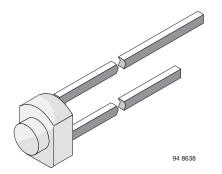


**Vishay Semiconductors** 

# Infrared Emitting Diode, RoHS Compliant, 950 nm, GaAs



## **FEATURES**

- · Package type: leaded
- Package form: T-34
- Dimensions (in mm): Ø 1.8
- Peak wavelength:  $\lambda_p = 950 \text{ nm}$
- · High reliability
- Angle of half intensity:  $\phi = \pm 55^{\circ}$
- · Low forward voltage
- · Suitable for high pulse current operation
- · Good spectral matching with Si photodetectors
- Package matches with detector BPW16N
- Compliant to RoHS Directive 2002/95/EC and in accordance with WEEE 2002/96/EC

### **APPLICATIONS**

• Radiation source in near infrared range

### DESCRIPTION

CQY36N is an infrared, 950 nm emitting diode in GaAs technology molded in a miniature, clear plastic package without lens.

PRODUCT SUMMARY					
COMPONENT	l <sub>e</sub> (mW/sr)	φ (deg)	λ <sub>P</sub> (nm)	t <sub>r</sub> (ns)	
CQY36N	1.5	± 55	950	800	

Note

• Test conditions see table "Basic Characteristics"

ORDERING INFORMATION				
ORDERING CODE	PACKAGING REMARKS		PACKAGE FORM	
CQY36N	Bulk	MOQ: 5000 pcs, 5000 pcs/bulk	T-3⁄4	

Note

• MOQ: minimum order quantity

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Reverse voltage		V <sub>R</sub>	5	V	
Forward current		١ <sub>F</sub>	100	mA	
Surge forward current	$t_p \le 100 \ \mu s$	I <sub>FSM</sub>	2	А	
Power dissipation		Pv	160	mW	
Junction temperature		Tj	100	°C	
Operating temperature range		T <sub>amb</sub>	- 25 to + 85	°C	
Storage temperature range		T <sub>stg</sub>	- 25 to + 100	°C	
Soldering temperature	$t \leq 3 s$	T <sub>sd</sub>	245	°C	
Thermal resistance junction/ambient	leads not soldered	R <sub>thJA</sub>	450	K/W	



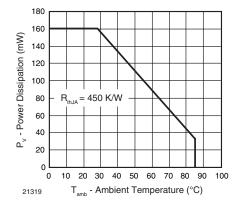
COMPLIANT

# CQY36N

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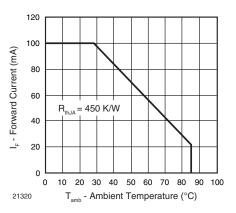


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

Fig. 2 - Forward Current Limit vs. Ambient Temperature

<b>BASIC CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 50$ mA, $t_p \le 20$ ms	V <sub>F</sub>		1.3	1.6	V
Temperature coefficient of $V_F$	I <sub>F</sub> = 100 mA	TK <sub>VF</sub>		- 1.3		mV/K
Breakdown voltage	I <sub>R</sub> = 100 μA	V <sub>(BR)</sub>	5			μA
Junction capacitance	V <sub>R</sub> = 0 V, f = 1 MHz, E = 0	Cj		50		pF
Radiant intensity	$I_F = 50 \text{ mA}, t_p \le 20 \text{ ms}$	l <sub>e</sub>	0.7	1.5	2.1	mW/sr
Radiant power	$I_F = 50 \text{ mA}, t_p \leq 20 \text{ ms}$	φe		10		mW
Temperature coefficient of $\phi_{\text{e}}$	I <sub>F</sub> = 50 mA	ΤΚφ <sub>e</sub>		- 0.8		%/K
Angle of half intensity		φ		± 55		deg
Peak wavelength	I <sub>F</sub> = 50 mA	λρ		950		nm
Spectral bandwidth	I <sub>F</sub> = 50 mA	Δλ		50		nm
Rise time	I <sub>F</sub> = 100 mA	t <sub>r</sub>		800		ns
	$I_F = 1.5 \; \text{A},  t_p/T = 0.01,  t_p \leq 10 \; \mu \text{s}$	t <sub>r</sub>		400		ns
Virtual source diameter		d		1.2		mm

## BASIC CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

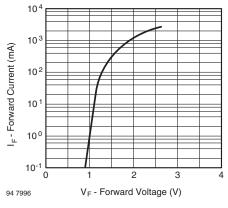


Fig. 3 - Forward Current vs. Forward Voltage

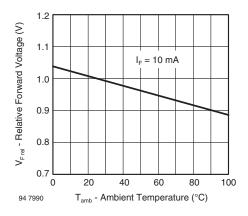


Fig. 4 - Relative Forward Voltage vs. Ambient Temperature

For technical questions, contact: emittertechsupport@vishay.com

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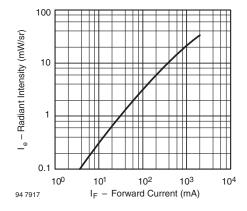


Fig. 5 - Radiant Intensity vs. Forward Current

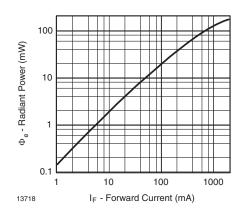


Fig. 6 - Radiant Power vs. Forward Current

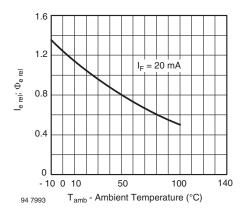


Fig. 7 - Relative Radiant Intensity/Power vs. Ambient Temperature

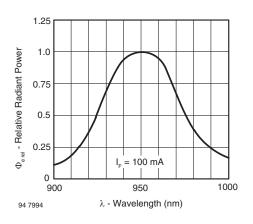


Fig. 8 - Relative Radiant Power vs. Wavelength

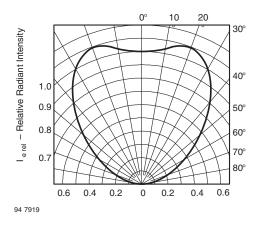


Fig. 9 - Relative Radiant Intensity vs. Angular Displacement

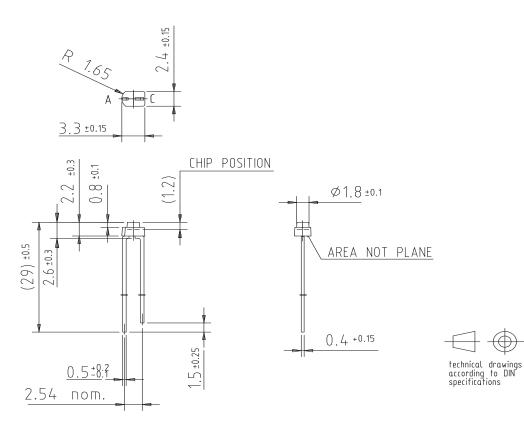
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### **PACKAGE DIMENSIONS** in millimeters



Drawing-No.: 6.544-5053.01-4 Issue: 1; 01.07.96 96 12189

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