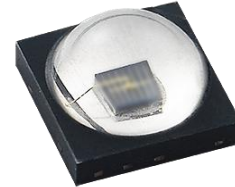


COMPACT IR EMITTER

Product	3535 IR Emitter
Part Number	P5F21
Customer Part Number	
Issue Date	2016/04/18



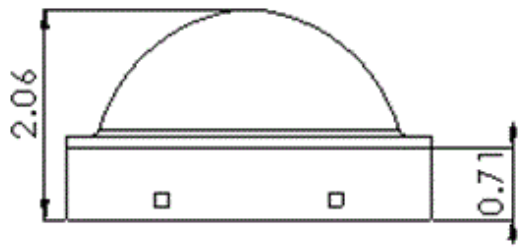
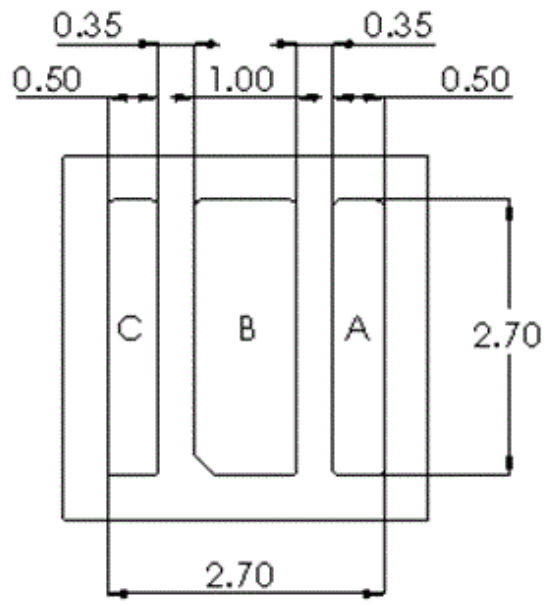
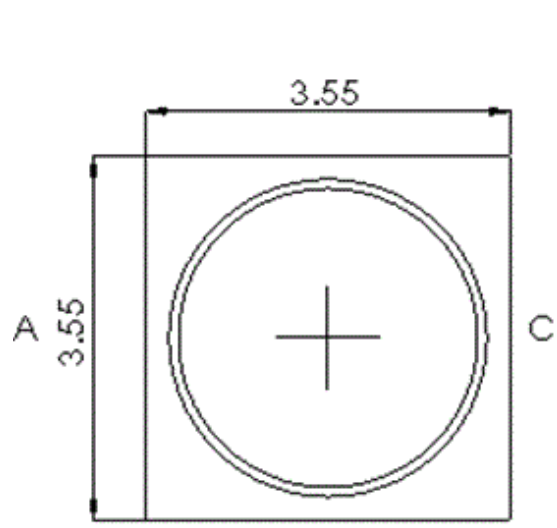
■ Features

- ✓ Compact dimensions: 3.55 mm × 3.55 mm × 2.05mm
- ✓ Peak wavelength: $\lambda_p = 940$ nm
- ✓ High power operation
- ✓ View angle: $\theta = 125^\circ \pm 10^\circ$
- ✓ Low thermal resistance
- ✓ ESD : 2 kV min. (HBM)
- ✓ Environmental friendly ; RoHS compliance
- ✓ Weight: 0.034g/pcs

■ Applications

- ✓ Surveillance system
- ✓ Industrial automatic vision system
- ✓ Infrared illumination for camera

MAKER			CUSTOMER			
Prepared	Checked	Approved				
Tommy Chen	Leland Ho	Sherry Chiu				



Unit:mm

A:Anode
 B:Anode
 C:Cathode

Unit: mm
 Tolerance:±0.15mm

■ Room Temperature Opto-Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Forward Voltage ⁽¹⁾	V_F	$I_F = 0.35 \text{ A}$, $t_p = 100 \mu\text{s}$	--	1.55	--	V
Wavelength	λ_p	$I_F = 0.35 \text{ A}$, $t_p = 100 \mu\text{s}$		940		nm
Radiant Intensity ⁽²⁾	I_e	$I_F = 0.35 \text{ A}$, $t_p = 100 \mu\text{s}$		80		mW/sr
Radiant Power	Φ_e	$I_F = 0.35 \text{ A}$		220		mW
View Angle	θ			125		deg

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Forward Voltage ⁽¹⁾	V_F	$I_F = 1.0 \text{ A}$, $t_p = 100 \mu\text{s}$	--	1.75	--	V
Wavelength	λ_p	$I_F = 1.0 \text{ A}$, $t_p = 100 \mu\text{s}$		940		nm
Radiant Intensity ⁽²⁾	I_e	$I_F = 1.0 \text{ A}$, $t_p = 100 \mu\text{s}$		210		mW/sr
Radiant Power	Φ_e	$I_F = 1.0 \text{ A}$		600		mW
View Angle	θ			125		deg

(1). Forward Voltage tolerance is $\pm 0.1 \text{ V}$

(2). Radiant Intensity tolerance is $\pm 10\%$

■ Temperature-dependent Opto-Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Forward Voltage ⁽¹⁾	V_F	$I_F = 0.35 \text{ A}$, $t_p = 100 \mu\text{s}$		-1.5		mV/ $^{\circ}\text{C}$
Wavelength	λ_p	$I_F = 0.35 \text{ A}$, $t_p = 100 \mu\text{s}$		0.23		nm/ $^{\circ}\text{C}$
Radiant Intensity ⁽²⁾	I_e	$I_F = 0.35 \text{ A}$, $t_p = 100 \mu\text{s}$		-0.3		%/ $^{\circ}\text{C}$
Radiant Power	Φ_e	$I_F = 0.35 \text{ A}$, $t_p = 100 \mu\text{s}$		-0.3		%/ $^{\circ}\text{C}$

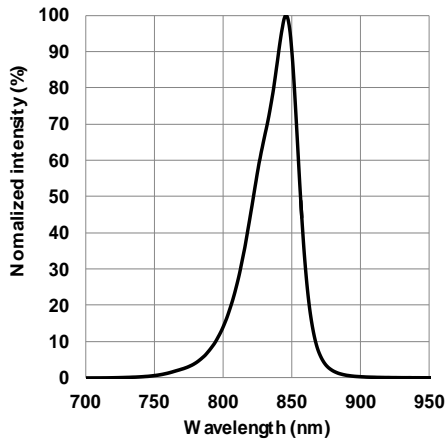
■ Absolute Maximum Ratings

Parameter	Symbol	VALUE	Unit
DC Forward Current ⁽¹⁾	I_F	1	A
Power Consumption	P_{tot}	1.8	W
Reverse Voltage	V_R	5	V
Surge Forward Current*($t_p=100\mu$ s)	I_{FS}	1	A
Junction Temperature	T_J	140	°C
Storage Temperature	T_S	-40 ~ 125	°C
Operation Temperature	T_{op}	-40 ~ 85	°C
Thermal Resistance –solder point	R_{thJS}	15	k/W
Electrostatic Discharge (HBM)	ESD	2000	V
Soldering Temperature ⁽²⁾	T_{Sol}	260	°C

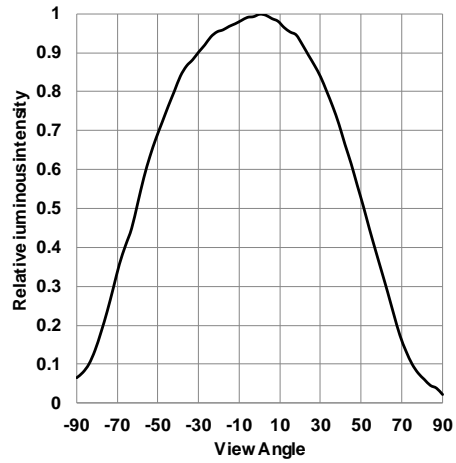
(1) Proper current rating must be observed to maintain junction temperature below maximum at all time.

(2) JEDEC J-STD-020 Latest version compliant. See profile and conditions in following page.

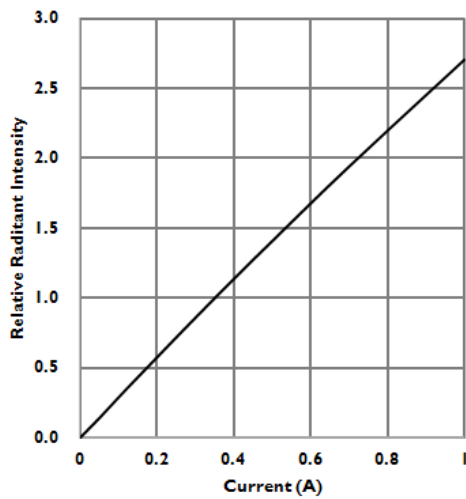
Emission Spectrum



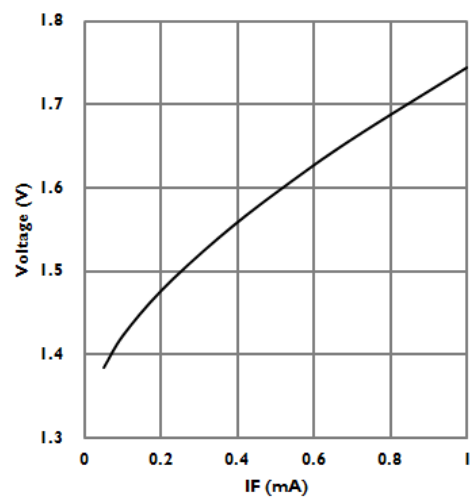
Radiation Pattern



Light output vs. Current



Voltage vs. Current



Max. permissible forward current

