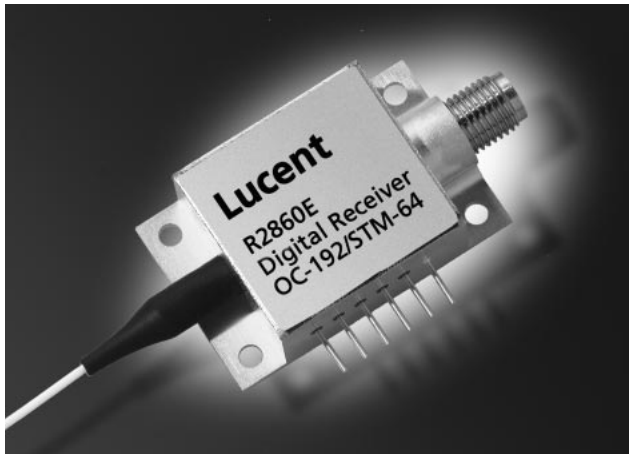




R2860E Digital Receiver OC-192/STM-64



Description

The R2860E receiver module, part of the R2860 receiver family, incorporates a high-speed planar PIN diode and a GaAs PHEMT preamplifier to provide exceptionally high performance. The unit provides high bandwidth and sensitivity to operate with long, dispersive fibers, plus wide dynamic range for operation over a variety of loss budgets. High transimpedance coupled with a nonquantizing limiting buffer output provides high gain while limiting the maximum output signal swing, thereby simplifying the interface to subsequent stages.

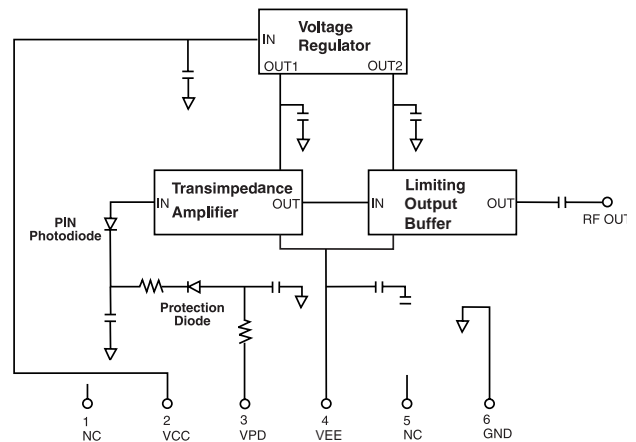
Features

- High sensitivity, -20 dBm typical
- Wide dynamic range, 2 dBm overload typical
- High transimpedance, 1200Ω typical
- Hermetically sealed
- Available with flexible supply voltages:
 - ± 5 V dual supplies
 - 8 V only
 - -8 V only
- ac-coupled output

Applications

- 10 Gbits/s short, intermediate, and long-haul systems
- SONET/SDH equipment
- Datacom equipment

Block Diagram



Pin Information

Table 1. Pin Descriptions

Pin No.	Description
1	NC
2	VCC
3	VPD
4	VEE
5	NC
6	Ground

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 operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Min	Max	Unit
Operating Temperature Range	TOP	-5	70	°C
Storage Case Temperature Range	Tstg	-40	85	°C
Preamplifier Supply Voltage	VCC-VEE	—	12	V
Photodiode Bias Voltage	VPD-VEE	—	20	V
Optical Input Power	PIN	—	4	dBm

Electrical/Optical Characteristics

Table 2. Electrical and Optical Characteristics (25 °C Case Temperature)

Parameter	Symbol	Min	Typ	Max	Unit
Optical Wavelength Range	λ	1280	—	1580	nm
Sensitivity (10^{-10} BER, PRBS $2^{23}-1$)	—	—	-20	-18	dBm
Overload (10^{-13} BER, PRBS $2^{23}-1$)	—	0	2	—	dBm
Responsivity	R	0.7	0.8	—	A/W
Dark Current	I_D	—	—	1.0	nA
High-Frequency Cutoff	—	8.0	9.0	—	GHz
Low-Frequency Cutoff	—	—	—	30	kHz
Transimpedance	Z	800	1200	—	Ω
Maximum ac Output Voltage Swing	—	—	450	—	mV p-p
RF Output Return Loss (0.1 GHz—10 GHz)	RLRF	—	—	10	dB
Optical Return Loss	RL	27	—	—	dB
Logic Sense	—	—	Noninverting	—	—
Photodiode Supply Voltage*	VPD	3	5	7	V
Positive Supply Voltage*	VCC	4	5	5.5	V
Negative Supply Voltage*	VEE	-5.5	-5	-4	V
Supply Current	$I_{CC}, -I_{EE}$	—	80	120	mA

* Floating supply capability allows alternate powering configurations such as VPD = 8 V, VCC = 8 V, and VEE = GND, or VPD = GND, VCC = GND, and VEE = -8 V.

Characteristic Curve

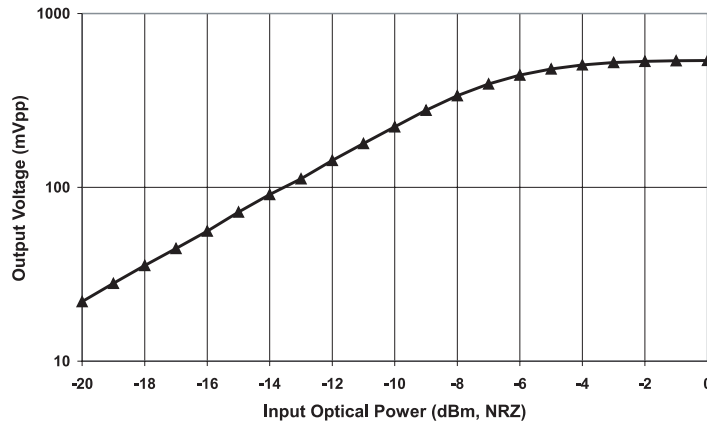
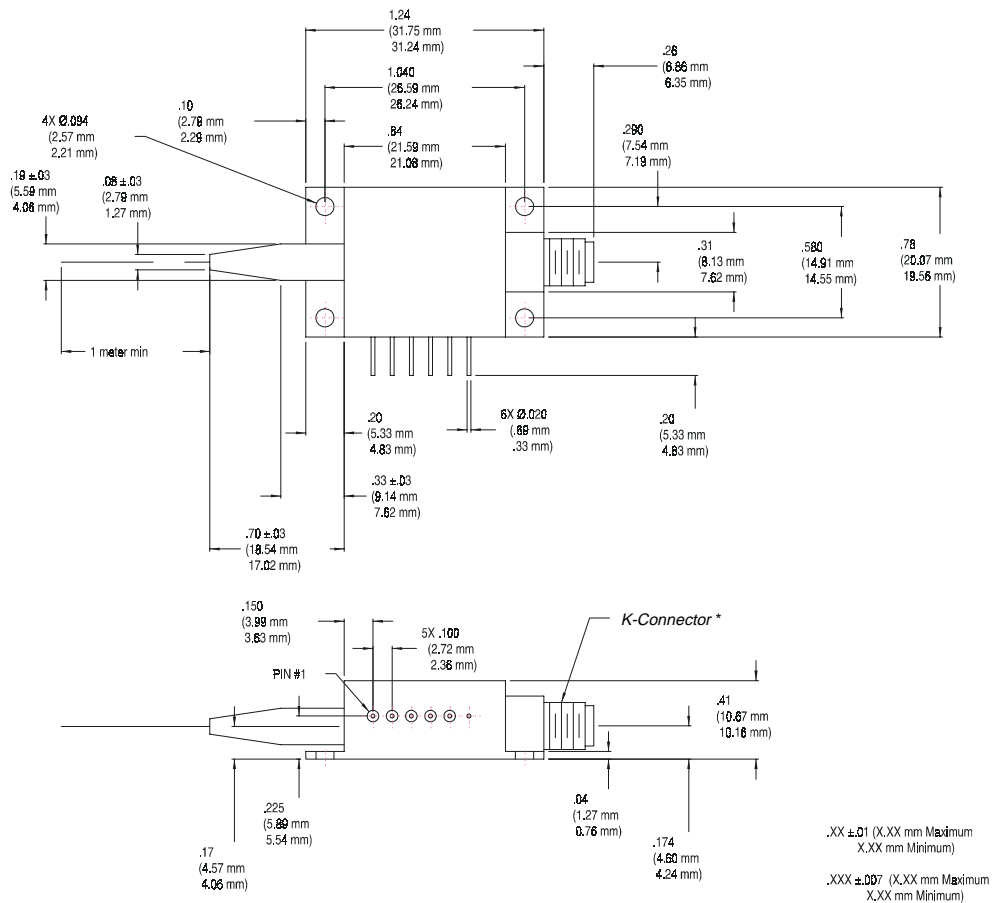


Figure 1. R2860E Typical Electrical Output Voltage vs. Optical Input Power

Outline Diagram

Dimensions are in inches and (millimeters).



* K-Connector is a trademark of Anritsu Company.

Ordering Information

Table 3. Ordering Information¹

Device Code	Description	Connector	Pigtail	Comcode
R2860E023	Digital Receiver 800 Ω min. TIA gain, ac-coupled output	FC/SPC, Standard	SMF-28 ² (1 m min.)	108870270
R2860E040	Digital Receiver 800 Ω min. TIA gain, ac-coupled output	SC/UPC	SMF-28 ² (1 m min.)	108870288

1. Other options available. For additional ordering information, please contact a Lucent account manager at Microelectronics Group, Opto West, 1-800-362-3891 (for sales staff, please press option 2).
2. SMF-28 is a trademark of Corning Incorporated.

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>
E-MAIL: docmaster@micro.lucent.com
N. AMERICA: Microelectronics Group, Lucent Technologies Inc., 555 Union Boulevard, Room 30L-15P-BA, Allentown, PA 18109-3286
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. 325**, FAX (86) 21 6440 0652
JAPAN: Microelectronics Group, Lucent Technologies Japan Ltd., 7-18, Higashi-Gotanda 2-chome, Shinagawa-ku, Tokyo 141, Japan
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EUROPE: Data Requests: MICROELECTRONICS GROUP DATALINE: **Tel. (44) 7000 582 368**, FAX (44) 1189 328 148
Technical Inquiries: OPTOELECTRONICS MARKETING: **(44) 1344 865 900** (Ascot UK)

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