

RC001



- Clock Redundancy
- Zero Downtime
- HALT/HASS Verified
- Up to 250.000 MHz

RC001 Redundant Clock Module

Positive ECL Compatible Differential Output

U.S. Patent 6,970,045 0314C Rev F

Description

The Redundant Clock Module is intended to supply highly reliable fixed clock reference. This clock output is based on two clock references internal that are monitored and eliminated from use if they are not operating within tolerance. A slow transition between oscillator references during switching is controlled to assure no significant phase shift or runt pulses will affect the end user application. Osc. 0 Enable or Osc. 1 Enable is used to disable respective oscillator to verify switching functionality. The oscillator status outputs indicate if the respective oscillator is functioning properly or not.

Features

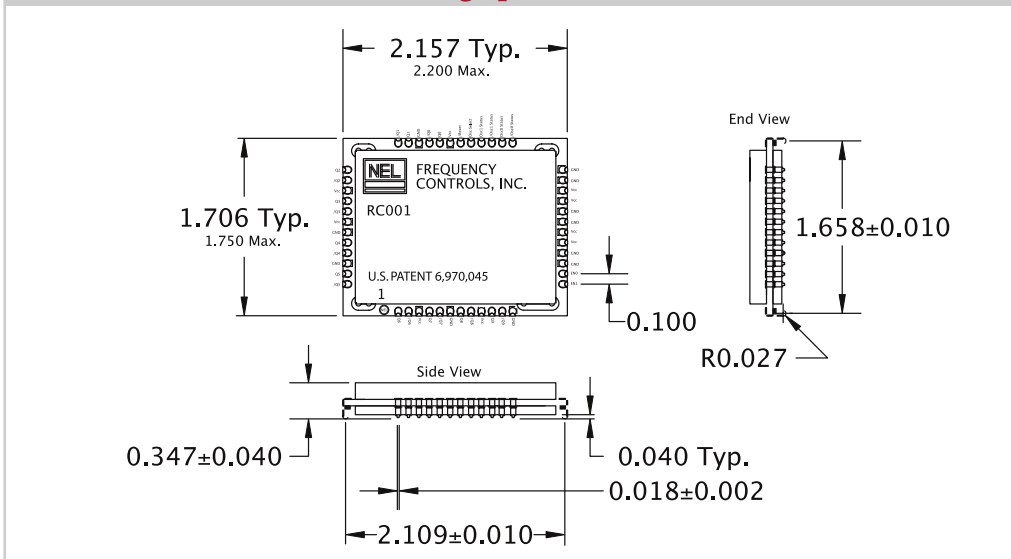
- HALT/HASS verified
- Frequency range: 20.000MHz to 250.000MHz
- User specified tolerance from ± 100 ppm
- Cover at electrical ground
- Will withstand SMD reflow temperatures of 253°C for 4 minutes maximum
- MECL compatible outputs
- High shock resistance, to 1000g
- Leaded package
- Ten low skew DPECL outputs

Electrical Connection

Pin	Connection	Pin	Connection	Pin	Connection
1	Q6	17	Vcc	33	/Q0
2	/Q6	18	Vcc	34	GND
3	Vcc	19	GND	35	Q1
4	Q7	20	GND	36	/Q1
5	/Q7	21	Vcc	37	Q2
6	GND	22	Vcc	38	/Q2
7	Q8	23	GND	39	Vcc
8	/Q8	24	GND	40	Q3
9	Vcc	25	/Osc 0 status	41	/Q3
10	Q9	26	Osc 0 status	42	Vcc
11	/Q9	27	/Osc 1 status	43	GND
12	GND	28	Osc 1 status	44	Q4
13	EN1	29	Osc select	45	/Q4
14	EN0	30	/Reset	46	GND
15	GND	31	Vcc	47	GND Q5
16	GND	32	Q0	48	GND /Q5

Note: Osc X status is logic low for pass and logic high for fail

Drawing Specifications



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Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	—	—	20.000 MHz	—	250.000 MHz
Duty Cycle	—	@V _{CC} -1.29	45/55%	—	55/45%
Logic 0	V _{OL}	—	V _{CC} -1.95 V	—	V _{CC} -1.60 V
Logic 1	V _{OH}	—	V _{CC} -1.15 V	—	V _{CC} -0.90 V
Rise & Fall Time	t _r , t _f	20-80% V _O	—	—	600 psec
Jitter, RMS	—	12 kHz to 20 MHz	—	—	5 psec
Frequency Stability	dF/F	User Specified	-100 ppm	—	+100 ppm
Output Skew	—	—	—	—	±30 psec

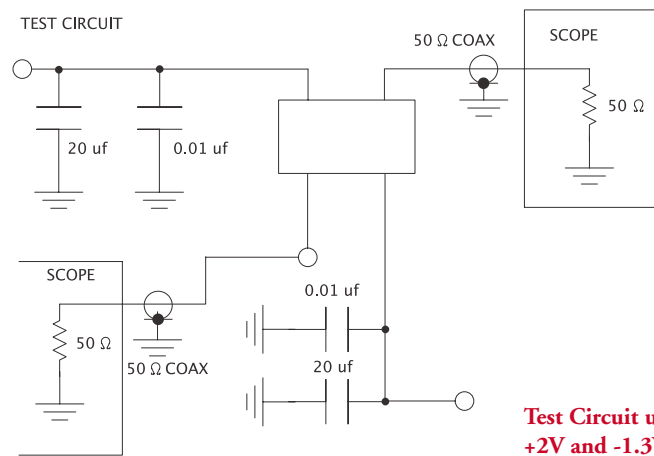
General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage	V _{CC}	3.3V±10%	2.97 V	3.3 V	3.63 V
Supply Current ⁽¹⁾	I _{CC}	V _{CC} or Ground Current	0.0 mA	—	900 mA
Output Current	I _O	Low level Output Current	0.0 mA	—	±50.0 mA
Operating Temperature	T _A	—	-0°C	—	70°C
Storage Temperature	T _S	—	-55°C	—	125°C

Footnote:

1) All outputs terminated by 50 ohm to V_{CC}-2V

Test Circuit



Output Waveform

