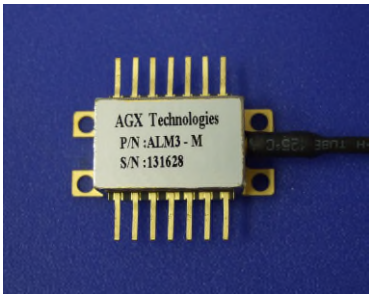
DESCRIPTION

The ALM3 series of 1310nm DFB laser modules is intended for use in the transmission of broadband analog signals. The high linearity makes them especially suitable for CATV broadcast and narrowcast applications. All critical components, including optical isolator, TEC, thermistor, laser, and monitor photodiode are hermetically sealed in a butterfly package.

FEATURES

- Directly modulated DFB lasers
- OC-48 compatible pinouts
- 110 channel NTSC loading
- Internal TEC, thermistor & monitor PD
- 14 pin butterfly package
- Up to 15 dBm (31mW) optical output power



APPLICATIONS

- 1310 broadcast and narrowcast applications
- CATV forward path
- RF over fiber

MODEL NUMBERS:

OEM Grade AGx Lasers

Tested with 77 Channel NTSC Loading

AGX Part Number	Power	Rx Power	Min CNR	Max CSO	Max CTB
ALM3-M1-UT1	10 dBm	-1 dBm	51 dBc	-64 dBc	-70 dBc
ALM3-M2-UT1	11 dBm	-1 dBm	51 dBc	-64 dBc	-70dBc
ALM3-H1-UT1	12 dBm	-1 dBm	51 dBc	-64 dBc	-70 dBc
ALM3-H2-UT1	13 dBm	-1 dBm	51 dBc	-64 dBc	-70 dBc
ALM3-U1-UT1	14 dBm	-1 dBm	51 dBc	-64 dBc	-70 dBc
ALM3-U2-UT1	15 dBm	-1 dBm	51 dBc	-64 dBc	-70 dBc

OPTICAL FIBER and PIN LEAD SPECIFICATIONS

- Type: SMF-28e fiber, flame retardant Hytrel coating, 0.9 mm diameter
- Length: 1-meter minimum
- Nominal Pin Lead Length: 5mm (from external package wall)

ELECTRO-OPTICAL CHARACTERISTICS
(T=25°C, unless otherwise specified)

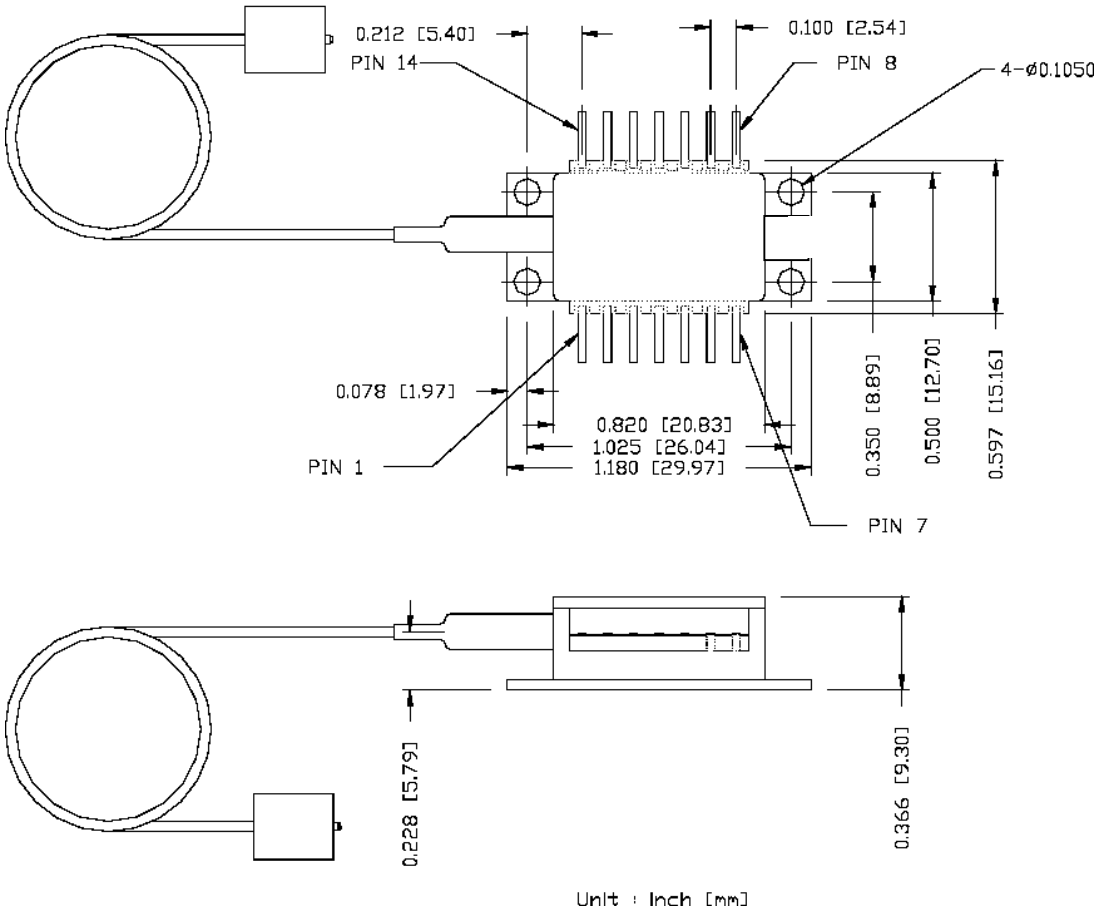
PARAMETER	SYMBOL	CONDITIONS	MIN	MAX	UNIT
Threshold Current	I_{TH}		--	20	mA
Operating Temperature	T_{OP}	$I_F = I_{OP}$	25		°C
Operating Current	I_{OP}		-	100	mA
Operating Voltage	V_{OP}		--	2.1	V
Operating Output Power	P_o	See Model #s	-	-	-
Monitor PD Responsivity	R_{MPD}	--	10	200	μA/mW
Dark Current	I_D	I_{OP}= 0 mA	--	0.2	μA
Operating Wavelength	λ_{OP}	$I_F=I_{OP}$, $T=T_{OP}$	1305	1314	nm
Side Mode Suppression	SMSR	$I_F=I_{OP}$	35	--	dB
Optical Isolation	ISO		30	--	dB
Optical Return Loss	ORL		40	--	dB
Nominal Input Impedance	Z_{IN}	Typical	25		Ohm
Bandwidth			1.1		GHz
TEC Case Temp Range	T_C		-40	70	°C
TEC Current	I_{TEC}	$-40<T_C<70$°C, If=100 mA	-1.5	1.5	A
Thermistor Resistance	R_{TH}		9.5	10.5	kΩ
TE Cooler Voltage	V_{TH}	T_{OP}=25°C over T_C	-2.5	2.5	V
Composite 2nd Order	CSO	See Model #s	--	-64	dBc
Composite Triple Beat	CTB		--	-70	dBc
Carrier to Noise Ratio	C/N		51	--	dB
Relative Intensity Noise	RIN		--	-145	dB/Hz

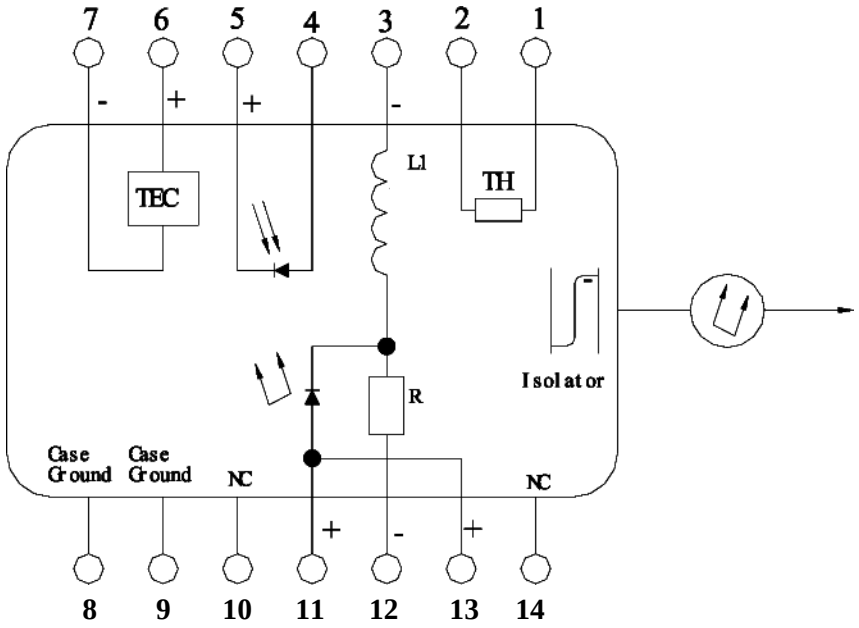
Note (1):
Test conditions: P_0 at rated power, 77 unmodulated NTSC carriers, -1 dBm received power

MAXIMUM RATINGS (T=25°C, unless otherwise specified)

PARAMETER	CONDITION	LIMIT
Storage Temperature	--	-40 to +85°C
Monitor Photodiode Reverse Voltage	60 seconds	15 V
	Continuous	10 V
Forward DC Laser Current	Continuous	150 mA
Reverse DC Laser Voltage	Continuous	1 V
TE Cooler current	Continuous	-1.9A to 1.9 A

MECHANICAL DRAWINGS





PIN ASSIGNMENTS			
Pin #	Function	Pin #	Function
1	Thermistor	8	Case Ground
2	Thermistor	9	Case Ground
3	DC Laser Bias (-)	10	NC
4	MPD Anode	11	Laser Common (+)
5	MPD Cathode	12	Laser Modulation (-)
6	TEC (+)	13	Laser Common (+)
7	TEC (-)	14	NC