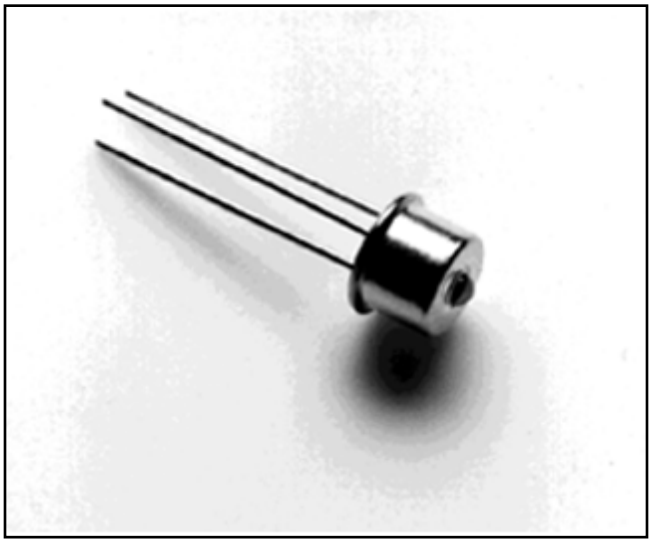
MF398
High Performance LED



TO-46 Package with Lens

DS5469 ISSUE 1 June 2001

Ordering Information

MF398	13000.11 TO-46 Package
MF398 ST	13415.11 ST Housing
MF398 SC	15063.13 SMA Housing
MF398 SMA	13729.11 FC Housing
MF398 FC	13307.11 FC Housing
MF398 PT	13216.11 Pig-Tail including 1 Meter of 62.5/125mm fibre, no connector

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

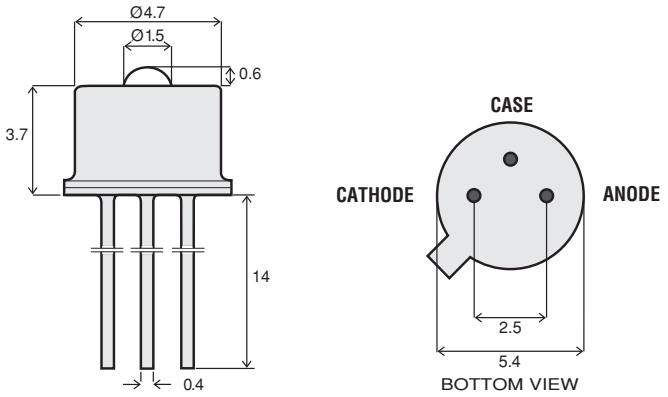
Description

The strictly defined 1300nm wavelength and high power is ideal for test equipment applications. It is packaged in a hermetically sealed can for high reliability and maximum resistance to harsh operating environments. The double-lens optical system results in optimum coupling of power into the fibre.

Optical and Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition	
Fiber-Coupled Power	P_{fiber}	50	60		µW	I_F=75mA (Note 1)	Fiber: 62.5/ 125µm Graded Index NA=0.275
Rise and Fall Time (10-90%)	t_r,t_f		10		ns	I_F=75mA (no bias)	
Bandwidth ($3dB_{el}$)	f_c		35		MHz	I_F=75mA	
Peak Center Wavelength	λ_c	1280	1300	1320	nm	I_F=75mA	
Spectral Width (FWHM)	$\Delta\lambda$		140	155	nm	I_F=75mA	
Forward Voltage (Fig. 5)	V_F		1.5	2	V	I_F=75mA	
Reverse Current	I_R			100	µA	V_R=1V	
Capacitance	C		200		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}	230 mW
Continuous Forward Current (f<10kHz)	I_F	110 mA
Peak Forward Current (duty cycle<50%, f>1MHz)	I_{FRM}	170 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}			150	˚C/W
Thermal Resistance-No Heat Sink	R_{thja}			450	˚C/W
Temperature Coefficient-Optical Power	dP/dT_j		-0.6		%/˚C
Temperature Coefficient-Wavelength	$d\lambda/dT_j$		0.55		nm/˚C
Temperature Coefficient-Spectral Width	$d\Delta\lambda/dT_j$		0.25		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
15µW	60µW	100µW

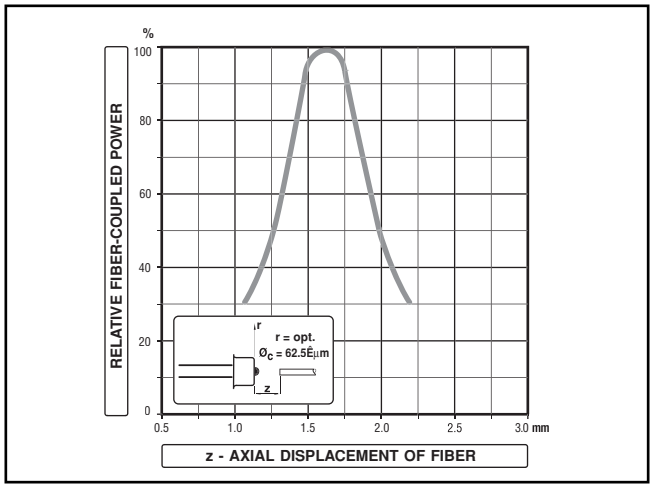


Figure 1

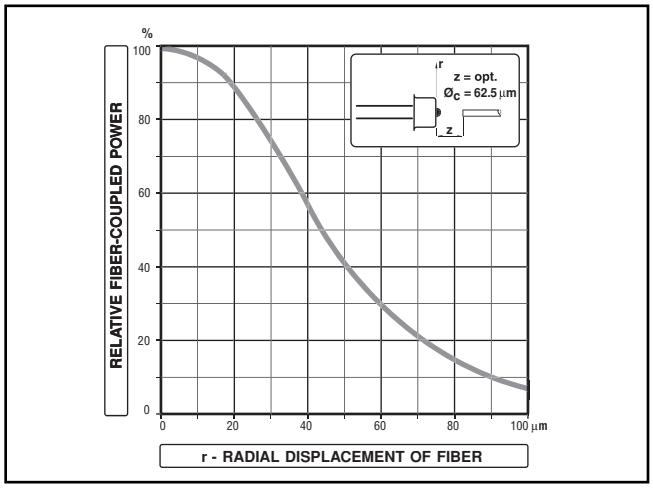


Figure 2

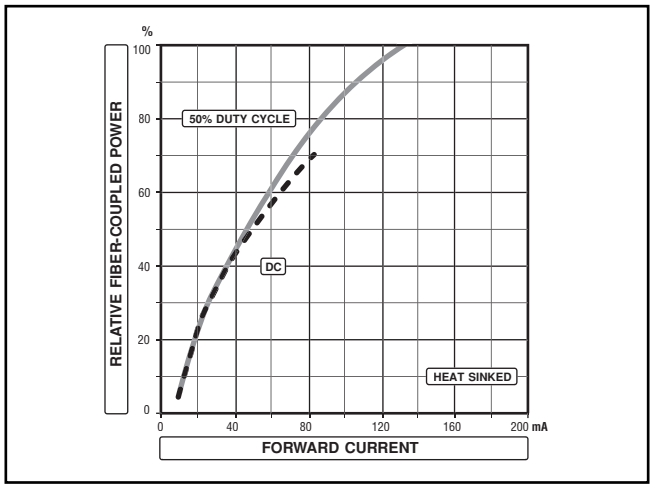


Figure 3

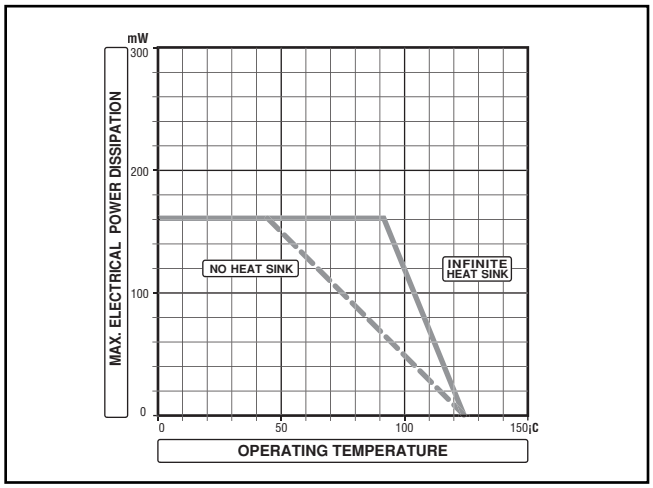


Figure 4

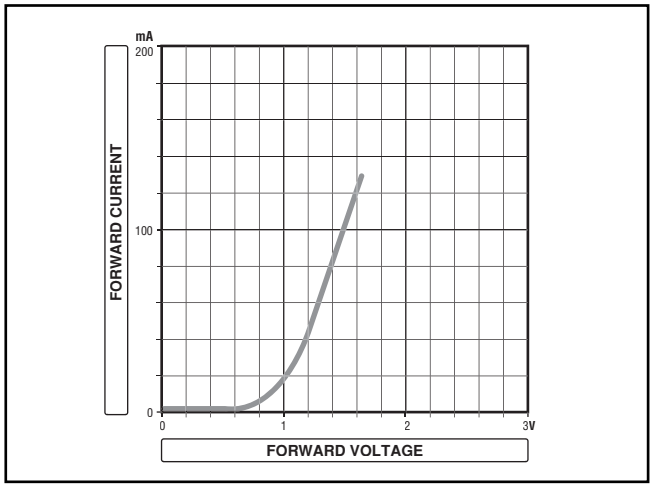


Figure 5

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