

Infrared Emitting Diode, 950 nm, GaAs



94 8638-2

FEATURES

- Package type: leaded
- Package form: T-3/4
- Dimensions (in mm): \varnothing 1.8
- Peak wavelength: $\lambda_p = 950$ nm
- High reliability
- Angle of half intensity: $\varphi = \pm 12^\circ$
- 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


RoHS
COMPLIANT

DESCRIPTION

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

APPLICATIONS

- Radiation source in near infrared range

PRODUCT SUMMARY

COMPONENT	I_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	PACKAGING	REMARKS	PACKAGE FORM
CQY37N	Bulk	MOQ: 5000 pcs, 5000 pcs/bulk	T-3/4

Note

- MOQ: minimum order quantity

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	5	V
Forward current		I_F	100	mA
Surge forward current	$t_p \leq 100 \mu\text{s}$	I_{FSM}	2	A
Power dissipation		P_V	160	mW
Junction temperature		T_j	100	$^\circ\text{C}$
Operating temperature range		T_{amb}	- 25 to + 85	$^\circ\text{C}$
Storage temperature range		T_{stg}	- 25 to + 100	$^\circ\text{C}$
Soldering temperature	$t \leq 3$ s	T_{sd}	245	$^\circ\text{C}$
Thermal resistance junction/ambient	Leads not soldered	R_{thJA}	450	K/W

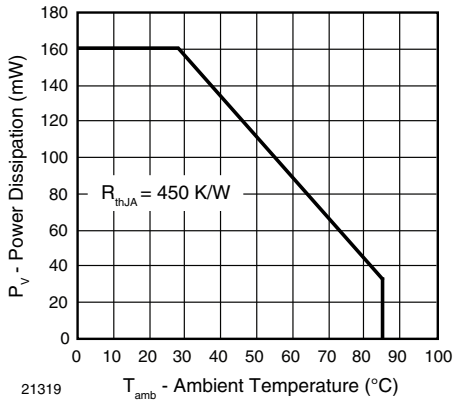


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

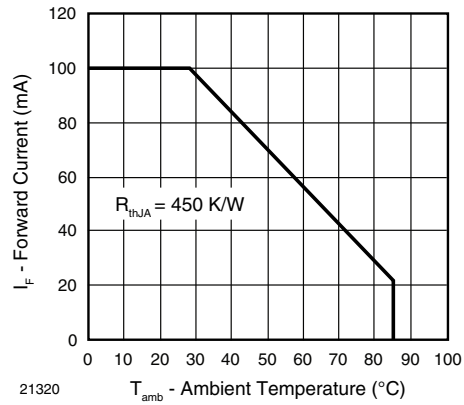


Fig. 2 - Forward Current Limit vs. Ambient Temperature

BASIC CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	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
Temperature coefficient of V_F	$I_F = 100\text{ mA}$	TK_{V_F}		- 1.3		mV/K
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}$	$V_{(BR)}$	5			μA
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	11	mW/sr
Radiant power	$I_F = 50\text{ mA}$, $t_p \leq 20\text{ ms}$	ϕ_e	4.8	10	17.8	mW
Temperature 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	$I_F = 100\text{ mA}$	t_r		800		ns
	$I_F = 1.5\text{ A}$, $t_p/T = 0.01$, $t_p \leq 10\text{ }\mu\text{s}$	t_r		400		ns
Virtual source diameter		d		1.2		mm

BASIC CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)



Fig. 3 - Forward Current vs. Forward Voltage

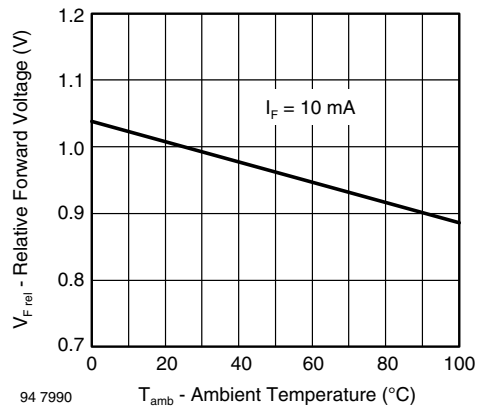


Fig. 4 - Relative Forward Voltage vs. Ambient Temperature

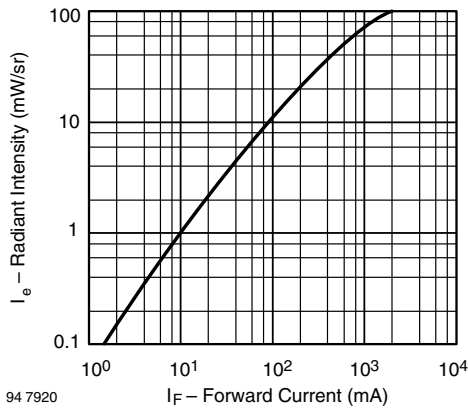


Fig. 5 - Radiant Intensity vs. Forward Current

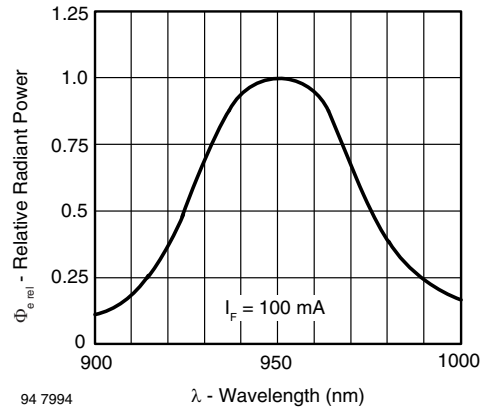


Fig. 8 - Relative Radiant Power vs. Wavelength



Fig. 6 - Radiant Power vs. Forward Current

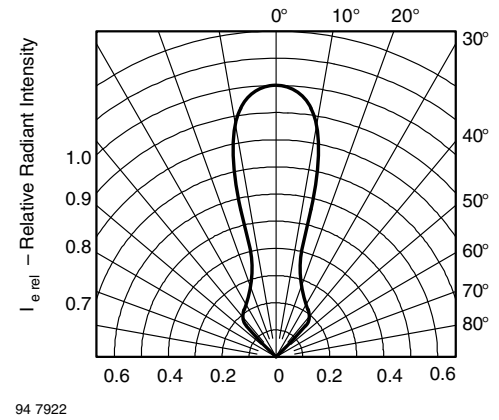


Fig. 9 - Relative Radiant Intensity vs. Angular Displacement

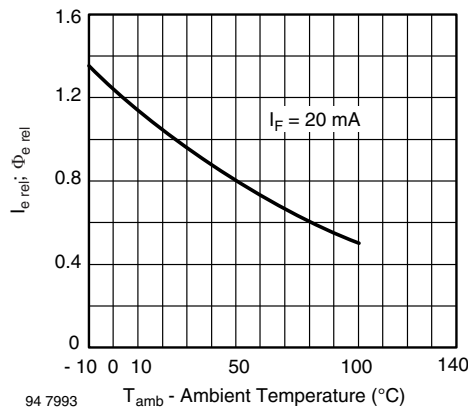


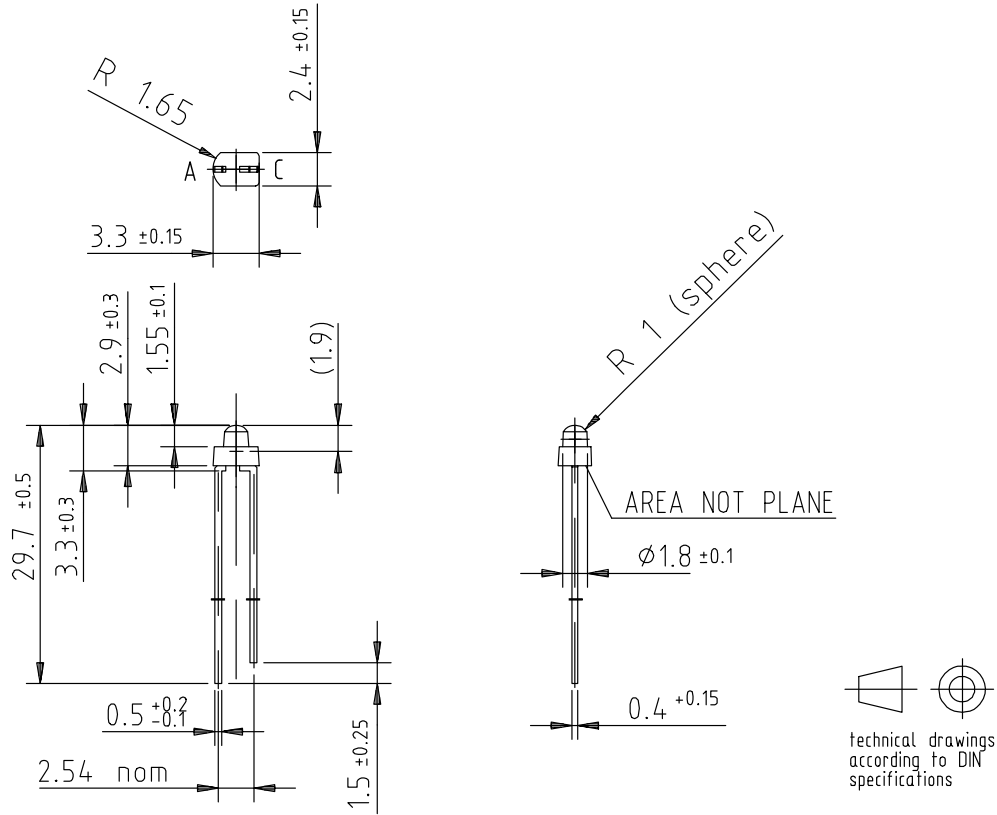
Fig. 7 - Relative Radiant Intensity/Power vs. Ambient Temperature

CQY37N

Vishay Semiconductors Infrared Emitting Diode, 950 nm,
GaAs



PACKAGE DIMENSIONS in millimeters



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