Technical Data Sheet

1.9mm Round Subminiature “Yoke” Lead Infrared LED

IR95-21C/TR9

Features

- Small double-end package
- High reliability
- Low forward voltage
- Good spectral matching to Si photo-detector

Descriptions

IR95-21C/TR9 is an infrared emitting diode in miniature SMD package which is molded in a water clear plastic with spherical top view lens. The device is spectrally matched with silicon photodiode and phototransistor.

Applications

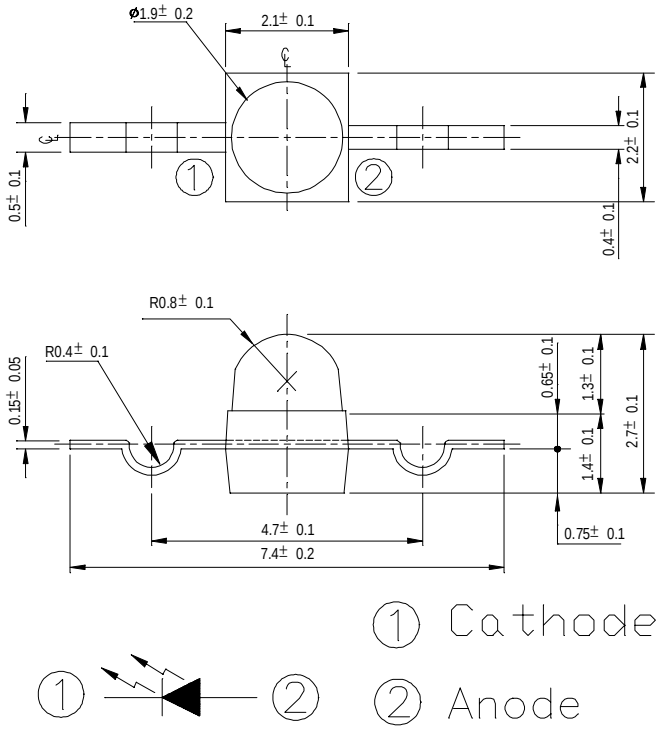
- PCB mounted infrared sensor
- Infrared emitting for miniature light barrier
- Floppy disk drive
- Printer

Device Selection Guide

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

Device No:DTR-095-054

Package Dimensions



Notes: 1.All dimensions are in millimeters
2.Tolerances unless dimensions ± 0.1mm

Absolute Maximum Ratings (Ta=25℃)

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	℃
Storage Temperature	T_{stg}	-40 ~ +85	℃
Soldering Temperature	T_{sol}	260	℃
Power Dissipation at(or below) 25℃ Free Air Temperature	P_d	130	mW

Notes: *1:I_{FP} Conditions--Pulse Width≦100 μ s and Duty≦1%.
*2:Soldering time≦5 seconds.

Device No:DTR-095-054

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	E_e	I_F=20mA	3.0	5.0	--	mW/sr
		I_F=100mA Pulse Width≦100 μs and Duty≦1%	--	25	--	
		I_F=1A Pulse Width≦100 μs and Duty≦1%	--	250	--	
Peak Wavelength	λp	I_F=20mA	--	940	--	nm
Spectral Bandwidth	Δλ	I_F=20mA	--	45	--	nm
Forward Voltage	V_F	I_F=20mA	--	1.2	1.5	V
		I_F=100mA Pulse Width≦100 μs and Duty≦1%	--	1.4	1.8	
		I_F=1A Pulse Width≦100 μs and Duty≦1%	--	2.6	4.0	
Reverse Current	I_R	V_R=5V	--	--	10	μA
View Angle	2θ1/2	I_F=20mA	--	25	--	deg

Intensity Specifications for Bin Grading

Rank	Test Condition	Min	Max	Unit
J	I_F=20mA	3.0	4.5	mW/sr
K		4.0	6.0	
L		5.0	7.5	
M		6.0	9.0	
N		7.0	10.5	
P		8.0	12.0	
Q		9.0	13.5	
R		10.0	15.0	
S		11.0	16.5	
T		12.0	18.0	

Device No:DTR-095-054

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

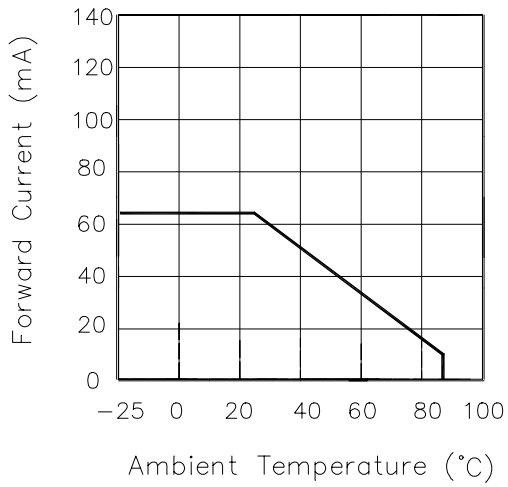


Fig.2 Spectral Distribution

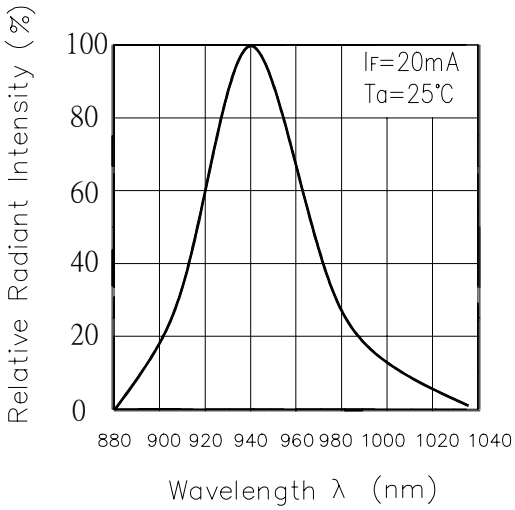


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

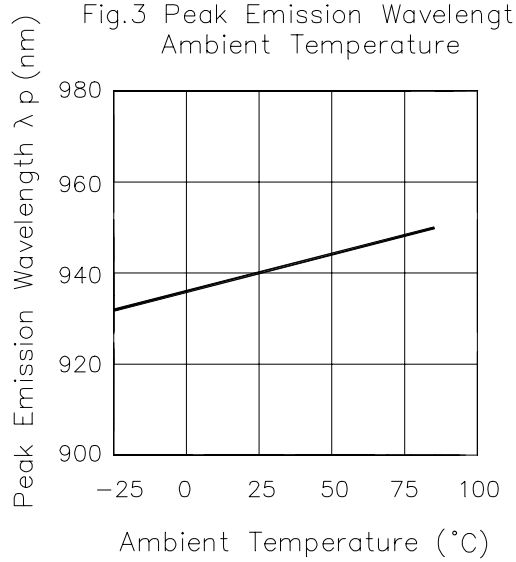
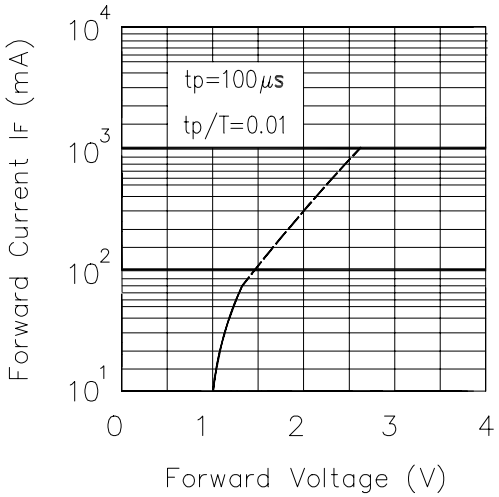


Fig.4 Forward Current vs. Forward Voltage



Device No:DTR-095-054

Typical Electro-Optical Characteristics Curves

Fig.5 Relative Intensity vs. Forward Current

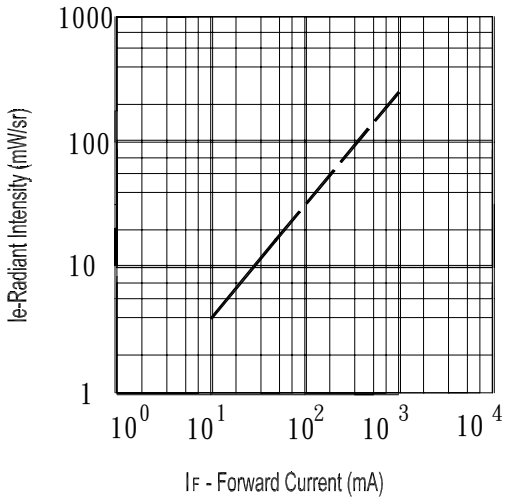


Fig.6 Relative Radiant Intensity vs. Angular Displacement

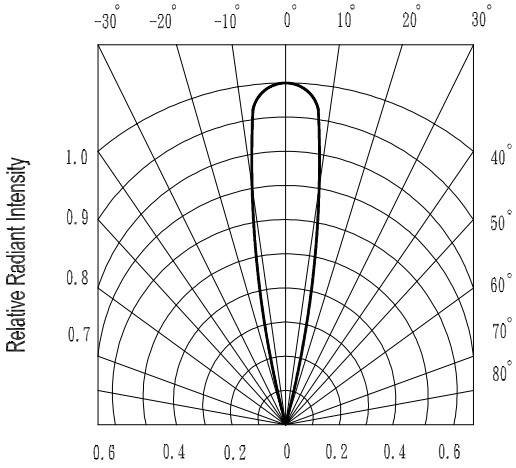


Fig.7 Relative Intensity vs. Ambient Temperature (° C)

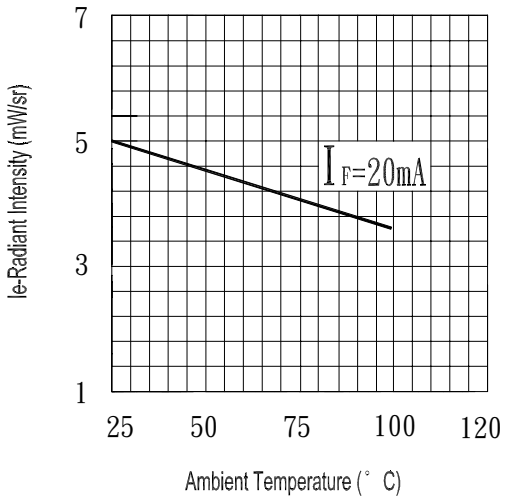
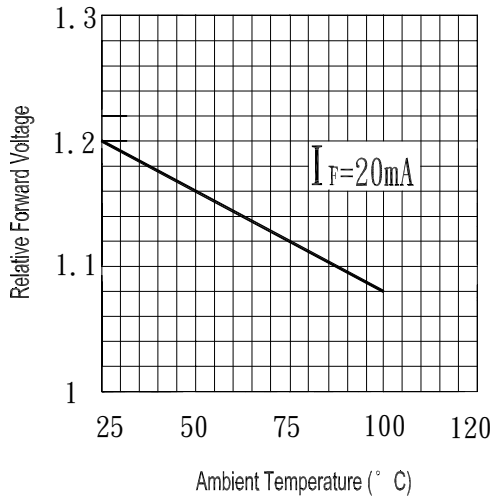


Fig.8 Forward Current vs. Ambient Temperature (° C)



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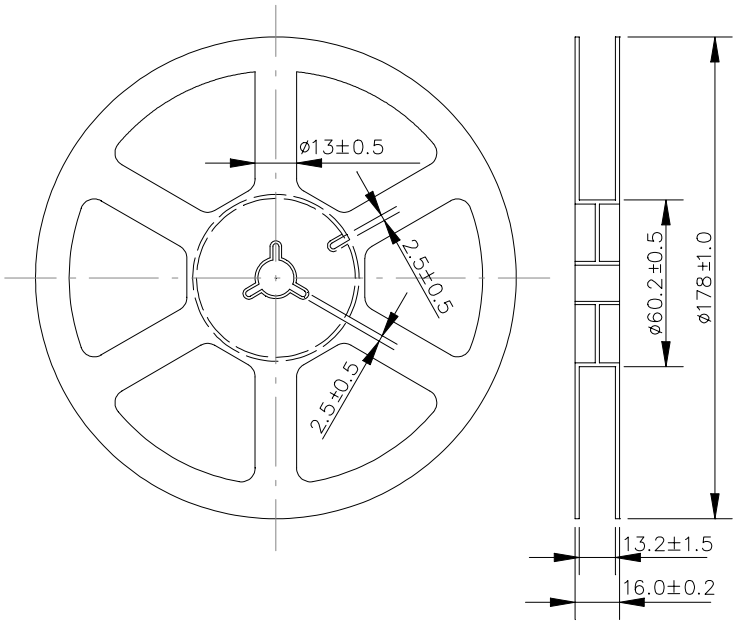
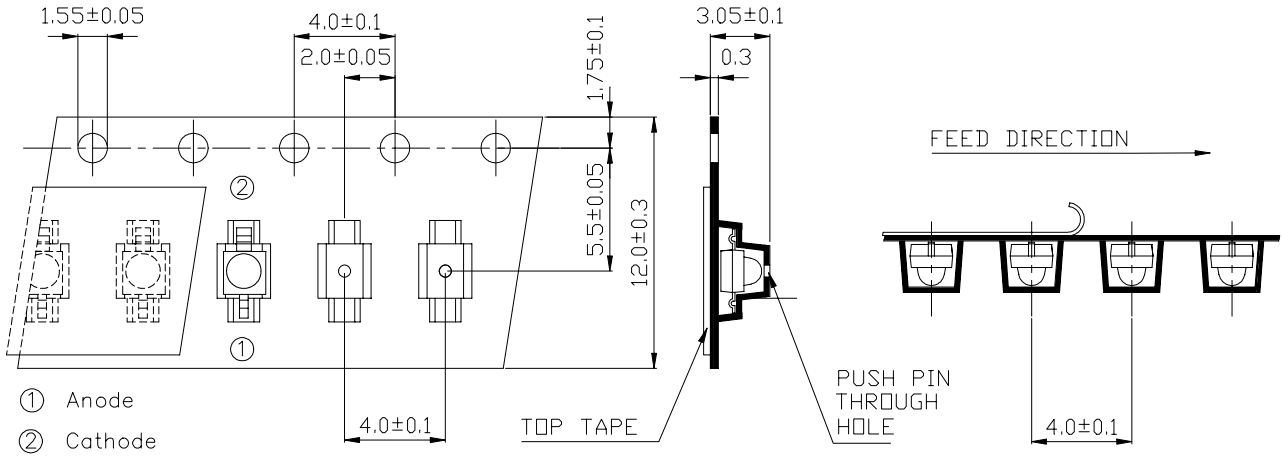
Package Dimensions



Loaded Quantity Per Reel 1000PCS/Reel



Unit：mm

Device No:DTR-095-054

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℃± 5℃ 5secs	6mins	22pcs	More than 90% of lead to be covered by soldering	0/1
2	Temperature Cycle	H : +85℃ 30mins ↕ 5mins L : -55℃ 30mins	50Cycle	22pcs	I_R≧U× 2 Ee≦L× 0.8 V_F≧U× 1.2 U：Upper Specification Limit L：Lower Specification Limit	0/1
3	Thermal Shock	H :+100℃ 5mins ↕ 10secs L :-10℃ 5mins	50Cycle	22pcs		0/1
4	High Temperature Storage	TEMP.：+100℃	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP.：-55℃	1000hrs	22pcs		0/1
6	DC Operating Life	I_F=20mA	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85℃ / 85% R.H	1000hrs	22pcs		0/1

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