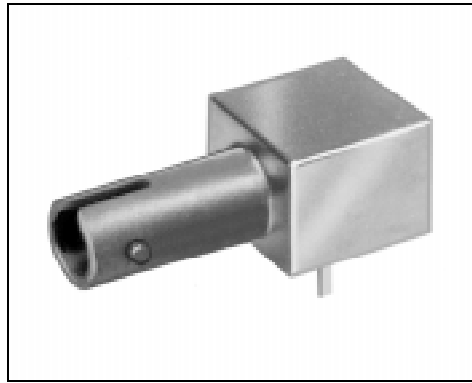


HFE4874

Next Generation High Power LEDs, Metal ST-LP2 Package

FEATURES

- Industry standard ST® fiber connector
- 850 nm GaAlAs LED
- High reliability construction
- Metal barrel and housing
- Wave solderable
- Straight metal package provides enhanced durability and heat dissipation over plastic packages
- ST-LP2 package



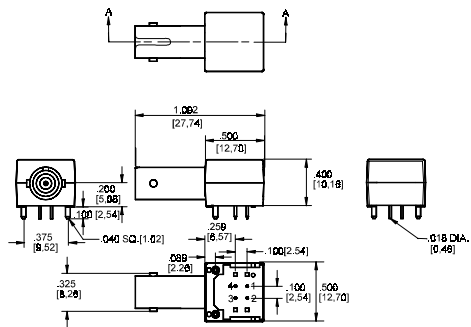
FIBER303.TIF

DESCRIPTION

Next Generation LEDs are designed for use in IEEE 802.3 Ethernet and IEEE 802.5J Token Ring applications such as repeaters, bridges, hubs, routers, switches and gateways. The devices are GaAlAs 850 nm LEDs which are designed to efficiently couple optical power into different fiber sizes ranging from 50/125 micron to 200/240 micron. They typically couple -12.0 dBm into 62.5/125 micron cable at 60 mA peak. The LED component is electrically isolated from the connector barrel. The mechanical construction uses a high reliability ST-LP2 fiber optic connector/housing designed to be easily mounted on printed circuit boards without the need for additional hardware. This component is specifically designed to provide performance and flexibility to the designer and should be driven with a 50% duty cycle at 60 mA to 100 mA peak forward current for the electrical input signal.

Next Generation LEDs have been updated and improved from existing Fiber Optic LEDs. The Next Generation LEDs provide an improved lensing scheme which makes the fiber optic coupling more repeatable. The LEDs are manufactured with an automated process that eliminates variable introduced by a manual process. The Next Generation LEDs are pin for pin compatible with existing ST-LP2 LEDs.

OUTLINE DIMENSIONS in inches (mm)



ODIM_207.cdr

Pinout

1. Anode
2. Cathode
3. Anode
4. Anode

HFE4874

Next Generation High Power LEDs, Metal ST-LP2 Package

ELECTRO-OPTICAL CHARACTERISTICS (T_A = -40 to +85°C unless otherwise specified)

PARAMETER	SYMBOL	MIN	TYP ⁽¹⁾	MAX	UNITS	TEST CONDITIONS
Fiber Coupled Power (HFE4874-222) Peak, T _A =25°C Peak over temp.	P _{OC}	-17.3 -18.9	-13.8	-11.4 -10.8	dBm	I _F =100 mA Peak 50/125μm fiber, NA = 0.20
Fiber Coupled Power Peak, T _A =25°C Peak over temp.	P _{OC}	-18.8 -19.8	-15.8	-13.8 -12.8	dBm	I _F = 60 mA Peak 50/125 μm fiber, NA = 0.20
Fiber Coupled Power Peak, T _A =25°C Peak over temp.	P _{OC}	-13.5 -15.1	-10.0	-7.6 -7.0	dBm	I _F = 100 mA Peak 62.5/125 μm fiber, NA = 0.275
Fiber Coupled Power Peak, T _A =25°C Peak over temp.	P _{OC}	-15.0 -16.0	-12.0	-10.0 -9.0	dBm	I _F = 60 mA Peak 62.5/125 μm fiber, NA = 0.275
Fiber Coupled Power (HFE4874-223) Peak, T _A =25°C Peak over temp.	P _{OC}	-15.0 -16.0	-10.5	-9.0 -8.0	dBm	I _F = 60 mA Peak 62.5/125 μm fiber, NA = 0.275
Forward Voltage	V _F V _F		1.84 1.70	2.09	V V	I _F = 100 mA I _F = 60 mA
Forward Voltage Temperature Coefficient	ΔV _F /ΔT ΔV _F /ΔT		-0.18 -0.22		mV/°C mV/°C	I _F = 100 mA I _F = 60 mA
Reverse Voltage	B _{VR}		1.8	3.8	V	I _R = 10 μA, T _A =25°C
Peak Wavelength	λ _P λ _P	810 810	856 850	895 885	nm nm	I _F = 100 mA DC I _F = 60 mA DC
Spectral Bandwidth (FWHM)			55 50		nm nm	I _F = 100 mA DC I _F = 60 mA DC
Response Time	t _R /t _F		4.0	6.3	ns	I _F = 60 mA peak, No Prebias
P _O Temperature Coefficient	ΔP _O /ΔT ΔP _O /ΔT		-0.017 -0.006		dB/°C dB/°C	I _F = 100 mA I _F = 60 mA
Series Resistance	r _S		4.0		Ω	DC
Device Capacitance	C		40		pF	V _R = 0 V, f = 1 MHz
Thermal Resistance			260		°C/W	Heat sinked

Notes

1. Typical specifications are for operations at T_C = 25°C.
2. P_{OC} is measured using a 10 meter mode stripped cable which is intended to accurately represent a working system.

ABSOLUTE MAXIMUM RATINGS

Storage temperature	-55 to +85°C
Case operating temperature	-40 to +85°C
Lead solder temperature	260°C, 10 s
Reverse voltage	1.8 V
Continuous forward current (heat sinked)	100 mA

Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational section of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods of time may affect reliability.

HFE4874

Next Generation High Power LEDs, Metal ST-LP2 Package

ORDER GUIDE

Description	Catalog Listing
Straight metal barrel and housing, standard power	HFE4874-222
Straight metal barrel and housing, extended power	HFE4874-223

WARNING

Under certain application conditions, the infrared optical output of this device may exceed Class 1 eye safety limits, as defined by IEC 825-1 (1993-11). Do not use magnification (such as a microscope or other focusing equipment) when viewing the device's output.

CAUTION

The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product.



Fig. 1 Typical Optical Power Output vs Forward Current

FIBER021.GRA

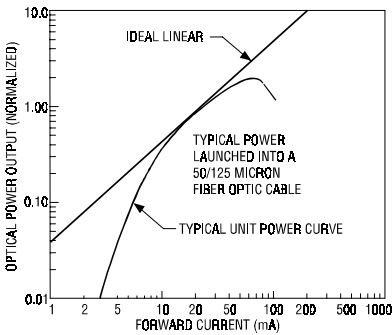


Fig. 2 Typical Spectral Output vs Wavelength

FIBER105.GRA

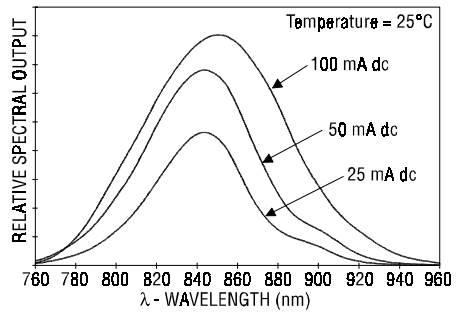
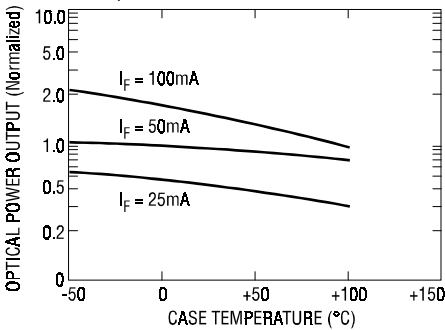


Fig. 3 Typical Optical Power Output vs Case Temperature

FIBER025.GRA



All Performance Curves Show Typical Values

Honeywell reserves the right to make changes in order to improve design and supply the best products possible.

Honeywell