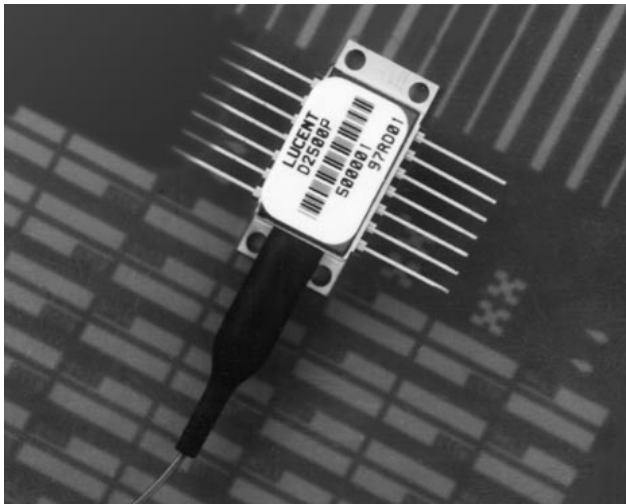




## D2570, D2526, D2555 Wavelength-Selected Direct Modulated Isolated DFB Laser Module



The 1.5  $\mu\text{m}$  D2570, D2526G, and D2555 Laser Modules are available in a 14-pin, hermetic, butterfly package.

### Features

- ITU wavelengths available from 1528.77 nm —1610.06 nm
- SONET/SDH compatible up to OC-48/STM-16
- Temperature tunable for precise wavelength selection
- Integrated optical isolator
- High-performance, multiquantum well (MQW) distributed-feedback (DFB) laser
- Industry-standard, 14-pin butterfly package
- Characterized at 2.488 Gbits/s (NRZ)
- InGaAs, PIN photodetector back-facet monitor
- Low threshold current
- High-reliability, hermetic packaging
- Excellent long-term wavelength stability can eliminate the need for external wavelength locker
- Qualified to meet the intent of *Telcordia Technologies*\* 468

\* *Telcordia Technologies* is a trademark of Bell Communications Research, Inc.

### Applications

- Three direct-modulated DWDM families available to meet a number of OC-48/STM-16 applications:
  - Extended reach (100 km)
  - Very long reach (170 km)
  - Metro DWDM
  - Digital video

### Product Codes

Product Code	Peak Power	Dispersion Performance
D2570H	10 mW	1800 ps/nm (100 km)
D2526G	2 mW	1800 ps/nm (100 km)
D2555G	2 mW	3000 ps/nm (170 km)

### Description

The Direct Modulated Isolated DFB Laser Module contains an internally cooled, InGaAs, MQW, distributed-feedback (DFB) laser designed for 1.5  $\mu\text{m}$  applications. The following three direct-modulation DWDM product families have been established to meet various OC-48/STM-16 system applications:

- D2526-type: Designed to be used in OC-48/STM-16 (2.488 Gbits/s) for extended reach, dense WDM applications (1800 ps/nm). The wavelength of the laser can be temperature-tuned for precise wavelength selection by adjusting the temperature of the internal thermoelectric cooler.
- D2555-type: High-performance device designed for very low dispersion; used in fiber spans exceeding 170 km (3000 ps/nm).
- D2570-type: High-power, direct-modulated laser eliminates the need for optical amplifiers in DWDM many applications.

**Description** (continued)

**Controlled Feedback**

The module contains an internal optical isolator that suppresses optical feedback in laser-based, fiber-optic systems. Light reflected back to the laser is attenuated a minimum of 30 dB.

**Controlled Temperature**

An integral thermoelectric cooler (TEC) provides stable thermal characteristics. The TEC allows for heating and cooling of the laser chip to maintain a temperature of 25 °C for case temperatures from -40 °C to +70 °C. The laser temperature is monitored by the internal thermistor, which can be used with external circuitry to control the laser chip temperature.

**Controlled Power**

An internal, InGaAs, PIN photodiode functions as the back-facet monitor. The photodiode monitors emission from the rear facet of the laser and, when used in conjunction with control circuitry, can control optical power launched into the fiber. Normally, this configuration is used in a feedback arrangement to maintain consistent laser output power.

**Standard Package**

The laser module is fabricated in a 14-pin, hermetic, metal/ceramic butterfly package that incorporates a bias tee, which separates the dc-bias path from the RF input. The RF input has a nominal 25 Ω impedance.

The laser module is equipped with Corning SMF-28 type fiber. The fiber has a 900 μm tight buffer jacket. Various connectors and pigtail lengths are available.

Lucent Technologies Microelectronics Group's optoelectronic components are being qualified to rigorous internal standards that are consistent with *Telcordia Technologies* TR-NWT-000468. All design and manufacturing operations are ISO\* 9001 certified. The module is being fully qualified for central office applications.

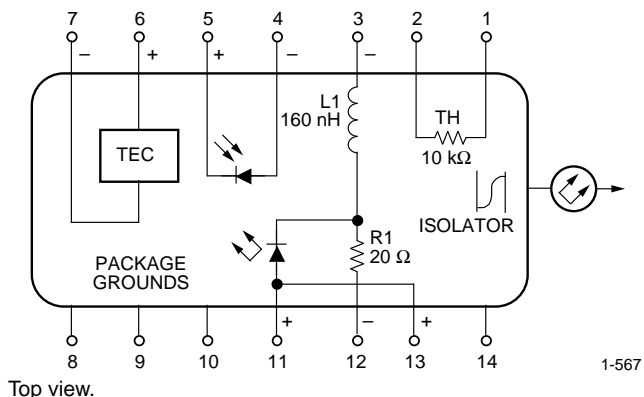
\* ISO is a registered trademark of The International Organization for Standardization.

**Pin Information**

Pin	Name
1	Thermistor
2	Thermistor
3	Laser dc Bias (Cathode) (-)
4	Back-facet Monitor Anode (-)
5	Back-facet Monitor Cathode (+)
6	Thermoelectric Cooler (+)*
7	Thermoelectric Cooler (-)†
8	Case Ground
9	Case Ground
10	Case Ground
11	Laser Anode (+)†
12	RF Laser Input Cathode (-)
13	Laser Anode (+)†
14	Case Ground

\* A positive current through the thermoelectric heat pump cools the laser.

† Both leads should be grounded for optimum performance.



**Figure 1. Circuit Schematic**

## Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the performance characteristics of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Min	Max	Unit
Laser Reverse Voltage	VRLMAX	—	2	V
dc Forward Current	IFLMAX	—	150	mA
Operating Case Temperature Range	T <sub>C</sub>	-40	70	°C
Storage Case Temperature Range*	T <sub>stg</sub>	-40	85	°C
Photodiode Reverse Voltage	VRPDMAX	—	10	V
Photodiode Forward Current	IFPDMAX	—	2	mA

\* Does not apply to shipping container.

## Handling Precautions

### Power Sequencing

To avoid the possibility of damage to the laser module from power supply switching transients, follow this turn-on sequence:

1. All ground connections
2. Most negative supply
3. Most positive supply
4. All remaining connections

Reverse the order for the proper turn-off sequence.

### Electrostatic Discharge

**CAUTION:** This device is susceptible to damage as a result of electrostatic discharge. Take proper precautions during both handling and testing. Follow guidelines such as JEDEC Publication No. 108-A (Dec. 1988).

Lucent employs a human-body model (HBM) for ESD-susceptibility testing and protection-design evaluation. ESD voltage thresholds are dependent on the critical parameters used to define the model. A standard HBM (resistance = 1.5 kΩ, capacitance = 100 pF) is widely used and, therefore, can be used for comparison purposes. The HBM ESD threshold presented here was obtained using these circuit parameters:

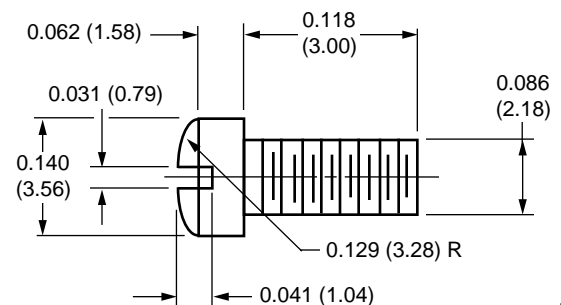
Parameter	Value	Unit
Human-body Model	>400	V

## Mounting Instructions

The minimum fiber bend radius is 30 mm (1.18 in).

To avoid degradation in performance, mount the module on the board as follows:

1. Place the bottom flange of the module on a flat heat sink at least 0.5 in. x 1.180 in. (12.7 mm x 30 mm) in size. The surface finish of the heat sink should be better than 32 μin. (0.8 μm), and the surface flatness must be better than 0.001 in. (25.4 μm). Using thermal conductive grease is optional; however, thermal performance can be improved by up to 5% if conductive grease is applied between the bottom flange and the heat sink.
2. Mount four #2-56 screws with Fillister heads (M2-3 mm) at the four screw hole locations (see Outline Diagram). The Fillister head diameter must not exceed 0.140 in. (3.55 mm). Do not apply more than 1 in./lb. of torque to the screws.



Note: Dimensions are in inches and (millimeters).

Figure 2. Fillister Head Screw

## D2526 Characteristics

Minimum and maximum values are testing requirements. Typical values are characteristics of the device and are the result of engineering evaluations. Typical values are for information purposes only and are not part of the testing requirements.

**Table 1. Electrical Characteristics (at 25 °C laser temperature)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Slope Efficiency	$\eta$	$I_F = 2 \text{ mW (CW)}$	0.06	0.09	0.13	mW/mA
Threshold Current	$I_{TH}$	—	—	14	50	mA
Laser Forward Voltage	$V_{LF}$	$I_F = 2 \text{ mW (CW)}$	—	1.3	1.8	V
Monitor Reverse-bias Voltage*	$V_{RMON}$	—	3	5	10	V
Monitor Current	$I_{RMON}$	$P_{OL} = 1 \text{ mW (CW)}$	0.1	1.0	1.5	mA
Monitor Dark Current	$I_D$	$I_F = 0, V_{RMON} = 5 \text{ V}$	—	0.01	0.1	$\mu\text{A}$
Input Impedance	$Z_{IN}$	—	—	25	—	$\Omega$
Thermistor Current	$I_{TC}$	—	10	—	100	$\mu\text{A}$
Resistance Ratio <sup>†</sup>	—	—	9.1	—	9.6	—
Thermistor Resistance	$R_{TH}$	$T_L = 25 \text{ }^\circ\text{C}$	9.5	—	10.5	k $\Omega$
TEC Current	$I_{TEC}$	$T_L = 25 \text{ }^\circ\text{C}, T_C = 70 \text{ }^\circ\text{C}$	—	0.6	1.0	A
TEC Voltage	$V_{TEC}$	$T_L = 25 \text{ }^\circ\text{C}, T_C = 70 \text{ }^\circ\text{C}$	—	1.3	2.0	V
TEC Capacity	$\Delta T$	$T_C = 70 \text{ }^\circ\text{C}$	50	—	—	$^\circ\text{C}$

\* Standard operating condition is 5.0 V reverse bias.

<sup>†</sup> Ratio of thermistor resistance at 0 °C to thermistor resistance at 50 °C.

**Table 2. Optical Characteristics (at 25 °C laser temperature)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Optical Output Power	$P_{PEAK}$	—	2.0	—	—	mW
Center Wavelength* (See Table 10.)	$\lambda_C$	$T_L = 25 \text{ }^\circ\text{C}$ CW wavelength	1528.77	—	1610.06	nm
Spectral Width: Full Width at –3 dB Full Width at –20 dB	$\Delta\lambda$	Modulated at 2.5 Gbits/s at rated power	— —	0.1 0.3	0.30 1.0	nm nm
Side-mode Suppression Ratio	SMSR	CW	30	—	—	dB
Optical Isolation	—	$T_C = 0 \text{ }^\circ\text{C to } 70 \text{ }^\circ\text{C}$	30	—	—	dB
Center Wavelength Drift with Case Temperature	$\Delta\lambda_C/\Delta T_C$	$0 \text{ }^\circ\text{C} \leq T_C \leq 70 \text{ }^\circ\text{C}$	—	—	1	pm/ $^\circ\text{C}$
Wavelength Temperature Tuning Coefficient	—	—	—	0.09	—	nm/ $^\circ\text{C}$

\* Shown in Table 10.

**Table 3. Dispersion Performance**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dispersion Penalty for Extended Reach	DP	1800 ps/nm	—	—	2.0	dB

## D2555 Characteristics

Minimum and maximum values are testing requirements. Typical values are characteristics of the device and are the result of engineering evaluations. Typical values are for information purposes only and are not part of the testing requirements.

**Table 4. Electrical Characteristics (at 25 °C laser temperature)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Slope Efficiency	$\eta$	$I_F = 2 \text{ mW (CW)}$	0.05	0.08	0.10	mW/mA
Threshold Current	$I_{TH}$	—	—	12	35	mA
Laser Forward Voltage	$V_{LF}$	$I_F = 2 \text{ mW (CW)}$	—	1.3	1.8	V
Monitor Reverse-bias Voltage*	$V_{RMON}$	—	3	5	10	V
Monitor Current	$I_{RMON}$	$P_{OL} = 1 \text{ mW (CW)}$	0.1	1.0	1.9	mA
Monitor Dark Current	$I_D$	$I_F = 0, V_{RMON} = 5 \text{ V}$	—	0.01	0.1	$\mu\text{A}$
Input Impedance	$Z_{IN}$	—	—	25	—	$\Omega$
Thermistor Current	$I_{TC}$	—	10	—	100	$\mu\text{A}$
Resistance Ratio†	—	—	9.1	—	9.6	—
Thermistor Resistance	$R_{TH}$	$T_L = 25 \text{ }^\circ\text{C}$	9.5	—	10.5	k $\Omega$
TEC Current	$I_{TEC}$	$T_L = 25 \text{ }^\circ\text{C}, T_C = 70 \text{ }^\circ\text{C}$	—	0.6	1.0	A
TEC Voltage	$V_{TEC}$	$T_L = 25 \text{ }^\circ\text{C}, T_C = 70 \text{ }^\circ\text{C}$	—	1.3	2.0	V
TEC Capacity	$\Delta T$	$T_C = 70 \text{ }^\circ\text{C}$	50	—	—	$^\circ\text{C}$

\* Standard operating condition is 5.0 V reverse bias.

† Ratio of thermistor resistance at 0 °C to thermistor resistance at 50 °C.

**Table 5. Optical Characteristics (at 25 °C laser temperature)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Optical Output Power	$P_{PEAK}$	—	2.0	—	—	mW
Center Wavelength* (See Table 11.)	$\lambda_C$	$T_L = 25 \text{ }^\circ\text{C}$ CW wavelength	1528.77	—	1563.86	nm
Spectral Width: Full Width at -3 dB Full Width at -20 dB	$\Delta\lambda$	Modulated at 2.5 Gbits/s at rated power	— —	0.1 0.3	0.30 1.0	nm nm
Side-mode Suppression Ratio	SMSR	CW	30	—	—	dB
Optical Isolation	—	$T_C = 0 \text{ }^\circ\text{C to } 75 \text{ }^\circ\text{C}$	30	—	—	dB
Center Wavelength Drift with Case Temperature	$\Delta\lambda_C/\Delta T_C$	$0 \text{ }^\circ\text{C} \leq T_C \leq 75 \text{ }^\circ\text{C}$	—	—	1	pm/ $^\circ\text{C}$
Wavelength Temperature Tuning Coefficient	—	—	—	0.09	—	nm/ $^\circ\text{C}$

\* Shown in Table 11.

**Table 6. Dispersion Performance**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dispersion Penalty for Extended Reach	DP	3000 ps/nm	—	—	2.0	dB

## D2570 Characteristics

Minimum and maximum values are testing requirements. Typical values are characteristics of the device and are the result of engineering evaluations. Typical values are for information purposes only and are not part of the testing requirements.

**Table 7. Electrical Characteristics (at 25 °C laser temperature)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Slope Efficiency	$\eta$	$I_F = 10$ mW (CW)	0.12	0.15	0.2	mW/mA
Threshold Current	$I_{TH}$	—	—	14	25	mA
Laser Forward Voltage	$V_{LF}$	$I_F = 10$ mW (CW)	—	1.3	1.8	V
Monitor Reverse-bias Voltage*	$V_{RMON}$	—	3	5	10	V
Monitor Current	$I_{RMON}$	$P_{OL} = 1$ mW (CW)	0.08	0.3	0.560	mA
Monitor Dark Current	$I_D$	$I_F = 0$ , $V_{RMON} = 5$ V	—	0.01	0.1	$\mu$ A
Input Impedance	$Z_{IN}$	—	—	25	—	$\Omega$
Thermistor Current	$I_{TC}$	—	10	—	100	$\mu$ A
Resistance Ratio†	—	—	9.1	—	9.6	—
Thermistor Resistance	$R_{TH}$	$T_L = 25$ °C	9.5	—	10.5	k $\Omega$
TEC Current	$I_{TEC}$	$T_L = 25$ °C, $T_C = 70$ °C	—	0.6	1.0	A
TEC Voltage	$V_{TEC}$	$T_L = 25$ °C, $T_C = 70$ °C	—	1.3	2.0	V
TEC Capacity	$\Delta T$	$T_C = 70$ °C	50	—	—	°C

\* Standard operating condition is 5.0 V reverse bias.

† Ratio of thermistor resistance at 0 °C to thermistor resistance at 50 °C.

**Table 8. Optical Characteristics (at 25 °C laser temperature)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Optical Output Power	$P_{PEAK}$	—	10	—	—	mW
Center Wavelength* (See Table 12.)	$\lambda_C$	$T_L = 25$ °C CW wavelength	1528.77	—	1610.06	nm
Spectral Width: Full Width at –3 dB Full Width at –20 dB	$\Delta\lambda$	Modulated at 2.5 Gbits/s at rated power	—	0.1 0.3	0.30 1.0	nm nm
Side-mode Suppression Ratio	SMSR	CW	30	—	—	dB
Optical Isolation	—	$T_C = 0$ °C to 70 °C	30	—	—	dB
Center Wavelength Drift with Case Temperature	$\Delta\lambda_C/\Delta T_C$	$0$ °C $\leq T_C \leq 70$ °C	—	—	1	pm/°C
Wavelength Temperature Tuning Coefficient	—	—	—	0.09	—	nm/°C

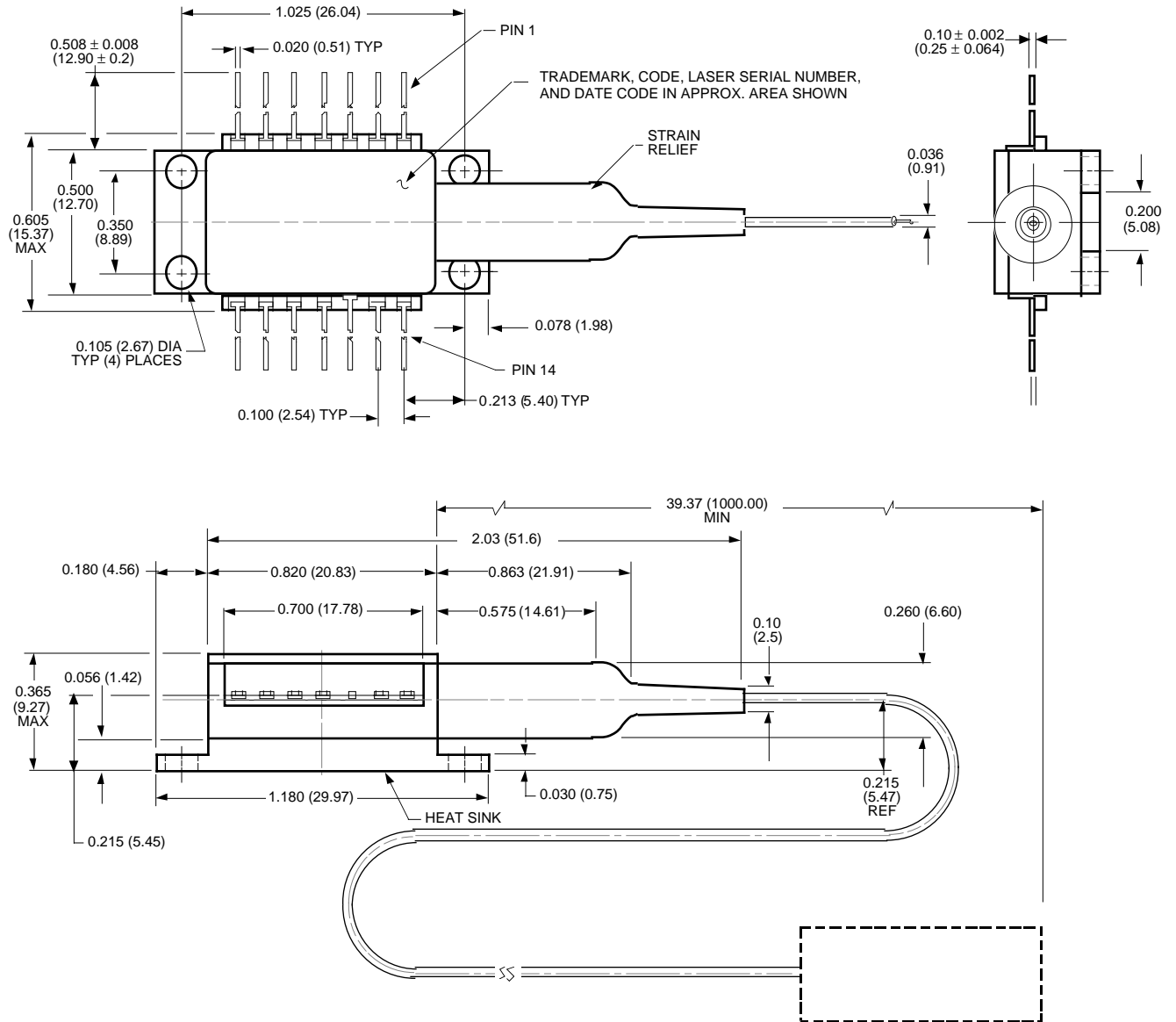
\* Shown in Table 12.

**Table 9. Dispersion Performance**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dispersion Penalty for Extended Reach	DP	1800 ps/nm	—	—	2.5	dB

## Outline Drawings

Dimensions are in inches and (millimeters).



1-520.g

## Ordering Information

Table 10. Ordering Information D2526G

Device	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Wavelength Tolerance	Connector
D2526G862	108578097	186.2	1610.06	±0.4 nm	FC-PC
D2526G863	108578105	186.3	1609.19	±0.4 nm	FC-PC
D2526G864	108578154	186.4	1608.33	±0.4 nm	FC-PC
D2526G865	108578162	186.5	1607.47	±0.4 nm	FC-PC
D2526G866	108578188	186.6	1606.60	±0.4 nm	FC-PC
D2526G867	108578196	186.7	1605.74	±0.4 nm	FC-PC
D2526G868	108578204	186.8	1604.88	±0.4 nm	FC-PC
D2526G869	108578220	186.9	1604.33	±0.4 nm	FC-PC
D2526G870	108578246	187.0	1603.17	±0.4 nm	FC-PC
D2526G871	108479437	187.1	1602.31	±0.4 nm	FC-PC
D2526G872	108479445	187.2	1601.45	±0.4 nm	FC-PC
D2526G873	108479452	187.3	1600.60	±0.4 nm	FC-PC
D2526G874	108479460	187.4	1599.75	±0.4 nm	FC-PC
D2526G875	108479478	187.5	1598.89	±0.4 nm	FC-PC
D2526G876	108479486	187.6	1598.04	±0.4 nm	FC-PC
D2526G877	108479494	187.7	1597.19	±0.4 nm	FC-PC
D2526G878	108479502	187.8	1596.34	±0.4 nm	FC-PC
D2526G879	108479510	187.9	1595.49	±0.4 nm	FC-PC
D2526G880	108479528	188.0	1594.64	±0.4 nm	FC-PC
D2526G881	108479536	188.1	1593.79	±0.4 nm	FC-PC
D2526G882	108479544	188.2	1592.95	±0.4 nm	FC-PC
D2526G883	108479551	188.3	1592.10	±0.4 nm	FC-PC
D2526G884	108479569	188.4	1591.25	±0.4 nm	FC-PC
D2526G885	108479577	188.5	1590.41	±0.4 nm	FC-PC
D2526G886	108479585	188.6	1589.57	±0.4 nm	FC-PC
D2526G887	108479601	188.7	1588.72	±0.4 nm	FC-PC
D2526G888	108479619	188.8	1587.88	±0.4 nm	FC-PC
D2526G889	108479627	188.9	1587.04	±0.4 nm	FC-PC
D2526G890	108479635	189.0	1586.20	±0.4 nm	FC-PC
D2526G891	108479643	189.1	1585.36	±0.4 nm	FC-PC
D2526G892	108479650	189.2	1584.53	±0.4 nm	FC-PC
D2526G893	108479668	189.3	1583.69	±0.4 nm	FC-PC
D2526G894	108479676	189.4	1582.85	±0.4 nm	FC-PC
D2526G895	108479684	189.5	1582.02	±0.4 nm	FC-PC
D2526G896	108479692	189.6	1581.18	±0.4 nm	FC-PC
D2526G897	108479700	189.7	1580.35	±0.4 nm	FC-PC

**Ordering Information** (continued)

**Table 10. Ordering Information D2526G** (continued)

Device	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Wavelength Tolerance	Connector
D2526G898	108479734	189.8	1579.52	±0.4 nm	FC-PC
D2526G899	108480336	189.9	1578.69	±0.4 nm	FC-PC
D2526G900	108479742	190.0	1577.85	±0.4 nm	FC-PC
D2526G901	108479759	190.1	1577.02	±0.4 nm	FC-PC
D2526G902	108479767	190.2	1576.20	±0.4 nm	FC-PC
D2526G903	108479775	190.3	1575.37	±0.4 nm	FC-PC
D2526G904	108479783	190.4	1574.54	±0.4 nm	FC-PC
D2526G905	108479791	190.5	1573.71	±0.4 nm	FC-PC
D2526G906	108480344	190.6	1572.89	±0.4 nm	FC-PC
D2526G907	108480351	190.7	1572.06	±0.4 nm	FC-PC
D2526G908	108480369	190.8	1571.24	±0.4 nm	FC-PC
D2526G909	108479809	190.9	1570.42	±0.4 nm	FC-PC
D2526G910	108479817	191.0	1569.59	±0.4 nm	FC-PC
D2526G911	108479825	191.1	1568.77	±0.4 nm	FC-PC
D2526G912	108479833	191.2	1567.95	±0.4 nm	FC-PC
D2526G913	108479841	191.3	1567.13	±0.4 nm	FC-PC
D2526G914	108479858	191.4	1566.31	±0.4 nm	FC-PC
D2526G915	108512518	191.5	1565.50	±0.4 nm	FC-PC
D2526G916	108512526	191.6	1564.68	±0.4 nm	FC-PC
D2526G17	108221532	191.7	1563.86	±0.4 nm	FC-PC
D2526G18	108221540	191.8	1563.05	±0.4 nm	FC-PC
D2526G19	108003260	191.9	1562.23	±0.4 nm	FC-PC
D2526G20	108003278	192.0	1561.42	±0.4 nm	FC-PC
D2526G21	108003286	192.1	1560.61	±0.4 nm	FC-PC
D2526G22	108003294	192.2	1559.79	±0.4 nm	FC-PC
D2526G23	108003302	192.3	1558.98	±0.4 nm	FC-PC
D2526G24	108003310	192.4	1558.17	±0.4 nm	FC-PC
D2526G25	108003328	192.5	1557.36	±0.4 nm	FC-PC
D2526G26	108003336	192.6	1556.55	±0.4 nm	FC-PC
D2526G27	108003344	192.7	1555.75	±0.4 nm	FC-PC
D2526G28	108003351	192.8	1554.94	±0.4 nm	FC-PC
D2526G29	108003369	192.9	1554.13	±0.4 nm	FC-PC
D2526G30	108003377	193.0	1553.33	±0.4 nm	FC-PC
D2526G31	108003385	193.1	1552.52	±0.4 nm	FC-PC
D2526G32	108003419	193.2	1551.72	±0.4 nm	FC-PC
D2526G33	108003427	193.3	1550.92	±0.4 nm	FC-PC
D2526G34	108003435	193.4	1550.12	±0.4 nm	FC-PC
D2526G35	108003443	193.5	1549.32	±0.4 nm	FC-PC
D2526G36	108003450	193.6	1548.51	±0.4 nm	FC-PC
D2526G37	108003468	193.7	1547.72	±0.4 nm	FC-PC
D2526G38	108003476	193.8	1546.92	±0.4 nm	FC-PC

**Ordering Information** (continued)

**Table 10. Ordering Information D2526G** (continued)

<b>Device</b>	<b>Comcode</b>	<b>ITU Frequency (THz)</b>	<b>Center Wavelength (nm)</b>	<b>Wavelength Tolerance</b>	<b>Connector</b>
D2526G39	108003484	193.9	1546.12	±0.4 nm	FC-PC
D2526G40	108003492	194.0	1545.32	±0.4 nm	FC-PC
D2526G41	108003500	194.1	1544.53	±0.4 nm	FC-PC
D2526G42	108003518	194.2	1543.73	±0.4 nm	FC-PC
D2526G43	108003526	194.3	1542.94	±0.4 nm	FC-PC
D2526G44	108003534	194.4	1542.14	±0.4 nm	FC-PC
D2526G45	108003542	194.5	1541.35	±0.4 nm	FC-PC
D2526G46	108003559	194.6	1540.56	±0.4 nm	FC-PC
D2526G47	108003567	194.7	1539.77	±0.4 nm	FC-PC
D2526G48	108003575	194.8	1538.98	±0.4 nm	FC-PC
D2526G49	108003583	194.9	1538.19	±0.4 nm	FC-PC
D2526G50	108003591	195.0	1537.40	±0.4 nm	FC-PC
D2526G51	108003609	195.1	1536.61	±0.4 nm	FC-PC
D2526G52	108003617	195.2	1535.82	±0.4 nm	FC-PC
D2526G53	108003625	195.3	1535.04	±0.4 nm	FC-PC
D2526G54	108003633	195.4	1534.25	±0.4 nm	FC-PC
D2526G55	108003641	195.5	1533.47	±0.4 nm	FC-PC
D2526G56	108003658	195.6	1532.68	±0.4 nm	FC-PC
D2526G57	108221557	195.7	1531.90	±0.4 nm	FC-PC
D2526G58	108221565	195.8	1531.12	±0.4 nm	FC-PC
D2526G59	108221673	195.9	1530.33	±0.4 nm	FC-PC
D2526G60	108221581	196.0	1529.55	±0.4 nm	FC-PC
D2526G61	108221599	196.1	1528.77	±0.4 nm	FC-PC

**Ordering Information** (continued)

**Table 11. Ordering Information D2555G**

Device	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Wavelength Tolerance	Connector
D2555G17	108309964	191.7	1563.86	±0.4 nm	FC-PC
D2555G18	108309972	191.8	1563.05	±0.4 nm	FC-PC
D2555G19	108166687	191.9	1562.23	±0.4 nm	FC-PC
D2555G20	108166695	192.0	1561.42	±0.4 nm	FC-PC
D2555G21	108166737	192.1	1560.61	±0.4 nm	FC-PC
D2555G22	108166745	192.2	1559.79	±0.4 nm	FC-PC
D2555G23	108166760	192.3	1558.98	±0.4 nm	FC-PC
D2555G24	108166786	192.4	1558.17	±0.4 nm	FC-PC
D2555G25	108166794	192.5	1557.36	±0.4 nm	FC-PC
D2555G26	108166810	192.6	1556.55	±0.4 nm	FC-PC
D2555G27	108166836	192.7	1555.75	±0.4 nm	FC-PC
D2555G28	108166851	192.8	1554.94	±0.4 nm	FC-PC
D2555G29	108166877	192.9	1554.13	±0.4 nm	FC-PC
D2555G30	108166927	193.0	1553.33	±0.4 nm	FC-PC
D2555G31	108166935	193.1	1552.52	±0.4 nm	FC-PC
D2555G32	108166943	193.2	1551.72	±0.4 nm	FC-PC
D2555G33	108166950	193.3	1550.92	±0.4 nm	FC-PC
D2555G34	108166968	193.4	1550.12	±0.4 nm	FC-PC
D2555G35	108166976	193.5	1549.32	±0.4 nm	FC-PC
D2555G36	108166984	193.6	1548.51	±0.4 nm	FC-PC
D2555G37	108166992	193.7	1547.72	±0.4 nm	FC-PC
D2555G38	108167008	193.8	1546.92	±0.4 nm	FC-PC
D2555G39	108167016	193.9	1546.12	±0.4 nm	FC-PC
D2555G40	108167024	194.0	1545.32	±0.4 nm	FC-PC
D2555G41	108167032	194.1	1544.53	±0.4 nm	FC-PC
D2555G42	108167040	194.2	1543.73	±0.4 nm	FC-PC
D2555G43	108167057	194.3	1542.94	±0.4 nm	FC-PC
D2555G44	108167065	194.4	1542.14	±0.4 nm	FC-PC
D2555G45	108167073	194.5	1541.35	±0.4 nm	FC-PC
D2555G46	108167081	194.6	1540.56	±0.4 nm	FC-PC
D2555G47	108167099	194.7	1539.77	±0.4 nm	FC-PC
D2555G48	108167107	194.8	1538.98	±0.4 nm	FC-PC
D2555G49	108167115	194.9	1538.19	±0.4 nm	FC-PC
D2555G50	108167123	195.0	1537.40	±0.4 nm	FC-PC
D2555G51	108167131	195.1	1536.61	±0.4 nm	FC-PC
D2555G52	108167149	195.2	1535.82	±0.4 nm	FC-PC
D2555G53	108167156	195.3	1535.04	±0.4 nm	FC-PC
D2555G54	108167164	195.4	1534.25	±0.4 nm	FC-PC
D2555G55	108167172	195.5	1533.47	±0.4 nm	FC-PC
D2555G56	108167180	195.6	1532.68	±0.4 nm	FC-PC
D2555G57	10830963	195.7	1531.90	±0.4 nm	FC-PC
D2555G58	108309071	195.8	1531.12	±0.4 nm	FC-PC
D2555G59	108309089	195.9	1530.33	±0.4 nm	FC-PC
D2555G60	108309105	196.0	1529.55	±0.4 nm	FC-PC
D2555G61	108309113	196.1	1528.77	±0.4 nm	FC-PC

Ordering Information (continued)

Table 12. Ordering Information D2570H

Device	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Wavelength Tolerance	Connector
D2570H862	108578394	186.2	1610.06	±0.4 nm	ST®
D2570H863	108578402	186.3	1609.19	±0.4 nm	ST
D2570H864	108578410	186.4	1608.33	±0.4 nm	ST
D2570H865	108578428	186.5	1607.47	±0.4 nm	ST
D2570H866	108578469	186.6	1606.60	±0.4 nm	ST
D2570H867	108578618	186.7	1605.74	±0.4 nm	ST
D2570H868	108578634	186.8	1604.88	±0.4 nm	ST
D2570H869	108578642	186.9	1604.33	±0.4 nm	ST
D2570H870	108578659	187.0	1603.17	±0.4 nm	ST
D2570H871	108487711	187.1	1602.31	±0.4 nm	ST
D2570H872	108487729	187.2	1601.45	±0.4 nm	ST
D2570H873	108487737	187.3	1600.60	±0.4 nm	ST
D2570H874	108487745	187.4	1599.75	±0.4 nm	ST
D2570H875	108487752	187.5	1598.89	±0.4 nm	ST
D2570H876	108487760	187.6	1598.04	±0.4 nm	ST
D2570H877	108487778	187.7	1597.19	±0.4 nm	ST
D2570H878	108487786	187.8	1596.34	±0.4 nm	ST
D2570H879	108487794	187.9	1595.49	±0.4 nm	ST
D2570H880	108487802	188.0	1594.64	±0.4 nm	ST
D2570H881	108487810	188.1	1593.79	±0.4 nm	ST
D2570H882	108487828	188.2	1592.95	±0.4 nm	ST
D2570H883	108487836	188.3	1592.10	±0.4 nm	ST
D2570H884	108487844	188.4	1591.25	±0.4 nm	ST
D2570H885	108487851	188.5	1590.41	±0.4 nm	ST
D2570H886	108487869	188.6	1589.57	±0.4 nm	ST
D2570H887	108487877	188.7	1588.72	±0.4 nm	ST
D2570H888	108487885	188.8	1587.88	±0.4 nm	ST
D2570H889	108487893	188.9	1587.04	±0.4 nm	ST
D2570H890	108487901	189.0	1586.20	±0.4 nm	ST
D2570H891	108487919	189.1	1585.36	±0.4 nm	ST
D2570H892	108487927	189.2	1584.53	±0.4 nm	ST
D2570H893	108487935	189.3	1583.69	±0.4 nm	ST
D2570H894	108487943	189.4	1582.85	±0.4 nm	ST
D2570H895	108487950	189.5	1582.02	±0.4 nm	ST
D2570H896	108487968	189.6	1581.18	±0.4 nm	ST
D2570H897	108487976	189.7	1580.35	±0.4 nm	ST
D2570H898	108487984	189.8	1579.52	±0.4 nm	ST
D2570H899	108487992	189.9	1578.69	±0.4 nm	ST
D2570H900	108488008	190.0	1577.85	±0.4 nm	ST
D2570H901	108488016	190.1	1577.02	±0.4 nm	ST
D2570H902	108488024	190.2	1576.20	±0.4 nm	ST

**Ordering Information** (continued)

**Table 12. Ordering Information D2570H** (continued)

Device	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Wavelength Tolerance	Connector
D2570H903	108488032	190.3	1575.37	±0.4 nm	ST
D2570H904	108488040	190.4	1574.54	±0.4 nm	ST
D2570H905	108488057	190.5	1573.71	±0.4 nm	ST
D2570H906	108488065	190.6	1572.89	±0.4 nm	ST
D2570H907	108488073	190.7	1572.06	±0.4 nm	ST
D2570H908	108488081	190.8	1571.24	±0.4 nm	ST
D2570H909	108488099	190.9	1570.42	±0.4 nm	ST
D2570H910	108488107	191.0	1569.59	±0.4 nm	ST
D2570H911	108488115	191.1	1568.77	±0.4 nm	ST
D2570H912	108488123	191.2	1567.95	±0.4 nm	ST
D2570H913	108488131	191.3	1567.13	±0.4 nm	ST
D2570H914	108488149	191.4	1566.31	±0.4 nm	ST
D2570H915	108512492	191.5	1565.50	±0.4 nm	ST
D2570H916	108512500	191.6	1564.68	±0.4 nm	ST
D2570H17	108277351	191.7	1563.86	±0.4 nm	ST
D2570H18	108277369	191.8	1563.05	±0.4 nm	ST
D2570H19	108277377	191.9	1562.23	±0.4 nm	ST
D2570H20	108277385	192.0	1561.42	±0.4 nm	ST
D2570H21	108277684	192.1	1560.61	±0.4 nm	ST
D2570H22	108277692	192.2	1559.79	±0.4 nm	ST
D2570H23	108277700	192.3	1558.98	±0.4 nm	ST
D2570H24	108277718	192.4	1558.17	±0.4 nm	ST
D2570H25	108277726	192.5	1557.36	±0.4 nm	ST
D2570H26	108277734	192.6	1556.55	±0.4 nm	ST
D2570H27	108277742	192.7	1555.75	±0.4 nm	ST
D2570H28	108277759	192.8	1554.94	±0.4 nm	ST
D2570H29	108277767	192.9	1554.13	±0.4 nm	ST
D2570H30	108277783	193.0	1553.33	±0.4 nm	ST
D2570H31	108277791	193.1	1552.52	±0.4 nm	ST
D2570H32	108277809	193.2	1551.72	±0.4 nm	ST
D2570H33	108277825	193.3	1550.92	±0.4 nm	ST
D2570H34	108277153	193.4	1550.12	±0.4 nm	ST
D2570H35	108277833	193.5	1549.32	±0.4 nm	ST
D2570H36	108277841	193.6	1548.51	±0.4 nm	ST
D2570H37	108277858	193.7	1547.72	±0.4 nm	ST
D2570H38	108277866	193.8	1546.92	±0.4 nm	ST
D2570H39	108277874	193.9	1546.12	±0.4 nm	ST
D2570H40	108277882	194.0	1545.32	±0.4 nm	ST
D2570H41	108277890	194.1	1544.53	±0.4 nm	ST
D2570H42	108277908	194.2	1543.73	±0.4 nm	ST
D2570H43	108277916	194.3	1542.94	±0.4 nm	ST

**Ordering Information** (continued)

**Table 12. Ordering Information D2570H** (continued)

<b>Device</b>	<b>Comcode</b>	<b>ITU Frequency (THz)</b>	<b>Center Wavelength (nm)</b>	<b>Wavelength Tolerance</b>	<b>Connector</b>
D2570H44	108277924	194.4	1542.14	±0.4 nm	ST
D2570H45	108277393	194.5	1541.35	±0.4 nm	ST
D2570H46	108277419	194.6	1540.56	±0.4 nm	ST
D2570H47	108277427	194.7	1539.77	±0.4 nm	ST
D2570H48	108277435	194.8	1538.98	±0.4 nm	ST
D2570H49	108277443	194.9	1538.19	±0.4 nm	ST
D2570H50	108277450	195.0	1537.40	±0.4 nm	ST
D2570H51	108277468	195.1	1536.61	±0.4 nm	ST
D2570H52	108277476	195.2	1535.82	±0.4 nm	ST
D2570H53	108277484	195.3	1535.04	±0.4 nm	ST
D2570H54	108277492	195.4	1534.25	±0.4 nm	ST
D2570H55	108277500	195.5	1533.47	±0.4 nm	ST
D2570H56	108277914	195.6	1532.68	±0.4 nm	ST
D2570H57	108278383	195.7	1531.90	±0.4 nm	ST
D2570H58	108278391	195.8	1531.12	±0.4 nm	ST
D2570H59	108278409	195.9	1530.33	±0.4 nm	ST
D2570H60	108278417	196.0	1529.55	±0.4 nm	ST
D2570H61	108278425	196.1	1528.77	±0.4 nm	ST

## Standard Product

### Class IIIb Laser Product

FDA/CDRH Class IIIb laser product. All versions are Class IIIb laser products per CDRH, 21 CFR 1040 Laser Safety requirements. All versions are Class IIIb laser products per IEC\* 60825-1:1993. The device has been certified with the FDA under accession number 8720010.

This product complies with 21 CFR 1040.10 and 1040.11.

8.3  $\mu\text{m}$ /125  $\mu\text{m}$  single-mode fiber pigtail with 900  $\mu\text{m}$  tight buffer jacket and connector

Wavelength = 1.5  $\mu\text{m}$

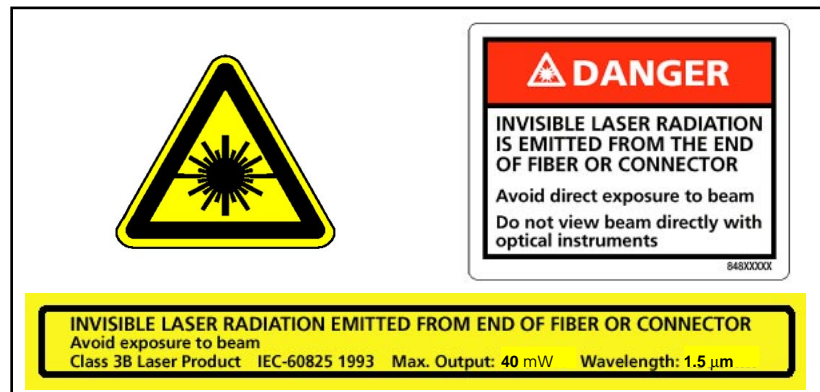
Maximum power = 40 mW

Because of size constraints, laser safety labeling is not affixed to the module but attached to the outside of the shipping carton.

Product is not shipped with power supply.

**Caution: Use of controls, adjustments, and procedures other than those specified herein may result in hazardous laser radiation exposure.**

\* IEC is a registered trademark of The International Electrotechnical Commission.



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For additional information, contact your Microelectronics Group Account Manager or the following:

INTERNET: <http://www.lucent.com/micro>, or for Optoelectronics information, <http://www.lucent.com/micro/opto>

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**1-800-372-2447**, FAX 610-712-4106 (In CANADA: **1-800-553-2448**, FAX 610-712-4106)

ASIA PACIFIC: Microelectronics Group, Lucent Technologies Singapore Pte. Ltd., 77 Science Park Drive, #03-18 Cintech III, Singapore 118256  
**Tel. (65) 778 8833**, FAX (65) 777 7495

CHINA: Microelectronics Group, Lucent Technologies (China) Co., Ltd., A-F2, 23/F, Zao Fong Universe Building, 1800 Zhong Shan Xi Road, Shanghai 200233 P. R. China **Tel. (86) 21 6440 0468, ext. 316**, FAX (86) 21 6440 0652

JAPAN: Microelectronics Group, Lucent Technologies Japan Ltd., 7-18, Higashi-Gotanda 2-chome, Shinagawa-ku, Tokyo 141, Japan  
**Tel. (81) 3 5421 1600**, FAX (81) 3 5421 1700

EUROPE: Data Requests: MICROELECTRONICS GROUP DATALINE: **Tel. (44) 700 582 368**, FAX (44) 1189 328 148  
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