

Features

- P-LCC-2 package.
- Peak wavelength: $\lambda_p = 940\text{nm}$
- High radiant intensity
- Low forward voltage
- The product itself will remain within RoHS compliant version



Descriptions

AT20S-14-01 is an infrared 940 nm emitting diode with high radiant power and high speed, molded in a clear plastic package

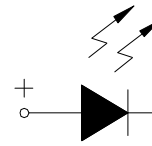
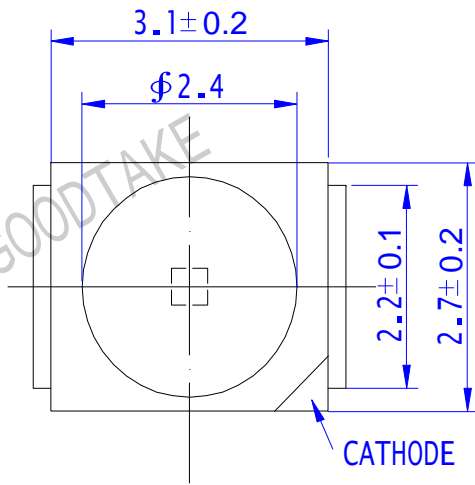
Applications

- Infrared light Source in the Near Infrared Remote Control System.

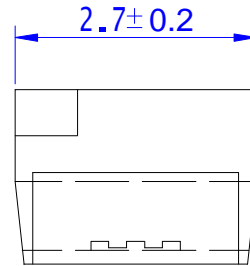
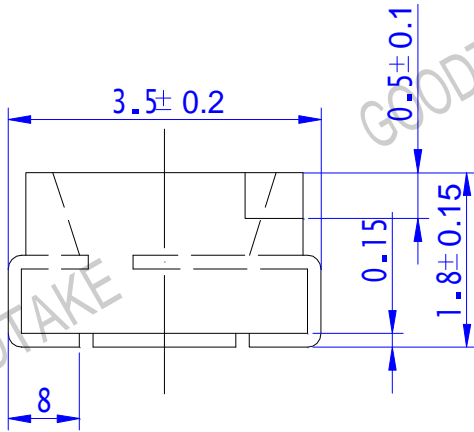
Device Selection Guide

Material	Resin (mold)	Emitted Color
InGaN	Epoxy	Infrared Light

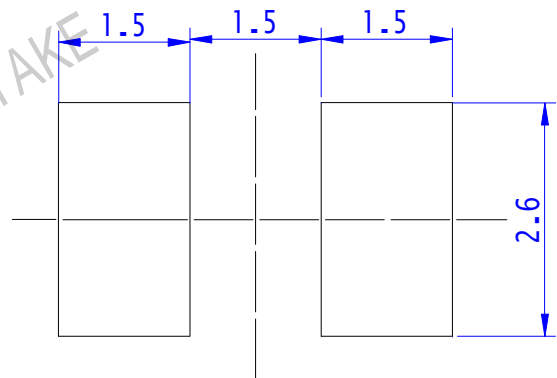
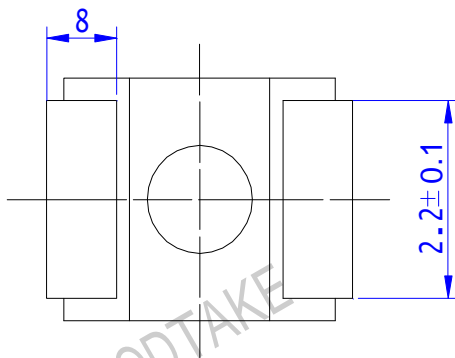
Package Dimensions



Polarity



For reflow soldering (Proposal)



Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit = mm

Absolute Maximum Rating (Ta=25°C)

Item	Symbol	Condition	Absolute Maximum Rating	Unit
Forward Current	I _F		100	mA
Pulse Forward Current	I _{FP}	Duty1/10 @1Khz)	1	A
Reverse Voltage	V _R		5	V
Power Dissipation	P _D		145	mW
Operating Temperature	T _{opr}		-40~+85	°C
Storage Temperature	T _{stg}		-55~+100	°C
Electrostatic Discharge	E _{SD}		2000 (HBM)	V
Lead Soldering Temperature	T _{sol}		260°C for 10 seconds	

Electrical and Optical Characteristics at (Ta=25°C)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITON
Radiant Intensity	E _e	--	3.3	--	mw/sr	I _F =20mA
		--	12.6	20	mw/sr	I _F =100mA
Radiant Power	E _e		40		mw	I _F =100mA T _p =20ms
Peak emission wavelength	λ _{peak}		940		nm	I _F =20mA
Spectral line half-width	Δλ		40		nm	I _F =50mA
Forward voltage	V _F	--	1.20	1.4	V	I _F =20mA
		1.20	1.37	--	V	I _F =100mA
Rise Time	T _f		15		ns	I _F =100Ma 20%to80%
Fall Time	T _f		15		ns	F=100Ma 20%to80%
Reverse current	I _R			10	μA	V _R =5V
Viewing angle	θ _{1/2}		120		Deg	I _F =20mA

Typical Characteristics

Tamb = 25 °C, unless otherwise specified

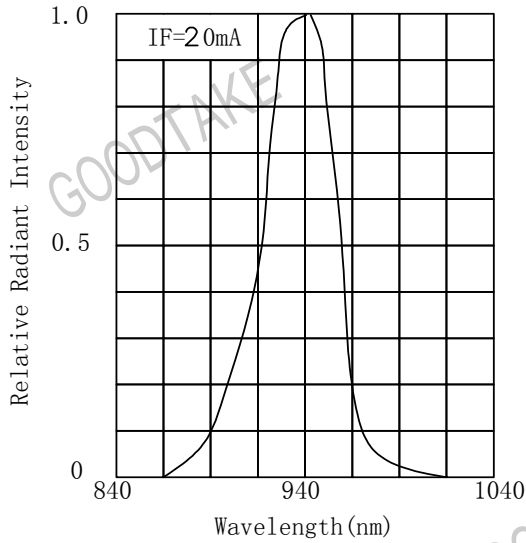


Fig. 1 Spectral Distribution

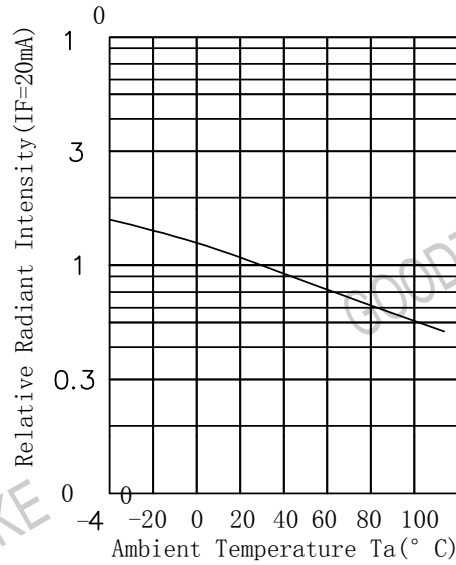


Fig. 2 Relative Radiant Intensity Vs Ambient Temperature

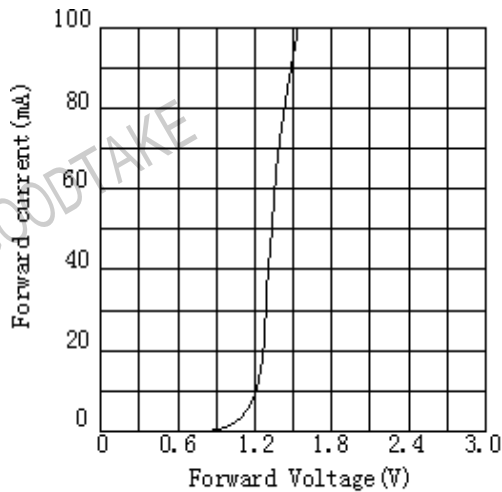


Fig. 3 Forward Current Vs Forward Voltage

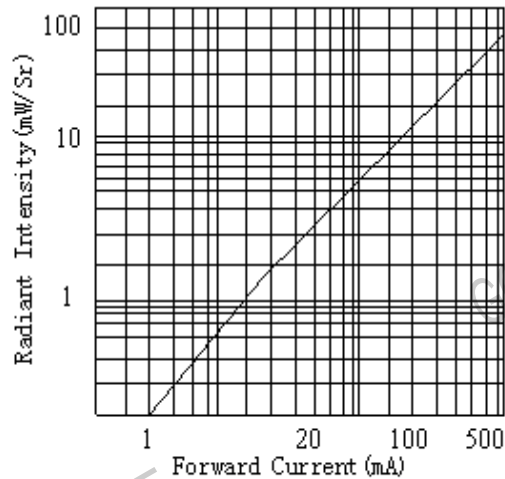


Fig. 4 Forward Current Vs Radiant Intensity

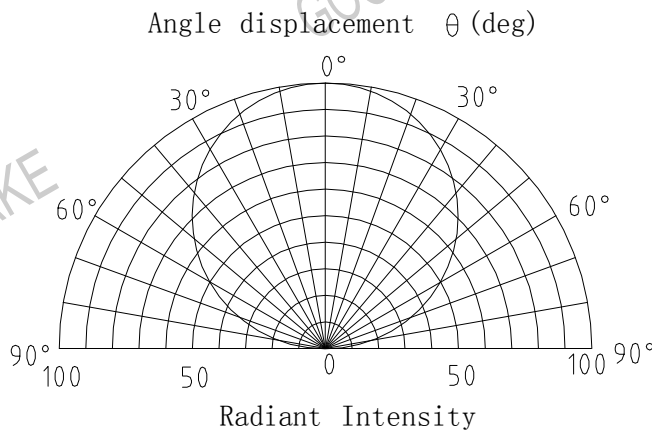


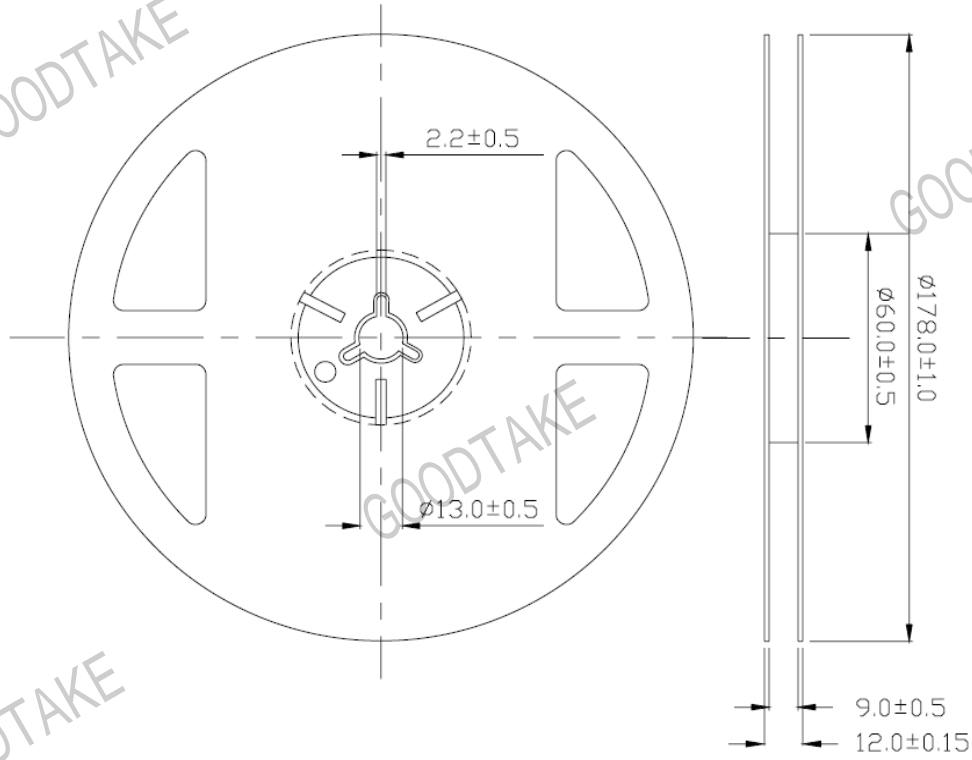
Fig. 5 Angle Vs Radiant Intensity

Test items and results of reliability

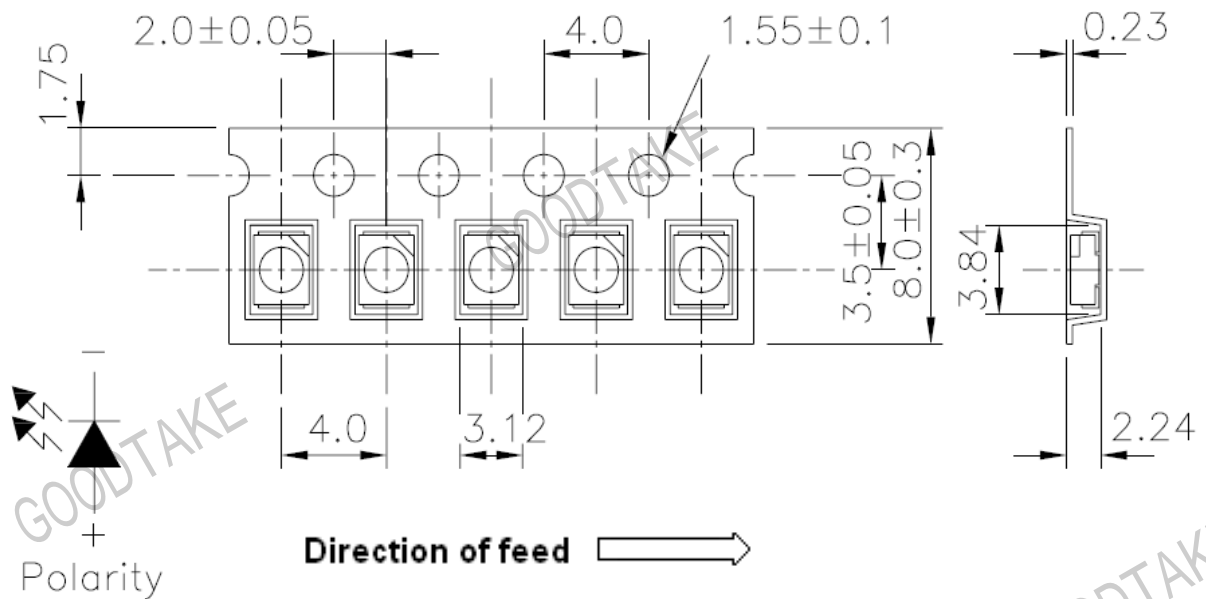
NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Reflow	TEMP: 260±5°C Min. 5sec.	6 MIN.	22 PCS	0/1
2	Temperature Cycle	H: +100°C 15min ↓ 5 min L: -40°C 15min	300 CYCLES	22 PCS	0/1
3	Thermal Shock	H: +100°C 5min ↓ 10 sec L: -10°C 5min	300 CYCLES	22 PCS	0/1
4	High Temperature Storage	TEMP: 100°C	1000 HRS	22 PCS	0/1
5	Low Temperature Storage	TEMP: -55°C	1000 HRS	22 PCS	0/1
6	DC Operating Life	I _F = 20 mA / 25°C	1000 HRS	22 PCS	0/1
7	High Temperature / High Humidity	85°C / 85%RH	1000 HRS	22 PCS	0/1

Taping Specification

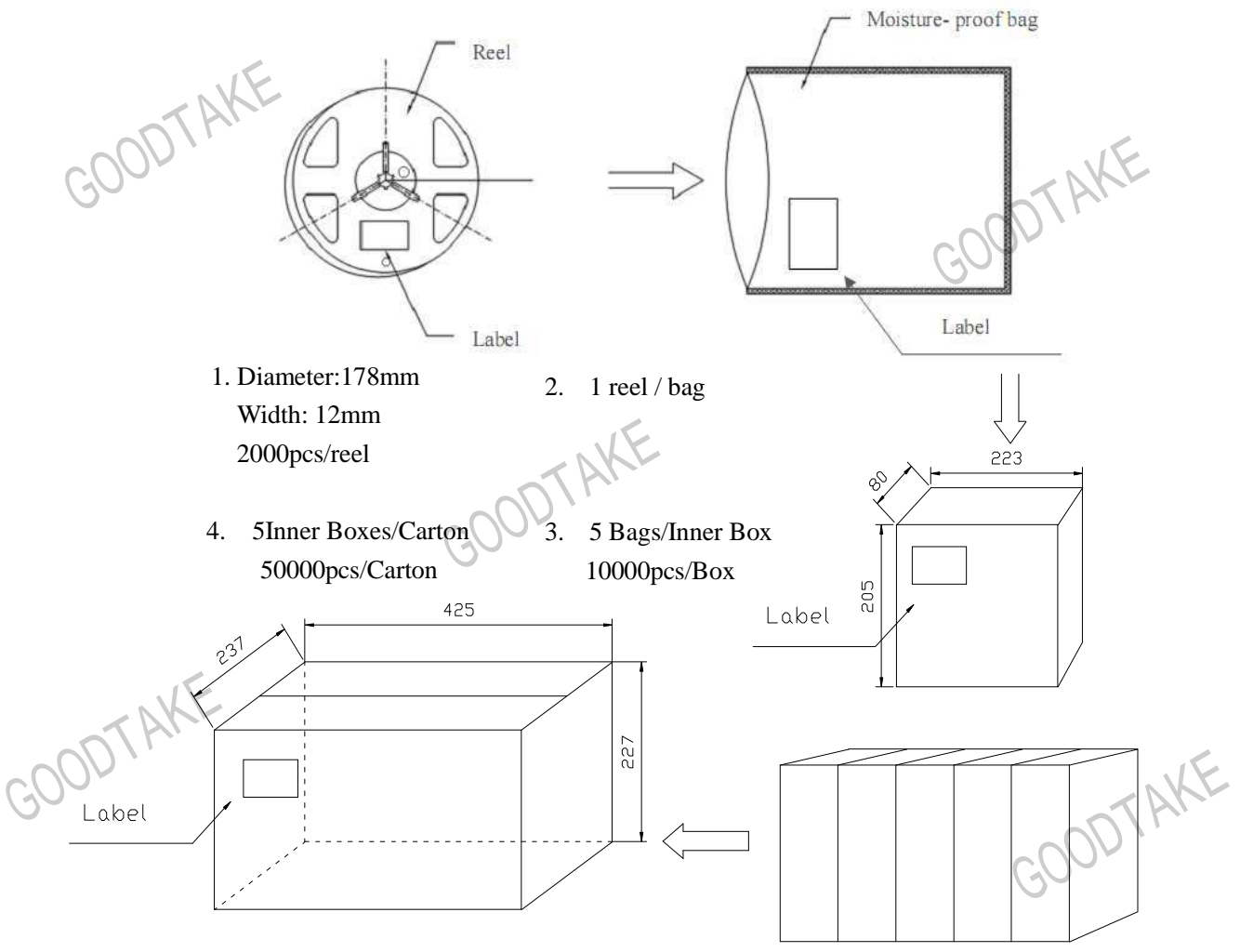
(1) Shape and dimensions of reels: unit in mm



(2) Dimensions of tape

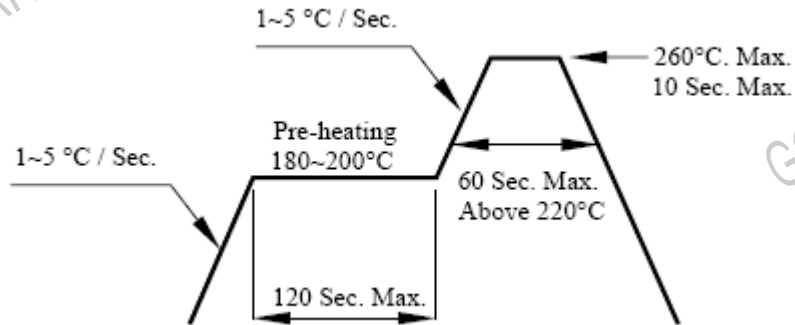


Packing Information



Soldering Condition

1. Pb-free solder temperature profile



2. Reflow soldering should not be done more than two times.
3. When soldering, do not put stress on the LEDs during heating.
4. After soldering, do not warp the circuit board.

Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.