



## Preliminary Data Sheet

### AC5425 Series

#### Uncooled 2.5 Gbps CWDM Distributed Feedback Laser (DFB) in TOSA Package



#### Description

The AC5425 series laser is an uncooled semiconductor Distributed-Feedback (DFB) laser working at CWDM wavelengths with an optical isolator. The device is delivered in a TOSA package with a monitor photodiode. This high performance and high reliability laser is suitable for applications up to 2.5 Gbps.

#### Features

- 1430 nm to 1610 nm emission wavelengths
- High power over wide temperature range
- High side-mode-suppression ratio (typical > 35dB)
- High Reliability
- Multi-Quantum Well (MQW) active layer

#### Applications

- Telecommunication
- Data communication
- Storage area networks

#### Absolute Maximum Rating

Symbol	Parameter	Ratings	Unit
$V_{RL}$	Reverse Voltage (Laser diode)	2	V
$V_{RD}$	Reverse Voltage (Photodiode)	20	V
$I_{FD}$	Forward current (Photodiode)	2	mA
$T_C$	Case temperature	-20 ~ +85	°C
$T_{stg}$	Storage temperature	-40 ~ +100	°C


**Electrical/Optical Characteristics** ( $T_c=25^\circ\text{C}$ , Unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{th}$	Threshold current	CW		8	15	mA
		CW, $85^\circ\text{C}$		30	45	
$P_o$	Output Power <sup>1</sup>	CW, $I_f = I_{th} + 20\text{ mA}$	1			mW
$V_{op}$	Operating voltage	CW, $I_f = 50\text{ mA}$		1.2	1.5	V
SMSR	Side-mode-suppression ratio	CW, $I_f = I_{th} + 20\text{ mA}$	35			dB
$\Delta\lambda$	Spectral Width	CW, $I_f = I_{th} + 20\text{ mA}$ , -20 dB		0.2		nm
-	Connector Repeatability		-1.0		1.0	dB
TE	Tracking Error <sup>2</sup>	CW, $I_f = I_{th} + 20\text{ mA}$ , $T_c = 0^\circ\text{C}$ to $+85^\circ\text{C}$	-1.5		+1.5	dB
$T_r, T_f$	Rise and fall time	$I_f = I_{th} + 20\text{ mA}$ , 20~80%			150	ps
$I_m$	Monitor current (Photodiode)	CW, $I_f = I_{th} + 20\text{ mA}$ , $V_{RD} = 1\text{ V}$	0.1	0.5		mA
$I_D$	Dark current (Photodiode)	$V_{RD} = 10\text{ V}$		0.01	0.1	$\mu\text{A}$

Note 1: Minimum output power for wavelengths 1590 nm and 1610 nm approximately 0.8 mW.

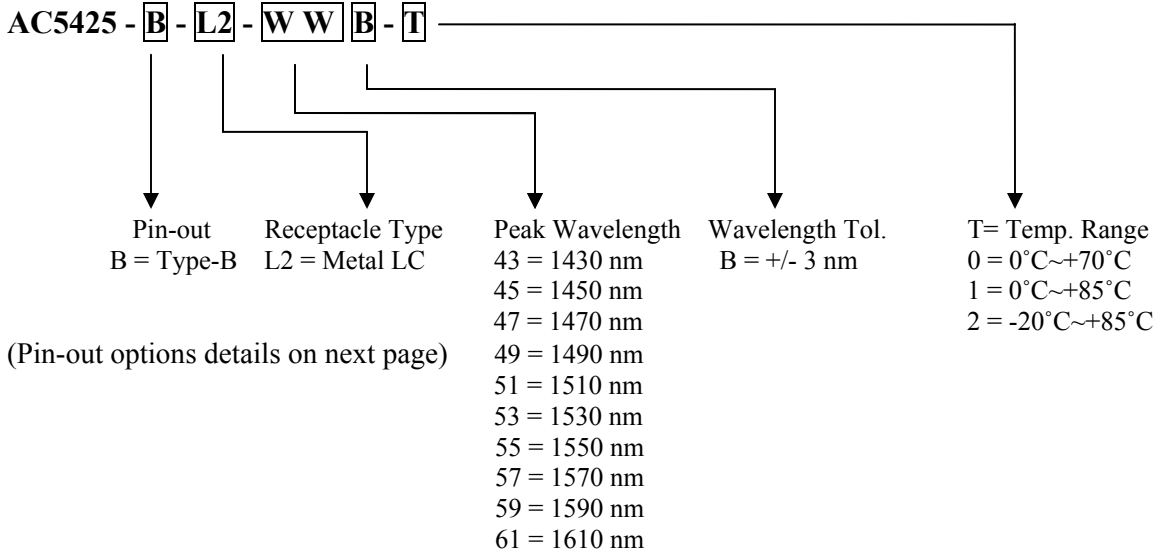
Note 2: Tracking error is defined as the front to back ratio variation over temperature  $0^\circ\text{C}$  to  $+85^\circ\text{C}$ .

**Wavelength Options:** (Test conditions: CW,  $I_f = I_{th} + 20\text{ mA}$ ,  $T_c = +25^\circ\text{C}$ )

Option	Center Wavelength	Tolerance	Units
-43B	1430	+/- 3	nm
-45B	1450	+/- 3	nm
-47B	1470	+/- 3	nm
-49B	1490	+/- 3	nm
-51B	1510	+/- 3	nm
-53B	1530	+/- 3	nm
-55B	1550	+/- 3	nm
-57B	1570	+/- 3	nm
-59B	1590	+/- 3	nm
-61B	1610	+/- 3	nm



**Ordering Information:**



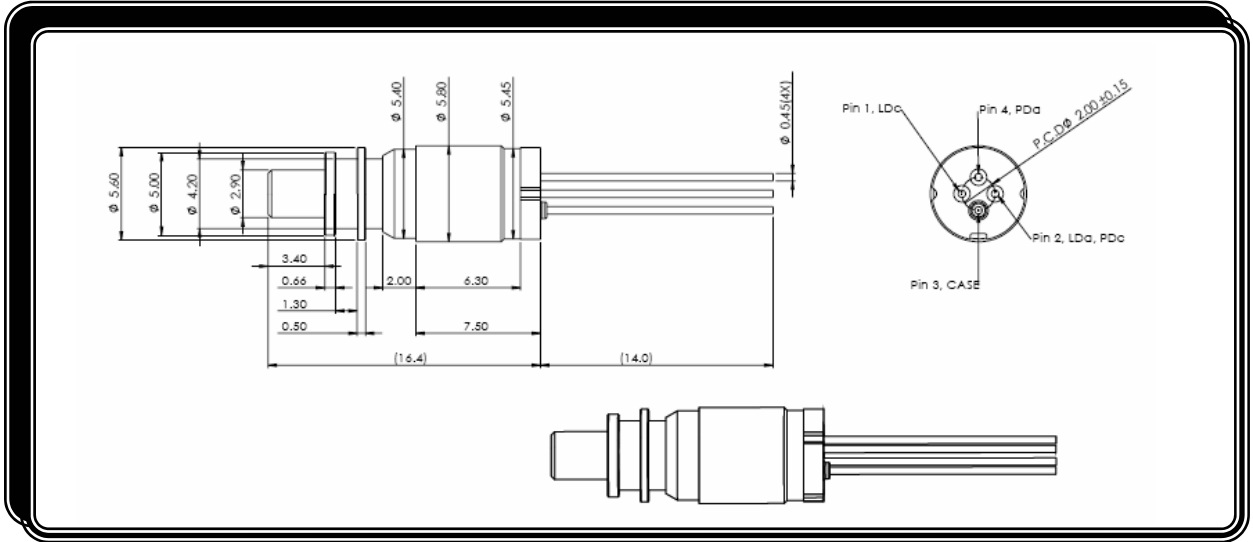
Example: **AC5425-B-L2-49B-1** is an Archcom 2.5 Gbps CWDM DFB laser, with Type-B pin-out, LC metal receptacle, center wavelength of 1490 nm +/-3 nm, and a operating temperature range of 0°C~+85°C.

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**Outline Drawings**



**Pin-Out Option**

