



LIGITEK ELECTRONICS CO.,LTD.
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INFRARED EMITTING DIODES



Lead-Free Parts

LSIR21931F/S1-PF/TR1

DATA SHEET

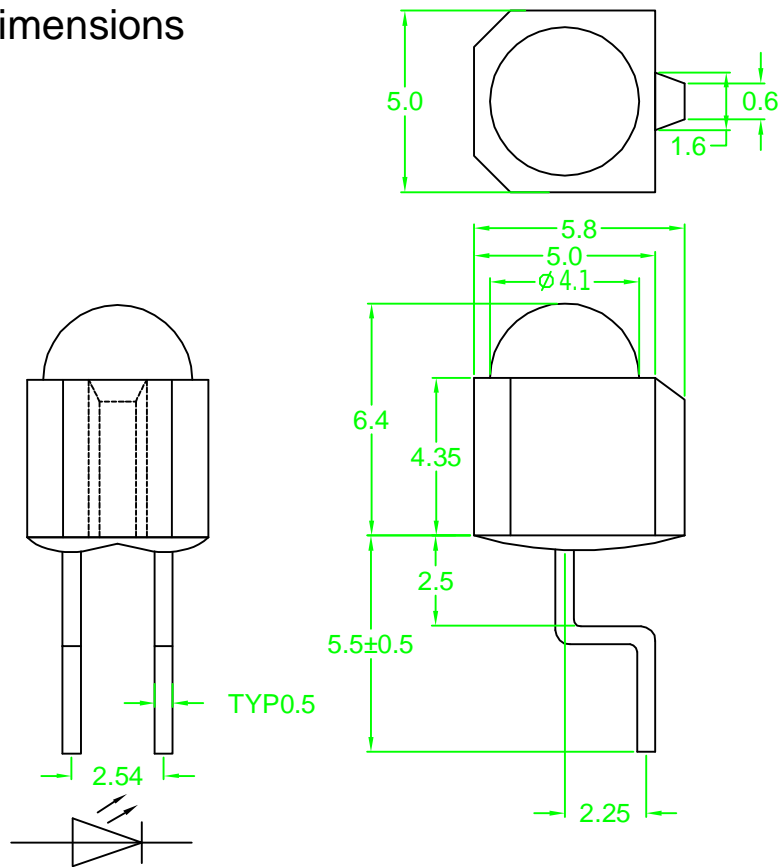
DOC. NO : QW0905-LSIR21931F/S1-PF/TR1

REV : B

DATE : 05- Nov. - 2012



Package Dimensions



Note : 1.All dimension are in millimeter tolerance is ± 0.25 mm unless otherwise noted.
2.Specifications are subject to change without notice.

Features:

1. High radiant intensity.
2. Suitable for pulse applications.
3. Low average degradation.

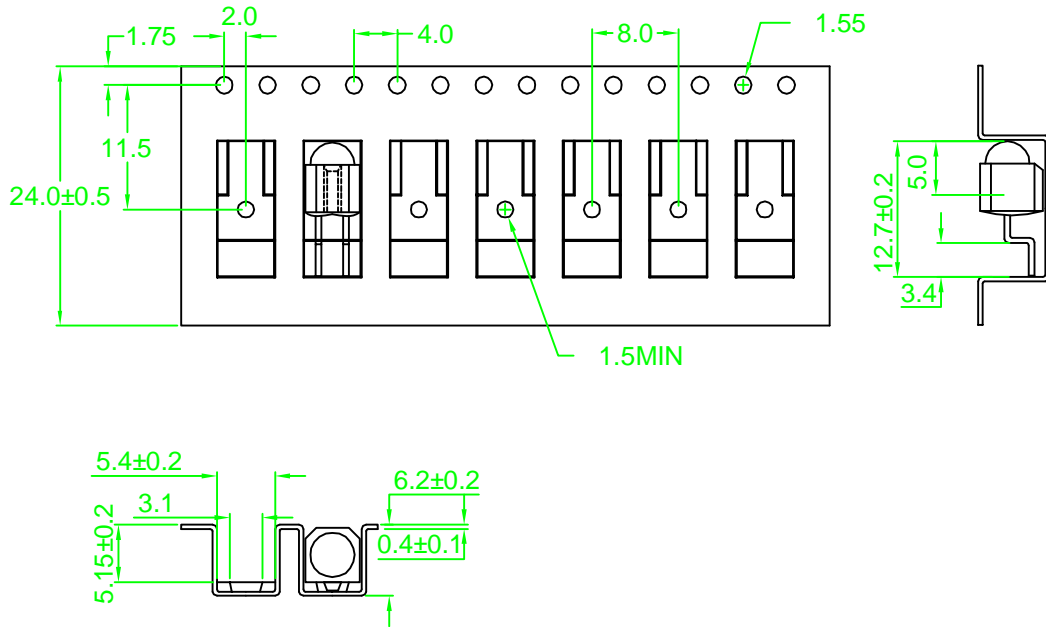
Descriptions:

The LSIR21931F/S1-PF/TR1 series are super-high efficiency Gallium Aluminum Arsenide infrared emitting diodes encapsulated in water clear plastic T-1 3/4 package individually

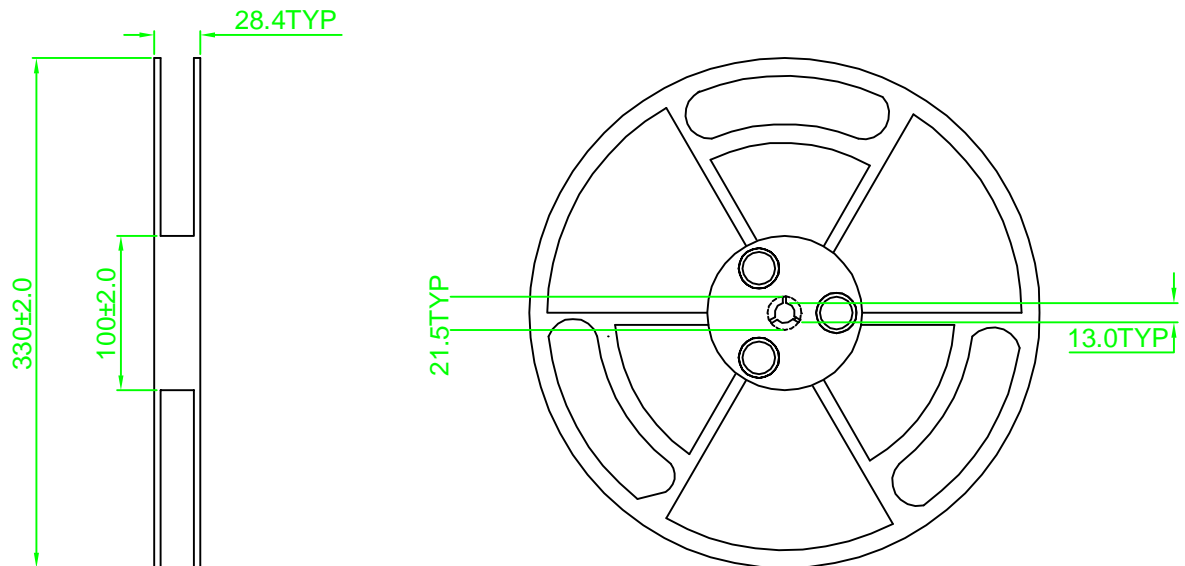
Device Selection Guide:

PART NO	MATERIAL	LENS COLOR
LSIR21931F/S1-PF/TR1	AlGaAs	Blue Transparent

Reel Dimensions



Carrier Type Dimensions



Part No.	Quantity/Reel
LSIR21931F/S1-PF/TR1	1500 devices

Absolute Maximum Ratings at Ta=25 °C

Parameter	Symbol	Ratings	UNIT
		SIR(F)	
Forward Current	IF	50	mA
Peak Forward Current (200uS every 4 seconds)	IFP	0.5	A
Peak Forward Current (300PPS,1µs Pulse)	IFP	3	A
Power Dissipation	PD	100	mW
Reverse Voltage	Vr	5	V
Electrostatic Discharge(*)	ESD	2000	V
Operating Temperature	Topr	-55 ~ +100	°C
Storage Temperature	Tstg	-55 ~ +100	°C
Storage Term	Shelf life of the products in unopened bag is 3 months(max) at <30° C and 70% RH from the delivery date.If the shelf life exceeds 3 months or more, the LEDs need to be stored in a sealed container with desiccant(silica gel) to ensure their shelf life will not exceed 1 year		

Electrical Optical Characteristics (Aa=25°C)

PARAMETER	SYMBOL	Min.	Typ.	Max.	UNIT	TEST CONDITION
Radiant Intensity	Le	35	75		mW/sr	IF=50mA
Aperture Radiant Incidence	Ee	5	15		mW/cm ²	IF=50mA
Peak Wavelength	λ peak		880		nm	IF=50mA
Spectral Line Half Width	$\Delta \lambda$		40		nm	IF=50mA
Forward Voltage	VF		1.4	1.7	V	IF=50mA
Reverse Current	IR			100	μ A	VR=5V
Viewing Angle	2θ 1/2		22		deg	

Note : 1. The forward voltage data did not including $\pm 0.1V$ testing tolerance.
2. The radiant intensity data did not including $\pm 15\%$ testing tolerance.

Brightness Code For Standard LED Lamps

SIR(F) CHIP

Group	Luminous Intensity(mcd) at 50 mA	
	Min.	Max.
A14	35	42
A15	42	50
A16	50	60
A17	60	75
A18	75	85

Typical Electro-Optical Characteristics Curve

SIR(F) CHIP

Fig.1 Forward Current vs. Forward Voltage

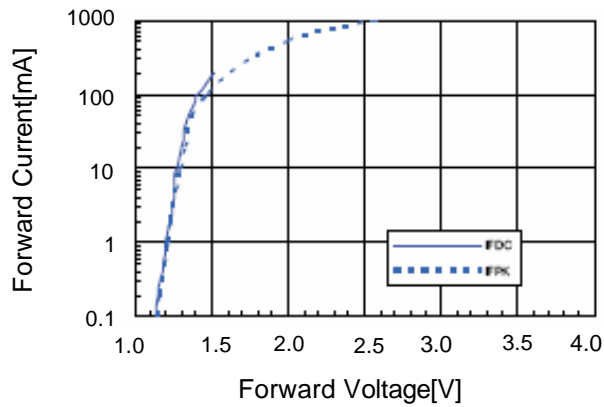


Fig.2 Relative Radiant Power vs. Wavelength

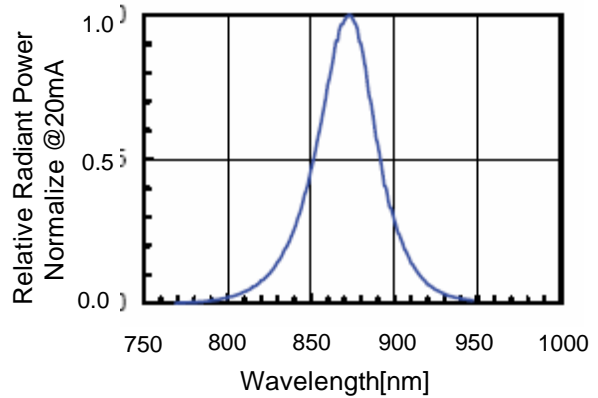


Fig.3 Relative Radiant Power vs. Forward DC Current

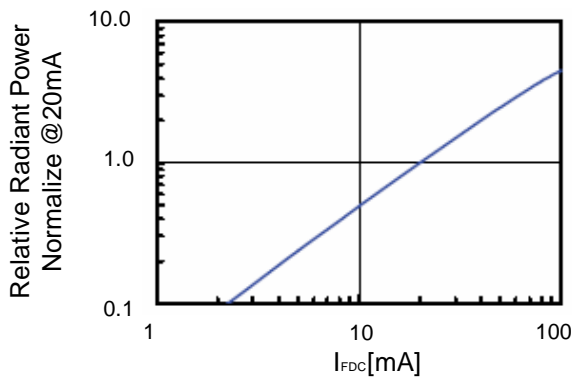


Fig.4 Relative Radiant Power vs. Forward Peak Current

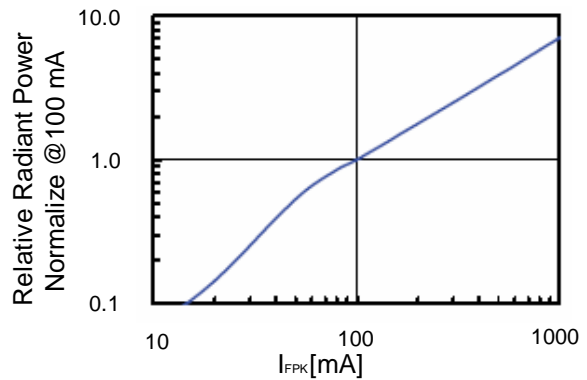


Fig.5 Forward DC Voltage vs. Temperature

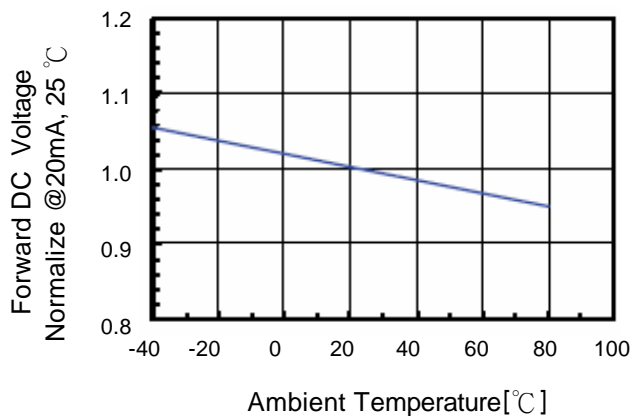
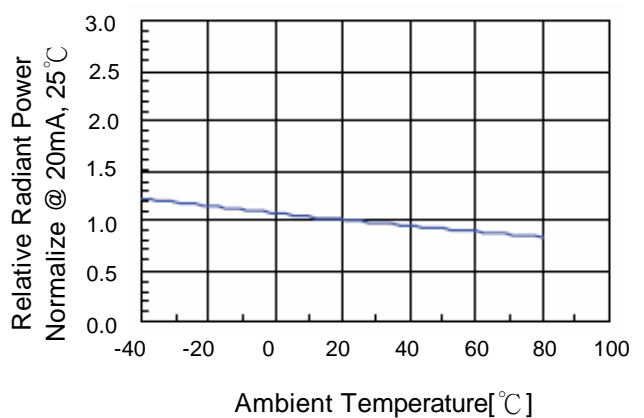


Fig.6 Relative Radiant Power vs. Temperature



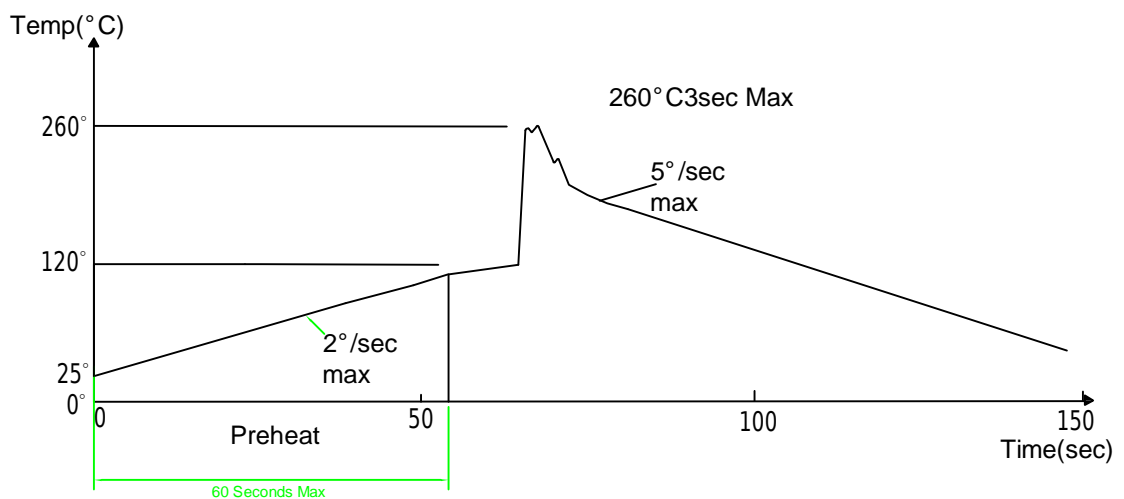
Soldering Condition(Pb-Free)

1.Iron:

Soldering Iron:30W Max
Temperature 350° C Max
Soldering Time:3 Seconds Max(One Time)
Distance:2mm Min(From solder joint to body)

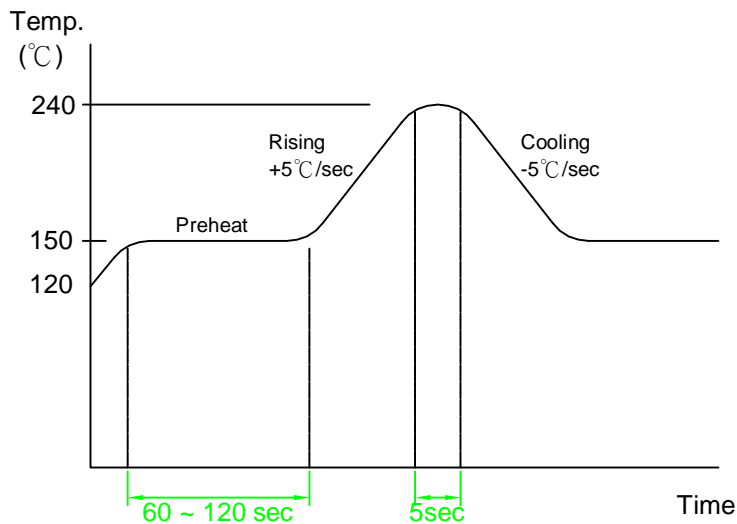
2.Wave Soldering Profile

Dip Soldering
Preheat: 120° C Max
Preheat time: 60seconds Max
Ramp-up
2° C/sec(max)
Ramp-Down:-5° C/sec(max)
Solder Bath:260° C Max
Dipping Time:3 seconds Max
Distance:2mm Min(From solder joint to body)

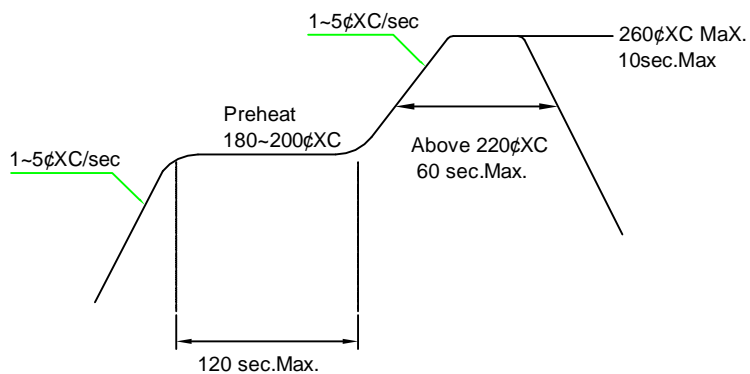


Recommended Soldering Conditions

3-1. LEAD Reflow Solder



3-2 PB-Free Reflow Solder



Reflow Soldering should not be done more than two times.