

Typical Applications

SONET
PCS Base Stations
Cellular Base Stations
Synthesizers
Test Equipment
Avionics

Features

SONET Minimum Clock Specifications
Tight Tolerances
Small SMD Size
Many Output Choices



Frequency Range

10 MHz – 220 MHz

Standard Frequency

155.52 MHz

Frequency Stability

	Code	Tolerance
Stability	20	±20 ppm* (meets SONET Minimum Clock specifications)
	25	±25 ppm*
	30	±30 ppm*
*Frequency Stability is defined as all conditions of temperature, accuracy, supply variation, load variation, and aging @ 25°C.		

RF Output

Code	A	B	C	D	E	F
Signal	CMOS	LV-CMOS	ECL	PECL	LV-PECL	LVDS
Freq. Available (MHz)	10-160	10-160	10-220	10-220	10-220	10-220
Rise and Fall Time	5 ns Max. 10% - 90%	5 ns Max. 10% - 90%	500 ps Max. 20% - 80%	500 ps Max. 20% - 80%	500 ps Max. 20% - 80%	1.5 ns Max. 20% - 80%
Symmetry	60/40 @ 50% amplitude					
Logic "0"	0.5 V Max.	0.5 V Max.	-1.6 to -2 V	3.0 to 3.4 V	1.4 to 1.7 V	N/A ²
Logic "1"	4.0 V Min.	2.5 V Min.	-0.7 to -1.1 V	3.9 to 4.3 V	2.2 to 2.4 V	N/A ²
Output Loading	Up to 5 CMOS Loads	Up to 5 CMOS Loads	50 Ω to -2 V	50 Ω to 3 V	50 Ω to 1.3 V	50 Ω across differential outputs
Complementary Output	No	No	Yes	Yes	Yes	Yes

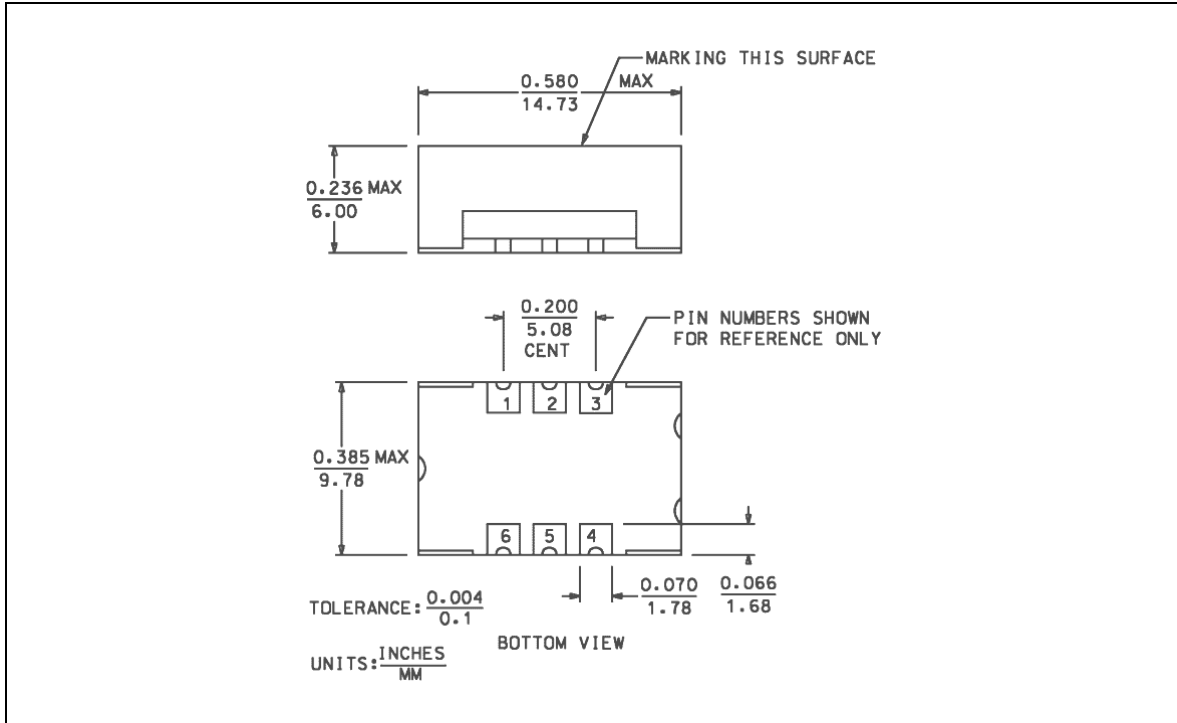
Supply Voltage

Supply voltage (±5%)	+ 5 VDC	+ 3.3 VDC	- 5.2 VDC	+ 5 VDC	+ 3.3 VDC	+ 3.3 VDC
Current Consumption	5 to 50mA Max. ¹	5 to 50mA Max. ¹	50mA Max.	60mA Max.	60mA Max.	25mA Max.

Additional Parameters

Phase Noise (Typical Values @ 155.52 MHz)	-50 dBc	10 Hz offset
	-90 dBc	100 Hz offset
	-120 dBc	1 kHz offset
	-135 dBc	10 kHz offset
	-140 dBc	100 kHz offset
Jitter	<1 pSec RMS from 10 kHz to 20 MHz	
Aging	<u>Code</u>	<u>Time</u>
	10	10 Years
	15	15 Years
	20	20 Years
Storage Temperature	-40°C to +85°C	
Operating Temperature	0°C to +70°C	
Weight	2 grams max.	
Enable Option available on some models. Contact factory for availability.		

Enclosure



Pin Connections	ECL Output	LVPECL, LVDS, PECL Output	CMOS, LVCMOS Output
Pin 1	N/C	1 N/C	1 N/C
Pin 2	N/C	2 N/C	2 N/C
Pin 3	Supply Voltage	3 Ground	3 Ground
Pin 4	RF Output	4 RF Output	4 RF Output
Pin 5	Complementary Output *	5 Complementary Output *	5 N/C
Pin 6	Ground	6 Supply Voltage	6 Supply Voltage

*if required

Ordering Code

	Model	Output	Stability	Aging	Frequency
Example	9140	E	20	20	155.52 MHz

Sample Specification 9140E2020 @ 155.52
 Output: LVDS
 Frequency Stability: ±20 ppm over all conditions
 Aging Time: 20 Years
 Output Frequency: 155.52MHz

Notes:

- 1 Max. current drain depends on output frequency.
- 2 Differential output voltage magnitude is 240 to 460 MV P-P
- 3 Typical values @ 155.52 MHz.
- 4 Unless otherwise stated all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, temperature (25°C).
- 5 Subject to technical modification: Not all options are available at all frequencies.