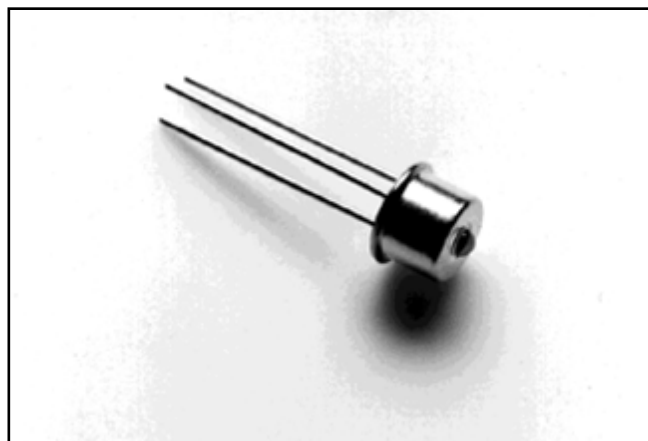




TO-46 Package with Lens

DS5452

ISSUE 1.1

August 2001

Ordering Information

MF272	12224.11 TO-46 Package
MF272 ST	12434.11 ST Housing
MF272 SMA	12247.11 SMA Housing
MF272 FC	12810.11 FC Housing

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

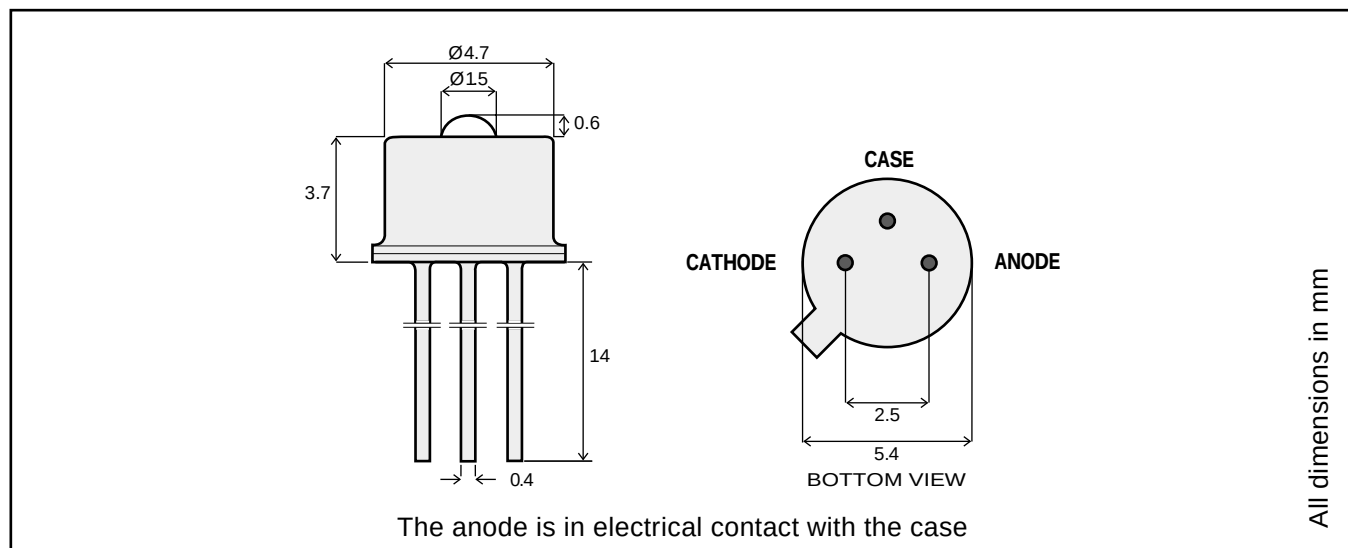
Description

This high speed device is optimized at 810nm wavelength which is of particular interest for use in radiation-hardened fiber. It operates in a wide temperature range and delivers very high power to 200 μm core fiber, making it ideal in avionics and military datacom applications.

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}	1300	1600		μW	$I_{\text{F}}=100\text{mA}$ (Note 1)	Fiber: 200/ 280 μm Step Index
Rise and Fall Time (10-90%)	$t_{\text{r}}, t_{\text{f}}$		5	8	ns	$I_{\text{F}}=100\text{mA}$ (no bias)	
Bandwidth (3dB _{el})	f_{c}		70		MHz	$I_{\text{F}}=100\text{mA}$	
Peak Wavelength	λ_{p}	790	810	830	nm	$I_{\text{F}}=100\text{mA}$	
Spectral Width (FWHM)	$\Delta\lambda$		50		nm	$I_{\text{F}}=100\text{mA}$	
Forward Voltage (Fig. 5)	V_{F}		2.2	2.4	V	$I_{\text{F}}=100\text{mA}$	
Reverse Current	I_{R}			20	μA	$V_{\text{R}}=1\text{V}$	
Capacitance	C		250		pF	$V_{\text{R}}=0\text{V}$, f=1MHz	

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



Absolute Maximum Ratings

Parameter	Symbol	Limit
Storage Temperature	T_{stg}	-55 to +125°C
Operating Temperature see (derating: Fig. 4)	T_{op}	-55 to +125°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	$d\lambda/dT_{\text{j}}$		0.3		nm/°C

Typical Fiber-Coupled Power

Core Diameter/Cladding Diameter Numerical 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	600 μW	2000 μW	1600 μW

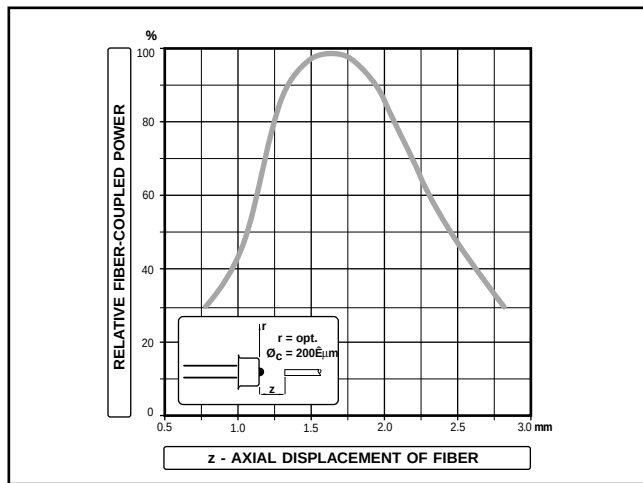


Figure 1

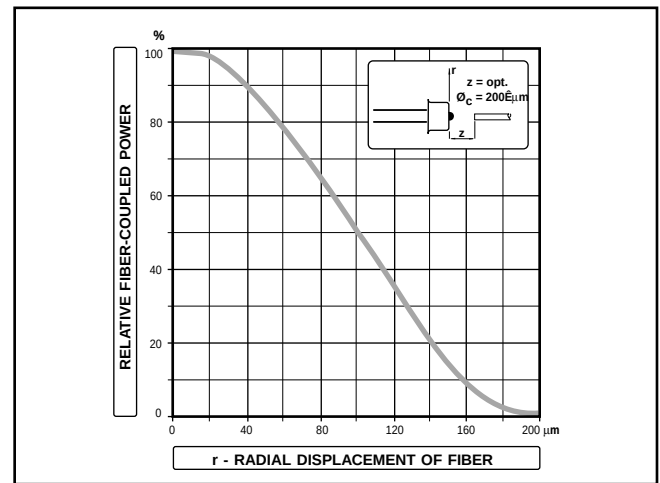


Figure 2

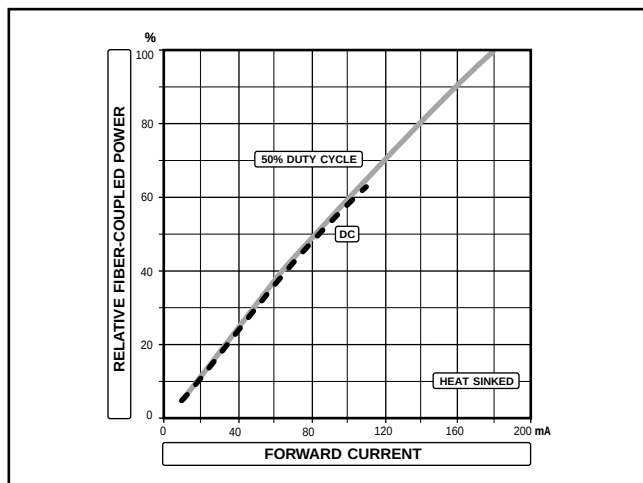


Figure 3

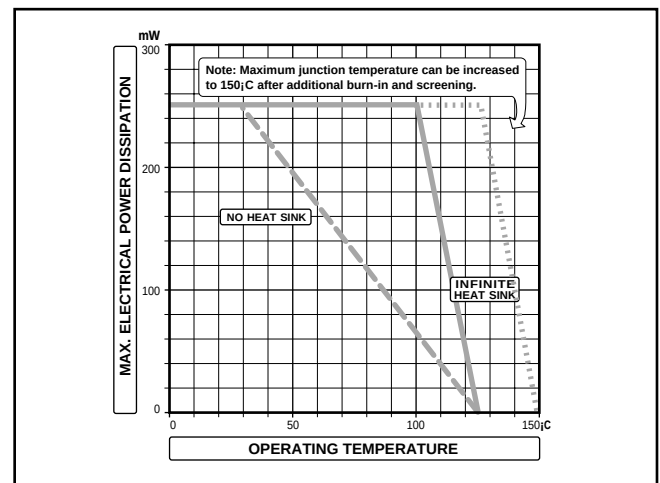


Figure 4

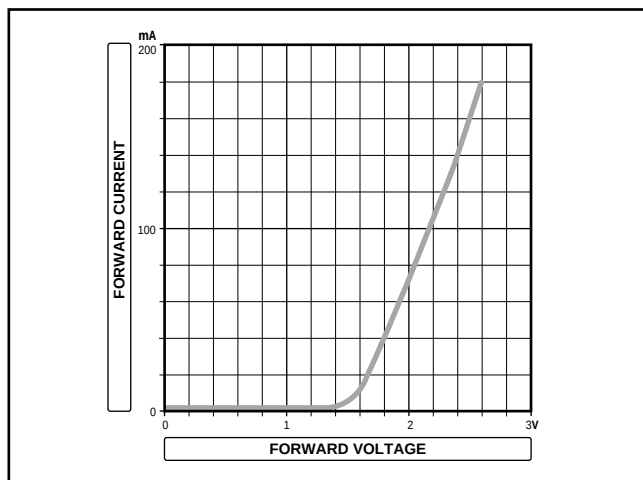


Figure 5

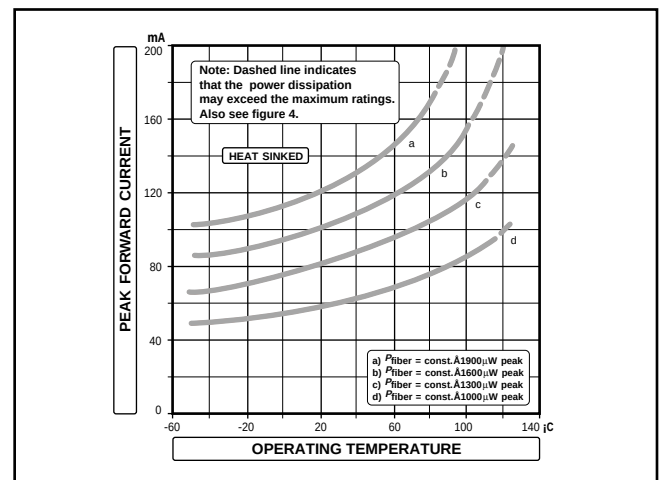


Figure 6



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