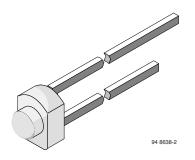


Vishay Semiconductors

Infrared Emitting Diode, 950 nm, GaAs



FEATURES

- Package type: leaded
- Package form: T-¾
- Dimensions (in mm): Ø 1.8
- Peak wavelength: $\lambda_p = 950 \text{ nm}$
- High reliability
- Angle of half intensity: $\phi = \pm 12^{\circ}$
- Low forward voltage
- Suitable for high pulse current operation
- · Good spectral matching with Si photodetectors
- Package matches with detector BPW17N
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

APPLICATIONS

• Radiation source in near infrared range

DESCRIPTION

CQY37N is an infrared, 950 nm emitting diode in GaAs technology molded in a miniature, clear plastic package with lens.

PRODUCT SUMMARY

COMPONENT	l _e (mW/sr)	φ (deg)	λ _P (nm)	t _r (ns)
CQY37N	5	± 12	950	800

Note

• Test conditions see table "Basic Characteristics"

ORDERING INFORMATION					
ORDERING CODE	DERING CODE PACKAGING		PACKAGE FORM		
CQY37N	Bulk	MOQ: 5000 pcs, 5000 pcs/bulk	T-3⁄4		

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	A	
Power dissipation		Pv	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	$t \leq 3 s$	T _{sd}	245	°C	
Thermal resistance junction/ambient	Leads not soldered	R _{thJA}	450	K/W	



CQY37N

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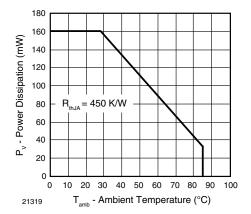


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

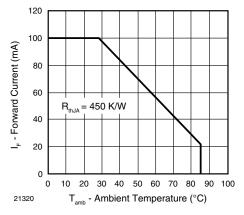


Fig. 2 - Forward Current Limit vs. Ambient Temperature

BASIC CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I_F = 50 mA, $t_p \le$ 20 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	$V_{R} = 0 V, f = 1 MHz, E = 0$	Cj		50		pF
Radiant intensity	I_F = 50 mA, $t_p \le$ 20 ms	l _e	2.2	5	11	mW/sr
Radiant power	I_F = 50 mA, $t_p \le$ 20 ms	фе	4.8	10	17.8	mW
Temperature coefficient of ϕ_{e}	I _F = 50 mA	ΤΚφ _e		- 0.8		%/K
Angle of half intensity		φ		± 12		deg
Peak wavelength	I _F = 50 mA	λρ		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 A, t_p/T = 0.01, $t_p \le 10 \ \mu s$	t _r		400		ns
Virtual source diameter		d		1.2		mm

BASIC CHARACTERISTICS (Tamb = 25 °C, unless otherwise specified)

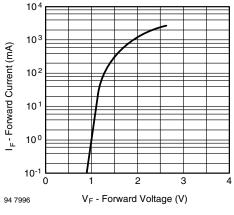


Fig. 3 - Forward Current vs. Forward Voltage

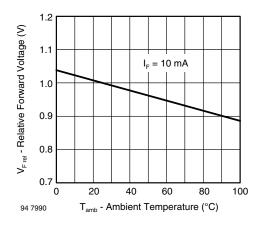


Fig. 4 - Relative Forward Voltage vs. Ambient Temperature



CQY37N

Infrared Emitting Diode, 950 nm, GaAs Vishay Semiconductors

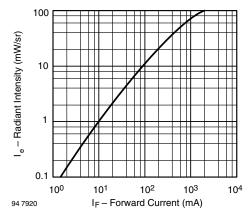


Fig. 5 - Radiant Intensity vs. Forward Current

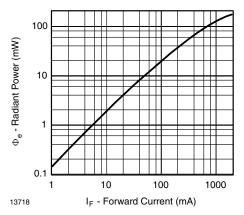


Fig. 6 - Radiant Power vs. Forward Current

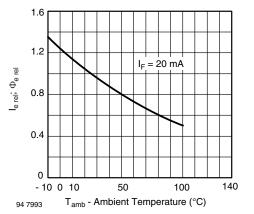


Fig. 7 - Relative Radiant Intensity/Power vs. Ambient Temperature

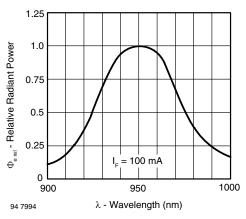


Fig. 8 - Relative Radiant Power vs. Wavelength

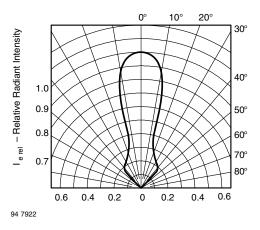


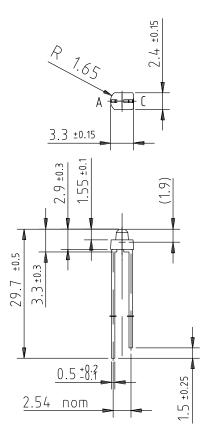
Fig. 9 - Relative Radiant Intensity vs. Angular Displacement

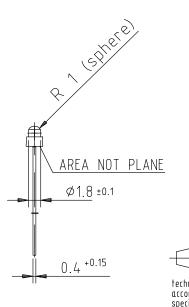
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Infrared Emitting Diode, 950 nm, GaAs



PACKAGE DIMENSIONS in millimeters







technical drawings according to DIN specifications

Drawing-No.: 6.544-5052.01-4 Issue: 1; 12.10.95 95 11262



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