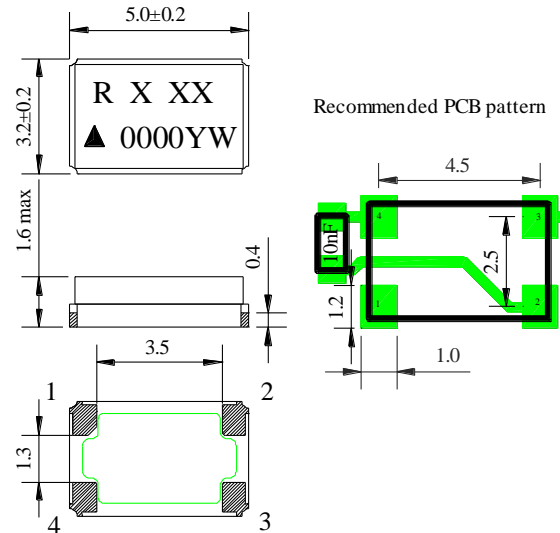


## Stratum 3 Oscillator Specification: E4190LF

### Outline:

Pin	Function
1	Do not connect
2	Ground
3	Output
4	Supply Voltage $V_s$

Note: for correct operation a 10nF supply de-coupling capacitor should be placed next to the device, see recommended PCB pattern.



### Marking, includes:

- Manufacturer's ID (R)
- Manufacturing identifier (X XX)
- Pad 1 / Static sensitivity identifier (Triangle)
- Part Number (Four digits)
- Device date code (YW)

### Electrical:

Nominal Frequency, $F_0$	12.8 MHz
Supply Voltage, $V_s$	$3.3 \text{ V} \pm 5\%$
Input Current	$\leq 4 \text{ mA}$
Output:	
Type	HCMOS
Load	15 pF
$V_{ol}$	$\leq 0.1 * V_s$
$V_{oh}$	$\geq 0.9 * V_s$
Duty cycle @ 50%	45% to 55%
Rise time, 10% to 90%	$\leq 8 \text{ ns}$
Fall time, 90% to 10%	$\leq 8 \text{ ns}$

HOLDOVER STABILITY [ $\pm(F_{\text{max}} - F_{\text{min}}) / 2.F_0$ ]	
Temperature, -20 to 70°C	$\leq \pm 0.28 \text{ ppm}$
ditto, inclusive of	
Supply Voltage, $3.3\text{V} \pm 5\%$ and	
Ageing, 24 hours	$\leq \pm 0.32 \text{ ppm}$

FREE-RUN ACCURACY, incl.	
Calibration @ 25°C,	
Temperature, -20 to 70°C,	
Supply Voltage, $3.3\text{V} \pm 5\%$ ,	
Load, 15pF±5pF	
Reflow soldering and Ageing, 20 years	$\leq \pm 4.6 \text{ ppm ref. to } F_0$



## Stratum 3 Oscillator Specification: E4190LF

24 hours drift (GR-1244-CORE)  $\leq \pm 0.04$  ppm

Phase Noise:

10 Hz	$\leq -90$ dBc/Hz
100 Hz	$\leq -115$ dBc/Hz
1 kHz	$\leq -127$ dBc/Hz
10 kHz	$\leq -137$ dBc/Hz
$\geq 100$ kHz	$\leq -143$ dBc/Hz

### Environmental Specification:

Storage Temperature:  $-55$  to  $+125^{\circ}\text{C}$

Vibration: IEC 60068-2-6, test Fc, procedure B4: 10-60Hz 1.5 mm displacement, 60-2000Hz at 20gn, 4 hours in each of three mutually perpendicular axes at 1 octave per minute.

Shock: IEC 60068-2-27, test Ea: 1500gn acceleration for 0.5ms duration, Half-sine pulse, 3 shocks in each direction along three mutually perpendicular axes.

Soldering: SMD Product suitable for Reflow soldering. Peak temperature  $260^{\circ}\text{C}$ . Maximum time above  $220^{\circ}\text{C}$ , 60 sec.

Marking: Laser Marked

RoHS Parts are fully compliant with the European Union directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment. Note: These RoHS compliant parts are suitable for assembly using both Lead-free solders and Tin/Lead solders.