

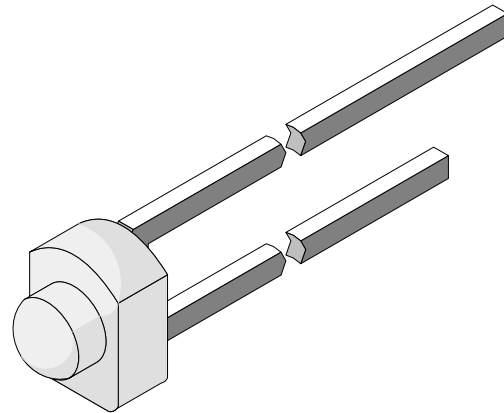
GaAs Infrared Emitting Diode in Miniature (T-³/₄) Package

Description

CQY37N is a standard GaAs infrared emitting diode in a miniature top view plastic package.

Its clear lens provides a high radiant intensity without external optics.

The diode is case compatible to the BPW17N phototransistor, allowing the user to assemble his own optical interrupters.



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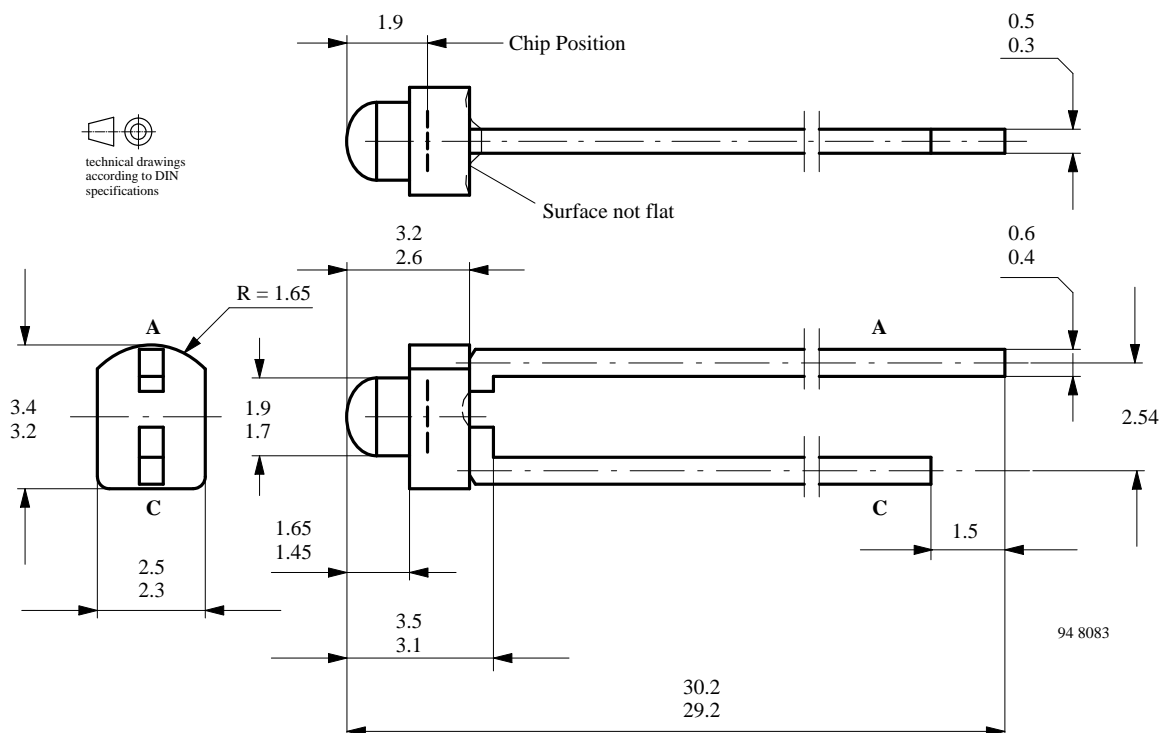
Features

- Suitable for pulse operation
- Standard T-³/₄ lensed miniature package
- Angle of half intensity $\varphi = \pm 12^\circ$
- Peak wavelength $\lambda_p = 950 \text{ nm}$
- Good spectral matching to Si photodetectors

Applications

Radiation source in near infrared range

Dimensions in mm



Absolute Maximum Ratings $T_{amb} = 25^{\circ}\text{C}$

Parameter	Test Conditions	Symbol	Value	Unit
Reverse Voltage		V_R	5	V
Forward Current		I_F	100	mA
Surge Forward Current	$t_p \leq 100 \mu\text{s}$	I_{FSM}	2	A
Power Dissipation		P_V	170	mW
Junction Temperature		T_j	100	$^{\circ}\text{C}$
Storage Temperature Range		T_{stg}	-25...+100	$^{\circ}\text{C}$
Soldering Temperature	$t \leq 3 \text{ s}$	T_{sd}	245	$^{\circ}\text{C}$
Thermal Resistance Junction/Ambient		R_{thJA}	450	K/W

Basic Characteristics $T_{amb} = 25^{\circ}\text{C}$

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Forward Voltage	$I_F = 50 \text{ mA}$, $t_p \leq 20 \text{ ms}$	V_F		1.3	1.6	V
Breakdown Voltage	$I_R = 100 \mu\text{A}$	$V_{(BR)}$	5			V
Junction Capacitance	$V_R = 0 \text{ V}$, $f = 1 \text{ MHz}$, $E = 0$	C_j		50		pF
Radiant Intensity	$I_F = 50 \text{ mA}$, $t_p \leq 20 \text{ ms}$	I_e	2.2	5		mW/sr
Radiant Power	$I_F = 50 \text{ mA}$, $t_p \leq 20 \text{ ms}$	ϕ_e		5		mW
Temp. Coefficient of ϕ_e	$I_F = 50 \text{ mA}$	TK_{ϕ_e}		-0.8		%/K
Angle of Half Intensity		φ		± 12		deg
Peak Wavelength	$I_F = 50 \text{ mA}$	λ_p		950		nm
Spectral Bandwidth	$I_F = 50 \text{ mA}$	$\Delta\lambda$		50		nm
Rise time	$I_F = 1.5 \text{ A}$, $t_p/T = 0.01$, $t_p \leq 10 \mu\text{s}$	t_r		400		ns
Fall time	$I_F = 1.5 \text{ A}$, $t_p/T = 0.01$, $t_p \leq 10 \mu\text{s}$	t_f		450		ns

Typical Characteristics ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise specified)

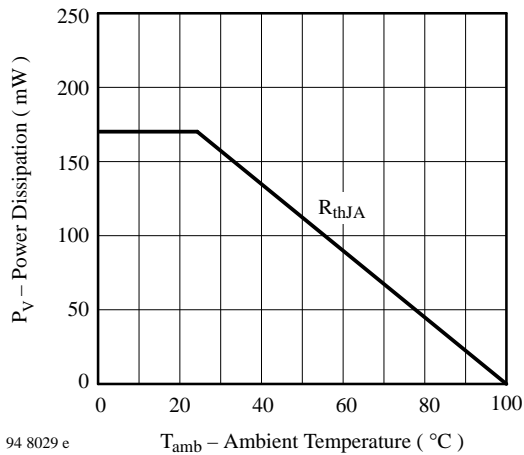


Figure 1 : Power Dissipation vs. Ambient Temperature

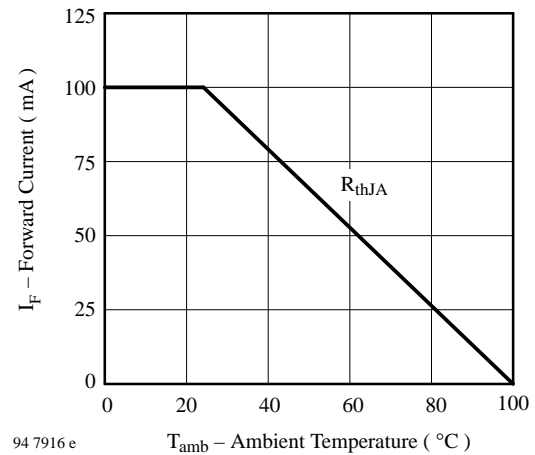


Figure 2 : Forward Current vs. Ambient Temperature

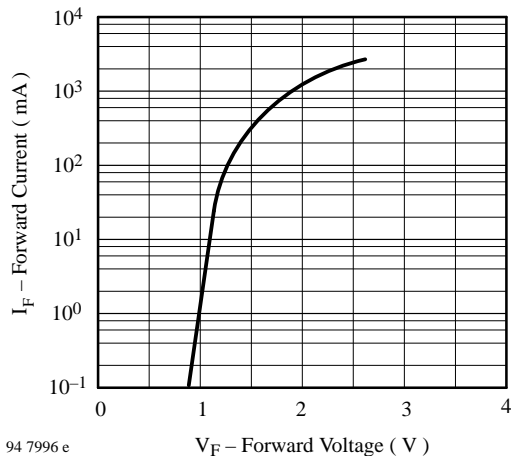


Figure 3 : Forward Current vs. Forward Voltage

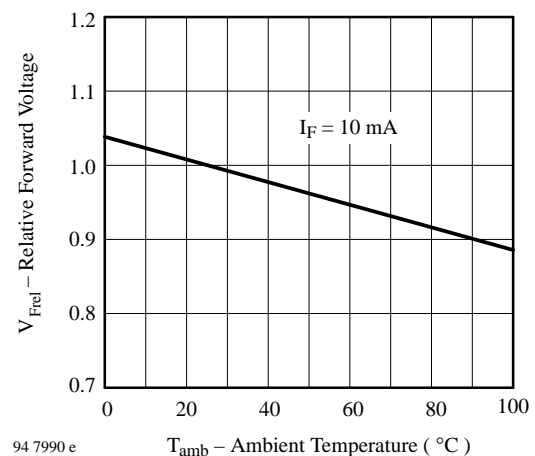


Figure 4 : Relative Forward Voltage vs. Ambient Temperature

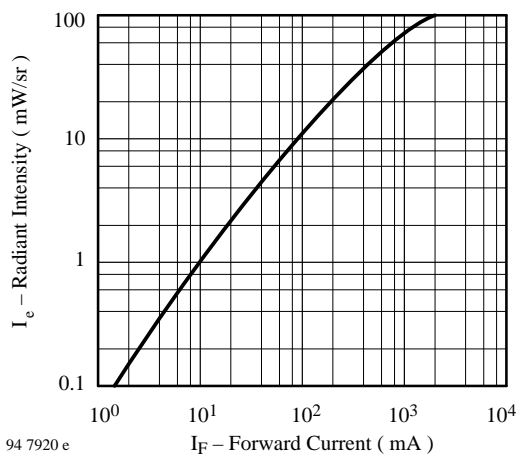


Figure 5 : Radiant Intensity vs. Forward Current

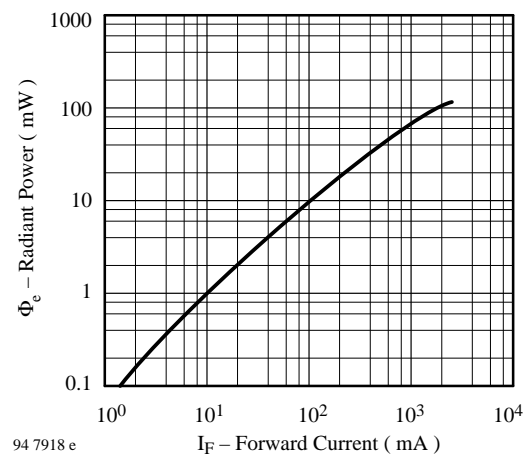


Figure 6 : Radiant Power vs. Forward Current

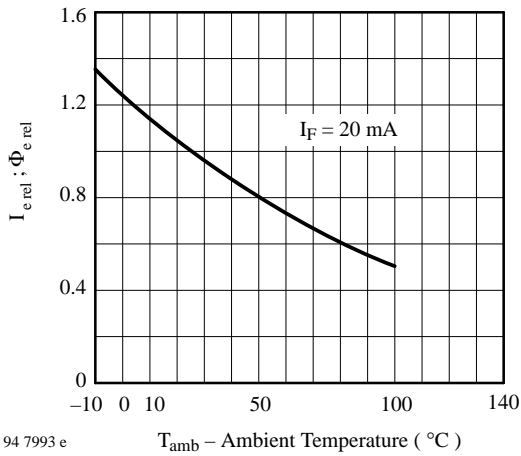


Figure 7 : Rel. Radiant Intensity/Power vs. Ambient Temperature

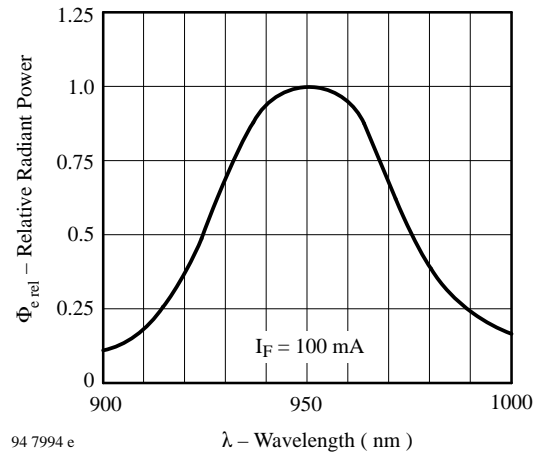


Figure 8 : Relative Radiant Power vs. Wavelength

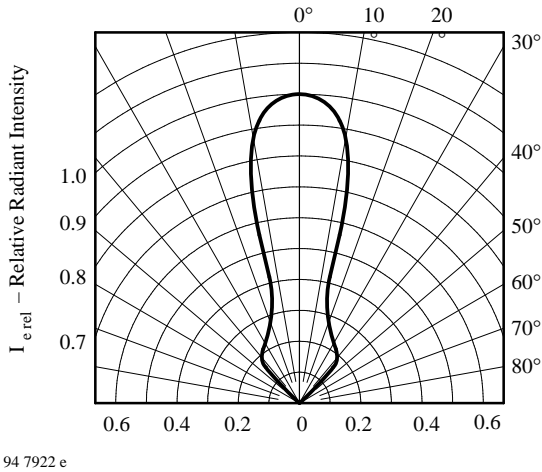


Figure 9 : Relative Radiant Intensity vs. Angular Displacement

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