44 avenue de la Glacière - BP 165
95105 ARGENTEUIL CEDEX - FRANCE

Tel. : +33 (0) 1 3998 3600
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OCXO SPECIFICATION	Reference	Page	1/5
		Date	Visa
	STP 2885 LF	2010 October. 18th.	Cyril Datin & Philippe Bunel

RoHS SMD OCXO / CFPO-11 @ 20 MHz _ 3.3V SUPPLY
+/-10 PPB OVER -20°C TO +70°C _ 12 MM HIGH MAX
Compliant to STRATUM 3E per GR-1244-CORE

ARG NPE 2010-5327
Added the Telcordia requirements the 15-10-2010

1- Nominal frequency (Fo)	:	20 MHz
Initial tolerance after shipment (after frequency recovery)	:	Fo ± 5E-7
2- Power Supply Voltage supply	:	+ 3.3 V ± 5 %
2.1- Power consumption @ warm-up time	:	≤ 3.5 W
2.2- Current in steady state +25°C	:	≤ 1.5 W
3- Output signal into 15pF load (rating up to 3 loads, Cl = 15 pF)		HCMOS compatible
3.1- Output levels		Voh ≥ +2.4V / Vol ≤ +0.4 V
3.2- Duty cycle @ 50% output signal	:	50 ± 10%
3.3- Rise - Fall times (from 10 to 90% output signal)	:	≤ 5 ns 15pF load)
3.4- Phase noise (in dBc/Hz) @ 1 Hz offset	:	- 80 typical
@ 10 Hz	:	- 110 typ.
@ 100 Hz	:	- 135 typ.
@ 1 kHz	:	- 145 typ.
@ 10 kHz & over	:	- 150 typ.

4- Frequency stability over operating conditions – all causes inclusive,
Total free-run accuracy (Telcordia GR-1244 requirement : +/-4.6 ppm) : ≤ **± 2 E-6 over lifetime**
after frequency recovery : required time of continuous operation so as to re-stabilize the device after powered-off / storage period)

4.1-ageing – stability versus time		≤ ± 5E-10/day / ≤ ± 8E-8/year
extrapolated for for 20 years		≤ ± 8E-7
4.2- Drift 24 hours with ± 2.8°C (per Telcordia GR 1244)	:	≤ ± 8E-10
4.3- Short term 1s integration time – 100 samples	:	1 E-11 typical
4.4- Stability over -20°C to + 70°C calm air	:	≤ ± 10 ppb
4.5- versus voltage (± 5%)	:	≤ ± 3E-9

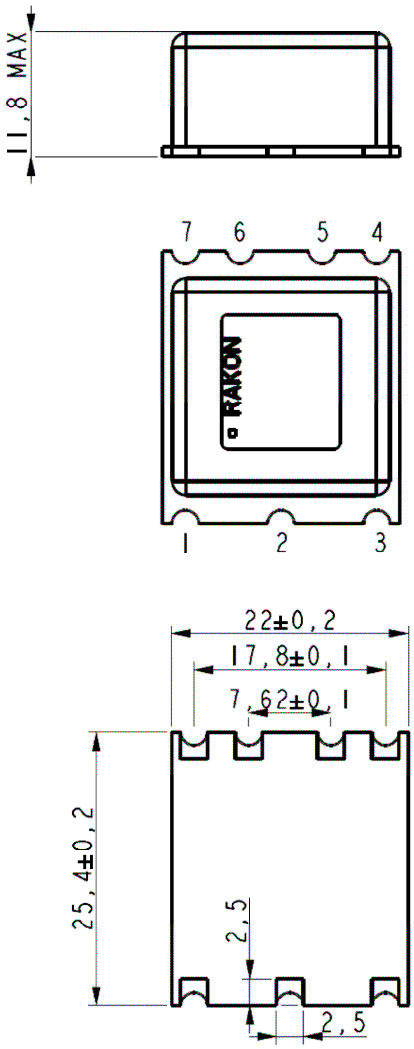
4.6- Warm-up time @ +25°C to within ± 1E-7 of frequency reference : ≤ 5 mn (2 mn typ.)
(with frequency reference = frequency reached by the device after 24h on)

4.7- Wander generation value under following tests conditions

- Oscillator stabilised 24 hours at constant temperature
- Data collection during 100,000 seconds at 1s interval
- Frequency data subjected to a 1mHz loop filter
  (-3dB cut-off frequency, 2nd order high pass filter)

- **MTIE** (GR-1244/ Fig 5-5)	:	**≤ 100 ns**
- **TDEV** (GR-1244/ Fig 5-4)	:	**≤ 10 ns**

5- Environmental conditions (not operating – qualification)		
5.1- Vibration 10g; 10- 500 Hz		IEC 68-2-6 test Fc severity 500/10
5.2- Shocks 50g – 11ms –1/2 sine		IEC 68–2-27 test Ea severity 50A
5.3- Storage temperature range		from - 50°C / + 90°C
6-Marking / Printed label on top of lid		**RAKON**
Part Number ("LF" means "RoHS")		STP2885 LF
Nominal Frequency		20 MHz
Serial Number	SN	L Nnnnn
Manufacturing date code (Year & Week)	DC	Yy Ww



1	Not to be connected
2	Not to be connected
3	Supply voltage
4	RF Output signal
5	Not to be connected
6	Not to be connected
7	Ground (Mechanical & Supply)

Outline Drawing (**maximum overall height of 12.0mm**)

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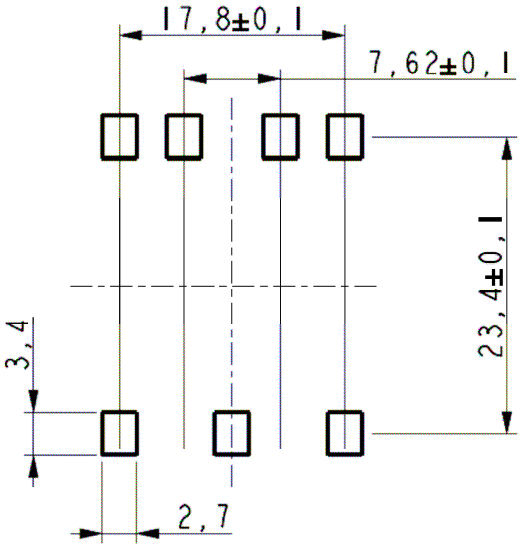
PAD LAY OUT



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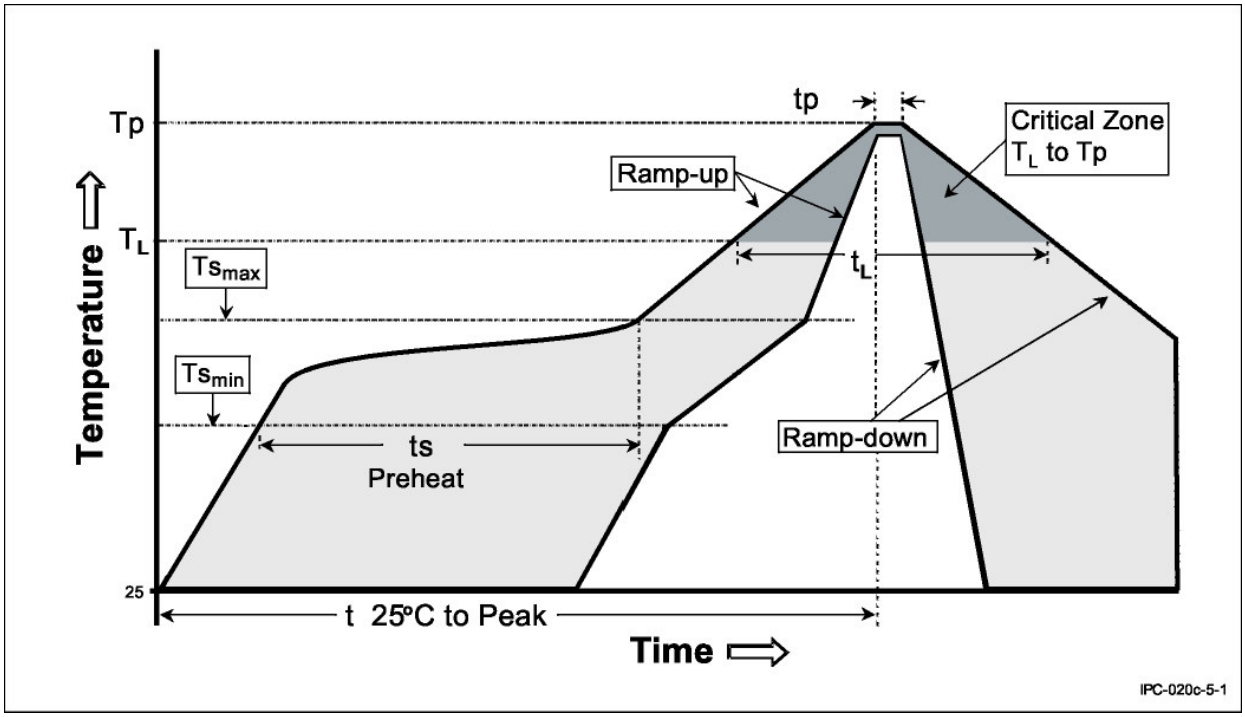
Prole Feature	Pb-Free Assembly
Average Ramp-Up Rate ($T_{s_{max}}$ to Tp)	3° C/second max.
Preheat – Temperature Min ($T_{s_{min}}$) – Temperature Max ($T_{s_{max}}$) – Time ($t_{s_{min}}$ to $t_{s_{max}}$)	150 °C 200 °C 60-1 80 seconds
Time maintained above: – Temperature (T_L) – Time (t_L)	217 °C 60-1 50 seconds
Peak/Classification Temperature (Tp)	245°C
Time within 5 °C of actual Peak Temperature(tp)	20-40 seconds
Ramp-Down Rate	6 °C/second max.
Time 25 °C to Peak Temperature	8 minutes max.



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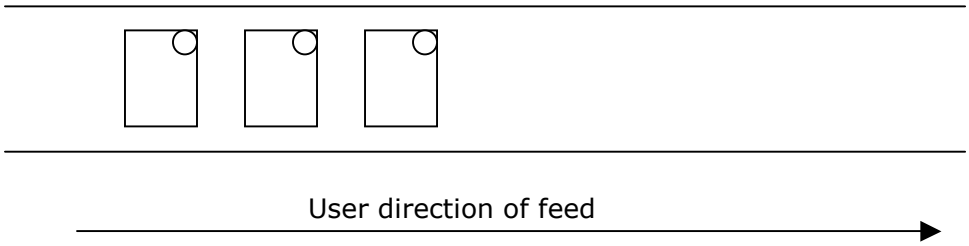
Tape & Reel Packaging : compliant ot standard EIA 481-3



P1	W	Quantity per reel	Diameter
28	44	200	330 mm