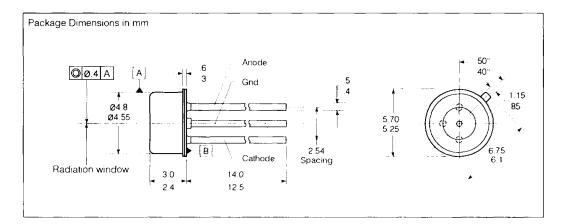
# **SIEMENS**

## SFH 4212 IRED TO18 PACKAGE



### **FEATURES**

- InGaAsP/InP-IRED
- Emission Wavelength: 2<sup>nd</sup> Optical Window (1300 nm)
- Suitable for Bit Rates up to 50 Mbit/s
- 200 Mbit/s with Appropriate Pulse Shaping of Modulation Current
- High Output Power with Double Heterostructure
- High Coupling Efficiency into a 62.5/125 µm Graded Index Fiber with Built in Optics and Appropriate Second Lens Configuration
- Hermetically Sealed 3-pin Metal Case, Similar to TO 18, AR-Coated Window
- Application:
  - Fiber Optic Communication System

### **Maximum Ratings**

Forward Current DC (I <sub>F</sub> )	60 mA
Forward Current τ ≤10 μs, D≤1 (I <sub>EGM</sub> )	100 mA
Reverse Voltage (V <sub>R</sub> )	
Operating Temperature Range at Case (T <sub>C</sub> )	20" to +80"C
Storage Temperature Range (Ambient Temp.) (T <sub>CTG</sub> )	40" to +80°C
Junction Temperature (T <sub>J</sub> )	125"C
Soldering Time (Wave Soldering),	
Pin Length 2mm, 260"C (T <sub>G1</sub> )	10 s
Soldering Time (Dip Soldering),	
Pin Length 2mm, 280°C (T <sub>02</sub> )	3 s

Characteristics (Output power ratings refers to an optimally coupled 62.5/125  $\mu m$  GI fiber at  $T_A=25^{\circ}C$ )

Parameter	Symbol	Value	Unit
Emission Wavelength (1)	$\lambda_c$	1310±30	nm
Spectral Bandwidth at 50% of $\Phi_{MAX}(1)$	$\Delta\lambda$	130±30	nm
Radiation Power Coupled into a			
62.5/125 μm GI-fiber with			
Fiber-Lens-Corif., NA = 0.275 (1)	ф <sub>е</sub>	15 to 45	μW
Forward Voltage, I <sub>F</sub> = 50 mA DC	V <sub>F</sub>	12	V
Rise and Fall Time (10 to 90%)			
$(R_L=50 \ \Omega. \ I_F=50 \ mA)$	$t_{\mathbf{H}},t_{\mathbf{F}}$	3, 4	ns
Capacitance (V <sub>R</sub> =0 V, f=1 MHz)	Co	100	рF
Temperature Coefficient of			
Forward Voltage (I <sub>F</sub> =50 mA)	TC <sub>VF</sub>	1.3	mV/K
Temperature Coefficient of			
Wavelength (I <sub>F</sub> =50 mA)	$TC_{\lambda}$	0.5	nm/K
Temperature Coefficient of			
Radiation Power (I <sub>F</sub> =50 mA) (1)	TC <sub>⊕e</sub>	-0.7	%/K
Thermal Resistance			
Junction/Air	R <sub>thJA</sub>	400	
Junction/Case	R <sub>thJC</sub>	150	KΜ
Frequency Response (2)	A <sub>(60(10)</sub>	0.80	

#### Notes

- 1 Measured with optical system as shown in example (see below). Driving current is a square wave, 50% duty cycle, 60 mA<sub>PK</sub> current at 1 MHz. Φ<sub>E</sub> is the average optical power coupled in the described lens configuration.
- The diode is driven with 30 mA DC and 60 mA<sub>PtC</sub> sine wave at 10 MHz and 60 MHz, respectively. A <sub>(60/10)</sub> is the ration of the coupled-in optical power of 60 MHz and 10 MHz modulation frequency.

### **OPERATING INSTRUCTIONS**

In order to achieve an operating lifetime  $> 10^5\,\mathrm{h}$ , which is required for Telcom applications, the value listed below should not be exceeded.

Recommended forward current I<sub>F</sub>=50 mA DC

