

SAW SONET RECIEVER MODULES

Performance Characteristics (TA = -40 °C to 85 °C)					
Specifications	Sym	Min	Typ	Max	Unit
Standard Bit Rates ¹			155.52, 622.08		Mb/s
Operating Temperature	T _o	-40	-	85	°C
Power Supply Voltage	V _{CC}	4.5	5.0	5.5	V
Power Supply Current	I _{CC}	-	-	300	mA
Data & Clock Output Level ²					
High	V _{OL}	V _{CC} -1.95		V _{CC} -1.63	V
Low	V _{OH}	V _{CC} -1.03		V _{CC} -0.88	
Clock/Data Alignment ³	T _{CDA}	-100		+100	ps
Data & Clock Rise/Fall Time ⁴	T _{R/F}	275	375	575	ps
Output Clock Duty Cycle	Duty	45	50	55	%
Received Power Level Flag					
SRM-155					
Decreasing Optical Power			-37		
Increasing Optical Power	LOS	-	-34	-	dBm
SRM-622					
Decreasing Optical Power			-34		
Increasing Optical Power			-31		
Flag Hysteresis	Hyst	-	3	-	dB
Acquisition Time ⁵	T _A	-	-	2	μs
Output Clock Random Jitter ⁶	J _C	-	17	-	ps _{rms}
Minimum Average Sensitivity ⁷					
SRM-155	Sens	-	-37	-34.0	dBm
SRM-622		-	-33	-31.0	
Maximum Optical Input ⁷					
SRM-155	P _{MAX}	0	-	-	dBm
SRM-622		-3	-	-	
Input Wavelength	λ	1100		1580	nm

Mechanical and Environmental Qualification		
Parameter	Test Method	Qty
Physical Dimensions	MIL-STD-883, Method 2016	11
Shock & Vibration	MIL-STD-883, Method 2007, Test A,B	11
Lead Solderability & Integrity	MIL-STD-883, Method 2003, 2004	22
Temperature Cycling	-40°C/85°C, 300 cycles	11
High Temperature Aging	85°C under bias, 3000 hours	11
Low Temperature Storage	-40°C, 168 hours	11
ESD	Method 3015	3
Destructive Bond Pull	MIL-STD-883	40

¹ Other center frequencies are available in the 124 to 622 MHz frequency range.

² Measured with a load of R_L = 50Ω to V_{CC} - 2 V. See figures 3 and 4. ECL levels are specified for dc measurement, an additional tolerance of 50 mV should be included for dynamic measurements.

³ Alignment of clock and data outputs

⁴ Measured at 20% to 80% levels.

⁵ Time required to achieve valid data and clock outputs with a transition density of at least 50%.

⁶ Measured with an input data pseudorandom word 2²³ - 1.

⁷ For a BER less than 1E-10. Measured using a 2²³ - 1 pseudorandom word and a 50% average optical duty cycle and a 10 dB Extinction Ratio.

Features

- SONET/SDH Compatible
- SAW Filter Clock Recovery and Data Retiming
- 17 ps Typical Output Jitter
- PECL Clock and Data Outputs
- Single +5 Volt Supply
- CMOS Loss of Signal Flag
- Operation at 1300 nm and 1550 nm
- 40 °C to +85°C Operation
- Wide Dynamic Range
- Multi-Sourced 20 Pin DIL Footprint

Applications

- Telecom Receiver Applications
- High Performance Datacom Receiver Applications

Description

The SRM-155 is a fully integrated fiber-optic receiver module with SAW filter clock recovery and data retiming. It is ideally suited for SONET/SDH and other fiber-optic transmission applications that demand superior performance and stability.

Qualification

The SRM-155 has been designed to comply with the intent of Bellcore specifications TR-NWT-000468 and TA-TSSY-000983. All of the technologies used in the assembly of the module represent standard microelectronics technologies that are used in similar products, and have extensive field reliability data.

Part Number

SRM 155

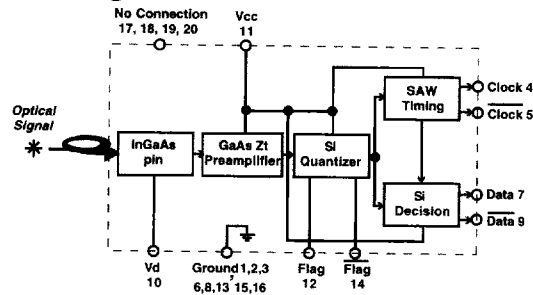
Pinout Information

Pin	Function
4	PECL Recovered Clock (Clock)
5	PECL Recovered Clock (Clock)
7	PECL Retimed Data (Data)
9	PECL Retimed Data (Data)
1, 2, 3, 6, 8, 15, 16	Case Ground (GND)
17, 18, 19, 20	No Connection (NC)
10	Detector Bias (V_D)
11	+5 Volt Supply (V_{CC})
12	Input Level Status (FLAG)
14	Input Level Status (FLAG)

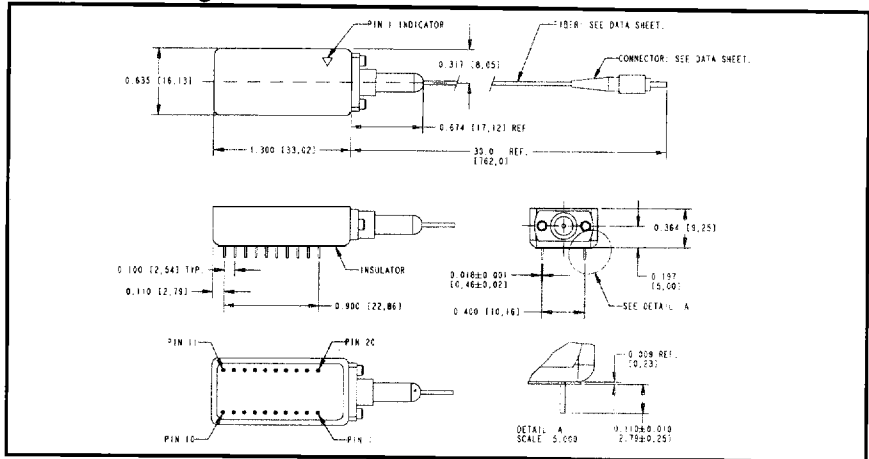
Fiber-Optic Connector ¹	Model Number	VTI Code Number
None	SRM-155	330001595
FC/PC	SRM-155A	330001702
ST	SRM-155B	330001710
SC	SRM-155C	330001728

¹ Other connectors or fiber requirements are available to meet specific application requirements

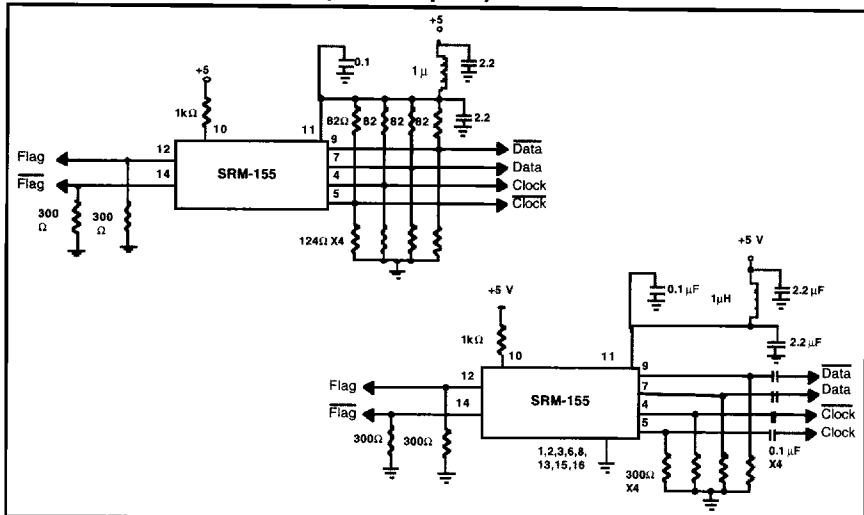
Simplified Block Diagram



Outline Drawing



PECL Interface and ECL (AC Coupled) Interface



Clock to Data Diagram

