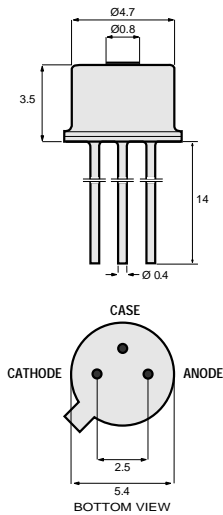


PRODUCT INFORMATION

820nm **1A286**
High-Performance LED

Free Air Communication, Sensors

This LED is designed for communication in free air. Its high optical output power makes it suitable for sensor applications as well. The hermetically sealed package contributes to its high reliability and the device can withstand the harshest environmental conditions.



All dimensions in mm

TO-46 Package With Lens

Optical and Electrical Characteristics (25° C Case Temperature)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Total Optical Power (Fig.3, & 6)	P_{tot}	2	4		mW	$I_F=100mA$
Fiber-Coupled Power (Fig.1, & 2)	P_{fiber}		1		mW	$I_F=100mA$ (Note 1) Fiber: 200/230 μm
Rise and Fall Time (10-90%)	t_r, t_f		5	10	ns	$I_F=100mA$ (no bias) Step Index NA=0.37
Bandwidth (3dB $_{el}$)	f_c		70		MHz	$I_F=100mA$
Peak Wavelength	λ_p	800	820	840	nm	$I_F=100mA$
Spectral Width (FWHM)	$\Delta\lambda$		50		nm	$I_F=100mA$
Forward Voltage (Fig.5)	V_F		2.2	2.4	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.

Absolute Maximum Ratings

PARAMETER	SYMBOL	LIMIT
Storage Temperature	T_{stg}	-55 to +125°C
Operating Temperature (derating: Fig.4)	T_{op}	-55 to +125°C
Electrical Power Dissipation (derating: Fig.4)	P_{tot}	250 mW
Continuous Forward Current ($f \leq 10$ kHz)	I_F	110 mA
Peak Forward Current (duty cycle $\leq 50\%$, $f \geq 1$ MHz)	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

12292.11 1994-09-20



Europe: Tel (46) 8 58 02 45 00 Fax (46) 8 58 02 01 10
Tel (44) 1291 436180 Fax (44) 1291 436771

America: Tel 1-800-96MITEL Fax (613) 592-6909
Asia: Tel (65) 293 5312 Fax (65) 293 8527

