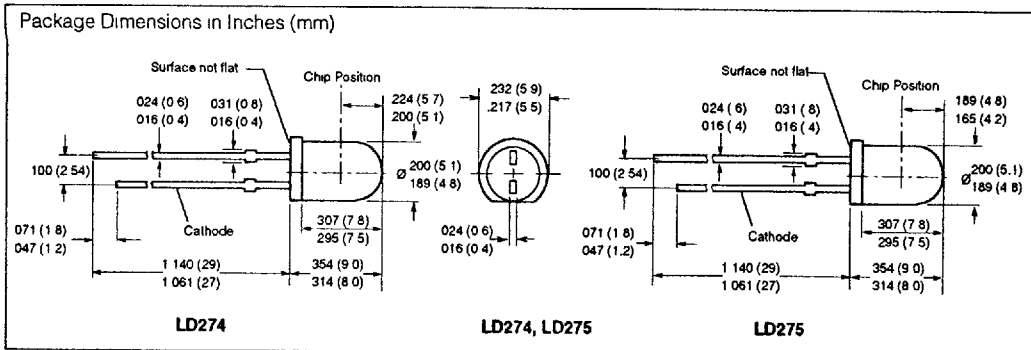




FEATURES

- GaAs Infrared Emitting Diode, Fabricated in a Liquid Phase Epitaxy Process
- Emits Radiation in Near Infrared Range
- High Efficiency
- High Reliability
- Long Lifetime
- LD274: Very High Radiant Intensity
- LD275: High Radiant Intensity
- High Pulse Power
- Radiant Intensity Selections
- LD274: Same Package as SFH484
- LD275: Same Package as BP103B, SFH415, SFH485, SFH2030
- DIN Humidity Category per DIN 40040 GQG
- Package
 - T¹/₄ (5 mm) LED Package
 - Gray Epoxy Resin Lens
 - Lead Spacing 0.100" (2.54 mm)
- Cathode Marking: Shorter Solder Tab, Flat

DESCRIPTION

The LD274 and LD275 are GaAs IR emitters with an emitted wavelength of 950 nm. The LD274 has a narrow beam and the LD275, a wide beam. These high power devices are suitable for remote control applications.

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) 100 mA
 Surge Current (I_{FSM}) t=10 μs, D=0 3 A
 Power Dissipation (P_{TOT}) 165 mW
 Thermal Resistance (R_{thJA}) 450 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)	Δλ	55	nm
Half Angle LD274	φ	±10	Deg
LD275	φ	±18	Deg
Active Chip Area	A	0.09	mm ²
Active Chip Area Dimensions	L x W	0.3 x 0.3	mm
Distance, Chip Surface to Case Surface LD274	H	4.9 to 5.5	mm
LD275	H	4.2 to 4.8	mm
Switching Times, I _E 10% to 90% and 90% to 10% (I _F =100 mA, R _L =50 Ω)	t _R , t _F	1	μs
Capacitance (V _R =0 V, f=1 MHz)	C ₀	25	pF
Forward Voltage (I _F =100 mA, t _p =20 μs)	V _F	1.30 (≤1.5)	V
(I _F =1 A, 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	15	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 Selections

I_E in axial direction at solid angle of Ω=0.001 sr (LD274) or Ω=0.01 sr (LD275)

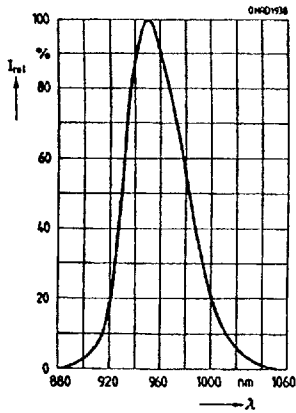
	LD	LD	LD	LD	LD	LD
Symbol	274-1	274-2	274-3*	275-1	275-2	275-3*
I _F =100 mA, t _p =20 ms	I _{Emin}	30	50	80	10	16
I _F =100 mA, t _p =20 ms	I _{Emax}	60	100	-	20	32
I _F =1 A, t _p =100 ms	I _{Etyp}	350	600	800	120	190
						250
						mW/sr

* Availability subject to yield.



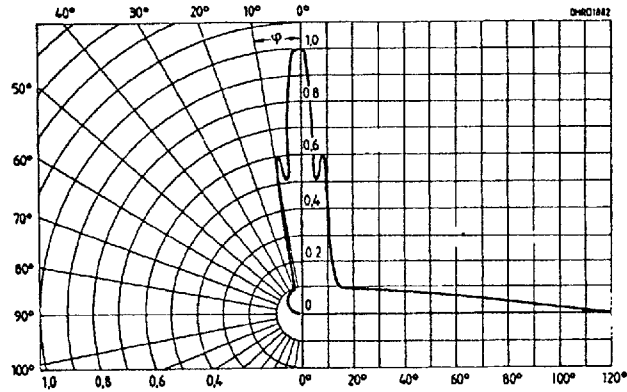
Relative spectral emission

$$I_{REL}=f(\lambda)$$

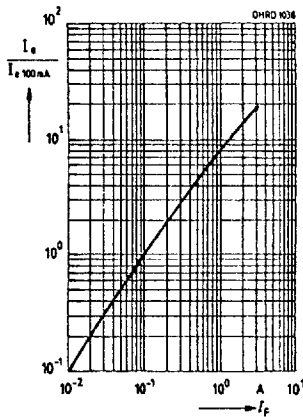


Radiation characteristic-LD274

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

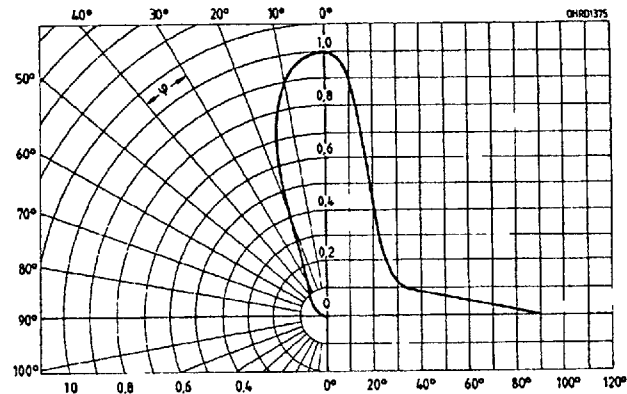


Radiant Intensity $I_E/I_{E50mA}=f(I_F)$
Single pulse, $\tau=20 \mu s$

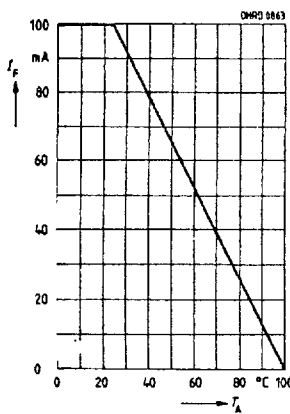


Radiation characteristic-LD275

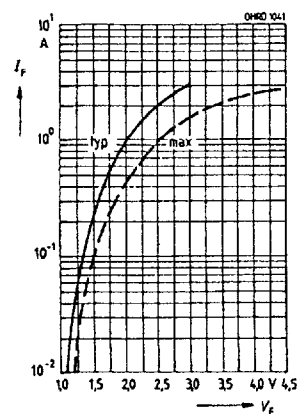
$$I_{REL}=f(\varphi)$$



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



Forward current $I_F=f(V_F)$
Single pulse, $\tau=20 \mu s$



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

