

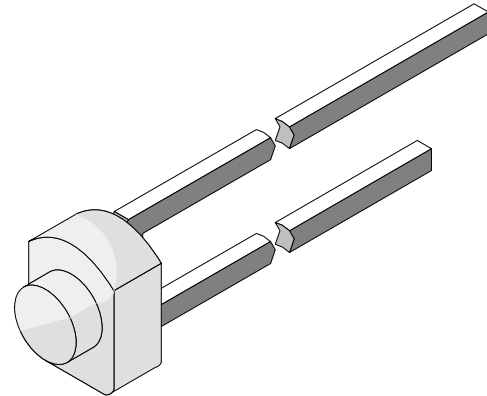
## GaAs Infrared Emitting Diode in Miniature (T-<sup>3</sup>/<sub>4</sub>) Package

### Description

CQY36N is a standard GaAs infrared emitting diode in a miniature top view plastic package. Its flat window provides a wide aperture making it ideal for use with external optics. The diode is case compatible to the BPW16N phototransistor, allowing the user to assemble his own optical interrupters.

### Features

- Suitable for pulse operation
- Standard T-<sup>3</sup>/<sub>4</sub> flat miniature package
- Wide angle of half intensity  $\varphi = \pm 55^\circ$
- Peak wavelength  $\lambda_p = 950 \text{ nm}$
- Good spectral matching to Si photodetectors

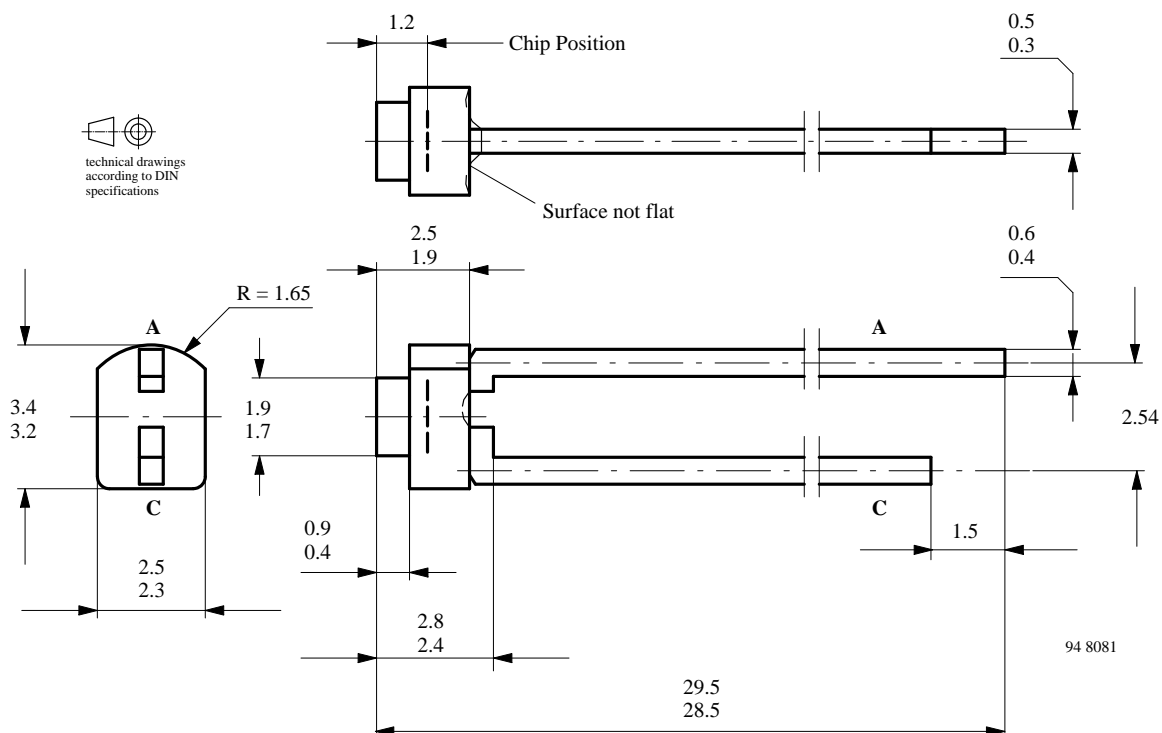


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### Applications

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	$I_F = 50 \text{ mA}$ , $t_p \leq 20 \text{ ms}$	$I_e$	0.7	1.5		mW/sr
Radiant Power	$I_F = 50 \text{ mA}$ , $t_p \leq 20 \text{ ms}$	$\phi_e$		5		mW
Temp. Coefficient of $\phi_e$	$I_F = 50 \text{ mA}$	$TK_{\phi_e}$		-0.8		%/K
Angle of Half Intensity		$\varphi$		$\pm 55$		deg
Peak Wavelength	$I_F = 50 \text{ mA}$	$\lambda_p$		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)

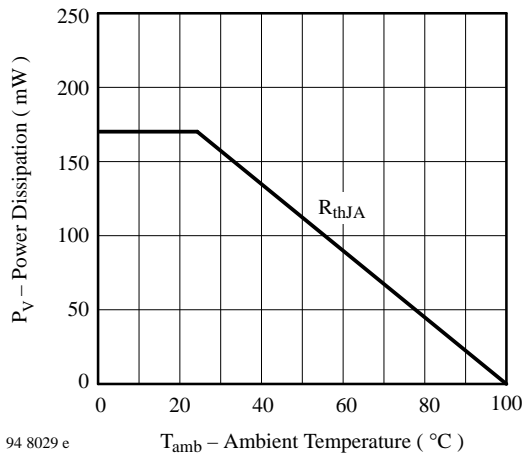


Figure 1 : Power Dissipation vs. Ambient Temperature

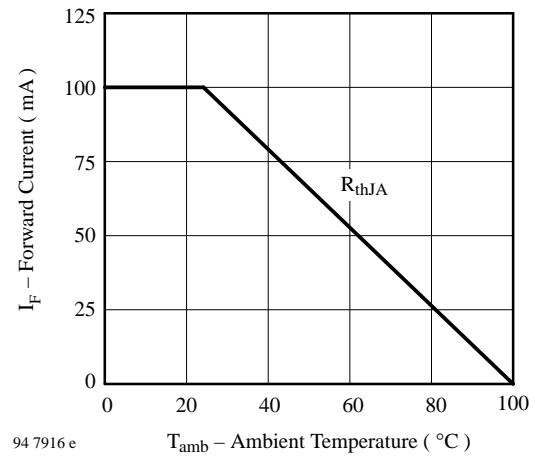


Figure 2 : Forward Current vs. Ambient Temperature

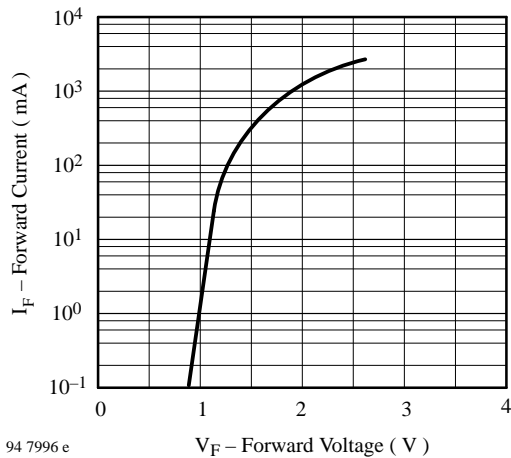


Figure 3 : Forward Current vs. Forward Voltage

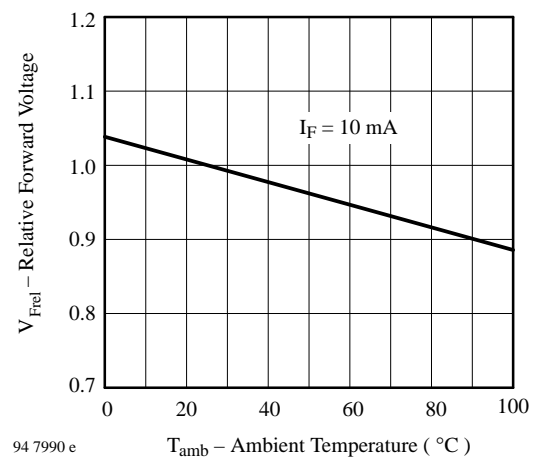


Figure 4 : Relative Forward Voltage vs. Ambient Temperature

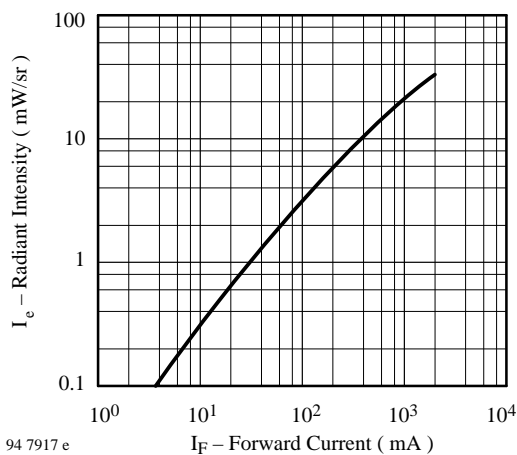


Figure 5 : Radiant Intensity vs. Forward Current

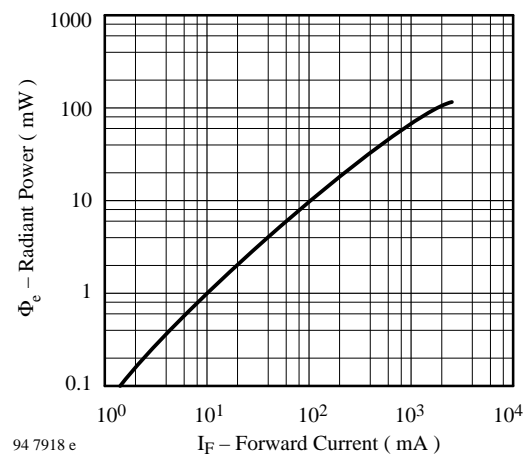


Figure 6 : Radiant Power vs. Forward Current

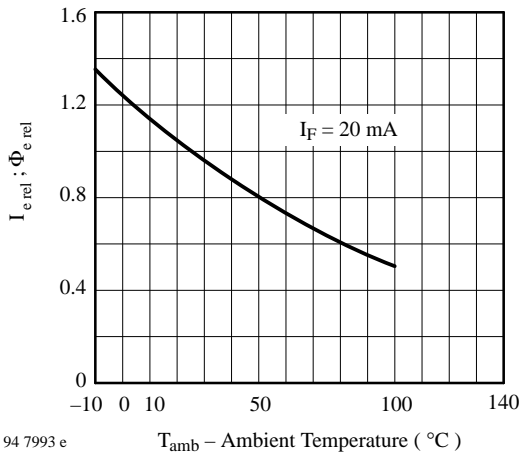


Figure 7 : Rel. Radiant Intensity/Power vs. Ambient Temperature

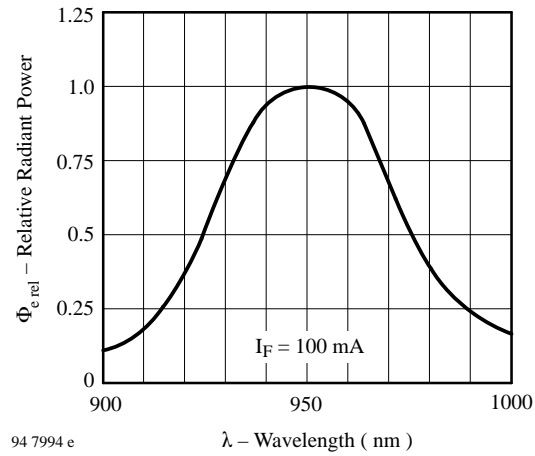


Figure 8 : Relative Radiant Power vs. Wavelength

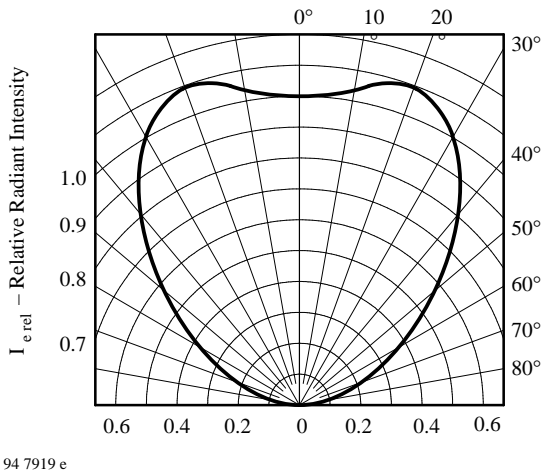


Figure 9 : Relative Radiant Intensity vs. Angular Displacement

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