

# Kingbright

## T-1 3/4 (5mm) INFRA-RED EMITTING DIODE

L-53F3C	L-53F3BT
L-53SF4C	L-53SF4BT
L-53SF6C	L-53SF6BT
L-53SF7C	L-53SF7BT

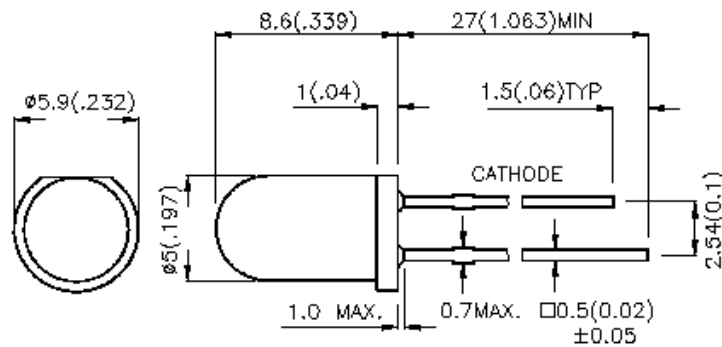
### Features

- MECHANICALLY AND SPECTRALLY MATCHED TO THE L-51P3C PHOTOTRANSISTOR.
- BOTH WATER CLEAR LENS AND BLUE TRANSPARENT LENS AVAILABLE HIGH POWER OUTPUT.

### Description

- F3 Made with Gallium Arsenide Infrared Emitting diodes.
- SF4 and SF6 and SF7 Made with Gallium Aluminum Arsenide Infrared Emitting diodes.

### Package Dimensions



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25 (0.01)$  unless otherwise noted.
3. Lead spacing is measured where the lead emerge package.
4. Specifications are subject to change without notice.

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## Selection Guide

Part No.	Die	Lens Type	Po (mW/sr) @ 20mA		Po (mW/sr) @ 50mA		Viewing Angle
			Min.	Typ.	Min.	Typ.	
L-53F3C	GaAs	WATER CLEAR	8	20	12	30	30°
L-53F3BT	GaAs	BLUE TRANS.	5	20	8	30	30°
L-53SF4C	GaAlAs	WATER CLEAR	8	20	12	30	30°
L-53SF4BT	GaAlAs	BLUE TRANS.	5	20	8	30	30°
L-53SF6C	GaAlAs	WATER CLEAR	10	40	50	100	30°
L-53SF6BT	GaAlAs	BLUE TRANS.	10	40	50	100	30°
L-53SF7C	GaAlAs	WATER CLEAR	10	40	50	100	30°
L-53SF7BT	GaAlAs	BLUE TRANS.	10	40	50	100	30°

Note:

1. 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

## Electrical / Optical Characteristics at T<sub>j</sub> = 25°C

Item	PN	Symbol	Typ.	Max.	Unit	Condition
Forward Voltage	F3 SF4 SF6 SF7	V <sub>F</sub>	1.2 1.3 1.35 1.4	1.5 1.7 1.6 1.8	V	I <sub>F</sub> = 20 mA
Reverse Current	F3 SF4 SF6 SF7	I <sub>R</sub>	-	10 10 10 10	uA	V <sub>R</sub> = 5 V
Junction Capacitance	F3 SF4 SF6 SF7	C	90 90 30 30	-	pF	V = 0 f = 1 MHz
Peak Spectral Wavelength	F3 SF4 SF6 SF7	P	940 880 860 850	-	nm	I <sub>F</sub> = 20 mA
Spectral Bandwidth	F3 SF4 SF6 SF7		50 50 50 41	-	nm	I <sub>F</sub> = 20 mA

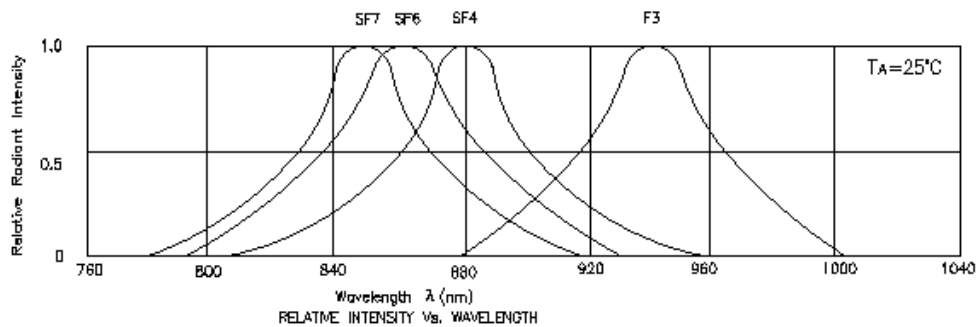
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Absolute Maximum Ratings at T<sub>a</sub> = 25°C

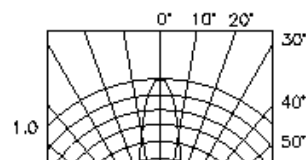
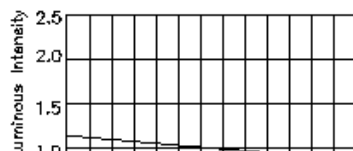
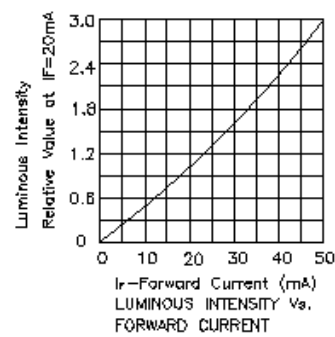
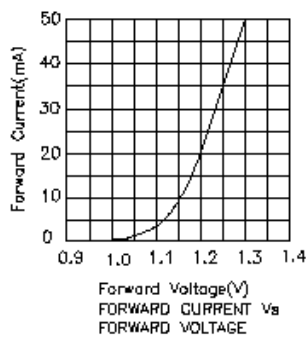
Item	Symbol	F3 & SF4	SF6 & SF7	Units
Power Dissipation	P <sub>d</sub>	100	100	mW
Forward Current	I <sub>f</sub>	50	50	mA
Peak Forward Current	I <sub>p</sub>	1.2	1	A
Reverse Voltage	V <sub>r</sub>	5	5	V
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +85	-40 ~ +85	°C

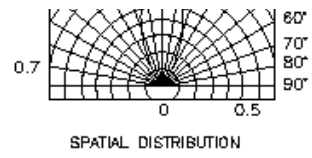
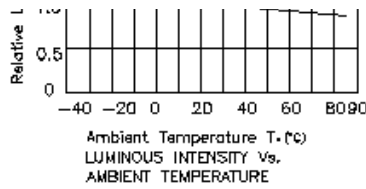
Notes:

- 1/10 Duty Cycle, 0.1ms Pulse Width.
- 2.4mm below package base.



L-53F3C, L-53F3BT





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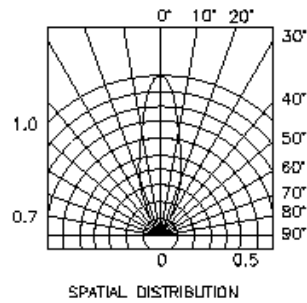
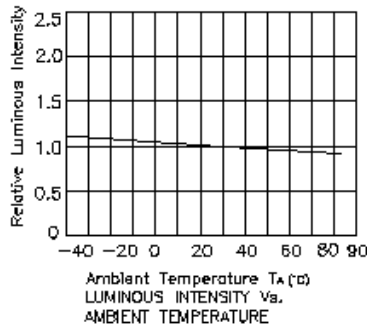
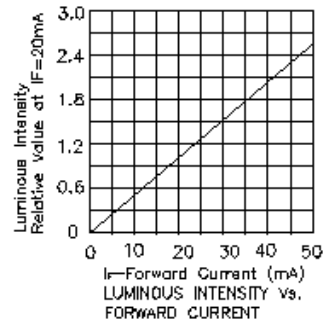
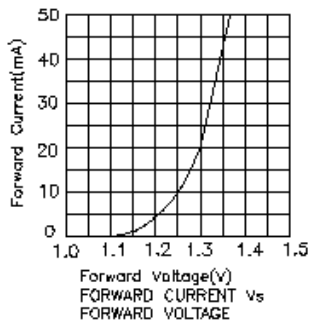
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CHECKED:

DATE: SEP/21/2001  
DRAWN: J.X.FU

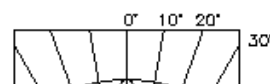
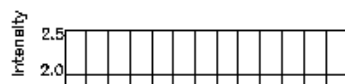
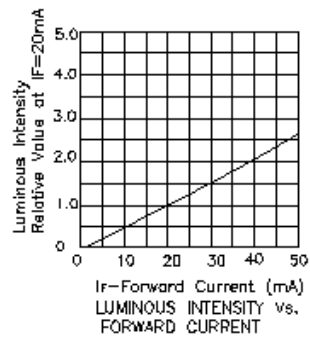
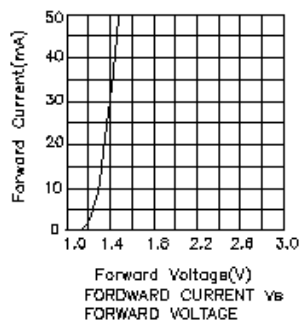
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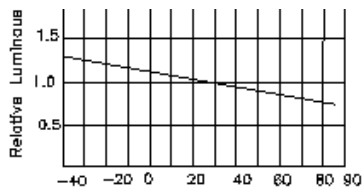
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L-53SF4C, L-53SF4BT

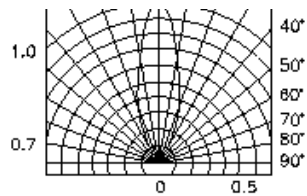


L-53SF6C, L-53SF6BT





Ambient Temperature  $T_a$  (°C)  
LUMINOUS INTENSITY vs.  
AMBIENT TEMPERATURE



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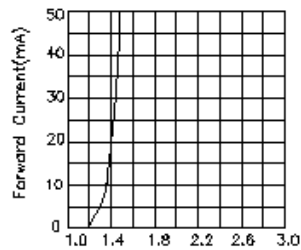
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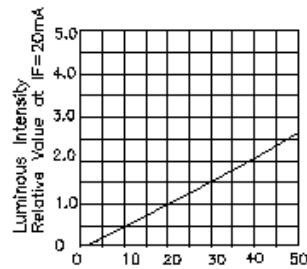
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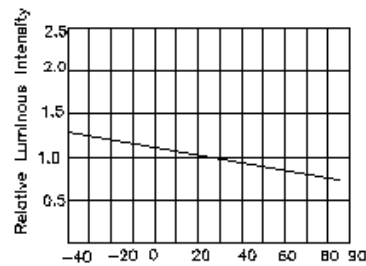
L-53SF7C, L-53SF7BT



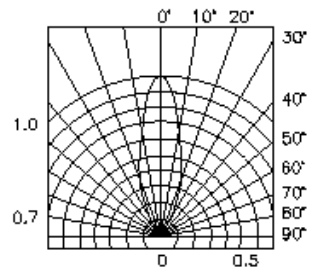
Forward Current (mA)  
FORWARD CURRENT vs  
FORWARD VOLTAGE



Luminous Intensity  
Relative Value at  $I_F=20\text{mA}$   
 $I_F$ -Forward Current (mA)  
LUMINOUS INTENSITY vs.  
FORWARD CURRENT



Ambient Temperature  $T_a$  (°C)  
LUMINOUS INTENSITY vs.  
AMBIENT TEMPERATURE



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