Features

- Hermetic 2-pin TO-46 package
- Wide viewing angle
- High reliability and rugged construction
- High reliability screening available
- Radiation tolerant
- Operating temperature range -65℃ to +125℃

Applications

- Encoders
- Position Sensors
- Level Detection

Description

The IB5E1 / IB5E2 / IB5E3 consist of AlGaAs 824nm infrared LED mounted in a narrow angle hermetic TO-46 package.

Schematic Diagram

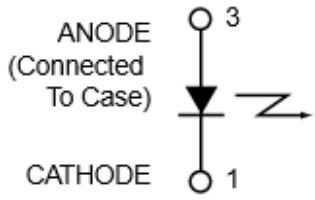

Figure 1. IB5EX Schematic Diagram

Package Dimensions in inches (mm)

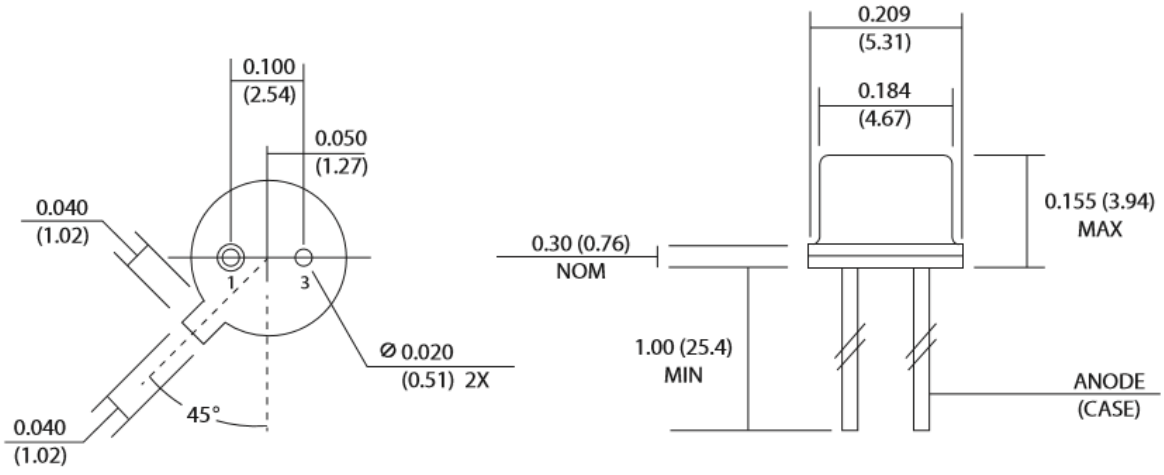

Figure 2. IB5EX Package Dimensions

Absolute Maximum Rating at 25°C (Note 1)

Symbol	*Parameters*	*Ratings*	*Units*	*Notes*
T_{OPR}	Operating temperature	-65 to +125	°C	
T_{STG}	Storage temperature	-65 to +150	°C	
T_{SOL}	Soldering temperature (10 seconds maximum)	240	°C	
P_D	Power dissipation, ambient	170	mW	2
P_D	Power dissipation, case	1300	mW	3
V_R	Reverse Voltage	3	V	
I_F	Continuous Forward Current	100	mA	
I_F	Peak Forward Current (PW 10 µs; 100Hz)	3	A	

Notes

1. When using this product, please observe the absolute maximum ratings. Only one parameter may be set at the limit to ensure no damage to the device. Exceeding any of the limits listed here may damage the device.
2. Linear derating factor: 1.70 mW/°C above 25°C ambient.
3. Linear derating factor: 13.0 mW/°C above 25°C case.

ESD Precaution

Please be advised that normal static precautions should be taken in the handling and assembly of this device to prevent damage or degradation which may be induced by electrostatic discharge (ESD).

Electrical Characteristics T_A = 25℃ *(unless otherwise specified)* (Note 1)

Symbol	*Parameters*	*Test Conditions*	*Min*	*Typ*	*Max*	*Units*	*Notes*
λ_P	Peak Emission Wavelength	I_F= 100mA	-	824	-	nm	
V_F	Forward Voltage	I_F= 100mA	-	-	1.7	V	
I_R	Reverse Leakage Current	V_F= 3V	-	-	10	µA	
P_O	Output Power, IB5E1	I_F= 100mA	12.0	18	-	mW	2
	Output Power, IB5E2	I_F= 100mA	9.0	14	-	mW	2
	Output Power, IB5E3	I_F= 100mA	10.5	16	-	mW	2
Θ	Emission Angle at ½ Sensitivity	I_F= 100mA	-	±40	-	°	
t_r	Rise Time		-	1.5	-	µs	
t_f	Fall Time		-	1.5	-	µs	

Notes
1. Performance guaranteed only under conditions listed in above tables.
2. Total power output, P_O, is the total power radiated by the device into a solid angle of 2π steradians.

Typical Characteristic Curves

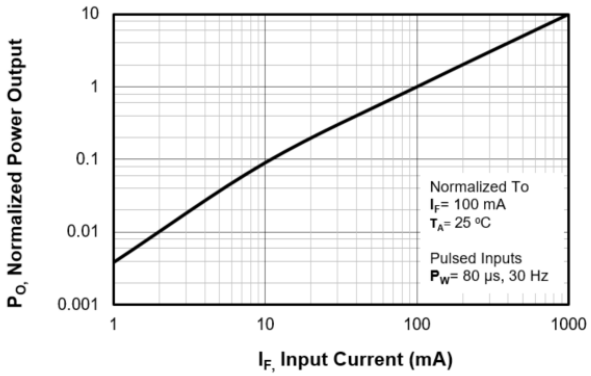

Figure 3. Power Output vs Input Current

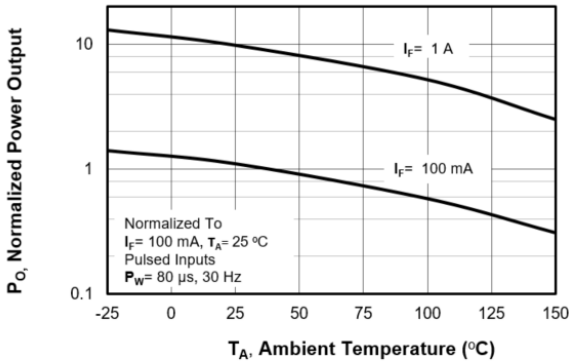

Figure 4. Power Output vs Temperature

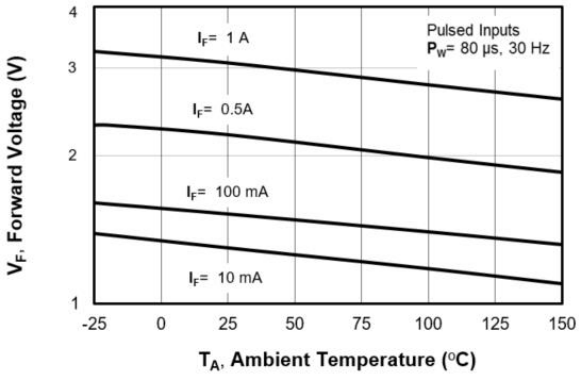

Figure 5. Forward Voltage vs Temperature

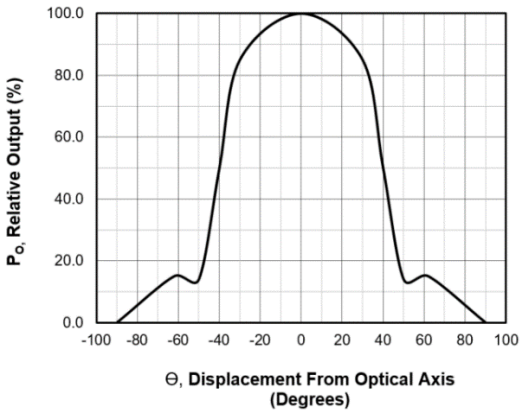

Figure 6. Typical Radiation Pattern

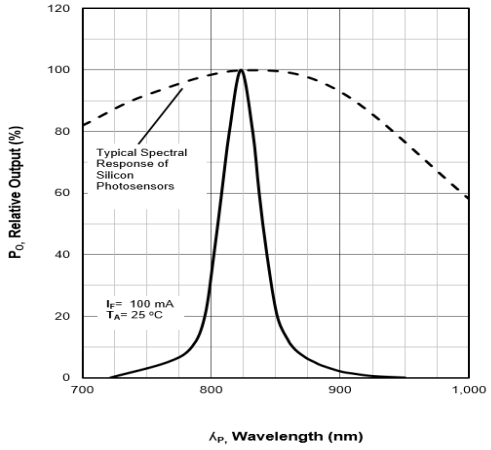

Figure 7. Output Vs Wavelength

Ordering Information

Manufacturing Part Number	***Part Description***
IB5E1	Radiation Tolerant Hermetic Infrared Emitting Diode 2-pin TO-46 Package
IB5E2	Radiation Tolerant Hermetic Infrared Emitting Diode 2-pin TO-46 Package
IB5E3	Radiation Tolerant Hermetic Infrared Emitting Diode 2-pin TO-46 Package

DISCLAIMER