

Technical Data Sheet

1.9mm Round Subminiature “Gull Wing” Lead Infrared LED

HIR95-21C/L11/TR7

Features

- High radiant intensity
- High reliability
- Low forward voltage
- Good spectral matching to Si photodetector



Descriptions

HIR95-21C/L11/TR7 is an infrared emitting diode in miniature SMD package which is in a water clear plastic with spherical top view lens. The spectrally matched silicon with Photodiode and phototransistor.

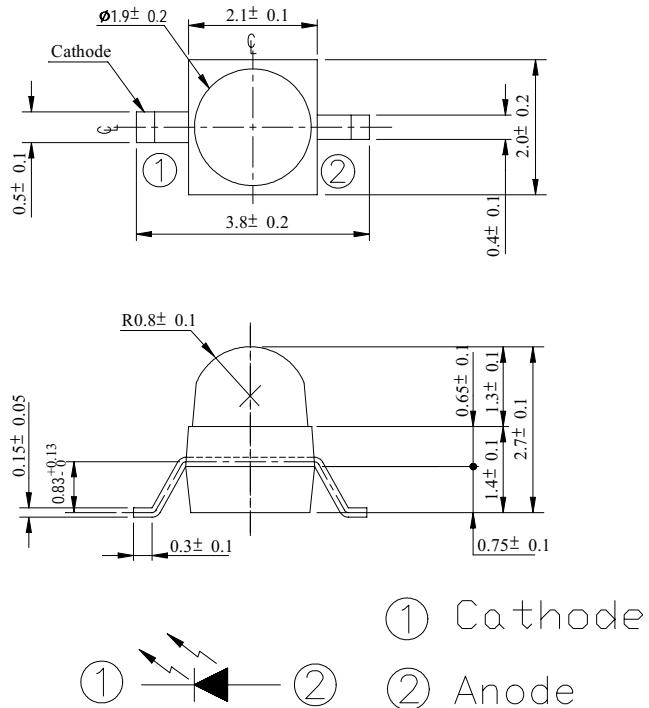
Applications

- Smoke detector
- VCR ,Video
- Floppy disk drive
- Optoelectronic switch
- Smoke detector

Device Selection Guide

LED Part No.	Chip	Lens Color
	Material	
HIR	GaAlAs	Water Clear

Device No:DTH-095-004

Package Dimensions

Notes: 1. All dimensions are in millimeters
2. Tolerances unless dimensions $\pm 0.1\text{mm}$

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Units
Continuous Forward Current	I _F	65	mA
Peak Forward Current	I _{FP}	1.0	A
Reverse Voltage	V _R	5	V
Operating Temperature	T _{opr}	-25 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +85	°C
Soldering Temperature	T _{sol}	260	°C
Power Dissipation at(or below) 25°C Free Air Temperature	P _d	130	mW

Notes: *1: I_{FP} Conditions--Pulse Width $\leq 100 \mu\text{s}$ and Duty $\leq 1\%$.

*2:Soldering time ≤ 5 seconds.

Device No:DTH-095-004



HIR95-21C/L11/TR7

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	Ee	I _F =20mA	5.0	10	--	mW/sr
Peak Wavelength	λ p	I _F =20mA	--	850	--	nm
Spectral Bandwidth	Δ λ	I _F =20mA	--	45	--	nm
Forward Voltage	V _F	I _F =20mA	--	1.45	1.65	V
Reverse Current	I _R	V _R =5V	--	--	10	μA
View Angle	2θ 1/2	I _F =20mA	--	25	--	deg

Device No:DTH-095-004

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

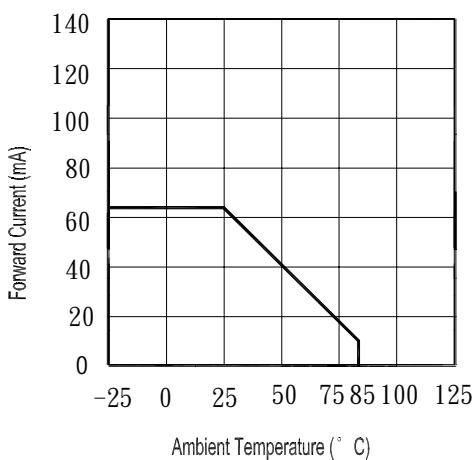


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

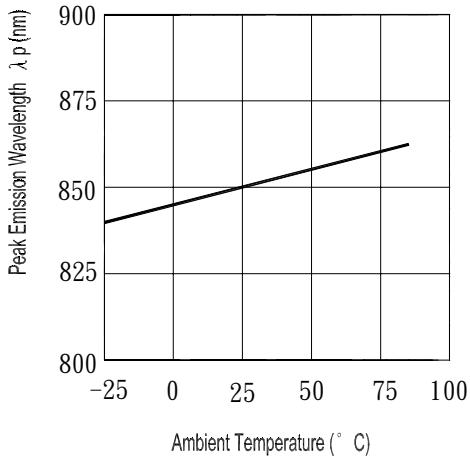


Fig.2 Spectral Distribution

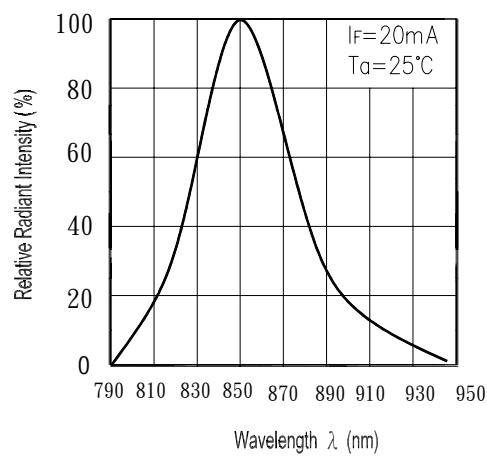
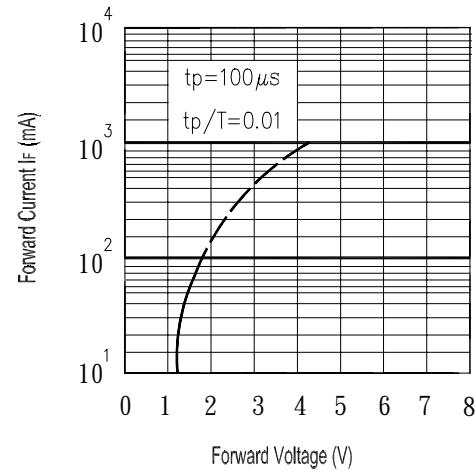
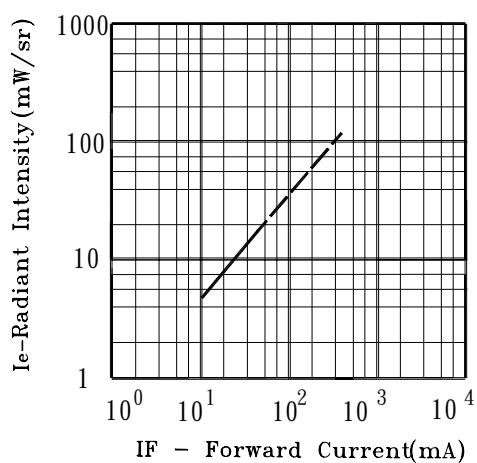
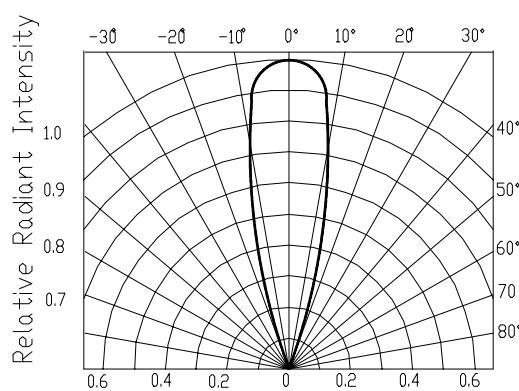
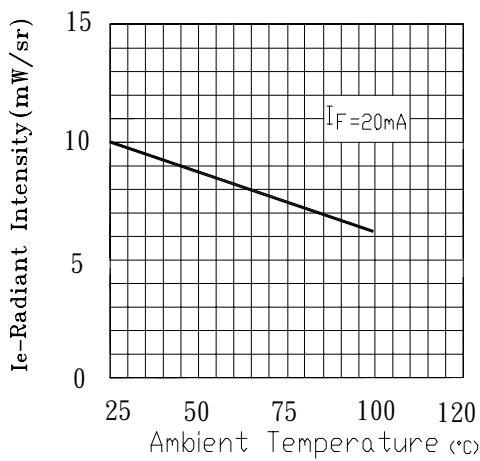
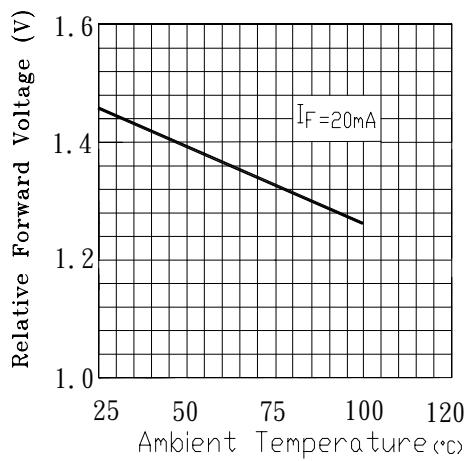


Fig.4 Forward Current vs. Forward Voltage

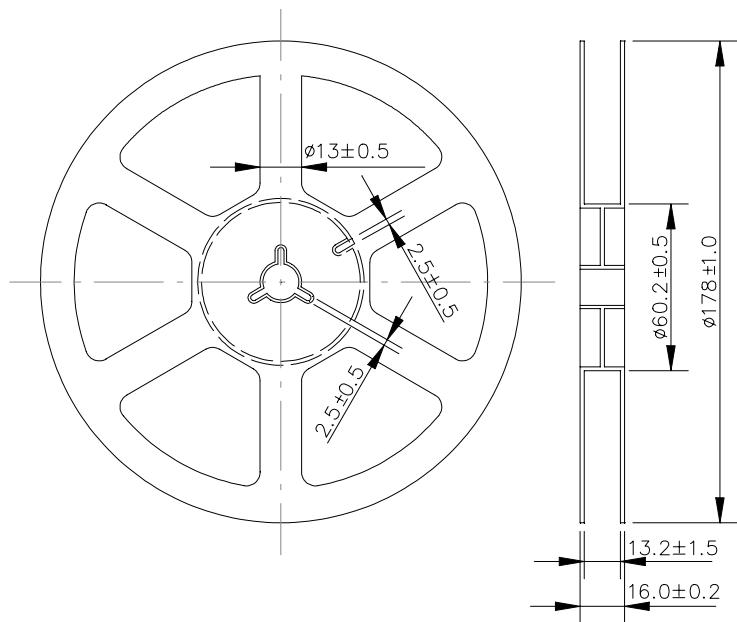


Device No:DTH-095-004

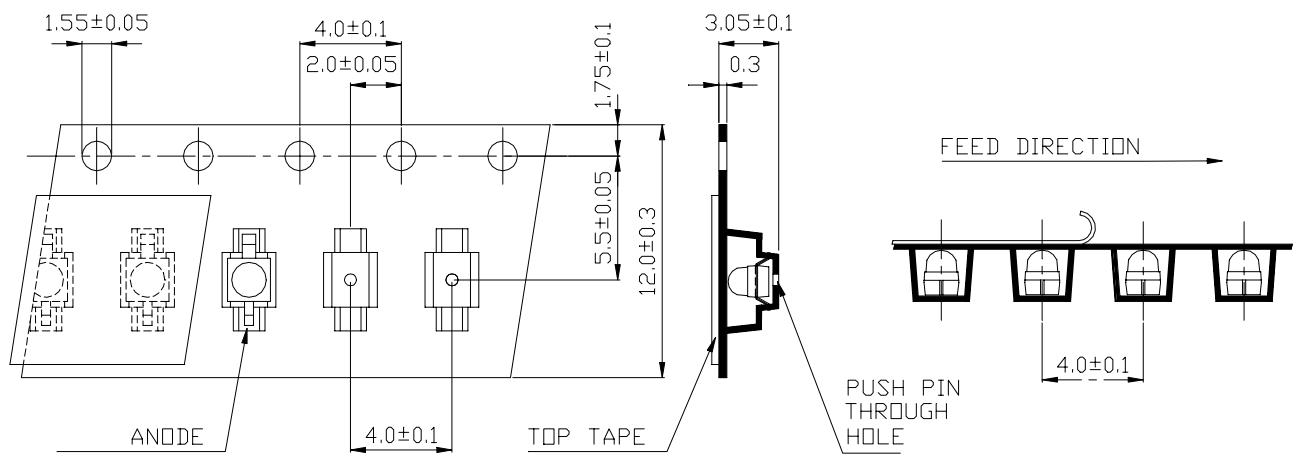
Typical Electro-Optical Characteristics CurvesFig. 5 Relative Intensity vs.
Forward CurrentFig. 6 Relative Radiant Intensity
Angular DisplacementFig. 7 Relative Intensity vs.
Ambient Temperature (°C)Fig. 8 Forward Current vs.
Ambient Temperature (°C)**Device No:DTH-095-004**

HIR95-21C/L11/TR7

Package Dimensions



Loaded Quantity Per Reel 1000PCS/Reel



Unit : mm

Device No:DTH-095-004

HIR95-21C/L11/TR7**Reliability Test Item And Condition**

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

NO.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Failure Judgement Criteria	Ac/Re
1	REFLOW	TEMP. : $240^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 5secs	6mins	22pcs	More than 90% of lead to be covered by soldering	0/1
2	Temperature Cycle	H : $+85^{\circ}\text{C}$ L : -55°C	30mins 5mins 30mins	50Cycles	22pcs	$I_R \geq U_x \cdot 2$ $E_e \leq L_x \cdot 0.8$
3	Thermal Shock	H : $+100^{\circ}\text{C}$ L : -10°C	5mins 10secs 5mins	50Cycles	22pcs	$V_F \geq U_x \cdot 1.2$ U : Upper Specification Limit
4	High Temperature Storage	TEMP. : $+100^{\circ}\text{C}$	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : -55°C	1000hrs	22pcs		0/1
6	DC Operating Life	$I_F = 20\text{mA}$	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	$85^{\circ}\text{C} / 85\% \text{ R.H}$	1000hrs	22pcs		0/1

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