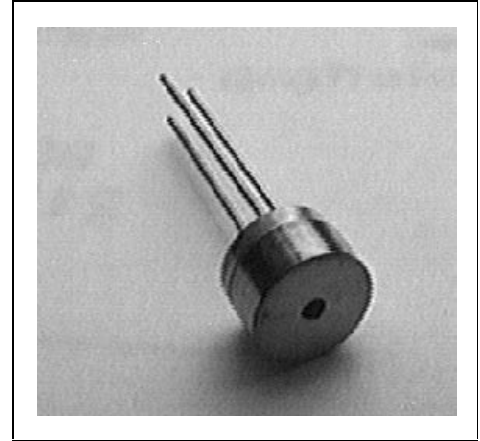# SIEMENS

IRED in TO-Package

STL 39002Z

- InGaAsP/InP - IRED
- Designed for application in fiber-optic
- Datacom systems
- Transmitter for the 2nd optical window (1300 nm)
- Suitable for bit rates up to 50 Mbit/s
- 200 Mbit/s with appropriate pulse shaping of the modulation current
- High output power with double heterostructure
- High coupling efficiency into multimode fibers
- No z-adjustment necessary (optimum coupling on cap surface)
- Hermetically sealed 3-pin metal case

Type	Ordering Code	Connector/Flange
STL 39002Z	Q62702-P3009	TO, with optics

Maximum Ratings

Parameter	Symbol	Values	Unit
Forward current (DC)	I_F	60	mA
Forward current ($\tau \leq 10~\mu s$, $D \leq 1$)	I_{FSM}	100	mA
Reverse voltage	V_R	0.5	V
Operating and storage temperature	T_A, T_{stg}	$-40 ... +85$	°C
Junction temperature	T_j	125	°C
Soldering time (wave / dip soldering), distance between solder point and base plate ≥ 2 mm, 260 °C	t_s	10	s

Characteristics

All optical data refer to an ambient temperature of 25 °C.

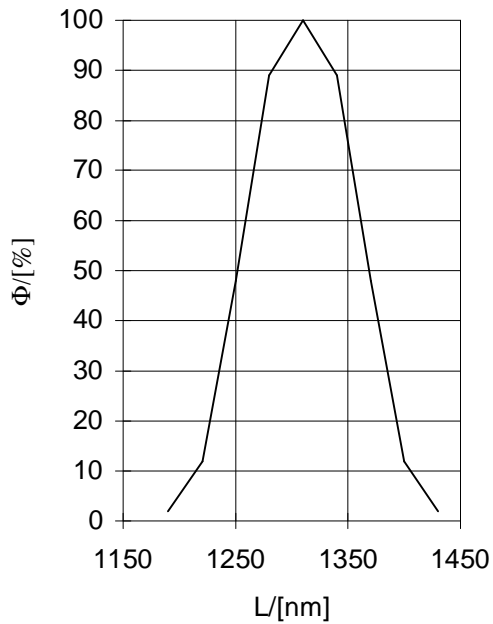| Parameter	Symbol	Values	Unit	Notes
Emission wavelength	λc	1310 ± 30	nm	1
Spectral bandwidth at 50 % of Φ_{max}	$\Delta\lambda$	130 ± 30	nm	1
Opt. power coupled into 62.5 µm multimode fiber, NA = 0.27	Φ_e	$-17.5 ... -13.5$	dBm	1.2
Opt. power coupled into 50 µm multimode fiber, NA = 0.2	Φ_e	$-20.5 ... -16.5$	dBm	1.2
Forward voltage, I_F = 50 mA DC	V_F	$1.2\ (\leq 1.5)$	V	
Rise and fall time (10 % - 90 %) R_L = 50 Ω, I_F = 50 mA	t_r; t_f	3; 4	ns	
Capacitance $V_R = 0, f$ = 1 MHz	C_0	100	pF	
Temp. coefficient of forward voltage, I_F = 50 mA	TC_{VF}	-1.3	mV/K	
Temp. coefficient of wavelength, I_F = 50 mA	TC_λ	0.5	nm/K	
Temp. coefficient of opt. power, I_F = 50 mA	TC_Φ	-0.7	%/K	

Operating Instructions

In order to achieve an operating lifetime $> 10^5$ h, which is required for Telcom applications, a forward current of I_F = 50 mA DC is recommended.

Notes: 1) Driving current is a square wave, 50 % duty cycle, 60 mA$_{pk}$ current at 1 MHz. Φ_e is the average optical power coupled into the specified fiber.
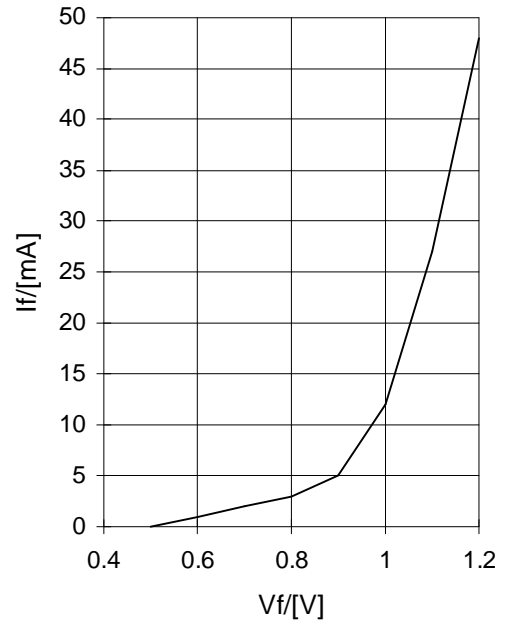2) Optimum coupling on cap surface, no adjustment in z-axis necessary.

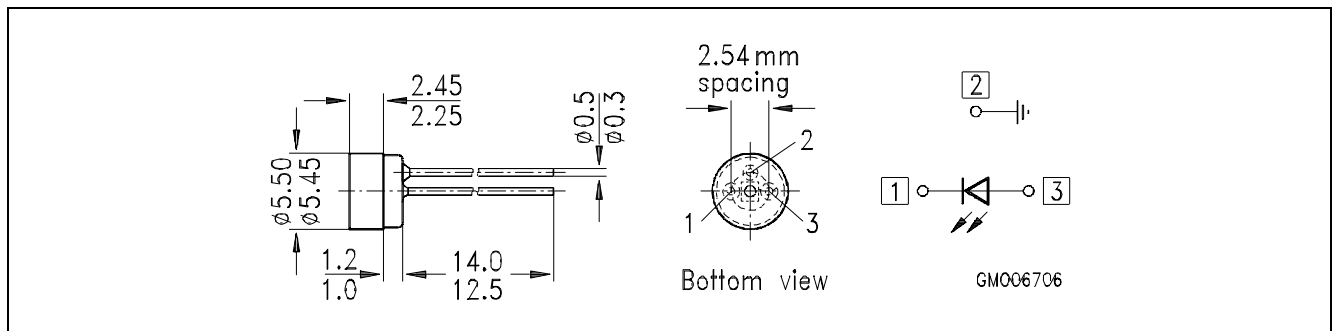**Rel. Spectral Emission**
$\Phi_e = \Phi_e\,(\lambda)$

Forward Current CW
$I_F = I_F(T_A)$

Package Outlines (Dimensions in mm)

STL 39002Z