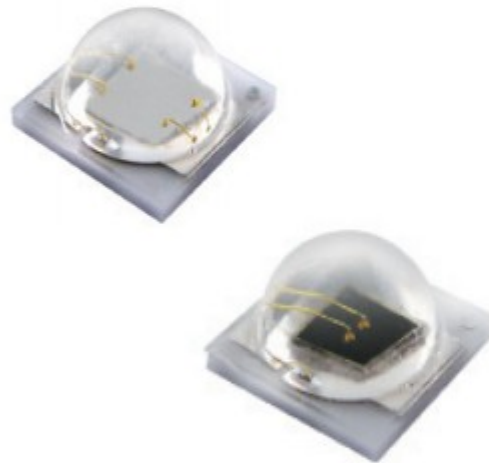




Federal Series

# Federal 3535 UV & IR Series Datasheet



## Features :

- High power performance
- Promising power maintenance characteristics
- High efficiency package
- Level 1 on JEDEC moisture sensitivity analysis
- RoHS compliant



## Absolute Maximum Ratings

Parameter	Symbol	Value	Units
DC Forward Current <sup>[1]</sup> (each chip)	$I_f$	Ultraviolet/ Deep Red : 350 / 700 IR 850 : 700/1000	mA
Peak Pulsed Current; (tp≤100μs, Duty cycle=0.25)	$I_{pulse}$	Ultraviolet/ Deep Red : 700 IR 850 : 1000	mA
Transient Surge Voltage	-	Ultraviolet/ Deep Red : 8 IR 850 : 3	V
Reverse Voltage <sup>[2]</sup>	$V_R$	Note 2	V
LED Junction Temperature <sup>[3]</sup>	$T_j$	125	°C
Operating Temperature	-	-40 ~ +80	°C
Storage Temperature	-	-40 ~ +120	°C
Soldering Temperature	-	260	°C

Notes:

1. Proper current derating must be observed to maintain junction temperature below the maximum at all time.
2. LEDs are not designed to drive in reverse bias.
3. Allowable reflow cycles are 3 times for each LED
4. tp: Pulse width time

Warning:

1. The transient surge voltage of EFE4I must < 3V, otherwise the components get damaged!

## Characteristics

Parameter	Symbol	Value	Units
Viewing Angle	(Typ.) $2\theta_{1/2}$	Ultraviolet : 135 Deep Red/IR 850 : 125	Degree
Forward voltage/per chip	(Typ.) $V_f$	Ultraviolet : Min. 3.0/Max. 4.0 Deep Red : Min. 2.0/Max. 3.0 IR 850 : Min. 1.4/Max. 2.4	V
Thermal resistance	-	10	°C/W
CCT/Wavelength Range	-	Ultraviolet : 390 - 410 Deep Red : 650 - 670 IR 850 : 835 - 870	nm
JEDEC Moisture Sensitivity	-	Level 1  <b>Floor Life</b> Conditions: ≤30°C / 85% RH  <b>Soak Requirements(Standard)</b> Time (hours): 168+5/-0 Conditions: 85°C / 85% RH	-

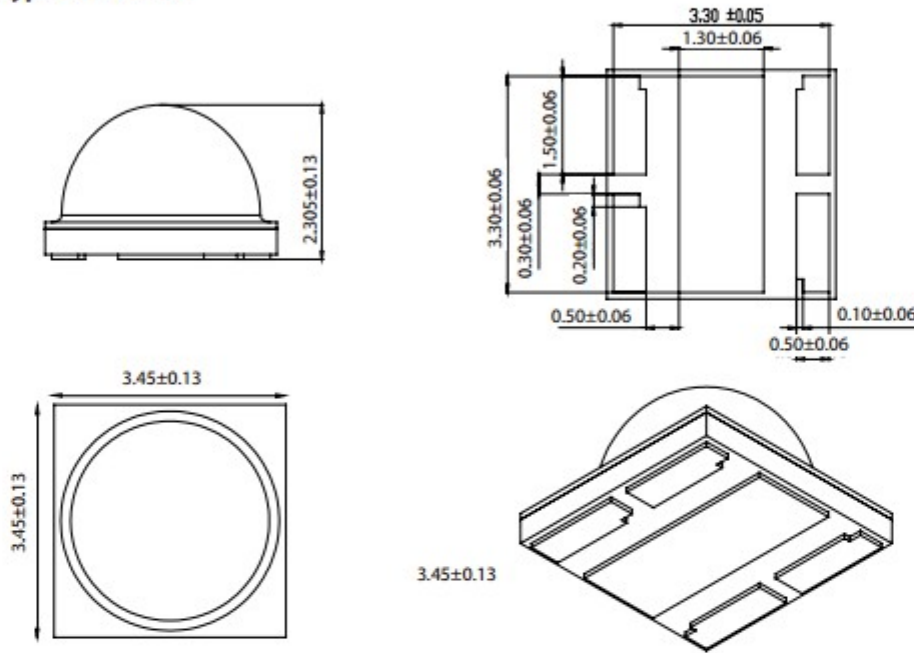
Notes:

1. Wavelengths are stated as peak wavelength.
2. Edison maintains a tolerance of ±2nm for peak wavelength.

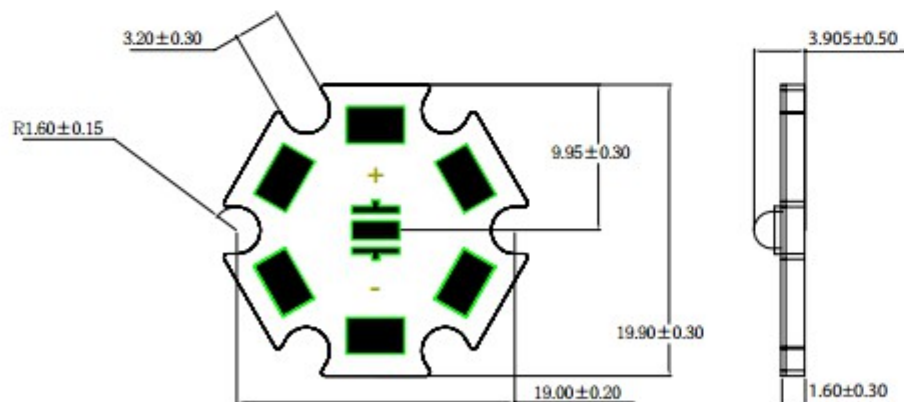


## Mechanical Dimensions

### Emitter Type Dimension



### Star PCB Type Dimension



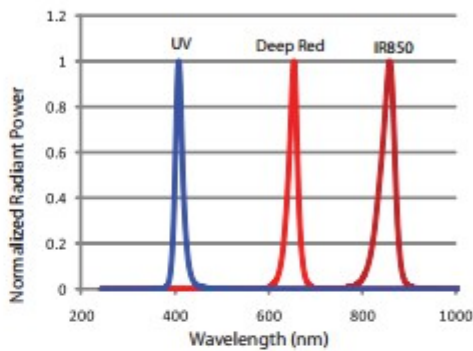
#### Notes:

1. All dimensions are measured in mm.
2. Drawings are not to scale.



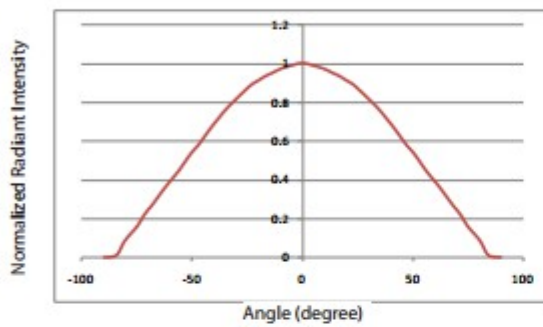
## Characteristic Curve

### Spectrum

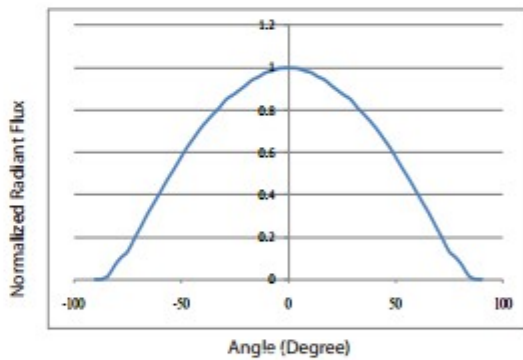


Color Spectrum for UV, Deep Red and IR850 at  $T_j=25\text{ }^\circ\text{C}$

### Radiation Diagram

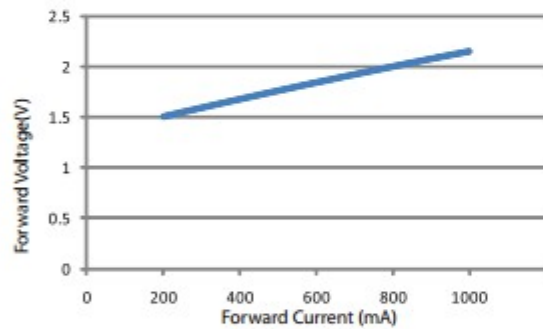


Emission Angle for IR850

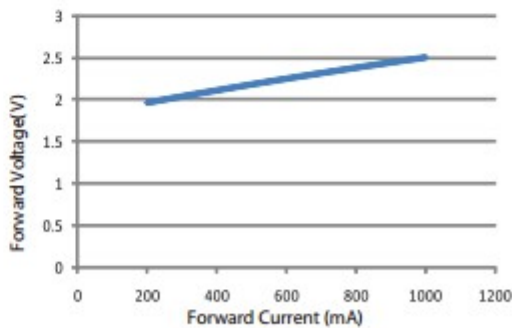


Emission Angle for UV

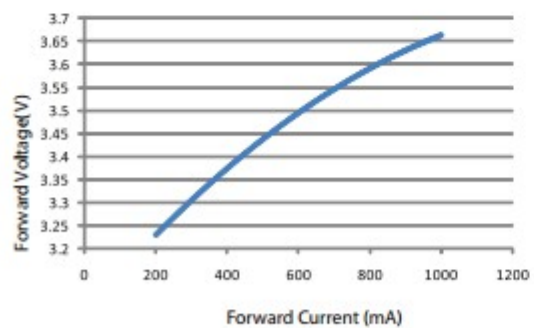
### Forward Voltage VS. Forward Current



Forward voltage vs. forward current for IR850



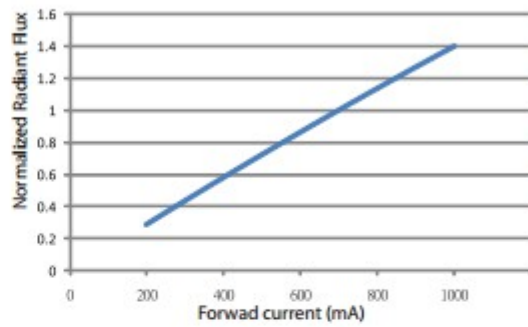
Forward voltage vs. forward current for Deep Red



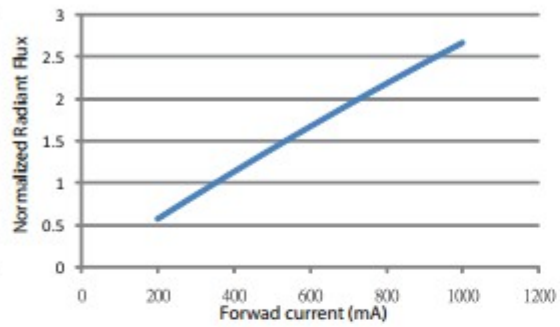
Forward voltage vs. forward current for UV



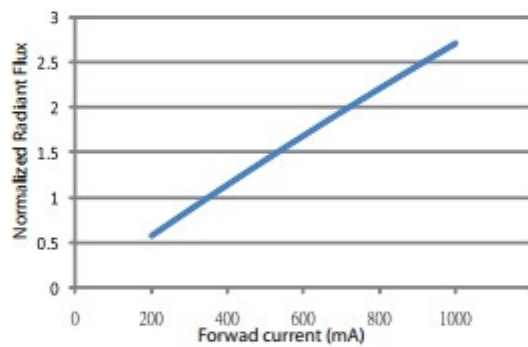
**Radiant Flux VS. Forward Current**



Radiant flux vs. forward current for IR850

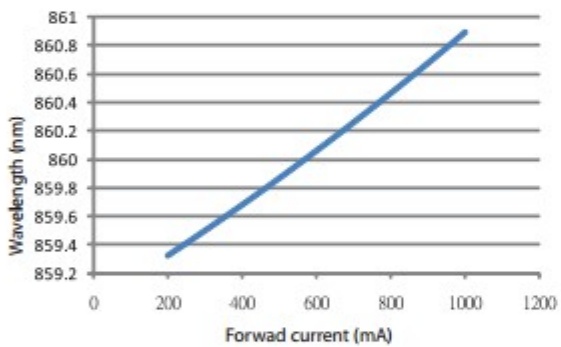


Radiant flux vs. forward current for Deep Red

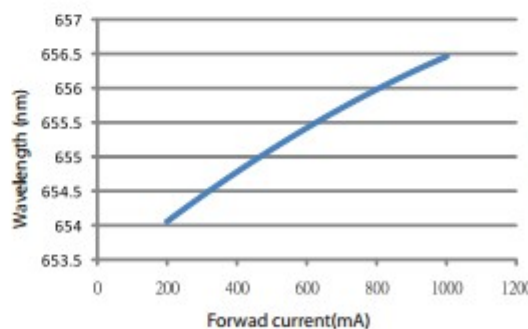


Radiant flux vs. forward current for UV

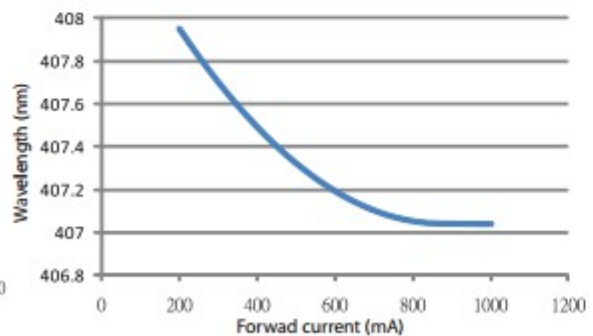
**Wavelength VS. Forward Current**



Wavelength vs. forward current for IR850



Wavelength vs. forward current for Deep Red

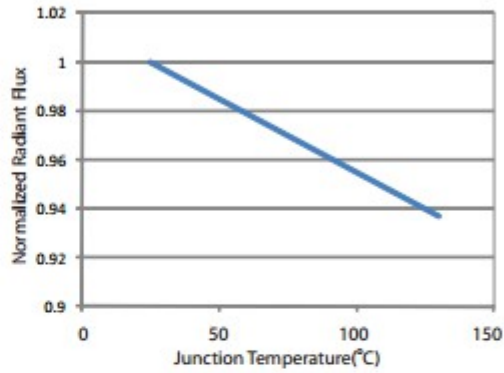


Wavelength vs. forward current for UV

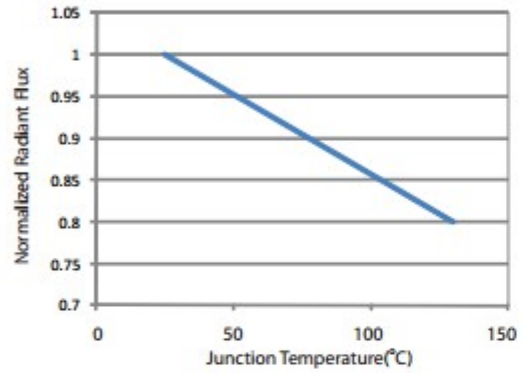




### Radiant Flux VS. Junction Temperature



Radiant Flux vs. Junction temperature for IR850



Radiant Flux vs. Junction temperature for UV