

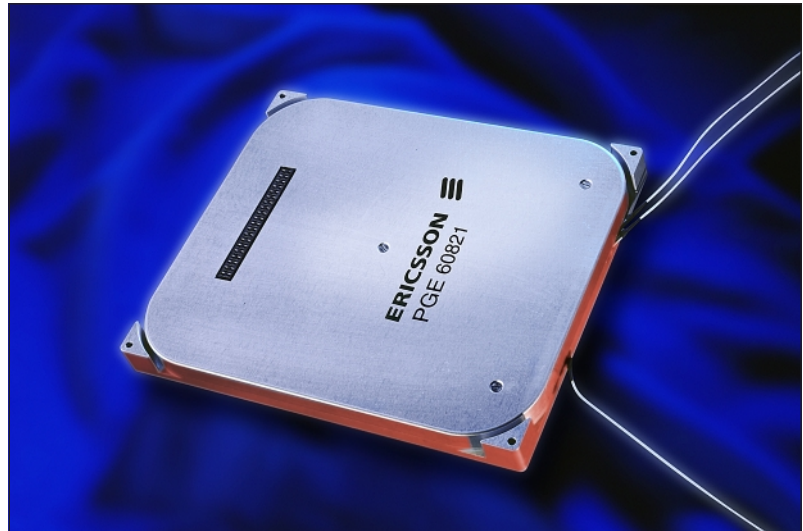
EDFA Gain Block for DWDM Applications

Key Features

- Full C-band EDFA (1530-1563 nm)
- +20 dBm output power using 3 pumps
- Single pumped preamp available
- Mid-stage access available
- Dual-sourced footprint and pinning
- Low noise figure, typical 5 dB
- Optical monitor output
- Small size (125x150x13 mm)

Applications

- Used as a C-band pre-, line- or booster amplifier EDFA in DWDM networks.



Description

The PGE 608 21 C-band EDFA family are 40-channel optical amplifiers intended to be used as pre-, line- or booster amplifiers in DWDM networks. It is designed for 1 to 3 pump laser configurations and is based on a dual-sourced platform. The gain block has input and output power monitoring. The input and output ports have isolators to attenuate spurious reflections in the system.

External electronic circuitry is needed for biasing the pump laser and for controlling the pump laser temperature. Heat sink is provided via the bottom surface.

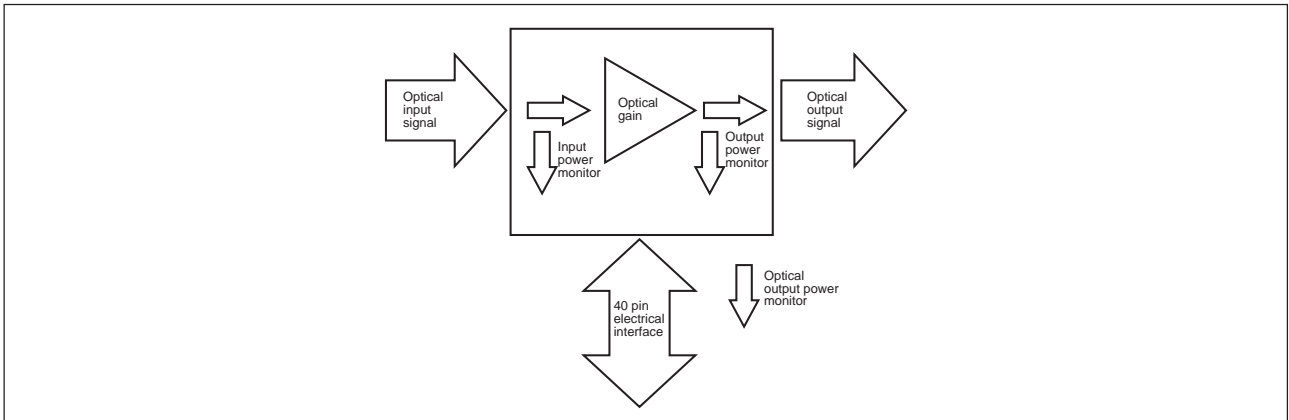


Figure 1. Block diagram

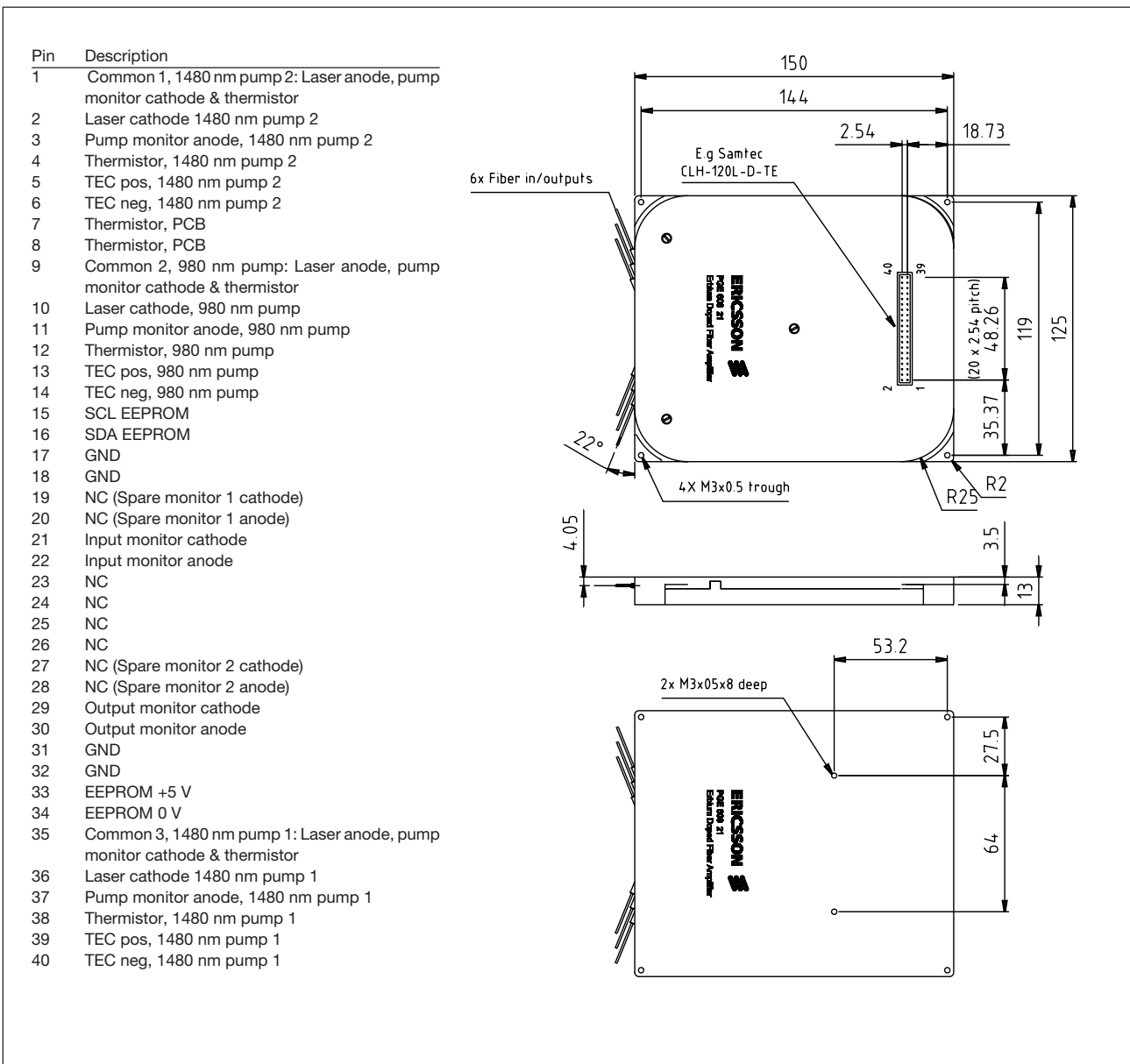


Figure 2. Mechanical Outline Drawing and Pin Connection

Optical Characteristics

Electrical and optical characteristics at recommended operating conditions, unless otherwise noted.

04 = single pump, **05** = double pump, **06** = triple pump

Parameter	Conditions	Symbol	04	05	06	Unit
Operating Wavelength		λ_L	1530-1562			nm
Measurement Wavelength		λ_M	1550			nm
Input Power		P_{IL}	-9.5	-6	-6	dBm
Output Power, min	@ P_{IL} and λ_M	P_{Out}	14	17	20	dBm
Noise Figure, max	@ P_{IL} and λ_L	NF	6.0	6.0	6.0	dB
Gain	@ P_{IL} and λ_L	G_{OPT}	17	23	26	dB
Gain Flatness, max	@ P_{IL} and λ_L (Note 1)	G_{Flat}	± 0.8	± 0.8	± 0.8	dB

Note 1. $G_{FLAT}=(G_{MAX}-G_{MIN})/2$, where G_{MAX} is the maximum gain for λ_L and G_{MIN} is the minimum gain for λ_L .
The gain is measured as dynamic gain under constant saturation.

Electrical Characteristics

Parameter	Conditions	Symbol	04	05	06	Unit
Operating Current, max		I_{Drive}	300	300+720	300+720x2	mA
Operating Voltage, max		VF	2.4	2.5	2.5	V
Power Dissipation, max		P_E	3.5	10.6	17.7	W
Thermistor Resistance		R_{Th}	9.5	10	10.5	k Ω
TEC Current, max	@ $\Delta T=50$ K	I_{TEC}	1.1	1.1+1.5	1.1+1.5x2	A
TEC Voltage, max	@ $\Delta T=50$ K	V_{TEC}	2.6	2.6+3.8	2.6+3.8x2	V

Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T_{Case}	-5		70	$^{\circ}C$

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	T_{stg}	-40	75	$^{\circ}C$
Drive Current	$I_{LD, MAX}$	300/800		mA

CAUTION: Stresses outside those listed in "Absolute Maximum Ratings" may cause permanent damage to the device.

Handling Precautions

This device may be damaged as a result of electrostatic discharge (ESD). Take proper precautions during both handling and testing. This typically includes grounded wrist wraps, workbenches and floor mats in ESD controlled areas. Semiconductor devices may be damaged by current surges, use appropriate transient protection.

Quality Assurance

Ericsson Microelectronics commitment to quality has been proven through a decade of semiconductor device production and has been confirmed to ISO 9001. Opto product qualification is made according to the intention of applicable Telcordia standards.

Connector Options

SC/SPC

(Other connectors available on request)



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Ericsson Microelectronics AB

SE-164 81 Kista, Sweden

Telephone: +46 8 757 50 00

www.ericsson.com/microelectronics

For local sales contacts, please refer to our website or call: Int + 46 8 757 47 00, Fax: +46 8 757 47 76

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