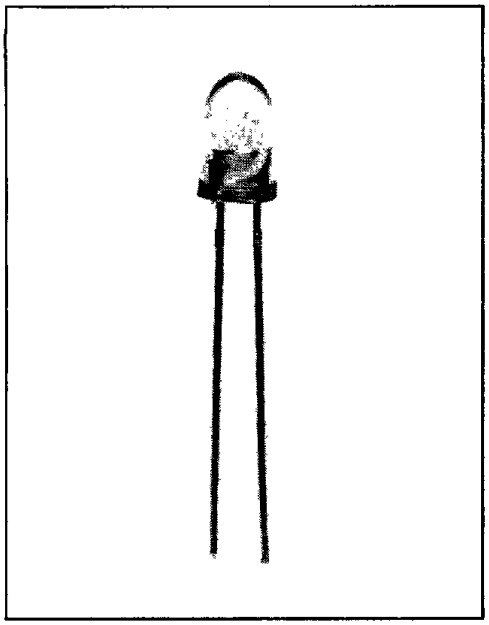
SIEMENS

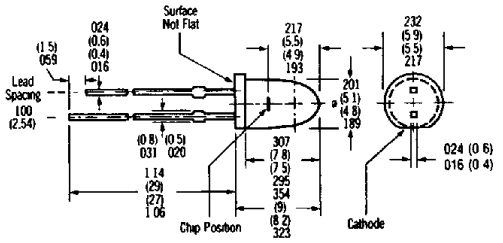
SFH 484

GaAlAs INFRARED EMITTER

T-41-13



Package Dimensions in Inches (mm)



FEATURES

- **Three Radiant Intensity Selections**
  SFH484-1 50–100
  SFH484-2 80–160
  SFH484-3 ≥125
- **Good Spectral Match with Silicon Photo Detector**
- **Gallium Aluminum Arsenide Material**
- **Low Cost**
- **T-1¾ Package**
- **Clear Plastic Lens**
- **Long Term Stability**
- **Narrow Beam, 16°**
- **Very High Power, 20 mW Typical at 100 mA**
- **High Intensity, 100 mW/sr at 100 mA**
- **For Smoke Detection Application: Use SFH484-E7517**

DESCRIPTION

SFH 484, an infrared emitting diode, emits radiation in the near infrared range (880 nm peak). The emitted radiation, which can be modulated, is generated by forward flowing current. The device is enclosed in a 5mm plastic package. Uses for SFH 484 include. IR remote control of color TV receivers, smoke detectors, and other applications requiring very high power, such as IR touch screens.

Maximum Ratings

Storage temperature	T_{stg}	−55 to +100	°C
Soldering temperature at dip soldering (≥2 mm distance from the case bottom; soldering time t≤5 sec)	T_{sold}	260	°C
Soldering temperature at iron soldering (≥2 mm distance from the case bottom, soldering time t≤3 sec)	T_{sold}	300	°C
Junction temperature	T_j	100	°C
Reverse voltage	V_R	5	V
Forward current	I_F	100	mA
Surge current ($\tau = 10$ µs)	I_{SC}	2 5	A
Power dissipation (T = 25°C)	P_{tot}	200	mW
Thermal Resistance*	R_{thA}	375	K/W

Characteristics ($T_{amb} = 25°C$)

Wavelength at peak emission at $I_F = 10$ mA	λpeak	880	nm
Wavelength at peak emission at $I_F = 100$ mA, $t_{pulse} = 20$ ms, Duty cycle = 1·12	λpeak	883	nm
Wavelength at peak emission at $I_F = 1$ A, $t_{pulse} = 100$ µs, Duty cycle = 1 100	λpeak	886	nm
Spectral bandwidth at $I_F = 10$ mA	Δλ	80	nm
Half angle	φ	±8	Deg
Active chip area	A	0 16	mm²
Dimensions of active chip area	L×W	0 4×0.4	mm
Distance chip surface to case surface	D	4.9 5 5	mm
Switching time (I_e from 10% to 90%, and from 90% to 10% $I_F = 100$ mA)	t_r, t_f	0.6/0 5	µs
Capacitance ($V_R = 0$ V, f = 1 MHz)	C_o	25	pF
Forward Voltage ($I_F = 100$ mA, $t_{pulse} = 20$ ms)	V_F	1.5 (≤1 8)	V
($I_F = 1$ A, $t_{pulse} = 100$ µs)	V_F	3 0 (≤3 8)	V
Breakdown voltage ($I_R = 10$ µA)	V_{BR}	30 (≥5)	V
Reverse current ($V_R = 5$ V)	I_R	0 01 (≤1)	µA
Temperature coefficient of I_e or Φ_e	TC	−0 5	%/K
Temperature coefficient of V_F	TC	−0 2	%/K
Temperature coefficient of λpeak	TC	0 25	nm/K

Radiant Intensity I_E in Axial Direction Measured at a Solid Angle of Ω = 0.01sr

Group	SFH 484-1	SFH 484-2	SFH 484-3	
Radiant Intensity I_E ($I_F = 100$ mA, $T_P = 20$ ms)	50–100	80–160	≥125	mW/sr
($I_F = 1$ A, $T_P = 100$ µs)	560	900	975	mW/sr
Total Radiant Flux Φ_E ($I_F = 100$ mA $T_P = 20$ ms)	21	23	25	mW

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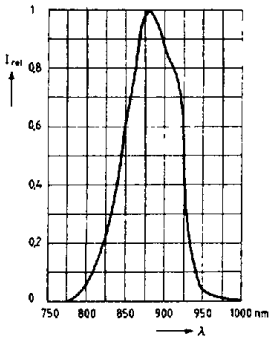
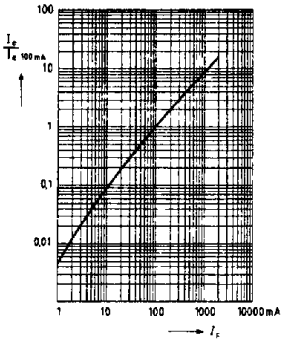
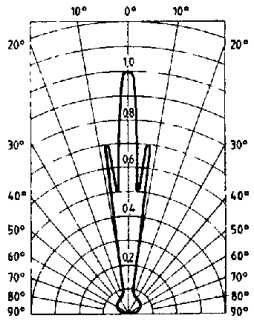
Relative spectral emission
$I_{rel} = f(\lambda)$



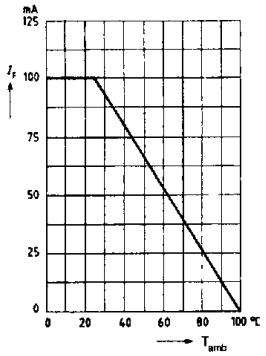
Radiant intensity
$\frac{I_e}{I_e\ 100\ mA} = f(I_F)$



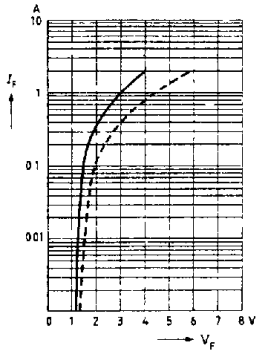
Radiant characteristics
$I_{rel} = f(\varphi)$



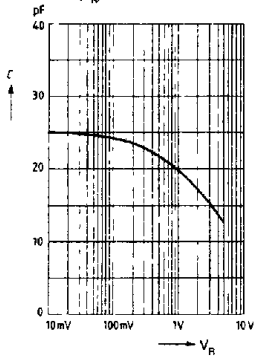
Maximum permissable forward current
$I_F = f(T_{amb})$



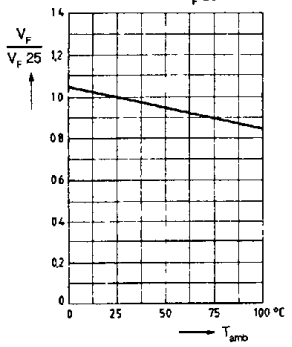
Forward current
$I_F = f(V_F)$



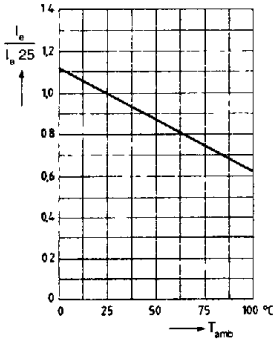
Capacitance
$C = f(V_R)$



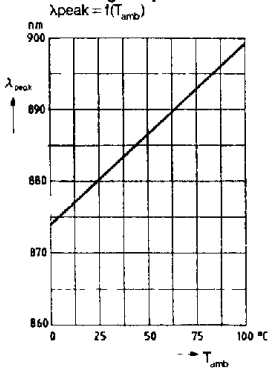
Forward voltage $\frac{V_F}{V_F\ 25} = f(T_{amb})$



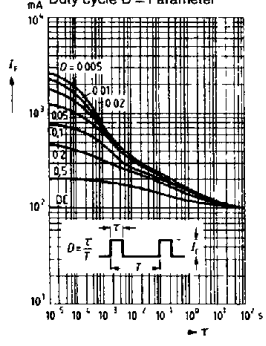
Radiant intensity $\frac{I_e}{I_e\ 25} = f(T_{amb})$



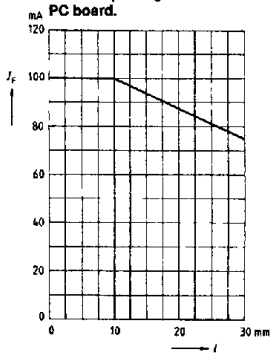
Wavelength at peak emission
$\lambda peak = f(T_{amb})$



Permissable pulse load
$I_F = f(\tau)$
Duty cycle D = Parameter



Forward current (max): dependent upon the lead length from the package bottom to the PC board.



Infrared Emitters

SFH 484