

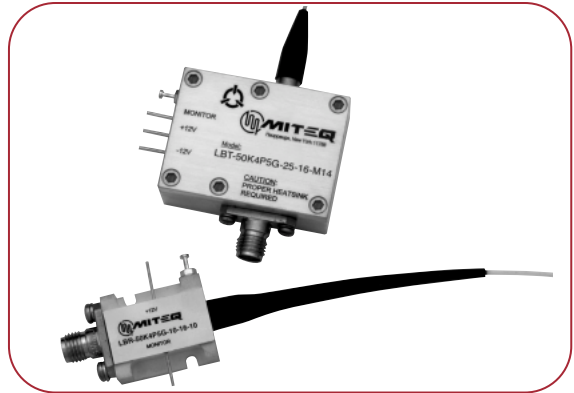
50 kHz - 4.5 GHz LBL FIBER OPTIC LINK

FEATURES

- Bandwidth 50 kHz to 4.5 GHz
- Small size
- Un-cooled DFB laser
- No external control circuits required
- Transimpedance amplifier in both transmitter and receiver
- Operational status monitor pins

APPLICATIONS

- Antenna remoting
- Local oscillator remoting
- Interfacility communication links



ELECTRICAL SPECIFICATIONS

PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
Operating frequency	3 dB bandwidth		50 kHz		4.5 GHz
Gain		dB	12	17	25
Noise figure	Above 50 MHz	dB		10	15
Group delay	Peak-to-peak	ns		0.1	0.2
VSWR	Input/output				2:1
Phase noise	100 Hz offset	dBc	100		
Input power at 1 dB compression	Option A	dBm	-14		
Spurious-free dynamic range	1 Hz bandwidth	dB/Hz ^{2/3}	100	106	
Maximum input power	No damage	dBm			+10
Maximum output power	Saturated	dBm			+10
Impedance	Input/output	Ohms		50	
RF connectors	SMA female (male optional)				

NOTE: -30 dBm input power.

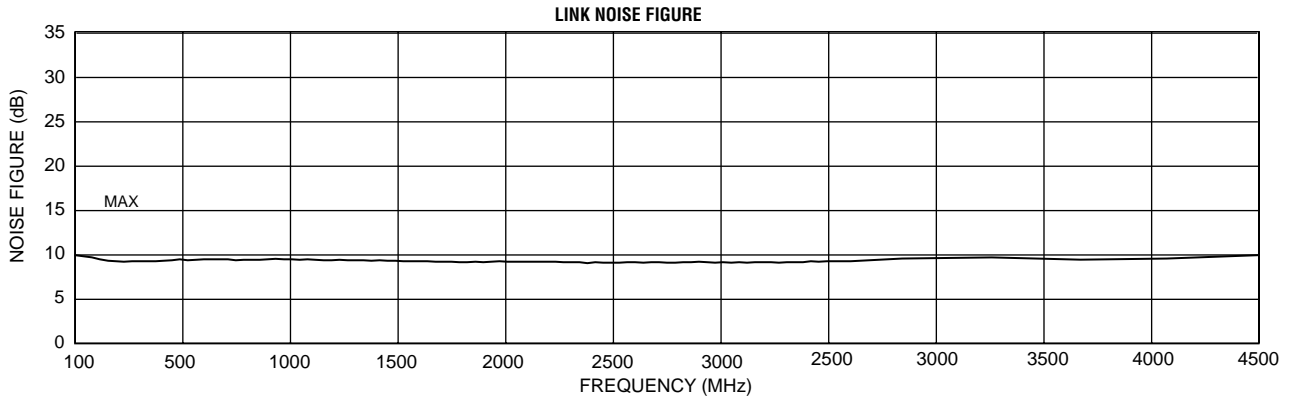
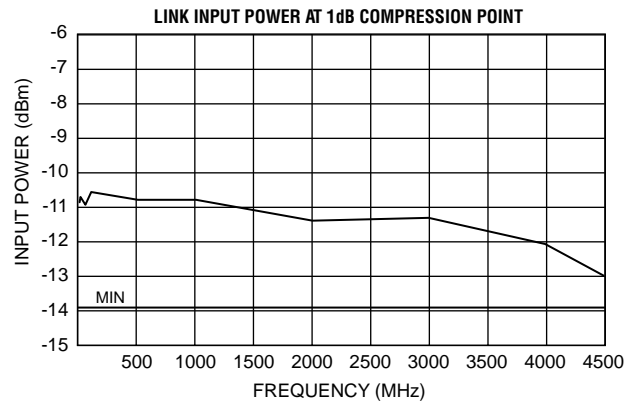
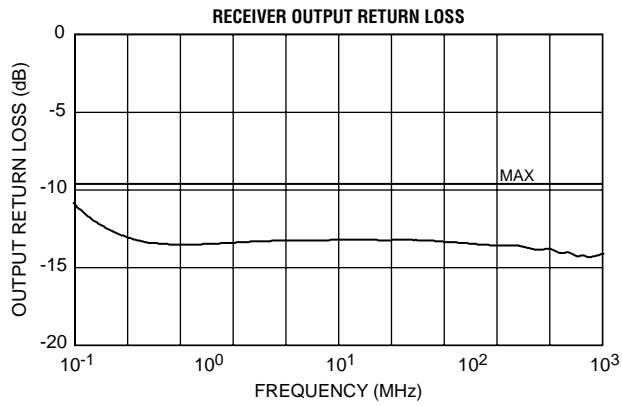
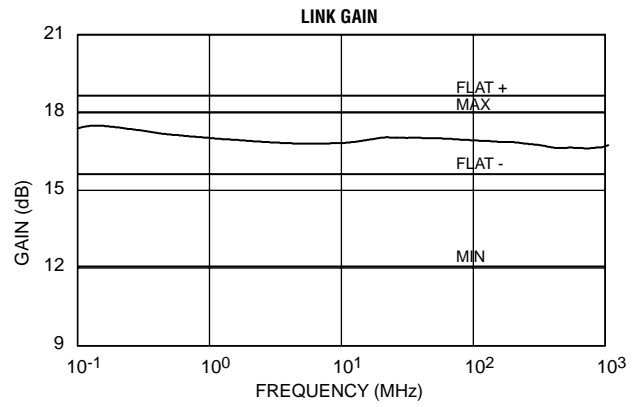
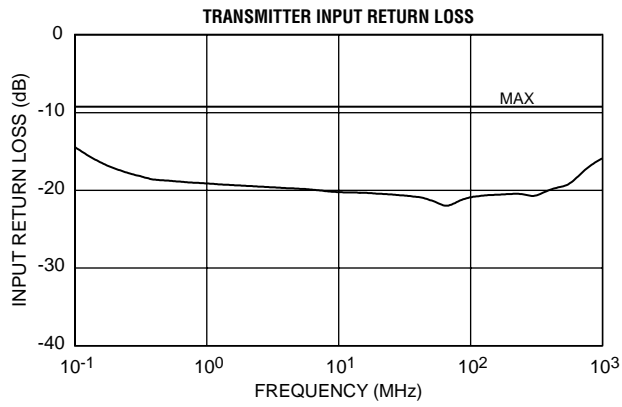
OPTICAL PERFORMANCE SPECIFICATIONS

PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
Fiber optic connectors	FC/APC (Other standard available)				
Fiber	Single mode fiber (9/125μm)				
Wavelength		nm	1540	1550	1560
Spectral width	FWHM	nm			0.1
Optical power in fiber	Reference only	mW	3	4	
Side mode suppression ratio		dB	30	40	

POWER REQUIREMENTS

PARAMETERS	CURRENT @ 25°C BASE PLATE	UNITS	MIN.	TYP.	MAX.
			(VDC)	(VDC)	(VDC)
Transmitter	200 mA	2	+11	+12	+20
	100 mA	1	-11	-12	-20
Receiver	100 mA	4	+11	+12	+20

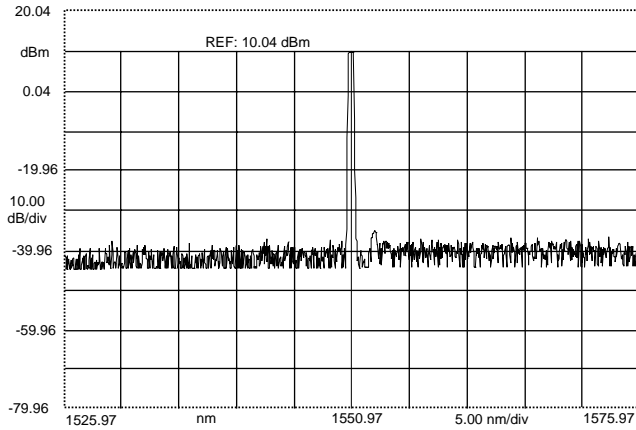
TYPICAL TEST DATA



TYPICAL TEST DATA (CONT.)

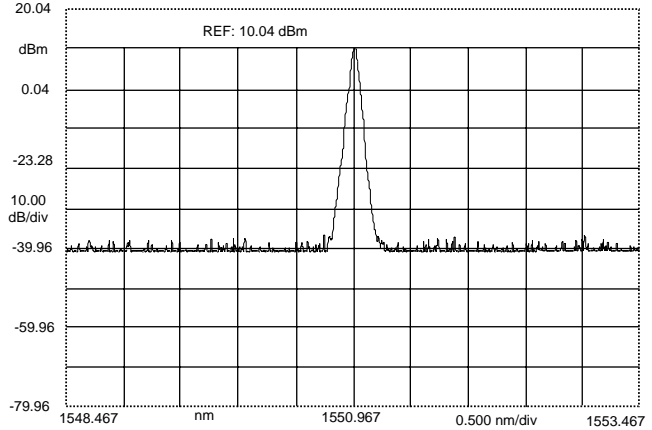
**TRANSMITTER SPECTRUM
50 nM SPAN**

DFB Source Test (TrA) Stop Band 1.55 nm Peak Amplitude 9.86 dBm
 Peak Wavelength 1551.12 nm Center Offset 0.07 nm Bandwidth 0.55 nm
 Mode Offset 1.90 nm SMSR 44.69 dB at: -3.00 dB

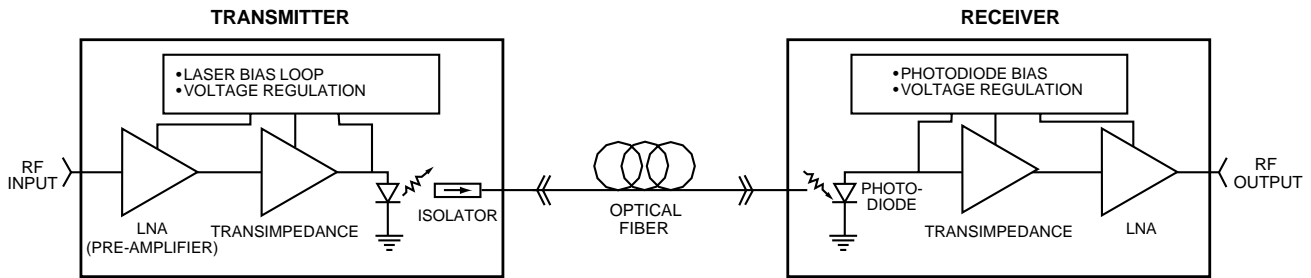


**TRANSMITTER SPECTRUM
5 nM SPAN**

DFB Source Test (TrA) Stop Band 0.990 nm Peak Amplitude 9.96 dBm
 Peak Wavelength 1550.977 nm Center Offset -0.230 nm Bandwidth 0.050 nm
 Mode Offset -0.265 nm SMSR 46.53 dB at: -3.00 dB



BLOCK DIAGRAM



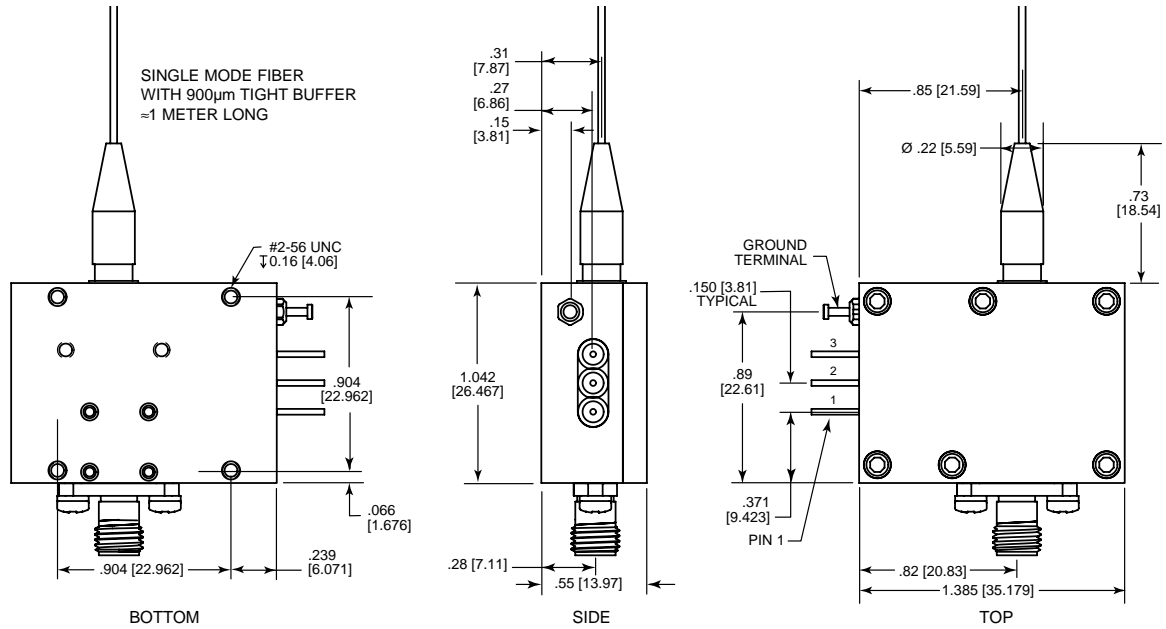
ORDERING INFORMATION

Transmitter..... Part number: LBT-50K4P5G-25-15-M14
 Receiver..... Part number: LBR-50K4P5G-10-15-10

ENVIRONMENTAL CONDITIONS

Operating temperature -20 to +70°C
 Storage temperature -40 to +85°C
 Humidity 95% relative humidity, noncondensing

TRANSMITTER OUTLINE DRAWING



TRANSMITTER POWER SUPPLY

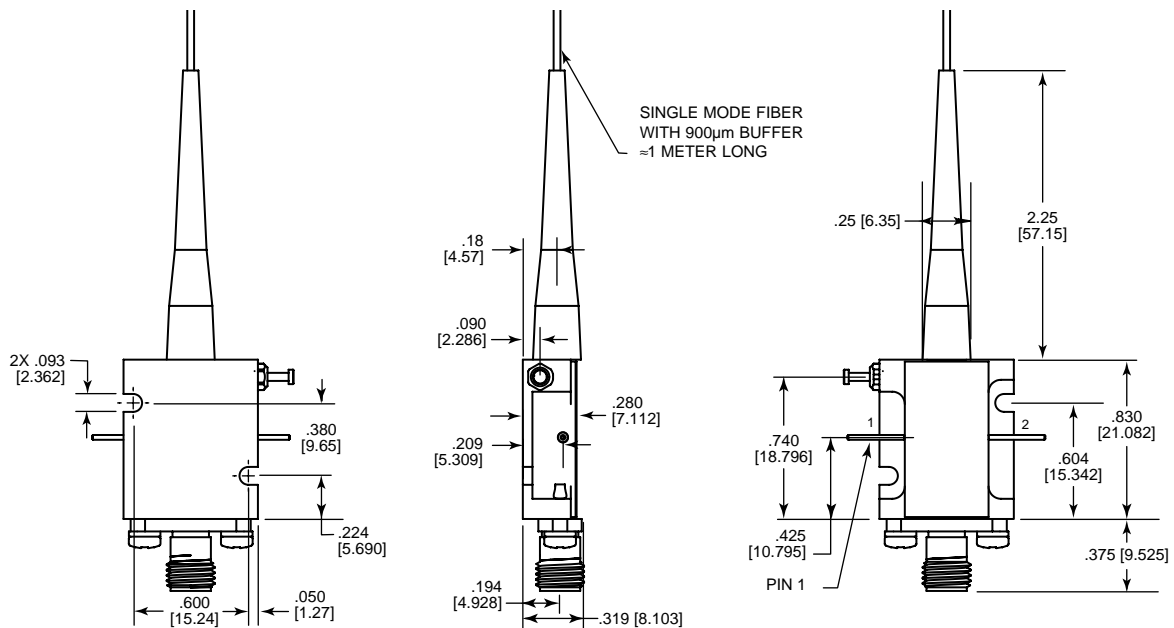
PIN	VOLTAGE	CURRENT (AMPS)	NOTES
1	-12	0.1	
2	+12	0.2	
3			PHOTOCURRENT MONITOR REFER TO "OPERATIONAL STATUS"

TRANSMITTER OPERATIONAL STATUS

PIN	DESCRIPTION	NORMAL VOLTAGE	NOTES
3	OPTICAL POWER MONITOR	-2.5 V TO -1.5 V	0 VOLTS INDICATES NO LASER LIGHT

RF CONNECTOR: SMA (FEMALE STANDARD)
 OPTICAL CONNECTOR: FC/APC STANDARD (OTHER STANDARDS AVAILABLE)
 OPTICAL FIBER: 9/125 SINGLE MODE

RECEIVER OUTLINE DRAWING



RECEIVER POWER SUPPLY

PIN	VOLTAGE	CURRENT (AMPS)	NOTES
1			PHOTOCURRENT MONITOR REFER TO "OPERATIONAL STATUS"
2	+12	0.1	

RECEIVER OPERATIONAL STATUS

PIN	DESCRIPTION	NORMAL VOLTAGE	NOTES
1	OPTICAL CARRIER DETECT	> 1.0 UP TO +8	0 VOLTS INDICATES NO CARRIER PRESENT. VOLTAGE INCREASES APPROXIMATELY 1.3 V/mW WITH DETECTED OPTICAL POWER.

RF CONNECTOR: SMA (FEMALE STANDARD)
 OPTICAL CONNECTOR: FC/APC STANDARD (OTHER STANDARDS AVAILABLE)
 OPTICAL FIBER: 9/125 SINGLE MODE

NOTE: DIMENSIONS SHOWN IN BRACKETS [] ARE IN MILLIMETERS.

