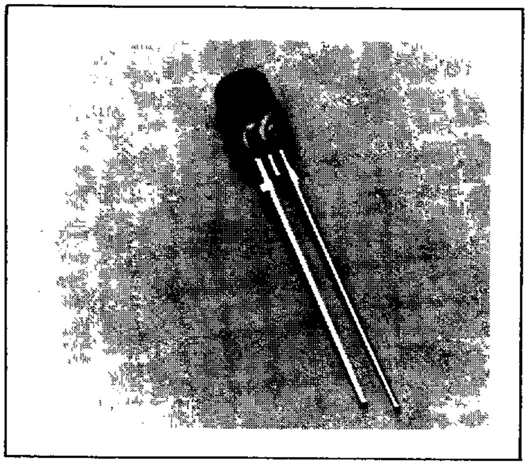
SIEMENS

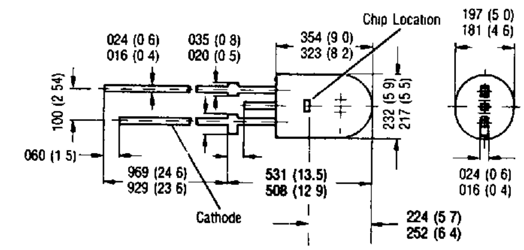
LD 273

TWO CHIP INFRARED EMITTER

T-41-11



Package Dimensions in Inches (mm)



FEATURES

- **Very High Radiant Intensity**
- **Two Chip Device**
- **Grey Oval Plastic Package**
- **Equivalent to T1¾ Size**
- **Matches with Photodiodes SFH 205 or BP104 or Phototransistors BP103B**

DESCRIPTION

The LD 273 is an infrared emitter consisting of two GaAs-IRLED chips connected in a series. This provides a very high radiant intensity of greater than 25 mW/sr at 100 mA Radiation is emitted in the axial (0°) direction from a smoke colored oval plastic package This device serves particularly well as a powerful emitter of increased range in remote control applications.

Mounting Instruction

In order not to damage the system when soldering in the emitting diodes, the soldering distance to the plastic package has to be dimensioned as large as possible. We recommend a minimum distance of 10 mm between package and soldering point for the usual soldering conditions (260°C/3 sec)

Maximum Ratings

Storage Temperature	T	-55 to +100	°C
Soldering Temperature (Distance from soldering joint to package ≥10 mm, soldering time t ≤ 3 s)	T_S	260	°C
Junction Temperature	T_j	100	°C
Reverse Voltage	V_R	10	V
Forward Current	I_F	100	mA
Surge Current (t = 10 μs, D = 0)	I_{FS}	3 2	A
Power Dissipation	P_{tot}	260	mW
Thermal Resistance	R_{thJamb}	280	K/W

Characteristics (T_{amb} = 25°C)

Wavelength (I_F = 100 mA, t_P = 20 ms)	λ	950±20	nm
Spectral Bandwidth (I_F = 100 mA, t_p = 20 ms)	Δλ	55	nm
Half Angle (Horizontal to terminal plane)	φ_H	±25	Deg
Half Angle (Vertical to terminal plane)	φ_V	±15	Deg
Active Area (2 die)	A	0 09	mm²
Active Die Area per Die	L × W	0 3 × 0 3	mm
Distance Die Surface to Package Surface	H	4 8 to 5 4	mm
Switching Time (I_e from 10% to 90% and from 90% to 10% at I_F = 100 mA)	t_r, t_f	1	μs
Capacitance (V_R = 0 V)	C_0	10	pF
Forward Voltage (I_F = 100 mA)	V_F	2 6 (≤3 0)	V
(I_F = 1A, t_p = 100μs)	V_F	3 8 (≤5 2)	V
Breakdown Voltage (I_R = 10 μA)	V_{BR}	50 (≥10)	V
Reverse Current (V_R = 10 V)	I_R	0 01 (≤1)	μA
Temperature Coefficient of I_e or Φ_e	TC_I	-0 55	%/K
Temperature Coefficient of V_F	TC_V	-3	mV/K
Temperature Coefficient of λpeak	TC_λ	+0 3	nm/K
Radiant Intensity in Axial Direction Measured at a Solid Angle of Ω = 0 01 sr (I_F = 100 mA, t_p = 20 ms)	I_e	≥25	mW/sr
(I_F = 1 A, t_p = 100 μs)	I_e	220	mW/sr
Radiant Power (I_F = 100 mA t_p = 20 ms)	Φ_e	26	mW

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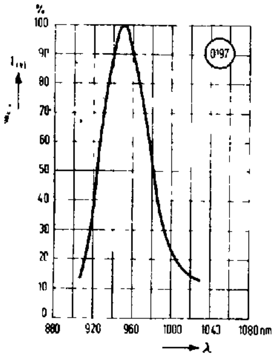
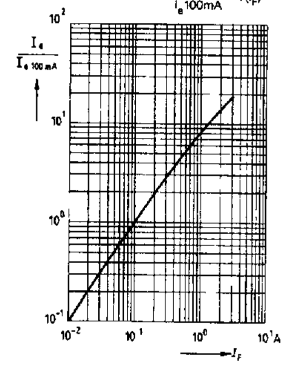
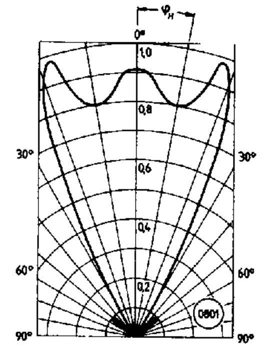
Relative spectral emission versus wavelength



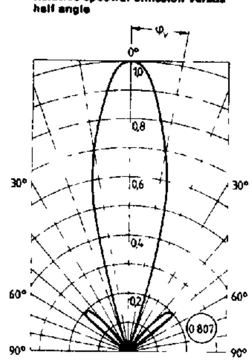
Radiant intensity $\frac{I_e}{I_{e\,100mA}} = f(I_F)$



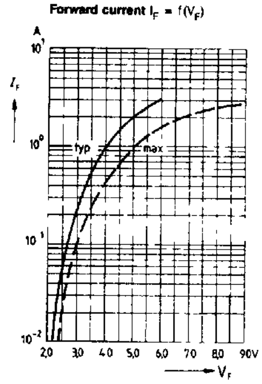
Radiation characteristic horizontally to pin terminal plane
Relative spectral emission versus half angle



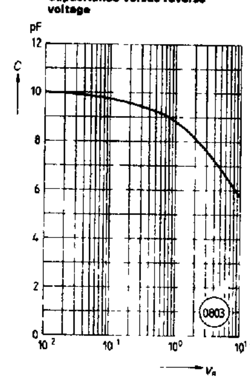
Radiation characteristic vertically to pin terminal plane
Relative spectral emission versus half angle



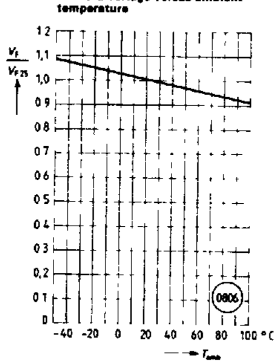
Forward current $I_F = f(V_F)$



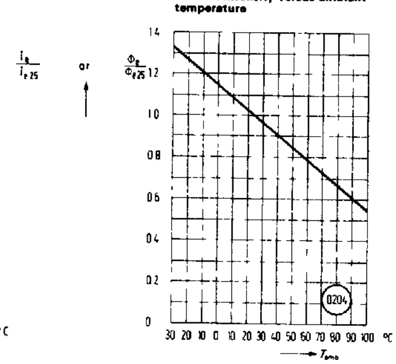
Capacitance versus reverse voltage



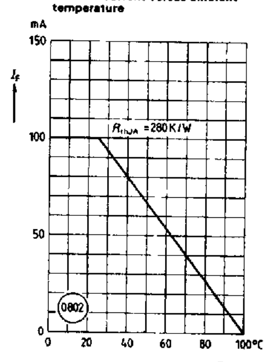
Forward voltage versus ambient temperature



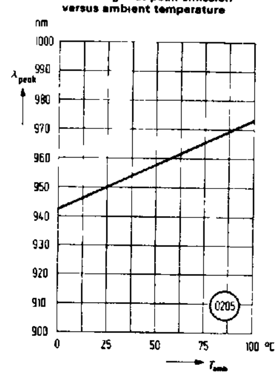
Radiant intensity versus ambient temperature



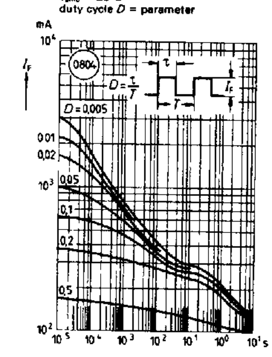
Forward current versus ambient temperature



Wavelength at peak emission versus ambient temperature



Permissible pulse handling capability
Forward current versus cycle duration
$T_{amb} = 25°C$
duty cycle D = parameter



Infrared Emitters

LD 273