RoHS COMPLIANT

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.

Request a Sample

ECS INC INTERNATIONAL®

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

ECS-2025/2033

- Low Voltage
- 2.5 x 2.0 mm Footprint
- Low Current Consumption
- PbFree/RoHS Compliant

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 (N Option)	-40		+85	-40		+85	°C
Storage Temperature		-55		+100	-55		+100	°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 ~ 20.0 MHz			5			7	mA
	20.1 ~ 40.0 MHz			9			13	mA
	40.1 ~ 60.0 MHz			11			19	mA
	60.1 ~ 75.0 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
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-2025 Series only.*

Part Numbering Guide: Example ECS-2033-200-BN-TR

ECS	- Series	- Frequency Abbreviations	- Stability Tolerance	- Temperature	- Output Symmetry	- Packaging
ECS	2025 = +2.5V 2033 = +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 U = -55 ~ +125°C	Blank = 40/60 **T = 45/55	TR = 1K TR3 = 3K Qty/Reel

ECS-2025/2033
SMD Clock Oscillator

Package Dimensions (mm)

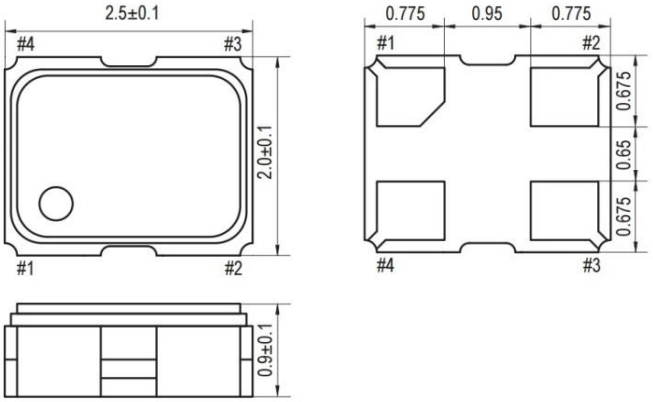


Figure 1) *Top, Side, and Bottom views*

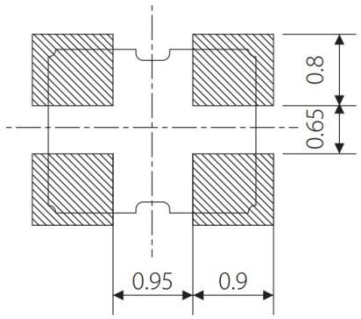


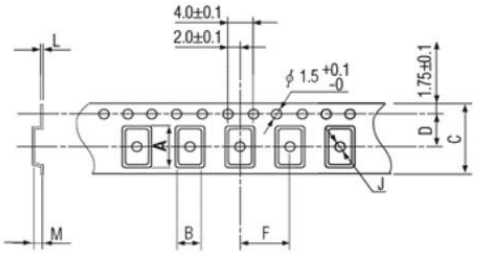
Figure 2) *Land Pattern*

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)

Tape Dimensions (mm)



A	B	C	D	F	J	L	M	Reel Dia.
2.8	2.3	8.0	3.5	4.0	1.0	0.25	1.1	180

Figure 3) *Pocket Tape Dimensions*

Package Data	
Item	**Description**
Lid	Metal
Base	Ceramic
Sealing	AuSn
Terminal	Tungsten (metalized)
Plating	Gold/Nickel (Surface)/(Under)
RoHS	Compliant (Pb Free)

Frequency Abbreviations

FREQUENCY MHz	CODE
3.579545	035
3.6864	036
4.000	040
6.000	060
7.3728	073
8.000	080
10.000	100
12.000	120
13.000	130
14.31818	143
14.7456	147.4
16.000	160
20.000	200
24.000	240
25.000	250
27.000	270
30.000	300
32.000	320
40.000	400
48.000	480
50.000	500

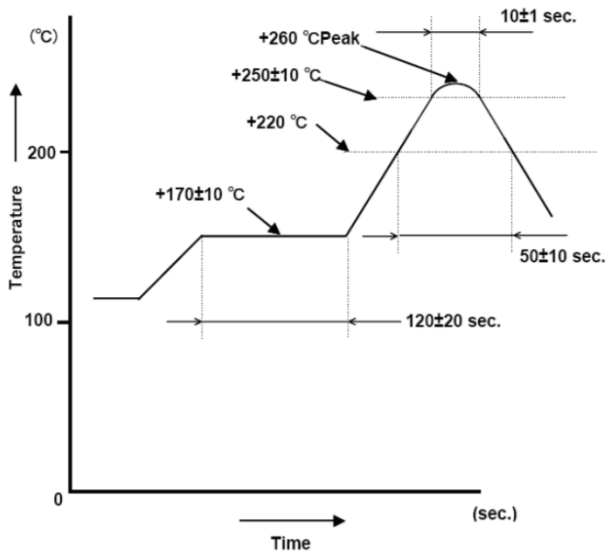


Figure 4) *Suggested Reflow Profile*