



## INFRARED EMITTING DIODE

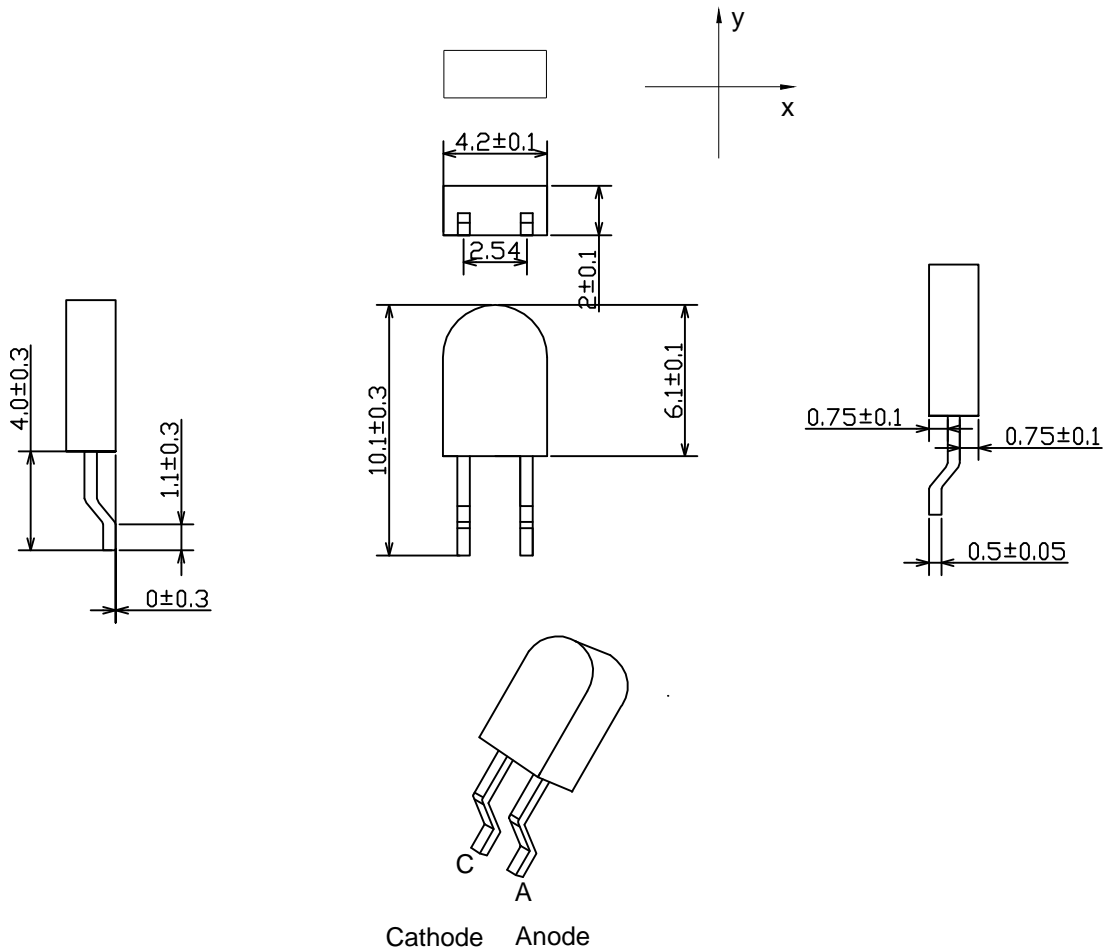
PATR NO. : CIL-78CC2-017-Z

### Features

- | High reliability and high radiant intensity
- | Suitable for DC and high pulse current operation
- | 2.54mm Lead spacing ,radiation angle : 75 °
- | Peak wavelenth 940 nm
- | Good spectral matching to si-photodetector
- | This product itself will remain within RoHS compliant version.
- | ESD capacity:>5KV



### Package Dimensions Unit : mm



### Notes :

- 1、 All dimensions are in millimeters
2. Protruded resin under flange is 1.5 mm max.
3. Tolerance is  $\pm 0.25$  mm unless otherwise noted.



### Device Selection Guide

Lens	Chip Material
Water clear	GaAs /AlGaAs

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

Parameter	Maximum Rating	Unit
Power Dissipation	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	0.8	A
Continuous Forward Current	80	mA
Reverse Voltage	5	V
Operating Temperature Range	-25°C to +80 °C	
Storage Temperature Range	-35°C to +85 °C	
Lead Soldering Temperature(1.6mm From Body)	260°C for 5 seconds	
Lead Soldering Temperature(5mm From Body)	350°C for 3 seconds	

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

Parameter	Test Conditions	Symbol	Min.	Typ .	Max.	Unit
Radiant Intensity	I <sub>F</sub> =20mA	I <sub>e</sub>	---	3.0	---	mW/sr
	I <sub>F</sub> =300mA	I <sub>e</sub>	---	40	---	mW/sr
Forward Voltage	I <sub>F</sub> =50mA	V <sub>F</sub>	---	1.30	1.8	V
	I <sub>F</sub> =300mA	V <sub>F</sub>	---	1.65	2.0	V
Reverse Current	V <sub>R</sub> =5V	I <sub>R</sub>	---	---	100	μA
Peak Wavelength	I <sub>F</sub> =20mA	λ <sub>p</sub>	---	940	---	nm
Spectral Bandwidth	I <sub>F</sub> =20mA	Δλ	---	50	---	nm
View Angle X	I <sub>F</sub> =20mA	2θ <sub>1/2</sub>	60	75	90	deg .
View Angle Y	I <sub>F</sub> =20mA	2θ <sub>1/2</sub>				deg .
Optical Rise Time	I <sub>F</sub> =20mA	2θ <sub>1/2</sub>	---	---	2	μS
Optical Fall Time	I <sub>F</sub> =20mA	2θ <sub>1/2</sub>	---	---	2	μS



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### Typical Optical-Electrical Characteristic Curves

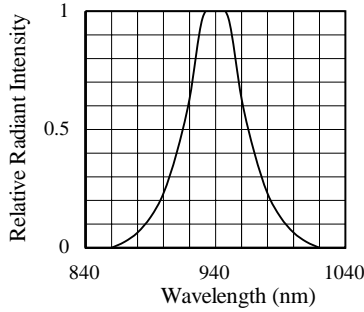


FIG.1 SPECTRAL DISTRIBUTION

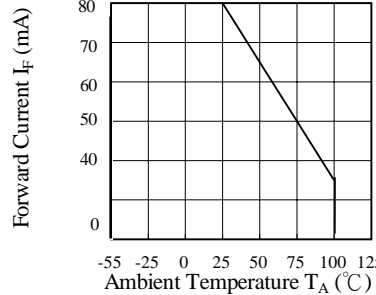


FIG.2 FORWARD CURRENT VS. AMBIENT TEMPERATURE

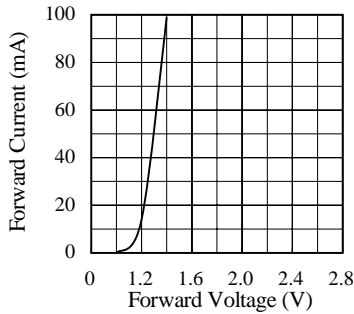


FIG.3 FORWARD CURRENT VS. FORWARD VOLTAGE

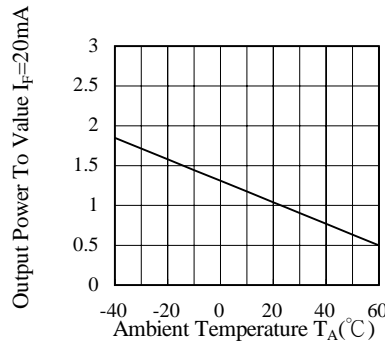


FIG.4 RELATIVE RADIANT INTENSITY VS. AMBIENT TEMPERATURE

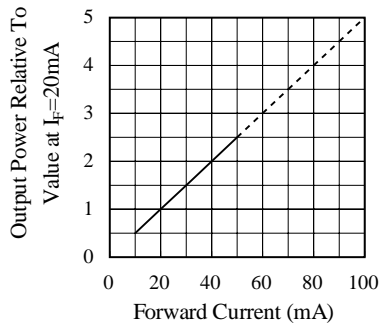


FIG.5 RELATIVE RADIANT INTENSITY VS. FORWARD CURRENT

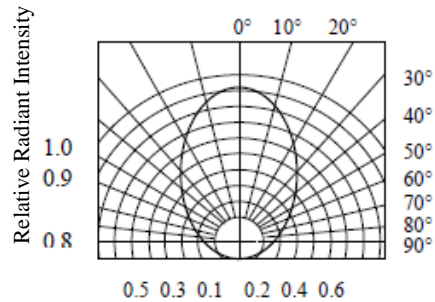


FIG.6 RADIATION DIAGRAM



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### Reliability test items and test conditions

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

Confidence level : 90%

LTPD (group of permitted defect rate): 10%

No.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Ac/Re	Reference Standard
1	REFLOW Soldering	Temp. : 260 ±5	5secs	22PCS	0/1	JEITA ED-4701 300 302
2	Temperature Cycle	H : +100 15min ~ 5 min L : -40 15min	100Cycles	22PCS	0/1	JEITA ED-4701 100 305
3	Thermal Shock	H : +100 5min ~ 10 sec L : -10 5min	100Cycles	22PCS	0/1	MIL-STD-202G
4	High Temperature Storage	Temp. : 100	1000Hrs	22PCS	0/1	JEITA ED-4701 200 201
5	Low Temperature Storage	Temp. : -40	1000Hrs	22PCS	0/1	JEITA ED-4701 200 202
6	DC Operating Life	IF = 50 mA	1000Hrs	22PCS	0/1	Tested with CGX standard
7	High Temperature/ High Humidity	85 %RH85%	1000Hrs	22PCS	0/1	JEITA ED-4701 100 103

Notes : Failure Judgement Criteria : IR U×2 Ie L×0.8 VF U×1.2

U : Upper Specification Limit L : Lower Specification Limit