

TRU200G Clock Recovery and Data Retiming Module



Description

The AT&T TRU200G Clock Recovery and Data Retiming Module is used to generate data and clock signals from nonreturn-to-zero digital data streams, such as those used in fiber-optic data links and telecommunications applications. A precision narrow-band filter, centered at the clock frequency, substantially suppresses jitter by rejecting other frequencies. Output jitter is typically 10 ps rms. In addition to producing outputs with very low jitter, the TRU200G has excellent stability, fast acquisition time, and robust operation over specified operating conditions.

Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Nominal Clock Frequency*	FN	125	—	312	MHz
Input Data Frequency Deviation	Dc	-200	—	+200	ppm from FN
Supply Current	I _{CC}	50	65	75	mA
Supply Voltage	V _{CC}	4.5	5.0	5.5	V
Data Input Voltage Levels					
Input Logic Low	V _{IL}	-1.81	—	-1.48	V
Input Logic High	V _{IH}	-1.17	—	-0.88	V
Data/Clock Output Voltage Levels					
Output Logic Low	V _{OL}	-1.95	—	-1.63	V
Output Logic High	V _{OH}	-1.03	—	-0.88	V
Clock/Data Alignment	TCDA	-100	0	100	ps
Output Clock Symmetry/Duty Cycle	SYM	45	50	55	%
Transition Times					
Rise Time	T _{RISE}	275	375	575	ps
Fall Time	T _{FALL}	275	375	575	ps
Acquisition Time	T _A	—	—	2.0	μs
Output Clock Random Jitter	J _c	—	10	—	ps rms
Power Consumption	P _d	—	325	—	mW
Operating Temperature Range	T	-40	25	85	°C

* The TRU200G meets all SONET/SDH requirements for jitter transfer and jitter tolerance mask characteristics at the standard SONET transmission rates.

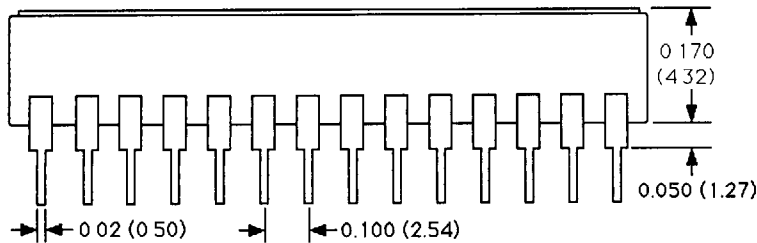
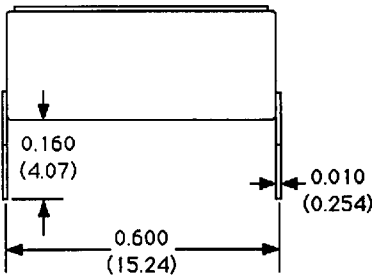
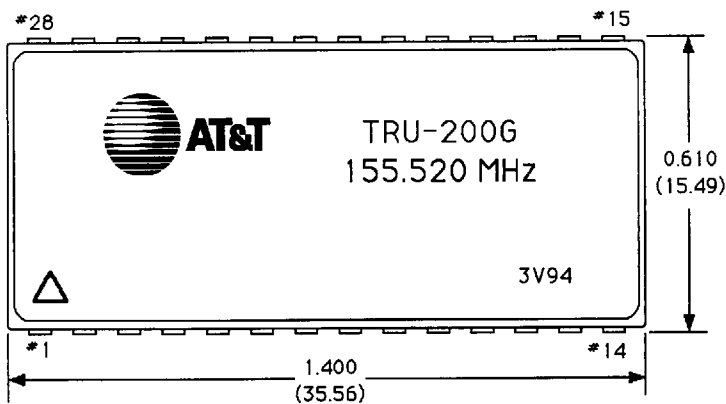
Mechanical Characteristics

Parameter	Description
Mechanical Shock	MIL-STD-883, Method 2002, Condition A.
Mechanical Vibration	MIL-STD-883, Method 2007, Condition A.
Solderability	MIL-STD-883, Method 2003.
Gross Leak Test	All units tested to MIL-STD-883, Method 1014.
Fine leak Test	All units tested to MIL-STD-883, Method 1014.
Resistance to Solvents	MIL-STD-883, Method 2016.

Outline Diagram

TRU200G Package

Dimensions are in inches and (millimeters).



PIN #	FUNCTION
1-5	Case ground
6	VEE
7	Recovered clock
8	Recovered clock
9	Vcc
10	Data output
11	Case ground
12	Data output
13	Vcc
14-16	Case ground
17	Data input
18	Case ground
19	Data input
20,21	Case ground
22,23	Vcc
24-28	Case ground

Ordering Information

Standard Frequency (MHz)*	Part Number
124.416	106949928
125.000	107097917
131.072	106949902
155.520	106949845
200.000	106949647
311.040	106949936

* Other specifications and frequencies may be available upon request. 3V94 is the date code and represents the month (3), week of the month (V = 5th week) and the year 19(94) of manufacture. The TRU200G is a pin-for-pin replacement and meets or exceeds all the specifications of the previously released products TRU200A, TRU200C, and TRU200D.