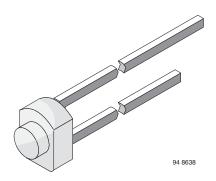


Vishay Semiconductors

Infrared Emitting Diode, RoHS Compliant, 950 nm, GaAs



DESCRIPTION

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

FEATURES

· Package type: leaded • Package form: T-3/4

• Dimensions (in mm): Ø 1.8 • Peak wavelength: $\lambda_p = 950 \text{ nm}$

· High reliability

• Angle of half intensity: $\varphi = \pm 55^{\circ}$

• 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



• Radiation source in near infrared range

PRODUCT SUMMARY					
COMPONENT	I _e (mW/sr)	φ (deg)	λ _P (nm)	t _r (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-¾	

Note

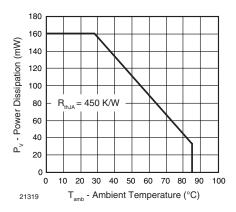
· MOQ: minimum order quantity

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Reverse voltage		V_R	5	V	
Forward current		I _F	100	mA	
Surge forward current	$t_p \le 100 \; \mu s$	I _{FSM}	2	Α	
Power dissipation		P _V	160	mW	
Junction temperature		Tj	100	°C	
Operating temperature range		T _{amb}	- 25 to + 85	°C	
Storage temperature range		T _{stg}	- 25 to + 100	°C	
Soldering temperature	t ≤ 3 s	T _{sd}	245	°C	
Thermal resistance junction/ambient	leads not soldered	R _{thJA}	450	K/W	

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120 100 I_F - Forward Current (mA) 80 60 _{JA} = 450 K/W 40 20 30 40 50 60 70 80 0 10 21320 T_{amb} - Ambient Temperature (°C)

Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

Fig. 2 - Forward Current Limit vs. Ambient Temperature

BASIC CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 50 \text{ mA}, t_p \le 20 \text{ ms}$	V_{F}		1.3	1.6	V
Temperature coefficient of V _F	I _F = 100 mA	TK _{VF}		- 1.3		mV/K
Breakdown voltage	I _R = 100 μA	V _(BR)	5			μA
Junction capacitance	V _R = 0 V, f = 1 MHz, E = 0	C _j		50		pF
Radiant intensity	$I_F = 50 \text{ mA}, t_p \le 20 \text{ ms}$	I _e	0.7	1.5	2.1	mW/sr
Radiant power	$I_F = 50 \text{ mA}, t_p \le 20 \text{ ms}$	фe		10		mW
Temperature coefficient of φ _e	I _F = 50 mA	TKφ _e		- 0.8		%/K
Angle of half intensity		φ		± 55		deg
Peak wavelength	I _F = 50 mA	λ_{p}		950		nm
Spectral bandwidth	I _F = 50 mA	Δλ		50		nm
Rise time	I _F = 100 mA	t _r		800		ns
	$I_F = 1.5 \text{ A}, t_p/T = 0.01, t_p \le 10 \mu\text{s}$	t _r		400		ns
Virtual source diameter		d		1.2		mm

BASIC CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

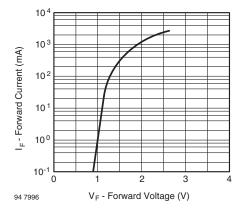


Fig. 3 - Forward Current vs. Forward Voltage

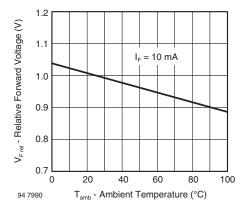


Fig. 4 - Relative Forward Voltage vs. Ambient Temperature



Infrared Emitting Diode, RoHS Compliant, 950 nm, GaAs

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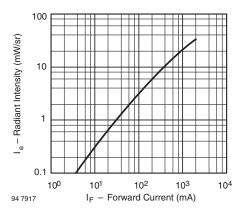


Fig. 5 - Radiant Intensity vs. Forward Current

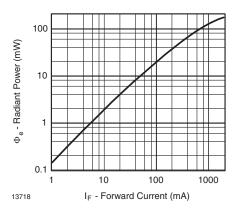


Fig. 6 - Radiant Power vs. Forward Current

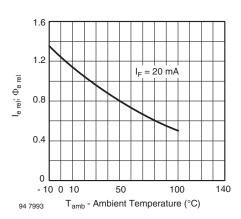


Fig. 7 - Relative Radiant Intensity/Power vs. Ambient Temperature

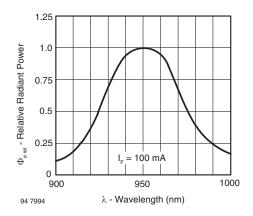


Fig. 8 - Relative Radiant Power vs. Wavelength

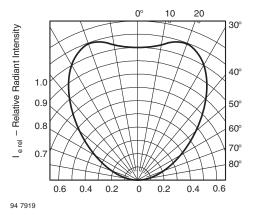


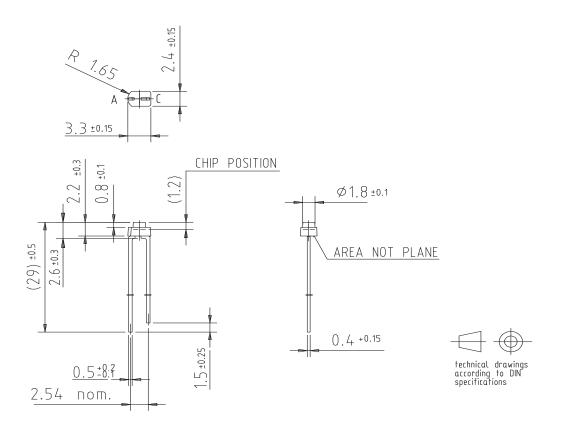
Fig. 9 - Relative Radiant Intensity vs. Angular Displacement

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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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