



- ▶ Low EMI Output
- ▶ 5 x 3.2 mm Footprint
- ▶ Wide frequency range
- ▶ Pb Free/RoHS Compliant

ECS-3250SS

SPREAD SPECTRUM OSCILLATOR

ECS-3250SS Spread Spectrum EMI output SMD oscillators provide cost effective EMI reduction.

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECS-3250SS (+3.3V)			UNITS
		MIN	TYP	MAX	
Frequency Range		10.000		168.000	MHz
Operating Temperature		-10		+70	°C
Storage Temperature		-40		+85	°C
Supply Voltage	VDD	+3.135	+3.3	+3.465	VDC
Frequency Stability	Referred to frequency avg.			± 50	ppm
Spread spectrum range Center spread	Option A			± 0.5	%
	Option B			± 1	%
	Option C			± 2	%
Input Current	10.000 to 28.000 MHz			13	mA
	28.100 to 168.000 MHz			15	mA
Output Symmetry	@ 50% VDD level	40/60		60/40	%
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
Enable/Disable delay time				10	ns
Startup time				10	ms
Aging (first year)	at +25°C ±3°C			± 5	ppm
Jitter (Cycle to Cycle)	10.000 to 20.000 MHz			200	pS
	20.10.000 to 168.000 MHz			100	pS

DIMENSIONS (mm)

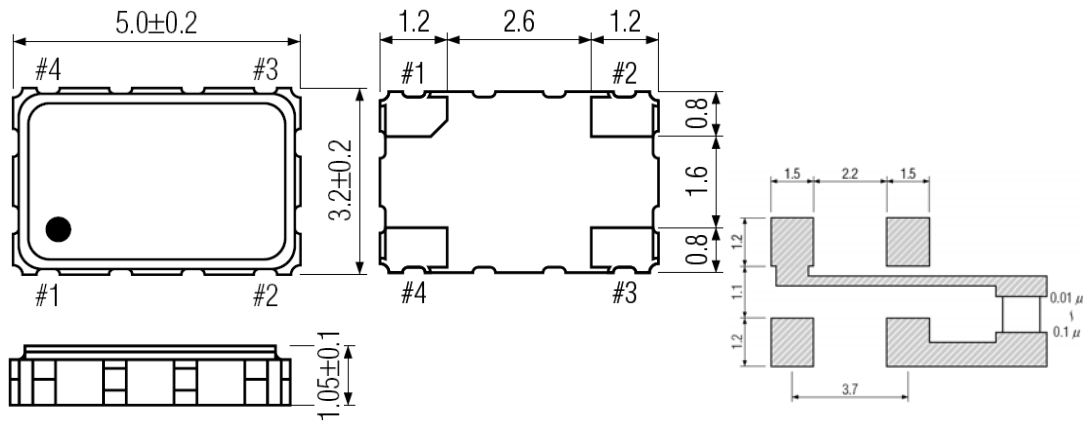


Figure 1) Top, Side and Bottom views

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 90% VDD Min	Oscillation
VIL 10% VDD Max	High Impedance

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

PART NUMBERING GUIDE: Example ECS-3250SS-270-3B

ECS	Series	Frequency Abbreviation	Voltage	Spread Spectrum Range
	3250SS	270 = 27.000 MHz See Frequency Abbreviations (Pg 2)	3 = 3.3V	A = ± 0.5% B = ± 1.0% C = ± 2.0%



Frequency Abbreviations

FREQUENCY MHz	CODE
24.000	240
25.000	250
27.000	270
40.000	400
54.000	540

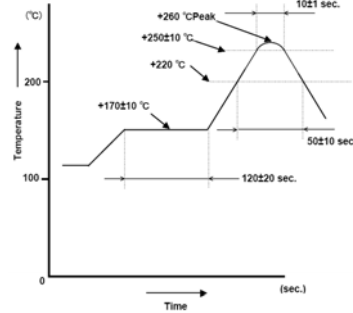
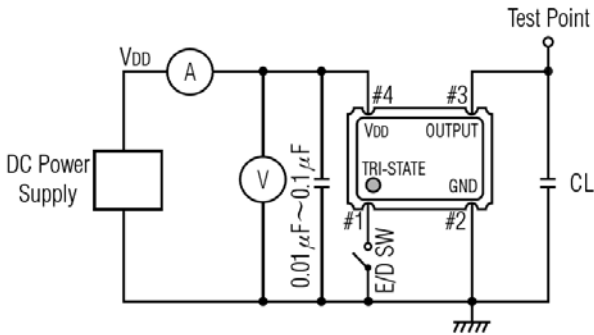


Figure 3) Suggested Reflow Profile

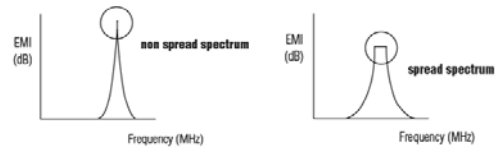
TEST CIRCUIT



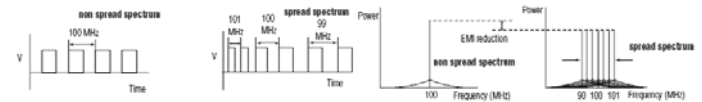
CL : including fixture and probe capacitance.

Figure 1) Suggested Reflow Profile

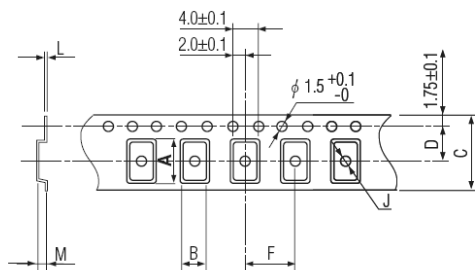
SPREAD SPECTRUM FOR EMI REDUCTION



± 1% CENTER SPREAD AT 100 MHz



TAPE DIMENSIONS (mm)



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
5.4	3.5	12.0	5.5	8.0	1.5	0.3	1.4	178	1000pcs

Package Data

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

Figure 2) Pocket Tape Dimensions