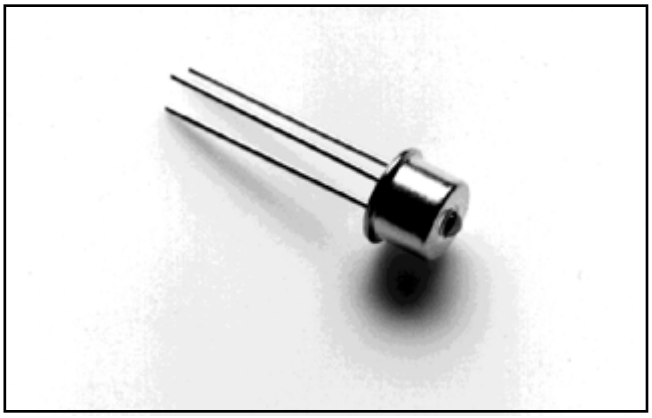
MF228
High Performance LED



TO-46 Package with Lens

DS5454 ISSUE 1 May 2001

Ordering Information

MF228	11914.11 TO-46 Package
MF228 ST	12517.11 ST Housing
MF228 SC	13308.11 SC Housing
MF228 SMA	12135.11 SMA Housing
MF228 FC	13008.11 FC Housing

Note: Rated Fiber coupled power apply only on the TO-46 package, for housing options fiber coupled power is typically 10% less

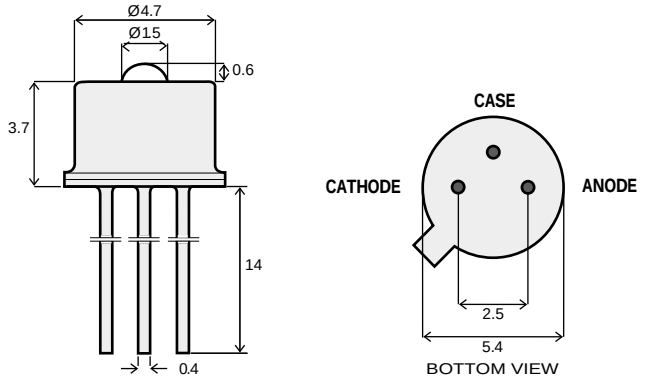
Description

This device is capable of providing high power into large-core fiber over a wide temperature range. Thanks to its very uniform phase distribution of the opticalpower, it is ideal for Electronic Distance Measurement equipment.

Optical and Electrical Characteristics - Case Temperature 25˚C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition	
Fiber-Coupled Power (Fig. 1,2 & 3) (Table 1)	P_{fiber}	1000	1200		µW	I_F=100mA (Note 1)	Fiber: 200/ 280µm Step Index NA=0.24
Rise and Fall Time (10-90%)	t_r,t_f		7	10	ns	I_F=100mA (no bias)	
Bandwidth ($3dB_{el}$)	f_c		50		MHz	I_F=100mA	
Peak Wavelength	λ_p	830	850	870	nm	I_F=100mA	
Spectral Width (FWHM)	$\Delta\lambda$		50		nm	I_F=100mA	
Forward Voltage (Fig. 5)	V_F		1.8	2.2	V	I_F=100mA	
Reverse Current	I_R			20	µA	V_R=1V	
Capacitance	C		250		pF	V_R=0V, f=1MHz	

Note 1: Measured at the exit of 100 meters of fiber



The anode is in electrical contact with the case

All dimensions in mm

Absolute Maximum Ratings

Parameter	Symbol	Limit
Storage Temperature	T_{stg}	-55 to +125˚C
Operating Temperature see (derating: Fig. 4)	T_{op}	-40 to +85˚C
Electrical Power Dissipation (derating: Fig. 4)	P_{tot}	250 mW
Continuous Forward Current (f<10kHz)	I_F	110 mA
Peak Forward Current (duty cycle<50%, f>1MHz)	I_{FRM}	180 mA
Reverse Voltage	V_R	1.5V
Soldering Temperature (2mm from the case for 10sec)	T_{sld}	260˚C

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance-Infinite Heat Sink	R_{thjc}			100	˚C/W
Thermal Resistance-No Heat Sink	R_{thja}			400	˚C/W
Temperature Coefficient - Optical Power	dP/dT_j		-0.4		%/˚C
Temperature Coefficient - Wavelength	$d\lambda/dT_j$		0.3		nm/˚C

Typical Fiber-Coupled Power

Core Diameter/Cladding Diameter Numberical Aperture				
50/125 µm 0.20	62.5/125 µm 0.275	100/140 µm 0.29	200/230 µm 0.37	200/280 µm 0.24
60 µW	150 µW	450 µW	1300 µW	1200 µW

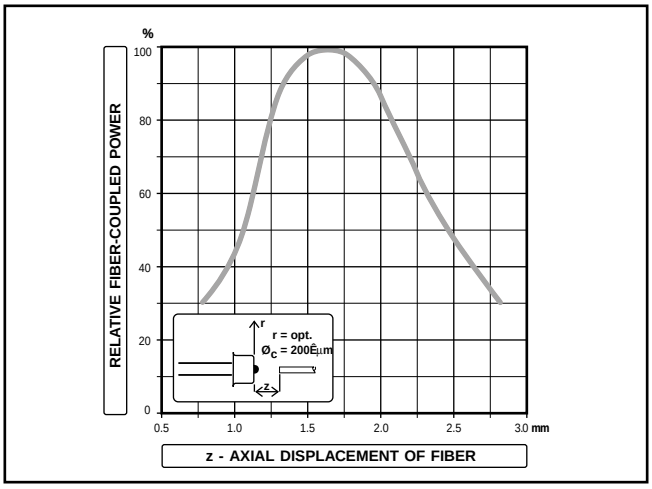


Figure 1

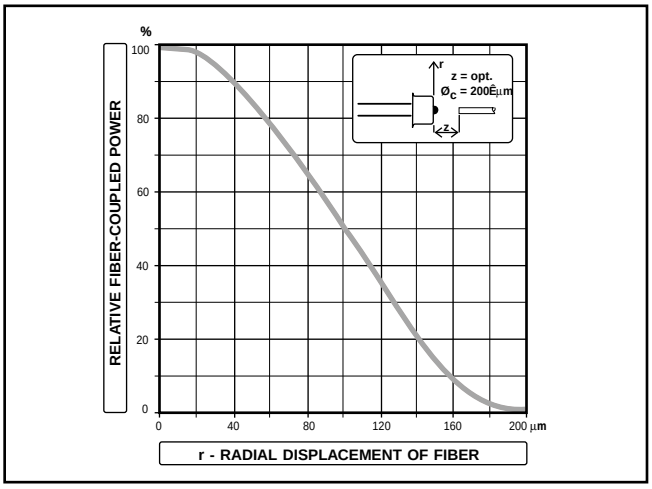


Figure 2

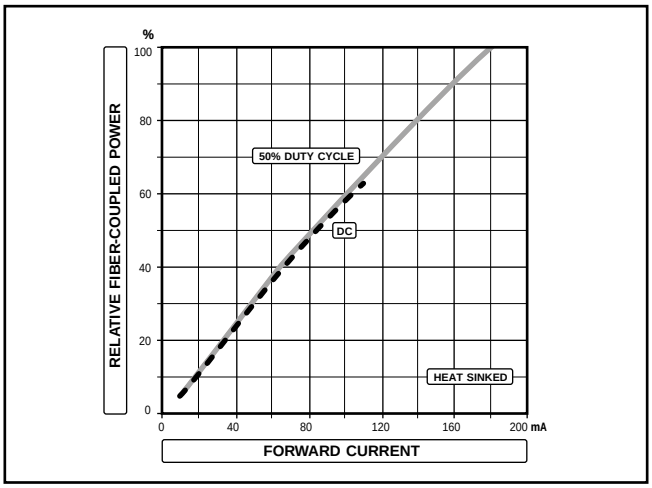


Figure 3

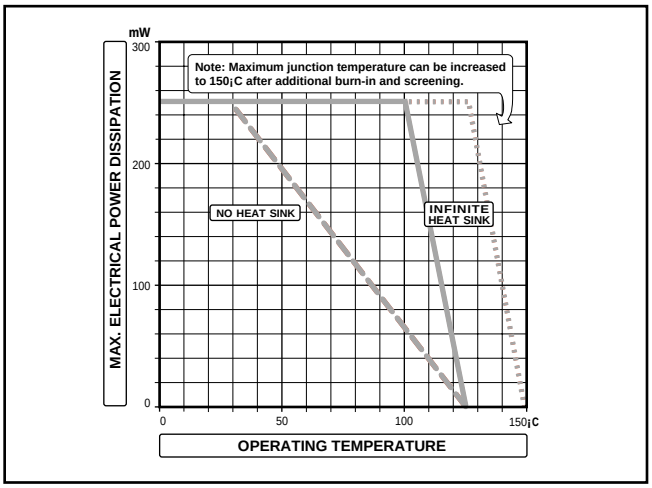


Figure 4

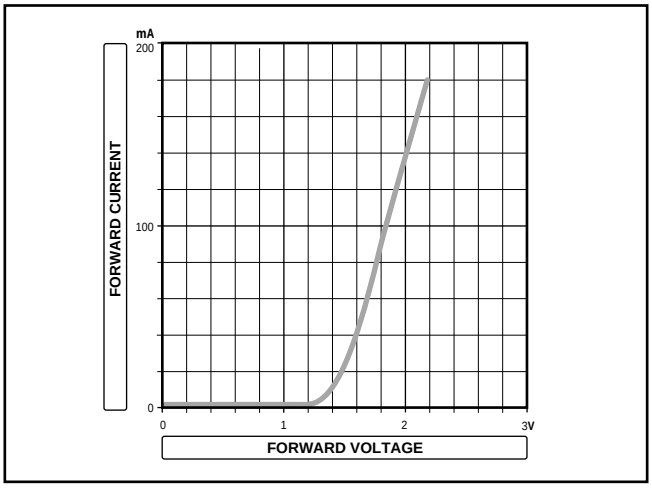


Figure 5

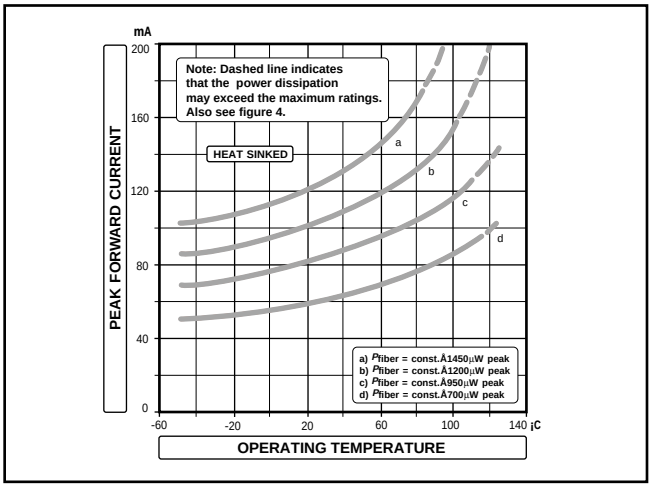


Figure 6

For more information about all Zarlink products
visit our Web Site at

www.zarlink.com

Information relating to products and services furnished herein by Zarlink Semiconductor Inc. or its subsidiaries (collectively "Zarlink") is believed to be reliable. However, Zarlink assumes no liability for errors that may appear in this publication, or for liability otherwise arising from the application or use of any such information, product or service or for any infringement of patents or other intellectual property rights owned by third parties which may result from such application or use. Neither the supply of such information or purchase of product or service conveys any license, either express or implied, under patents or other intellectual property rights owned by Zarlink or licensed from third parties by Zarlink, whatsoever. Purchasers of products are also hereby notified that the use of product in certain ways or in combination with Zarlink, or non-Zarlink furnished goods or services may infringe patents or other intellectual property rights owned by Zarlink.

This publication is issued to provide information only and (unless agreed by Zarlink in writing) may not be used, applied or reproduced for any purpose nor form part of any order or contract nor to be regarded as a representation relating to the products or services concerned. The products, their specifications, services and other information appearing in this publication are subject to change by Zarlink without notice. No warranty or guarantee express or implied is made regarding the capability, performance or suitability of any product or service. Information concerning possible methods of use is provided as a guide only and does not constitute any guarantee that such methods of use will be satisfactory in a specific piece of equipment. It is the user's responsibility to fully determine the performance and suitability of any equipment using such information and to ensure that any publication or data used is up to date and has not been superseded. Manufacturing does not necessarily include testing of all functions or parameters. These products are not suitable for use in any medical products whose failure to perform may result in significant injury or death to the user. All products and materials are sold and services provided subject to Zarlink's conditions of sale which are available on request.

Purchase of Zarlink's I^2C components conveys a licence under the Philips I^2C Patent rights to use these components in and I^2C System, provided that the system conforms to the I^2C Standard Specification as defined by Philips.

Zarlink, ZL and the Zarlink Semiconductor logo are trademarks of Zarlink Semiconductor Inc.

Copyright Zarlink Semiconductor Inc. All Rights Reserved.

TECHNICAL DOCUMENTATION - NOT FOR RESALE