



- ▶ RoHS 2011/65/EU Compliant
- ▶ MSL 1
- ▶ Lead Finish: Au



# ECS-2025/2033

## SMD CLOCK OSCILLATOR

ECS-2025 (2.5V) and ECS-2033 (3.3V) subminiature SMD oscillators. Ideal for today's high density applications.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECS-2025 (+2.5V)			ECS-2033 (+3.3V)			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
Frequency Range		0.750		75.000	0.750		75.000	MHz
Operating Temperature	Standard	-10		+70	-10		+70	°C
	Extended (U Option)	-55		+125	-55		+125	°C
Storage Temperature		-55		+125	-55		+125	°C
Supply Voltage	VDD	+2.375	+2.5	+2.625	+3.135	+3.3	+3.465	VDC
Frequency Stability *	Option A			± 100			± 100	ppm
	Option B			± 50			± 50	ppm
	Option C			± 25			± 25	ppm
Input Current	0.75 to 20 MHz			5			7	mA
	20.1 to 40 MHz			9			13	mA
	40.1 to 60 MHz			11			19	mA
	60.1 to 75 MHz			14			24	mA
Stand-by Current	Pin 1 = VIL			10			10	µA
Output Symmetry	@ 50% VDD level			40/60			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
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.

### DIMENSIONS (mm)

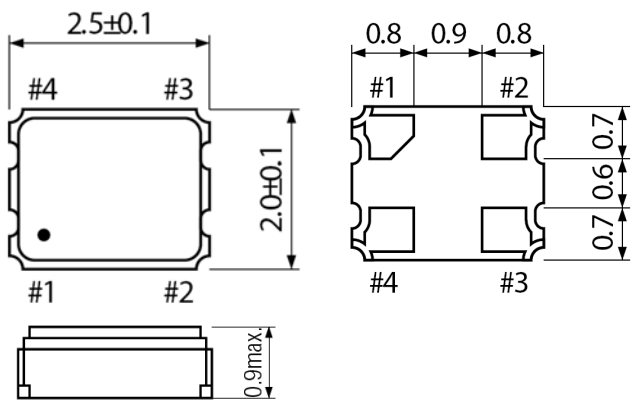


Figure 1) Top, Side and Bottom views

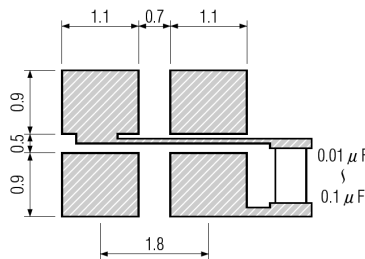


Figure 2) Suggested Land Pattern

### Pin Connections

Pin #1	Tri-State
Pin #2	Ground
Pin #3	Output
Pin #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)

PART NUMBERING GUIDE: Example ECS-2033-200-BN