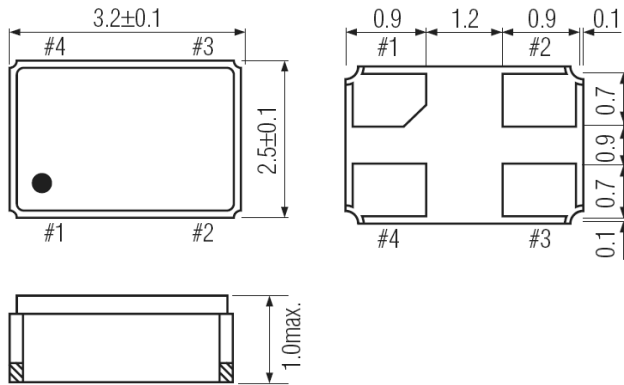


Figure 1) Top, Side, and Bottom views

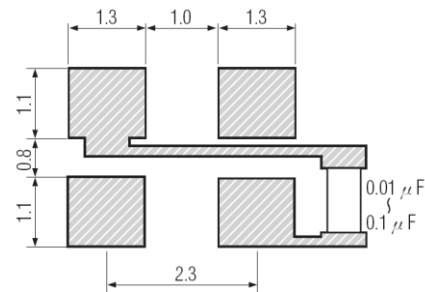


Figure 2) Land Pattern



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

Tri-State Control Voltage	
Pad 1	Pad 3
Open	Oscillation
VIH 70% VDD Min.	Oscillation
VIL 30% VDD Max.	No Oscillation

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

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