

DESCRIPTION

The ALM935 series of 1550nm DFB laser modules are specifically developed for use as a wavelength selected source in combination with an external modulator, such as the LiNbO₃ based Mach-Zehnder. All critical components, including optical isolator, TEC, thermistor, laser, and monitor photodiode are hermetically sealed in a butterfly package.

FEATURES

- ✚ Low Relative Intensity Noise
- ✚ Narrow Linewidth (< 1 MHz)
- ✚ Internal TEC, Thermistor & Monitor PD
- ✚ 14 pin Butterfly Package
- ✚ High Optical Power (>50 mW)
- ✚ Wavelengths available on ITU Grid
- ✚ Polarization Maintaining Fiber

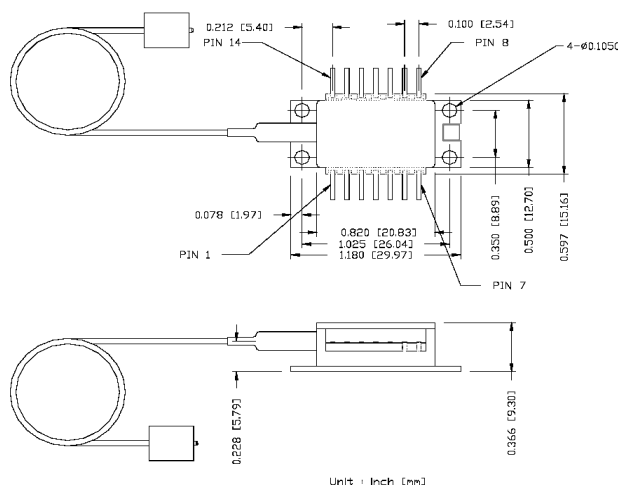
APPLICATIONS

- ✚ Hybrid Fiber-Coax (HFC) networks, CATV networks where high power, low RIN, and narrow linewidths are required
- ✚ Long haul for compensation of high-loss passive or active components

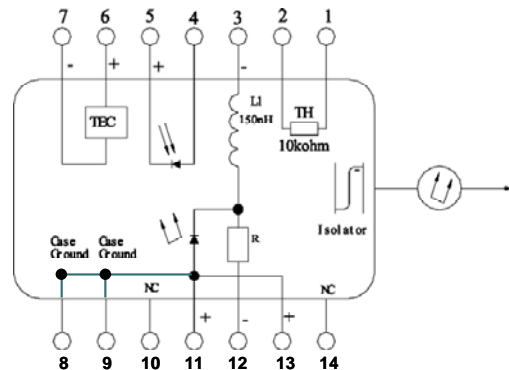
MODEL OPTIONS

ALM935 – yy - zz					
yy		20: 20mW	zz	ITU Channel i.e. Channel 34 1550.12nm	
		30: 30 mW			
		40: 40mW			
		50: 50 mW			
		60: 60mW			

MECHANICAL DRAWINGS



- ✚ Type: PMF fiber, 0.9 mm diameter
- ✚ Length: 1-meter minimum
- ✚ Nominal Pin Lead Length: 5mm (from external package wall)



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 (+)/Gnd
5	MPD Cathode	12	Laser Modulation (-)
6	TEC (+)	13	Laser Common (+)/Gnd
7	TEC (-)	14	NC

ELECTRO-OPTICAL CHARACTERISTICS						
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Case Temp Range	T_C		0		65	°C
Operating (Chip) Temperature	T_{OP}	$I_F = I_{OP}$	15		35	°C
Laser Threshold Current	I_{TH}		-	25	40	mA
Laser Operating Current	I_{OP}		-		500	mA
Laser Operating Voltage	V_{OP}		-		2.1	V
Operating Output Power	P_o	See Model #s	20		-	mW
Operating Wavelength	λ_{OP}	$I_F = I_{OP}, T = T_{OP}$	1547		1561	nm
Side Mode Suppression	SMSR	$I_F = I_{OP}$	30	45	-	dB
Optical Isolation	ISO		30	35	-	dB
Spectral Linewidth	$\Delta\lambda$	FWHM	-	-	1	MHz
Relative Intensity Noise	RIN	20-1000 MHz	-	-	-160	dB/Hz
Wavelength Drift with Case Temp	--	$0 < T_C < 65^\circ\text{C}$	-	-	0.001	nm/ °C
Wavelength Temp Tunability	--	$15 < T_{OP} < 35^\circ\text{C}$	0.07		0.12	nm/ °C
Monitor PD Responsivity	r_{MPD}	--	5		200	$\mu\text{A}/\text{mW}$
Monitor PD Dark Current	I_D	$I_{OP} = 0\text{mA}$	-		0.2	μA
TEC Current	I_{TEC}	$0 < T_C < 65^\circ\text{C}, I_F = 500\text{mA}$	-1.2		1.2	Amp
Thermistor Resistance	R_{TH}		9.5	10	10.5	k Ω
TE Cooler Voltage	V_{TH}	$T_{OP} = 15\text{-}35^\circ\text{C}$ over T_C	-2.5		2.5	V
Polarization Extinction Ratio	PER	E-field along slow axis	18	20		dB
Temperature Tracking Error		$0 < T_C < 65^\circ\text{C}$	-0.5	-	0.5	dB

MAXIMUM RATINGS						
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Storage temperature		continuous	-40	-	85	°C
Monitor photodiode reverse voltage		60 seconds	-	-	15	V
		continuous	-	-	10	
Forward DC laser current		continuous			500	mA
Reverse DC laser voltage		continuous			1	V
TEC current		continuous	-1.9	-	1.9	A