



#### 4.0 Power Supply

Parameter	Min.	Typ.	Max.	Unit	Test Condition / Description
a. Supply voltage (Vcc)		3.3		V	±5%
b. Supply current		4	6	mA	

#### 5.0 Control Voltage (Vc)

Parameter	Min.	Typ.	Max.	Unit	Test Condition / Description
a. Control voltage range	0.5		2.5	V	
b. Frequency tuning	±5		±15	ppm	Reference to frequency at Vc=1.5V
c. Slope		+8		ppm/V	
d. Linearity			1	%	
e. Port input impedance	100			kΩ	
f. Modulation bandwidth	1			Hz	

#### 6.0 Oscillator Output – HCMOS

Parameter	Min.	Typ.	Max.	Unit	Test Condition / Description
a. Output waveform					CMOS square wave
b. Output voltage level low (V <sub>OL</sub> )			10% Vcc	V	
c. Output voltage level high (V <sub>OH</sub> )	90% Vcc			V	
d. Rise and fall time			8	ns	10% to 90% level
e. Duty cycle	45		55	%	At 50% level
f. Load		15		pF	

#### 7.0 Tri-State Control <sup>2</sup>

Parameter	Min.	Typ.	Max.	Unit	Test Condition / Description
a. Tri-state mode					The device features a tri-state mode which allows the output to be disabled and brought into a high impedance state
b. Tri-state control (pin 8), input level low (V <sub>IL</sub> )			20% Vcc	V	Device disabled (output in high impedance state)
c. Tri-state control (pin 8), input level high (V <sub>IH</sub> )	60% Vcc			V	Device enabled (operating)
d. Current when in tri-state mode		2		mA	
e. Output enable time			100	μs	

<sup>2</sup> The tri-state control (enable) input pin has an internal 100kΩ pull up resistor which allows it to be left unconnected if not used. When in tri-state mode, the output stage is disabled, but the oscillator and compensation circuit are still active.

## 8.0 Pin Connections

Parameter	Connection	
a. Pin 1	Do not connect	Pin1 =メーカー調整端子です。必ず Open にして下さい。
b. Pin 2	N/C	
c. Pin 3	Do not connect	Pin3 =メーカー調整端子です。必ず Open にして下さい。
d. Pin 4	GND	
e. Pin 5	RF Output	
f. Pin 6	N/C	
g. Pin 7	N/C	
h. Pin 8	Tri-state Control (Enable) <sup>2</sup>	
i. Pin 9	Supply voltage (Vcc)	
j. Pin 10	Control Voltage (Vc)	

## 9.0 SSB Phase Noise (at 25°C)

Parameter	Typ.	Unit.	Test Condition / Description
a. 1Hz offset	-64	dBc/Hz	
b. 10Hz offset	-90	dBc/Hz	
c. 100Hz offset	-123	dBc/Hz	
d. 1kHz offset	-142	dBc/Hz	
e. 10kHz offset	-150	dBc/Hz	
f. 100kHz offset	-152	dBc/Hz	
g. 1MHz offset	-154	dBc/Hz	

## 10.0 Root Allan Variance (at 25°C)

Parameter	Typ.	Unit	Test Condition / Description
a. Root Allan Variance	<2*10 <sup>-10</sup>		tau = 1.0s

## 11.0 Marking

Parameter	Description
a. Type	Laser marked
b. Line 1	[ R X XX ] Rakon, manufacturing identifier (X XX)
c. Line 2	[ Δ 7346 YW ] Pad 1 / static sensitivity identifier (Δ), abbreviated part number (7346), date code (YW)

## 12.0 Manufacturing Information

Parameter	Description
a. Reflow soldering	See reflow profile diagram
b. Packaging description	Tape and reel (see drawing)

## 13.0 Environmental Specification

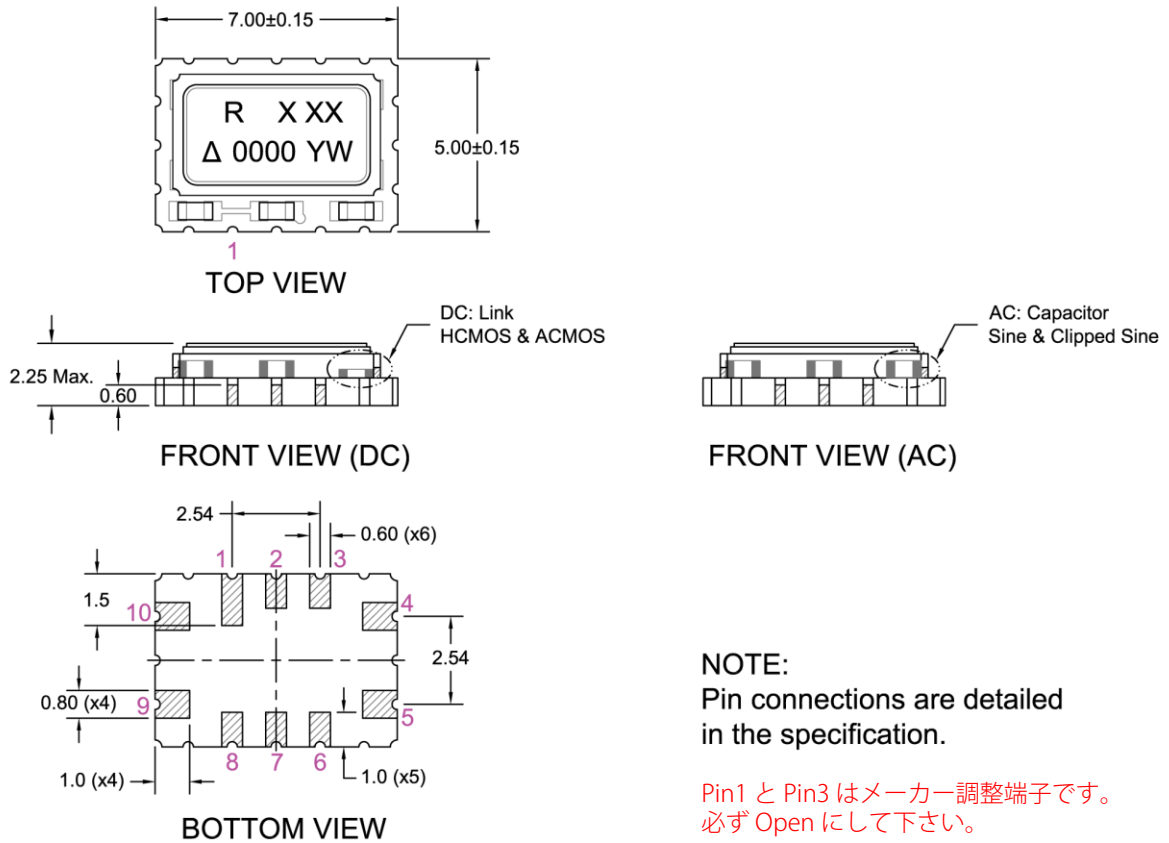
Parameter	Description
a. RoHS	Parts are fully compliant with the European Union directives 2002/95/EC and 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment. Note the RoHS compliant parts are suitable for assembly using both Lead-free solders and Tin / Lead solders.
b. Solderability	JESD22-B102, M1, condition E (IPC/EIA J-STD-002A), 245°C for 5s, precondition for 16 hours at +150°C
c. High Temperature Operating Life (HTOL)	JESD22-A108, 1008 hours at +125°C
d. Temperature cycle	JESD22-A104, 500 cycles, -55°C to +125°C
e. Low temperature storage	IEC 60068-2-1 test Ab, 1000 hours at -55°C
f. High temperature storage	IEC 60068-2-2 test Bb, 1000 hours at +150°C
g. Moisture resistance	JESD22-A113, MSL = 1
h. Temperature / Humidity bias	JESD22-A101, 1008 hours at +85°C / 85% R.H., precondition: 3 Reflow cycles (peak temperature 260°C)
i. Mechanical vibration	JESD22-B103, 20g, 60-2000Hz, 4 hours in each of three axes (12 hours total)
j. Mechanical shock	JESD22-B104, 1500g <sub>n</sub> , 0.5ms, 5 pulses in each of 6 directions
k. Aging	MIL-PRF-55310, 1008 hours at +85°C, precondition: 3 Reflow cycles (peak temperature 260°C)
l. Resistance to soldering heat	IPC/JEDEC J-STD-020, 3 reflow cycles (peak temperature 260°C)

## 14.0 Disclaimer

Parameter	Description
a. Disclaimer	"Samples supplied according to this specification are supplied from our development or pre-production programme and as such are not qualification approved products. No condition, warranty or representation regarding quality, suitability, performance, life or continuation of supply is given or implied and Guarantee in clause 6.1 of our standard Conditions of Sale is not applicable. The right is reserved to change the design or specification or cease supply without notice." RAKON Limited

15.0 Model Outline:

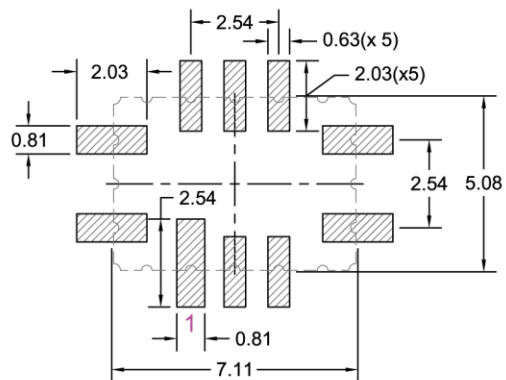
MODEL DRAWING



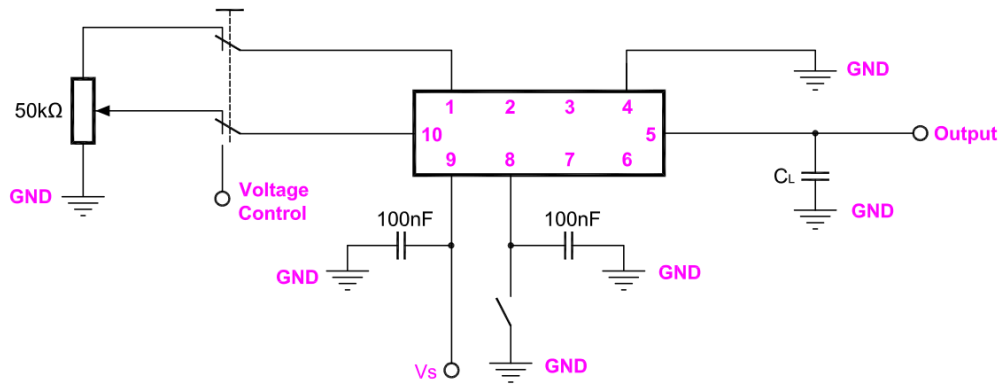
**NOTE:**  
Pin connections are detailed in the specification.

Pin1 と Pin3 はメーカー調整端子です。  
必ず Open にして下さい。

RECOMMENDED PAD LAYOUT - TOP VIEW



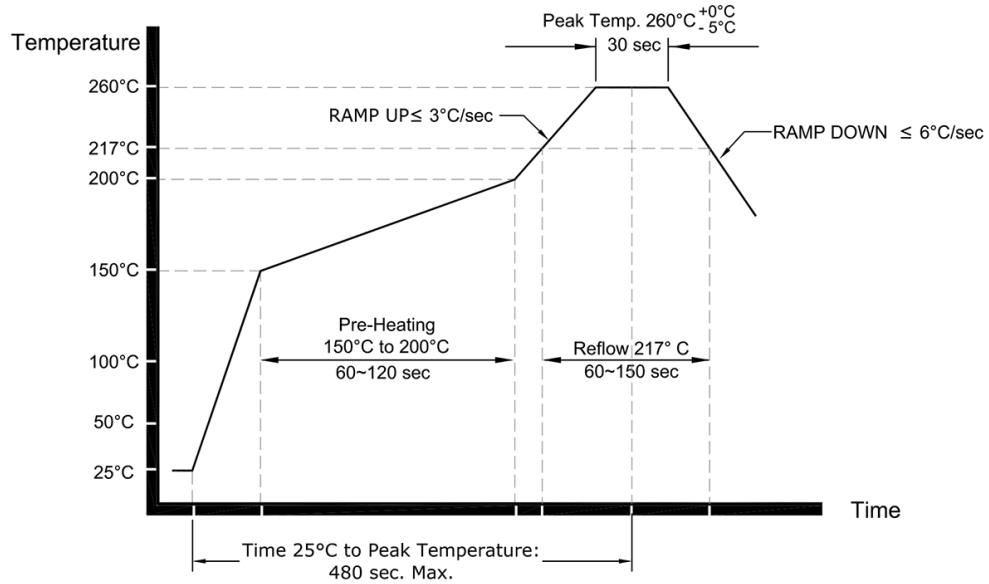
16.0 Test Circuit:



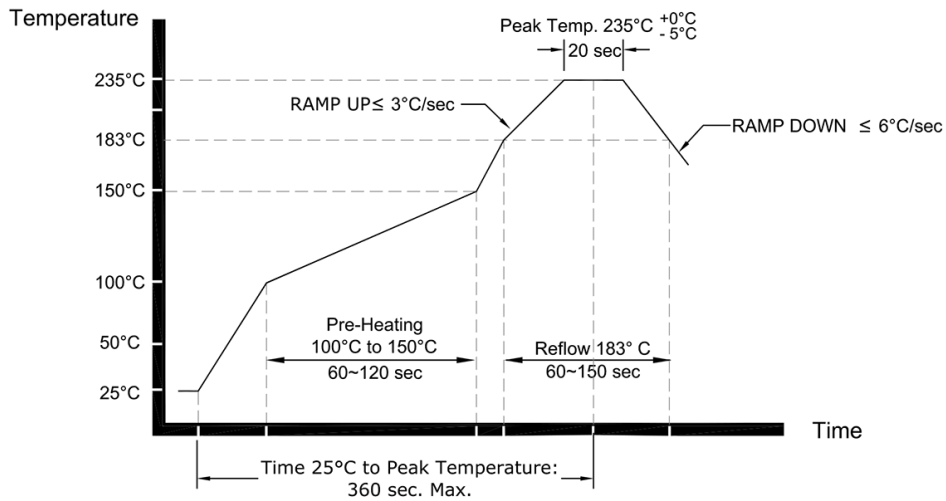
Note function connected to pin 1 is not enabled (do not connect).

17.0 Reflow:

Pb-Free Reflow Soldering Profile \*



Sn-Pb Eutectic Reflow Soldering Profile \*



**\* NOTE:**

These profile were used during the qualification testing of the product and therefore represents worst case conditions. They are not recommended for use by the customer in the actual assembly of these parts.

## 18.0 Specification History

Version	User	Changes	Approver	Date
A	JO	Initial issue	KW	2016-09-21
B	JO	Model change	KW	2016-09-23