**Electrical and optical characteristics and absolute maximum ratings (Thermal pad Temperature=25°C)**

Symbol	Parameter	MIN	Typ	MAX	Unit	Test conditions
I _F	DC Forward current		200	400	mA	
I _{PEAK}	Peak Forward current			800	mA	T _p < 10μsec. ; T=1:10 ; R _{therm} < 40 K/W
V _F	Forward Voltage	1,35	1,7	2,2	V	I _F = 400mA
V _R	Reverse Voltage			4	V	I _{rev} = 40μA
Φ _E	Total Power Output	25	35		mW	I _F = 100mA
Φ _E	Total Power Output	120			mW	I _F = 400mA @ T _{pad} = 25°C
I _v	Radiant Intensity	28			mW/sr	I _F = 200mA
λ _{Peak}	Peak Wavelength	840	850	870	nm	I _F = 100mA
Δλ _{0,5}	Bandwidth of half power		35		nm	I _F = 20mA
2Φ _{0,5}	Emission Angle		110		deg.	Φ _E = 50%
TK _{vF}	Temp.Coeff. of Forward Voltage		- 2		mV/K	*
TK _F	Temp.Coeff. of Radiant Power		- 0,35		%/K	*
T _{Operating}	Operating Temperature	- 25		85	°C	
T _{Storage}	Storage Temperature	- 25		85	°C	
T _{Soldering}	Soldering Temperature			240	°C	REFLOW SOLDER. 5mm from case @5 sec.
T _{Soldering}	Soldering Temperature			360	°C	IRON SOLDERING (Hand) @3 sec.
T _{junction}	Junction Temperature			100	°C	
Θ _{j-PIN}	Thermal Resistance		34		K/W	
P _{tot}	Total Power Dissipation			700	mW	derate above 45°C 3,5mW/K

* values only for information

** Measurement tolerance of the luminous flux : +/- 10%

Order Informations :

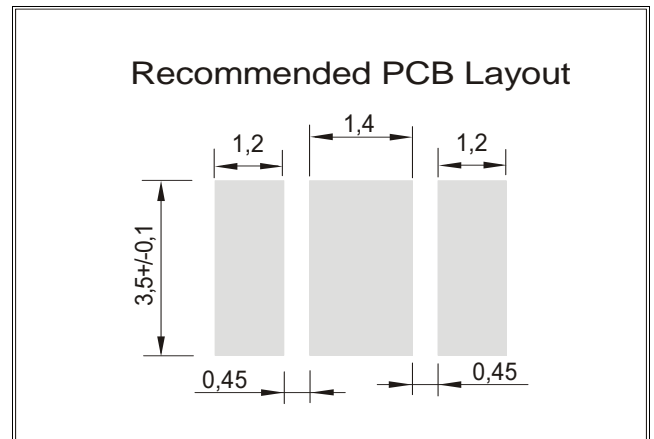
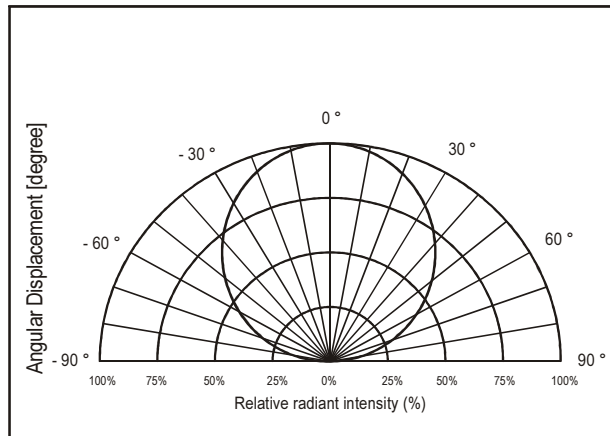
FQA35593BUB

Tape&Reel (1000pcs. /reel)

Ceramic SMD IRED

855nm

FQA35593BUB



Manual Iron Soldering (NOT RECOMMENDED)

Use SN60 solder of solder with silver content. Use 25W soldering iron at 350°C Max for 3 seconds or less. The soldering time and temperature will be different according with different LED thermal dissipation base. Must not touch top resin portion of SMD LED by heated soldering iron. Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

Cautions

Moisture Proof Package and Storage

When moisture is absorbed into the SMT package it may vaporize and expand during soldering. There is a possibility that this can cause exfoliation of the contacts and affect the optical characteristics of the LEDs. For this reason, a moisture proof package is used to keep moisture to a minimum in the package.

Recommended storage environment: Temperature: 5°C ~ 30°C (41°F ~ 86°F) Humidity: 60% RH Max. Use within 7 days after opening of sealed vapor/ESD barrier bags. If LEDs remain unused, they should be stored in moisture proof packages, such as sealed containers with packages of moisture absorbent material.

Heat Generation

Thermal design of the end product is of paramount importance. Heat generated by the LED must be considered in system design. The coefficient of temperature increase per input electric power is affected by the thermal resistance of the circuit board and density of LED placement on the board, as well as other components. It is necessary to avoid intense heat generation and operate within the maximum ratings given in this specification. The operating current should be derated if ambient temperature is to exceed recommended value in this datasheet.

Handling Instructions of Silicone Resin LEDs

Mechanical stress on the surface should be minimized as much as possible during handling. Sharp objects of all types should not be used to avoid piercing the sealing compound. No any mechanical force on the surface of silicone surface at any time.

Cleaning

It is recommended that isopropyl alcohol be used as a solvent for cleaning the LEDs. When using other solvents, it should be confirmed before hand whether the solvents will damage the LED. Avoid using organic solvents. Surface condition of this device may change when organic solvents such as trichloroethylene or acetone is applied. Do not clean the LEDs by the ultrasonic method. When it is absolutely necessary, the effect of ultrasonic cleaning on the LEDs depends on factors such as ultrasonic power, baking time and assembled condition. Before cleaning, a pre-test should be done to confirm whether any damage to the LEDs will occur.

Other

Not responsible for any damage caused due to using the LEDs at conditions exceeding our specifications.

These LEDs are designed and manufactured for use in typical consumer applications. It is recommended to consult us in advance if user's application requires any particular quality or reliability which concerns human life. Examples would be medical equipment, aerospace applications, traffic signals, safety system equipment and so on.

Human Eye Safety

Care must be taken to ensure that the reverse voltage will not exceed the absolute maximum rating when using the LEDs with matrix drive. The LED light output is strong enough to injure human eyes. Precautions must be taken to prevent looking directly at the LEDs with unprotected eyes for more than a few seconds. The appearance and specifications of the product may be modified for improvement without notice.

Fietje reserves the right to make changes at any time in order to improve design and to supply the best product possible, contact Fietje for latest device specification sheets before using.