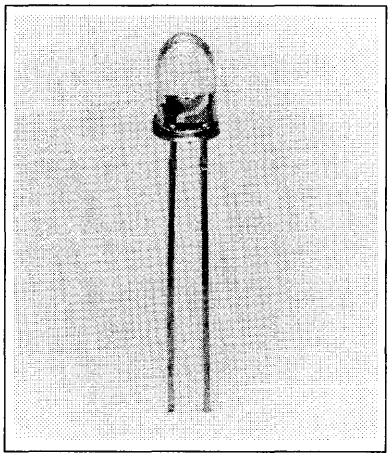
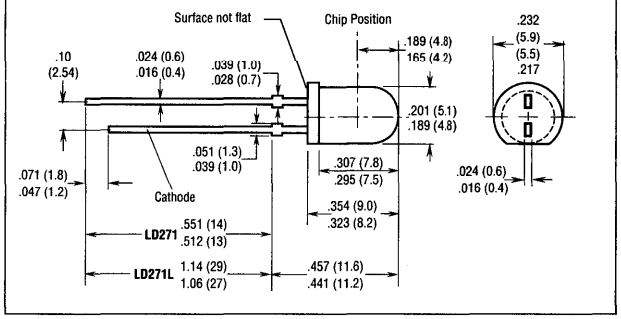
SIEMENS

LD271
1" LEADS LD271L
GaAs INFRARED EMITTER



Package Dimensions in Inches (mm)



FEATURES

- **T1¾ (5 mm) Package**
- **Lightly Diffused Gray Plastic Lens**
- **LD271L, 1" Leads**
- **Long Term Stability**
- **Medium Wide Beam, 50°**
- **High Power**
- **Matches Photodiodes SFH205 or BP104 or Phototransistors BP103B**

DESCRIPTION

LD271/L is an infrared emitting diode and emits radiation in the near infrared range (950 nm peak). The emitted radiation, which can be modulated, is generated by forward flowing current. The device is enclosed in a T1¾ (5 mm) plastic package.

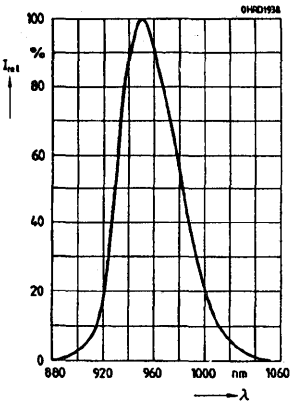
Maximum Ratings

Operating/Storage Temperature Range (T_{OP}, T_{STG}) .....–55° to +100°C
Junction Temperature (T_J) ..... 100°C
Reverse Voltage (V_R) ..... 5 V
Forward Current (I_F) ..... 130 mA
Surge Current (I_{FSM}) t=10 µs, D=0 ..... 3.5 A
Power Dissipation (P_{TOT}) ..... 210 mW
Thermal Resistance (R_{thJA}) ..... 210 K/W

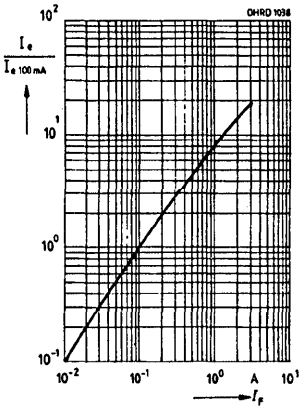
Characteristics (T_A=25°C)

Parameter	Symbol	Value	Unit
Peak Wavelength (I_F=100 mA, t_P=20 ms)	λ_{PEAK}	950±20	nm
Spectral Bandwidth, 50% I_{MAX} (I_F=100 mA, t_P=20 ms)	$\Delta\lambda$	55	nm
Half Angle	φ	±25	Deg.
Active Chip Area	A	0.25	mm²
Active Chip Area Dimensions	L x W	0.5 x 0.5	mm
Distance, Chip Surface to Case Surface	H	4.0 to 4.6	mm
Switching Times, I_E 10% to 90% and 90% to 10% (I_F=50 mA, R_L=50 Ω)	t_R, t_F	1	µs
Capacitance (V_R=0 V, f=1 MHz)	C_0	40	pF
Forward Voltage (I_F=100 mA, t_P=20 µs)	V_F	1.30 (≤1.5)	V
(I_F=1 mA, t_P=100 µs)	V_F	1.90 (≤2.5)	V
Reverse Current (V_R=5 V)	I_R	0.01 (≤1)	µA
Radiant Flux, Total (I_F=100 mA, t_P=20 ms)	Φ_E	18	mW
Temperature Coefficient, I_E or Φ_E (I_F=100 mA)	TC_I	–0.55	%/K
Temperature Coefficient, V_F (I_F=100 mA)	TC_V	–1.5	mV/K
Temperature Coefficient, λ (I_F=100 mA)	TC_λ	0.3	nm/K
Radiant Intensity, I_E in axial direction at solid angle of Ω=0.01 sr			
(I_F=100 mA, t_P=20 ms)	I_E	15 (≥10)	mW/sr
(I_F=1 mA, t_P=100 µs)	I_{Etyp}	120	mW/sr

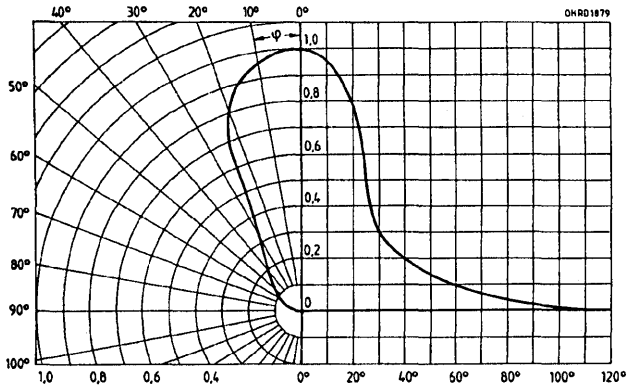
Relative spectral emission
$I_{REL}=f(\lambda)$



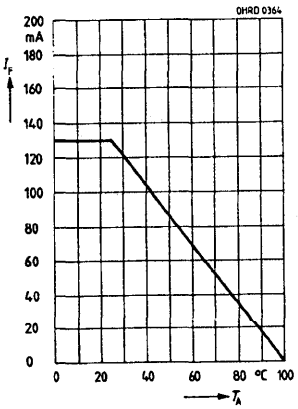
Radiant Intensity
$I_E/I_{E100mA}=f(I_F)$
Single pulse, τ= 20 µs



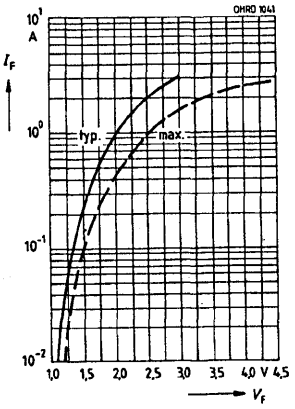
Radiation characteristic $I_{REL}=f(\varphi)$



Maximum permissible forward current $I_F=f(T_A)$



Forward current
Single pulse, τ= 20 µs



Permissible pulse handling capability $I_F=f(\tau)$, $T_A\leq 25°C$
duty cycle D=Parameter