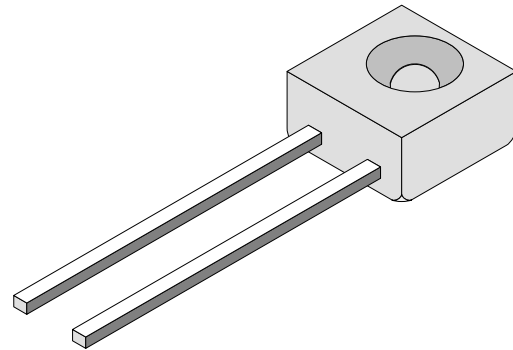

GaAs Infrared Emitting Diode in Side View Package

Description

CQX 48 is a standard GaAs infrared emitting diode in a flat sideview plastic package.

A small recessed spherical lens provides an improved radiant intensity in a low profile case. The diode is case compatible to the BPW78 phototransistor, allowing the user to assemble his own optical interrupters.



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Features

- Side view case with spherical lens
- Radiation direction perpendicular to mounting direction
- Angle of half intensity $\varphi = \pm 25^\circ$
- Peak wavelength $\lambda_p = 950 \text{ nm}$
- High reliability
- Selected into groups
- Case compatible with BPW 78

Applications

Radiation source in near infrared range

Absolute Maximum Ratings

 $T_{amb} = 25^{\circ}\text{C}$

Parameter	Test Conditions	Symbol	Value	Unit
Reverse Voltage		V_R	6	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	$t \leq 5 \text{ s}$	T_{sd}	260	$^{\circ}\text{C}$
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	$I_F = 100 \text{ mA}$, $t_p \leq 20 \text{ ms}$	V_F		1.3	1.7	V
Breakdown Voltage	$I_R = 100 \mu\text{A}$	$V_{(BR)}$	6			V
Junction Capacitance	$V_R = 0 \text{ V}$, $f = 1 \text{ MHz}$, $E = 0$	C_j		50		pF
Radiant Power	$I_F = 50 \text{ mA}$, $t_p \leq 20 \text{ ms}$	ϕ_e		5		mW
Temp. Coefficient of ϕ_e	$I_F = 50 \text{ mA}$	TK_{ϕ_e}		-1		%/K
Angle of Half Intensity		ϕ		± 25		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	$I_F=1\text{A}$, $t_p/T=0.01$, $t_p \leq 10\mu\text{s}$	t_r		400		ns
Fall time	$I_F=1\text{A}$, $t_p/T=0.01$, $t_p \leq 10\mu\text{s}$	t_f		450		ns

Type Dedicated Characteristics

 $T_{amb} = 25^{\circ}\text{C}$

Parameter	Type	Test Conditions	Symbol	Min	Typ	Max	Unit
Radiant Intensity	CQX 48 A	$I_F=50 \text{ mA}$, $t_p \leq 20\text{ms}$	I_e	1		3	mW/sr
	CQX 48 B	$I_F=50 \text{ mA}$, $t_p \leq 20\text{ms}$	I_e	2			mW/sr

Typical Characteristics ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise specified)

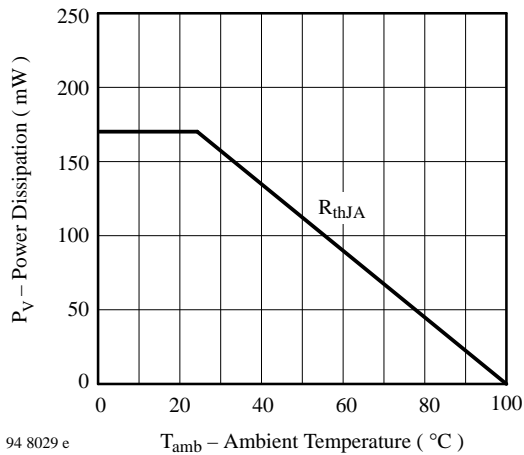


Figure 1 : Power Dissipation vs. Ambient Temperature

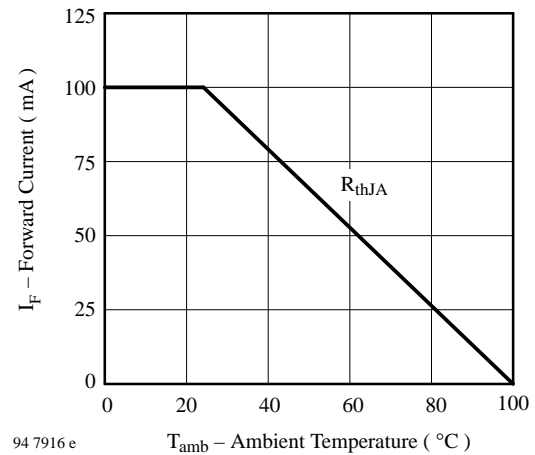


Figure 2 : Forward Current vs. Ambient Temperature

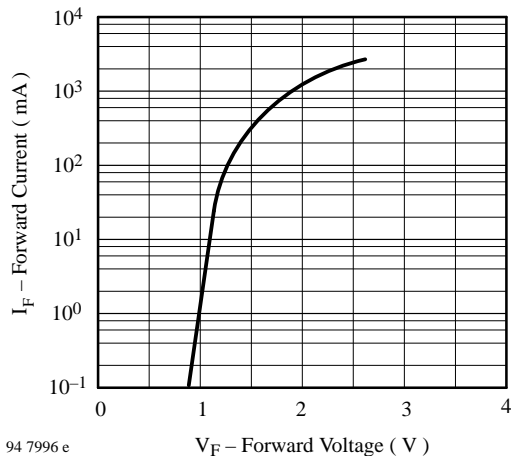


Figure 3 : Forward Current vs. Forward Voltage

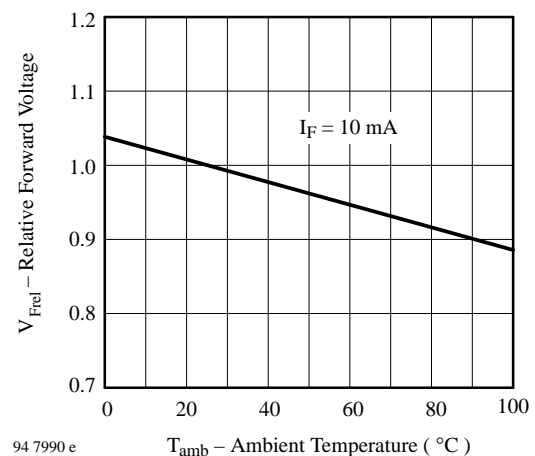


Figure 4 : Relative Forward Voltage vs. Ambient Temperature

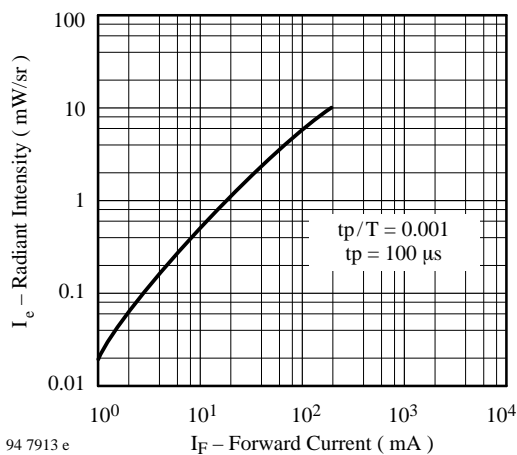


Figure 5 : Radiant Intensity vs. Forward Current

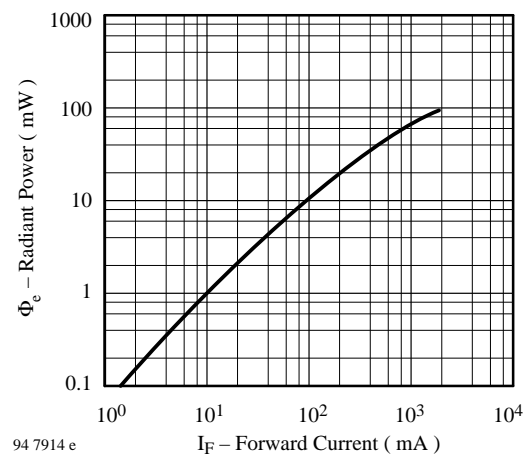
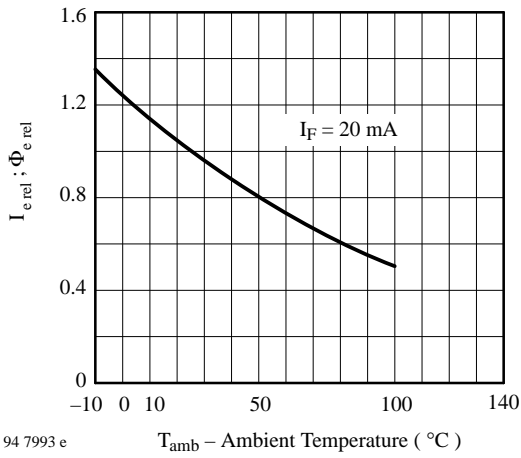
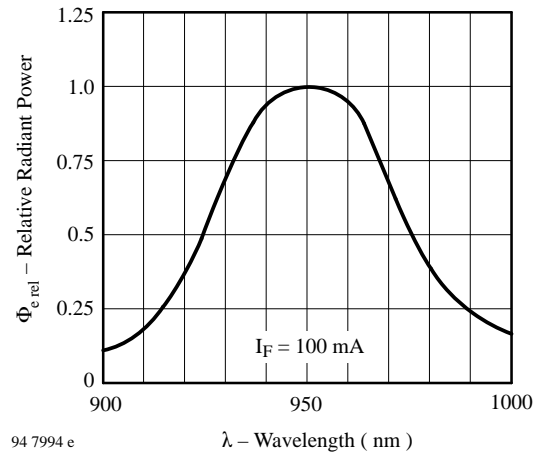


Figure 6 : Radiant Power vs. Forward Current



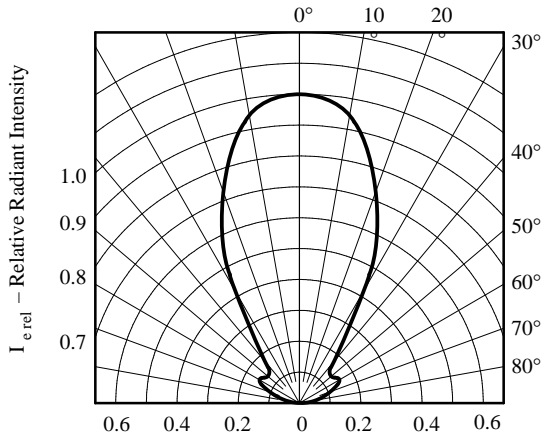
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Figure 7 : Rel. Radiant Intensity\Power vs. Ambient Temperature



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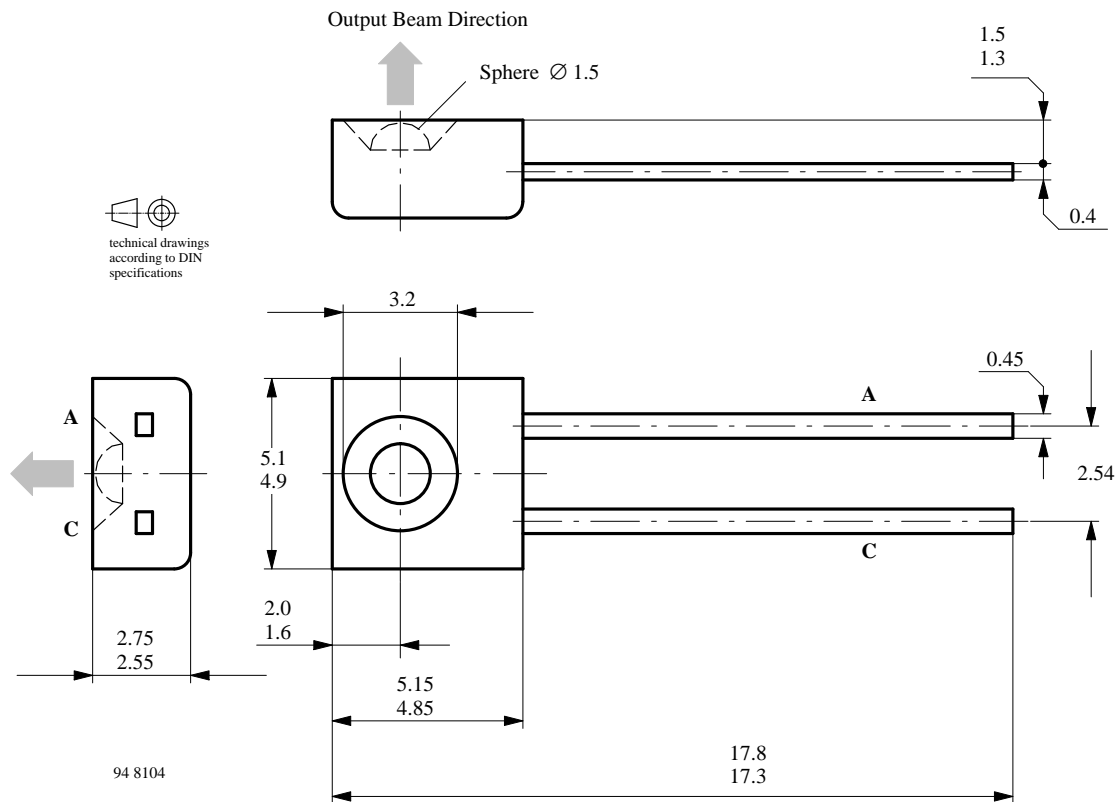
Figure 8 : Relative Radiant Power vs. Wavelength



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Figure 9 : Relative Radiant Intensity vs. Angular Displacement

Dimensions in mm



We reserve the right to make changes to improve technical design without further notice.

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