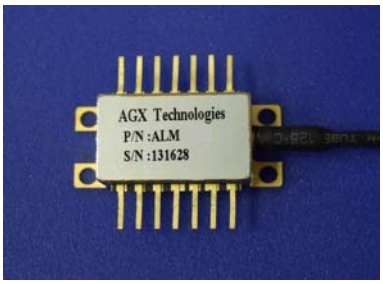
DESCRIPTION



The ALM5R series of 1550nm DFB laser modules are intended for use in the transmission of broadband analog signals. Their high linearity makes them especially suitable for CATV return 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 Pinout
- High linearity, low residual chirp
- Internal TEC, Thermistor & Monitor PD
- 14 pin Butterfly Package
- Up to 10 mW Optical Power
- Wavelengths available on ITU Grid

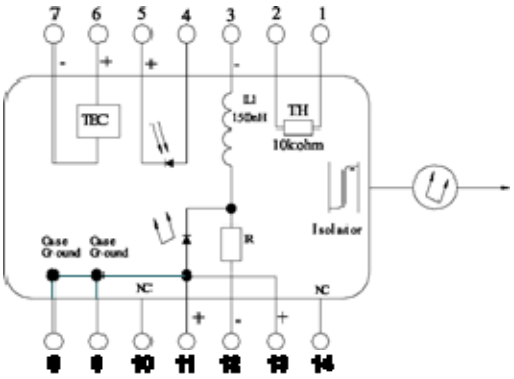
APPLICATIONS

- 1550 return and narrowcast applications

MECHANICAL SPECIFICATION

(in mm unless otherwise noted)

- Type: SMF-28e fiber, flame retardant Hytrel coating, 0.9 mm diameter, 1-meter long, SC/APC connector standard. Please call if special connectors are needed
- 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	11	Laser Common(+)/Gnd
5	MPD Cathode	12	Laser Modulation (-)
6	TEC (+)	13	Laser Common(+)/Gnd
7	TEC (-)	14	NC

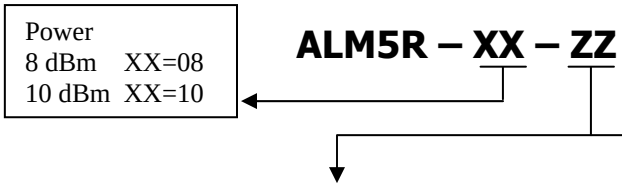
ELECTRO-OPTICAL CHARACTERISTICS					
PARAMETER	SYMBOL	CONDITIONS	MIN	MAX	UNIT
Threshold Current	I_{th}	25°C	--	35	mA
Operating Chip Temperature	T_{op}	$I_F = I_{op}$	35	45	°C
Operating Current	I_{op}	$T=T_{op}$	-	100	mA
Operating Voltage	V_{op}	$T=T_{op}$	--	2.1	V
Operating Output Power	P_o	XX=08 XX=10	8 10		dBm
Monitor PD Responsivity	r_{MPD}	--	10	200	μA/mW
Dark Current	I_D	I_{OP}= 0mA	--	0.2	μA
Operating Wavelength	λ_{OP}	$I_F=I_{OP}$, $T=T_{OP}$	1529	1561	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}	-	25 typical		Ohms
Bandwidth		-	1.1		GHz
Frequency Response(1)		5-200 MHz, I_F=60 mA	-0.5	0.5	dB
TEC Case Temp Range	T_C	-	-40	85	°C
TEC Current	I_{TEC}	-40<Tc<70°C, If=100 mA	-1.0	1.6	Amp
Thermistor Resistance	R_{TH}	-	9.5	10.5	kΩ
TE Cooler Voltage	V_{TH}	Top=35-45 °C over Tc	-2.5	3.8	V
Carrier to Noise Ratio	CNR	Note(2)	51		dB
Second Order Intermod	IMD2	Note(2)	--	-50	dBc
Third Order Intermod	IMD3	Note(2)	--	-60	dBc
Relative Intensity Noise	RIN	-	--	-155	dB/Hz

(1) Peak to Valley: 1 dB, T_{op} =25°C
(2) Test conditions: P_0 at rated power, T=25° C, 13 and 19 MHz at 10% OMI, -4 dBm received power

MAXIMUM RATINGS					
PARAMETER	SYMBOL	CONDITIONS	MIN	MAX	UNIT
Storage Temperature	-	Continuous	-40	85	°C
Photodiode reverse voltage	-	60 seconds	-	15	V
	-	Continuous	-	10	
Forward DC laser current	-	Continuous	-	150	mA
Reverse DC laser voltage	-	Continuous	-	1	V
TE Cooler current	-	Continuous	-1.9	1.9	A
Soldering time		260 °C		10	Sec

Ordering Information

Note: not all wavelengths are available yet. Please check with your sales associate for more information.



λ (nm)	Frequency	ITU Channel
1567.95	191.2	12
1567.13	191.3	13
1566.31	191.4	14
1565.50	191.5	15
1564.68	191.6	16
1563.86	191.7	17
1563.05	191.8	18
1562.23	191.9	19
1561.42	192.0	20
1560.61	192.1	21
1559.79	192.2	22
1558.98	192.3	23
1558.17	192.4	24
1557.36	192.5	25
1556.55	192.6	26
1555.75	192.7	27
1554.94	192.8	28
1554.13	192.9	29
1553.33	193.0	30
1552.52	193.1	31
1551.72	193.2	32
1550.92	193.3	33
1550.12	193.4	34
1549.32	193.5	35

λ (nm)	Frequency	ITU Channel
1548.51	193.6	36
1547.72	193.7	37
1546.92	193.8	38
1546.12	193.9	39
1545.32	194.0	40
1544.53	194.1	41
1543.73	194.2	42
1542.94	194.3	43
1542.14	194.4	44
1541.35	194.5	45
1540.56	194.6	46
1539.77	194.7	47
1538.98	194.8	48
1538.19	194.9	49
1537.40	195.0	50
1536.61	195.1	51
1535.82	195.2	52
1535.04	195.3	53
1534.25	195.4	54
1533.47	195.5	55
1532.68	195.6	56
1531.90	195.7	57
1531.12	195.8	58
1530.33	195.9	59

Table 1