ECS INC INTERNATIONAL

RoHS COMPLIANT

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ECS-1633

SMD CLOCK OSCILLATOR

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

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECS-1633 (+3.3V)			UNITS
		MIN	TYP	MAX	
Frequency Range		1.500		80.000	MHz
Operating Temperature	Standard	-10		+70	ºC
	Extended (N Option)	-40		+85	ºC
Storage Temperature		-55		+100	ºC
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 to 19.90 MHz			6.0	mA
	20.0 to 39.9 MHz			7.0	mA
	40.0 to 49.9 MHz			8.0	mA
	50.0 to 80.0 MHz			9.0	mA
Stand-by Current	Pin 1 = VIL			10.0	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.

DIMENSIONS (mm)

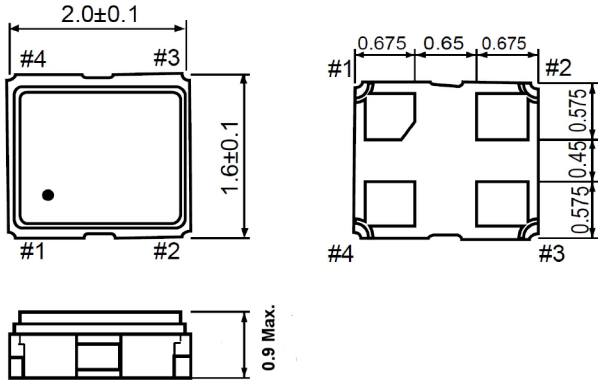

Figure 1) Top, Side and Bottom views

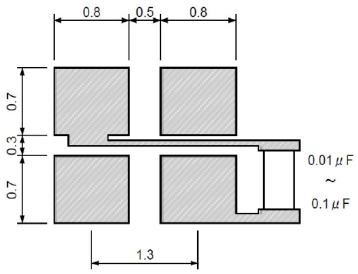

Figure 2) Suggested Land Pattern

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-1633-200-BN-TR

ECS -	Series	- Frequency Abbreviation	- Stability	Temperature	Packaging
	1633 = +3.3V	200 = 20.000 MHz See Frequency Abbreviations	A = ± 100 ppm B = ± 50 ppm C = ± 25 ppm	Blank = -10 ~ +70ºC M = -20 ~ +70ºC N = -40 ~ +85ºC	TR = Tape & Reel

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