

**Features**

- 2500 MHz Bandwidth
- 1.3 or 1.5  $\mu\text{m}$  DFB Low Noise Laser
- High Dynamic Range
- WDM option for bidirectional transmission
- CWDM transmission available
- Internal Optical Isolator
- Monitoring and Alarm Capability
- Singlemode Fiber



**Description**

The AC 231-2.5 is a linear, low noise RF fiber optic transceiver designed for fiber optic wireless systems and broadband RF applications. The system is composed of a fully integrated transceiver module designed for wide temperature performance and transmission over a single fiber. The transmitter utilizes a high performance, linear, optically isolated DFB laser operating at 1.3 or 1.5  $\mu\text{m}$  over 9/125  $\mu\text{m}$  singlemode fiber. For optimal stability, the laser incorporates average optical power feedback which monitors and actively adjusts the laser for constant power output over temperature and lifetime.

The receiver utilizes a high-speed, low distortion InGaAs PIN diode photodetector. The RF interface is via a 50 $\Omega$  SMA connector and the optical connector is a low reflection FC/APC connector. The frequency response is from 100 to 2500 MHz. The unit requires a single 12 volt DC supply with no external settings necessary. A laser and received optical power monitor and alarm is provided. An internal WDM permits bidirectional transmission over one fiber. The AC 231W-2.5-1.3 transmits at 1.3 $\mu\text{m}$  and the AC 231W-2.5-1.5 transmits at 1.5  $\mu\text{m}$  wavelength. Three channel systems are also available.

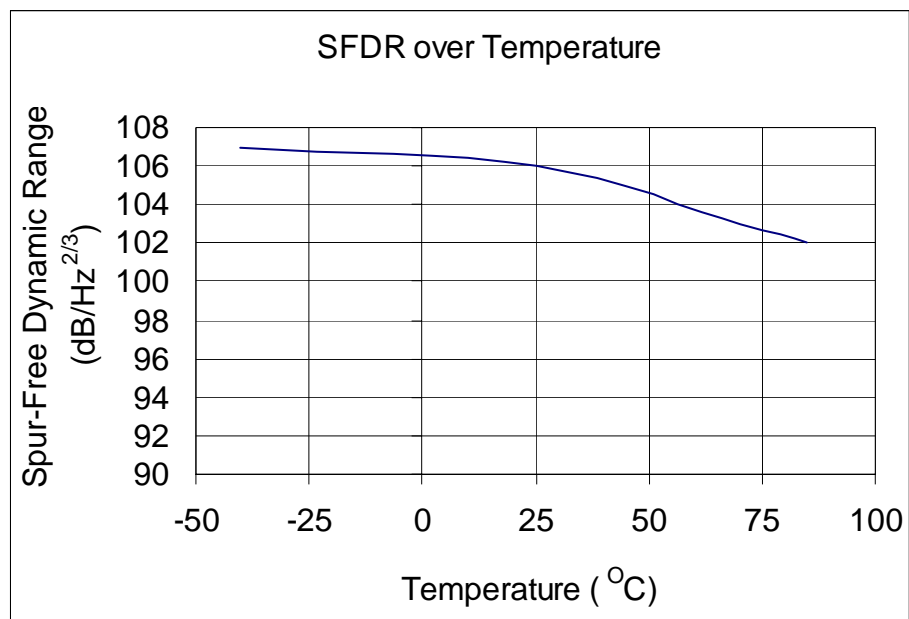
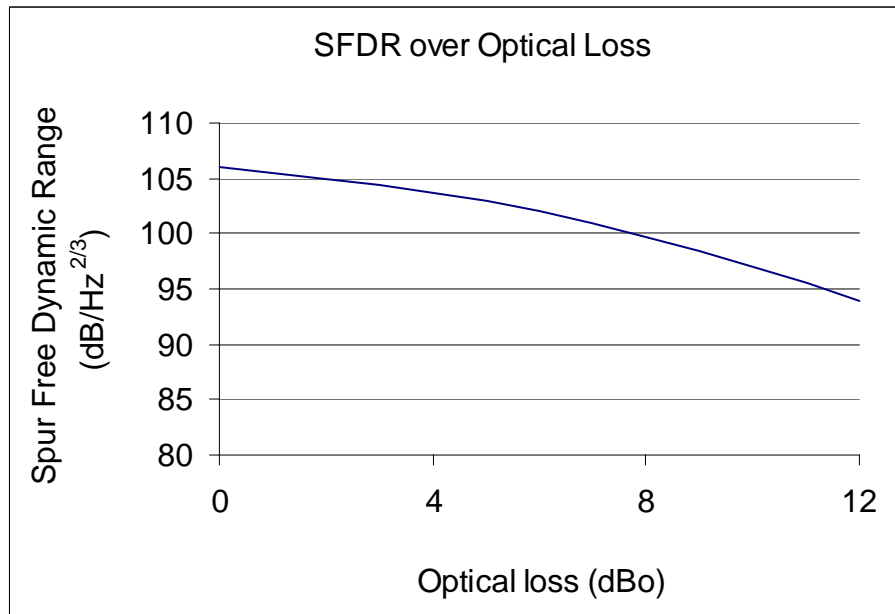
**Specifications (Tc = 25°C)**

Parameter	Min	Typ	Max	Units
Wavelength, peak	1520	1550	1570	nm
	1280	1310	1360	nm
Bandwidth			2500	MHz
Frequency Response, 800 – 2500 MHz		+/- 1.5		dB
Input and Output VSWR			1.8:1	--
RF Isolation	50	60		
Spur Free Dynamic Range (1)	98			dB/Hz <sup>2/3</sup>
RF Link Gain (2)	- 2	0	+ 2	dB
Output Noise Floor (1)		- 133	- 130	dBm/Hz
Input 3rd Order Intercept (1)	+26			dBm

Notes:

- (1) SFDR, Noise and IP3 are specified with optical loss over 1 meter fiber.
- (2) Gain is specified with 1 meter fiber.

Typical Performance

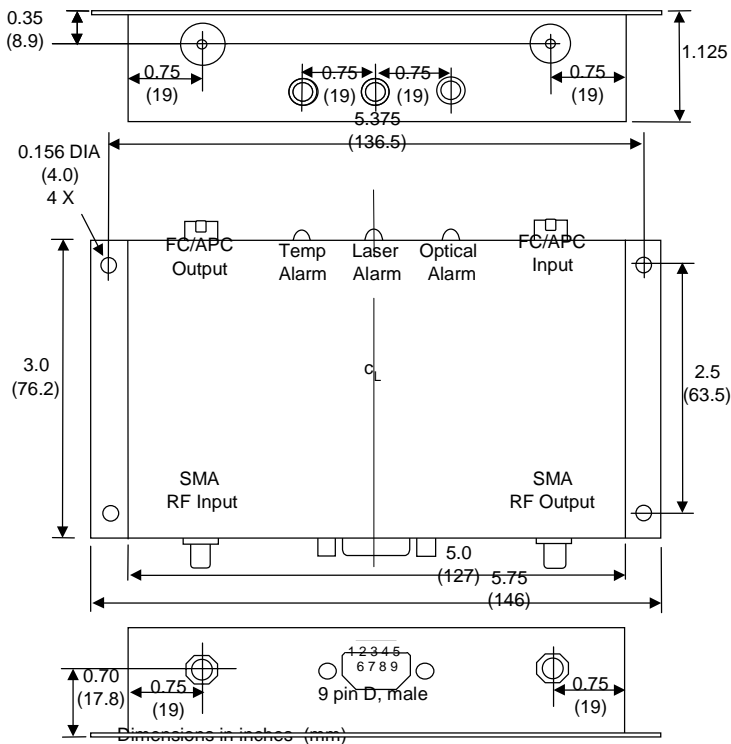


Note: SFDR degradation is attributed to the increased input noise. Input IP3 remains constant.

**Absolute Maximums**

Parameter	
Operating Temperature	-30 to +75°C
Storage Temperature	-40 to +85°C
Maximum RF Input to Transmitter	+10 dBm
Maximum Optical Input to Receiver	4 mW
D.C. Supply Voltage	12 volts ±\ -5%

**Package Schematic**



PINOUT	
1.	Laser Disable (+12 v = Laser ON)
2.	Ground
3.	+12 volts (250 mA max)
4.	Ground
5.	Ground
6.	Laser Bias Monitor (0.1 V = 10 mA)
7.	Laser Bias Alarm (open collector, 25 mA)
8.	Received Power Monitor (1V = 1mW)
9.	Received Power Alarm (open collector, 25 mA)



**Ordering Information**

Model Number: AC 231-2.5-1.3 or AC 231-2.5-1.5  
 Description: 2.5 GHz Fiber Optic Transceiver  
 Model Number: AC 231T-2.5-1.3/1.5 or AC231R-2.5-1.3/1.5  
 Description: 2.5 GHz Fiber Optic Transmitter or Receiver

The AC231W is available with internal WDM functionality for bidirectional transmission on a single fiber or multichannel CWDM options. Please consult the Sales Department for other packaging configurations.

The information is considered to be accurate however to provide the best product possible, Fiber-Span reserves the right to make changes and improvements to the specifications without notice.