

### Features

- 2200 MHz Bandwidth
- 1.3 or 1.5  $\mu\text{m}$  DFB Low Noise Laser
- High Dynamic Range
- WDM for bidirectional transmission
- CWDM configurations available
- Internal Optical Isolator
- Monitoring and Alarm Capability
- Singlemode Fiber



### Description

The AC 231W 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 bandwidth, 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 2200 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-1.3 transmits at 1.3 $\mu\text{m}$  and the AC 231W-1.5 transmits at 1.5  $\mu\text{m}$  wavelength. Three channel systems are also available.

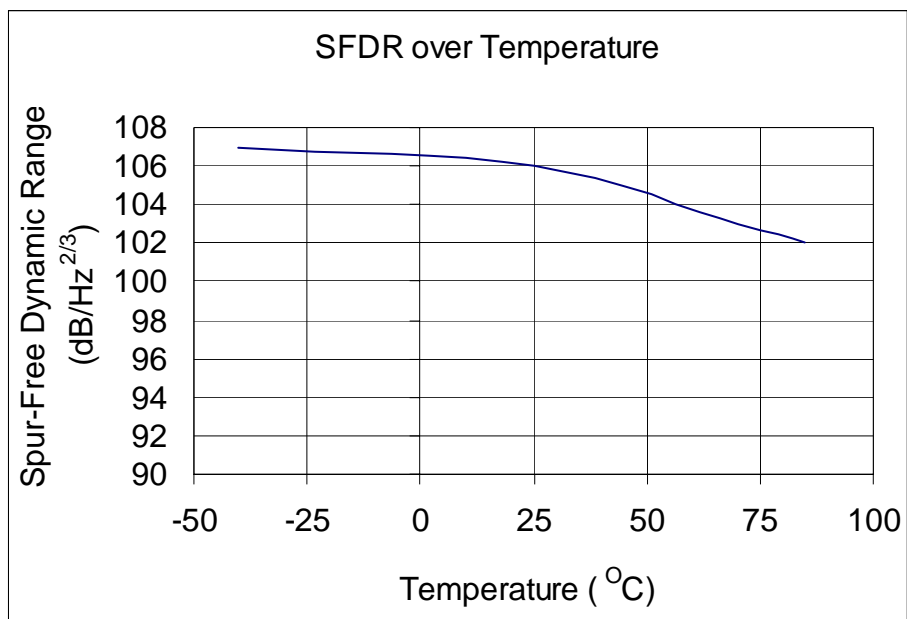
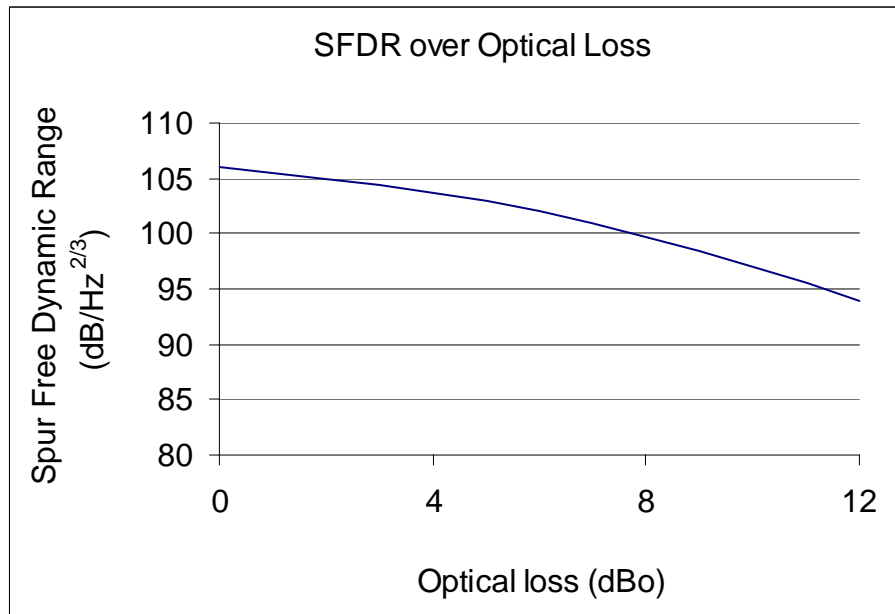
### Specifications (Tc = 25°C)

Parameter	Min	Typ	Max	Units
Wavelength, peak	1520	1550	1570	nm
	1280	1310	1360	nm
Bandwidth	2200			MHz
Frequency Response, 800 – 2200 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 budget over 1 meter fiber.
- (2) Gain is specified with 1 meter fiber.

Typical Performance

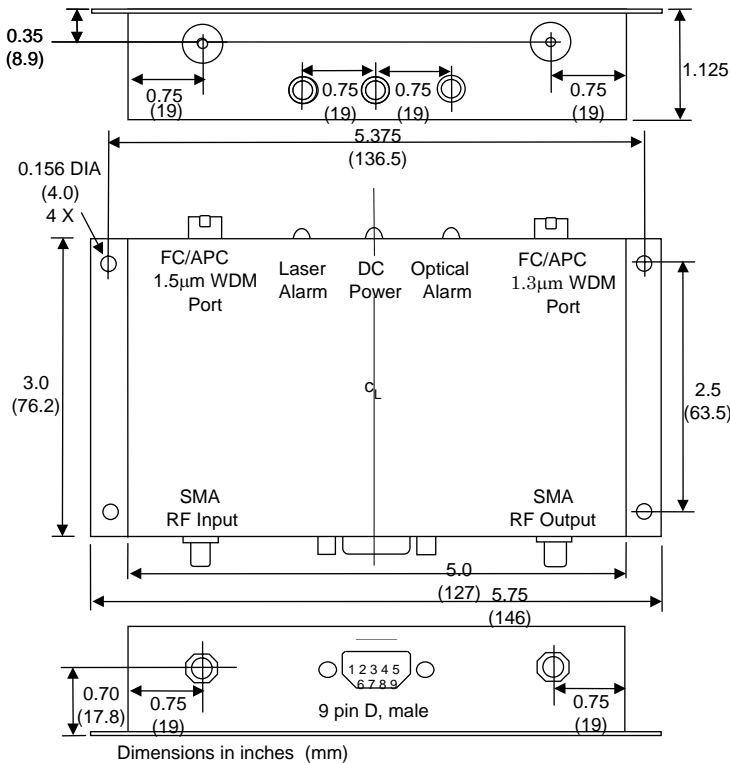


Note: SFDR degradation is attributed to the increased input noise. Input IP3 remains constant.

### 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)



Note: Each AC 231W WDM transceiver will be equipped with either one 1.3µm or 1.5µm optical port.

### Ordering Information

Model Number: AC 231W-1.3 (1.3 Tx, 1.55 Rx)  
 AC 231W-1.5 (1.55 Tx, 1.3 Rx)  
 Description: RF/Fiber Optic WDM Transceiver System

CWDM configurations available.

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.