

TRU600 Clock Recovery and Data Retiming Module



Description

The AT&T TRU600 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 TRU600 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	155	—	625	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 TRU600 meets all SONET/SDH requirements for jitter transfer and jitter tolerance mask characteristics at the standard SONET transmission rates.

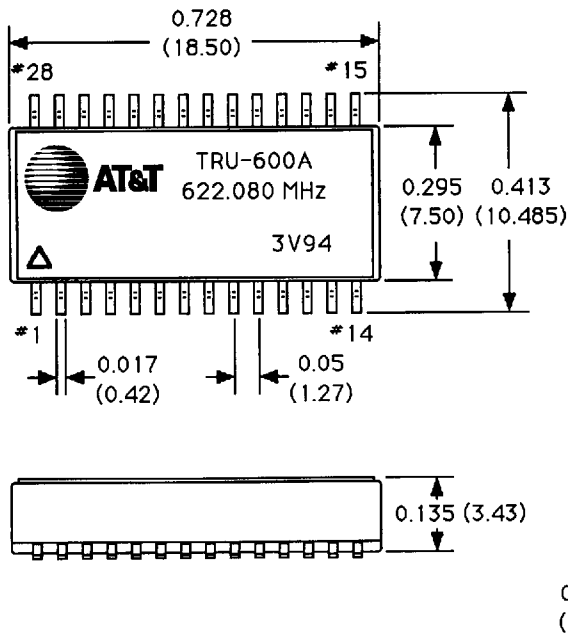
Mechanical Characteristics

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

TRU600 Package

Dimensions are in inches and (millimeters).



PIN #	FUNCTION
2	Test data in [†]
4	Recovered data out
6	Recovered $\overline{\text{data}}$ out
8	Test clock in [†]
10	Recovered clock out
12	Recovered $\overline{\text{clock}}$ out
14	Output disable
16	Vcc
19	VEE
21	Vcc
23	Data in
25	Data in
1,3,5,7,9,11, 13,15,17,18,	Case ground
20,22,24,26,	Case ground
27,28	Case ground

[†] Connect to Vcc if not used, if test clock and test data are used for board test but unconnected for in-circuit use, connect to Vcc using a 10 K Ω resistor.

Ordering Information

Standard Frequency (MHz)*	Part Number
155.520	106859002
200.000	107097925
265.625	—
278.528	—
311.040	107097933
531.250	—
622.080	106859028

* 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 199(4) of manufacture.