

Infrared Light Emitting Diode

1. GENERAL DESCRIPTION

GT-E243A01-TT/TR is a high power Infrared Emitting Diode in AlGaAs/GaAs technology & wavelength of 940nm. Molded in clear epoxy (with lens) SMD package, with the advantages of fast response time, high radiant intensity, long life and high reliability etc. It is widely used in Infrared Remote Control System or IR Touch Panel as Infrared light Source .

2. FEATURES

- Good linearity
- High output power
- Capable of pulse operation.
- Floor life: 72hours, MSL 4, acc. J-STD-020
- RoHS compliant and satisfy the environmental law and regulation requirements of customers

3. APPLICATIONS

- Emitter for remote control.
- IR touch panels.
- Photo-interrupters
- Optical switch

4. ABSOLUTE MAXIMUM RATINGS at Ta = 25°C

PARAMETER	MAXIMUM RATING	UNIT
Power Dissipation	150	mW
Peak Forward Current (tp=25μs)	1.0	A
Continuous Forward Current	100	mA
Reverse Voltage	5	V
Operating Temperature Range	-25to +85	°C
Storage Temperature Range	-40 to +100	°C
Terminal Soldering Temperature	260 for 5seconds	°C

5. ELECTRICAL OPTICAL CHARACTERISTICS (at Ta = 25°C)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITION
Radiant Intensity	Ee	10	16	-	mw/sr	I _F = 20mA
Peak Emission Wavelength	λ _{peak}	-	940	-	nm	I _F = 20mA
Spectral Line Half-Width	Δλ	-	40	-	nm	I _F = 20mA
Forward Voltage	V _F	-	1.2	1.4	V	I _F = 20mA
		-	1.4	1.6	V	I _F = 100mA Pulse Width ≅ 100 μs, Duty ≅ 1%
		-	2.6	4	V	I _F = 1A Pulse Width ≅ 100 μs, Duty ≅ 1%.
Reverse Current	I _R	-	-	10	μA	V _R = 5V
Angle of half intensity	2θ/2	25	30	-	Deg	I _F = 20mA

6. TYPICAL CHARACTERISTICS (Ta = 25°C Unless Otherwise Noted)

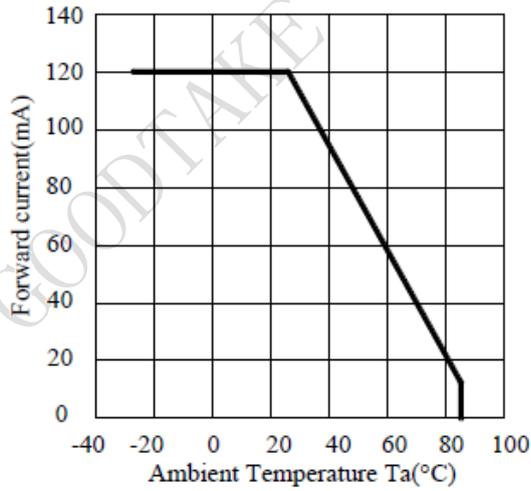


Fig.1 Forward Current Vs Ambient Temperature

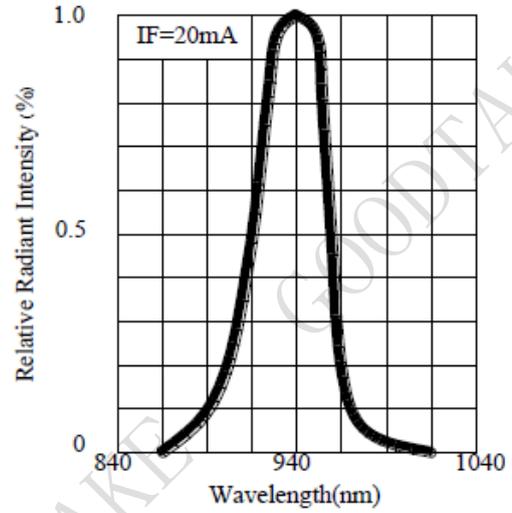


Fig.2 Spectral Distribution

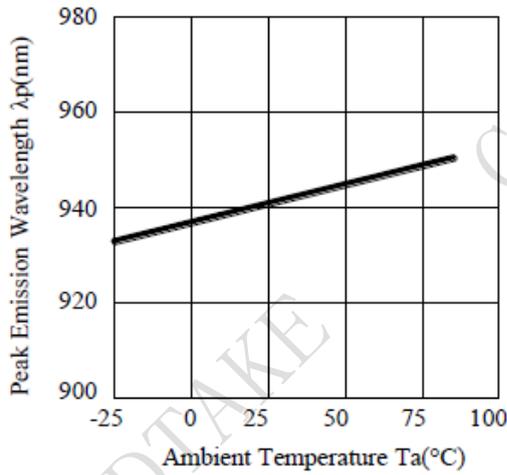


Fig.3 Peak Emission Wavelength Vs Ambient Temperature

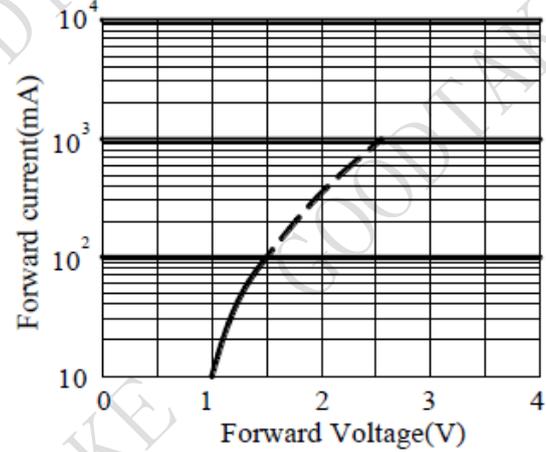


Fig.4 Forward Current Vs Forward Voltage

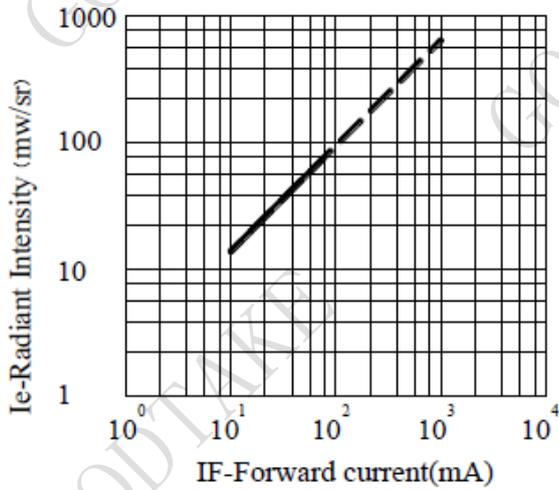


Fig.5 Forward Current Vs Radiant Intensity

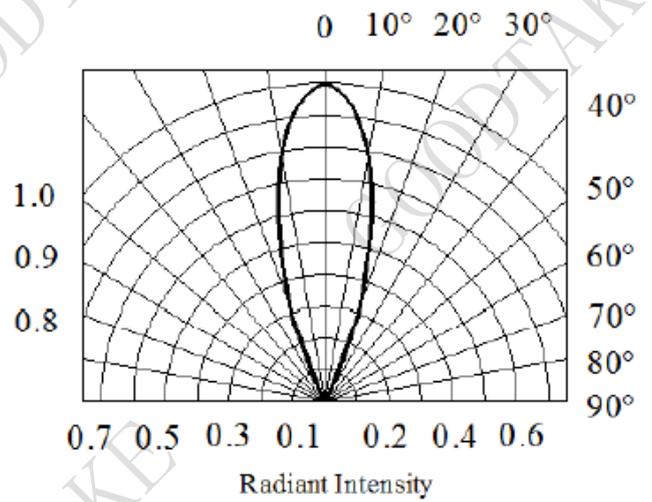
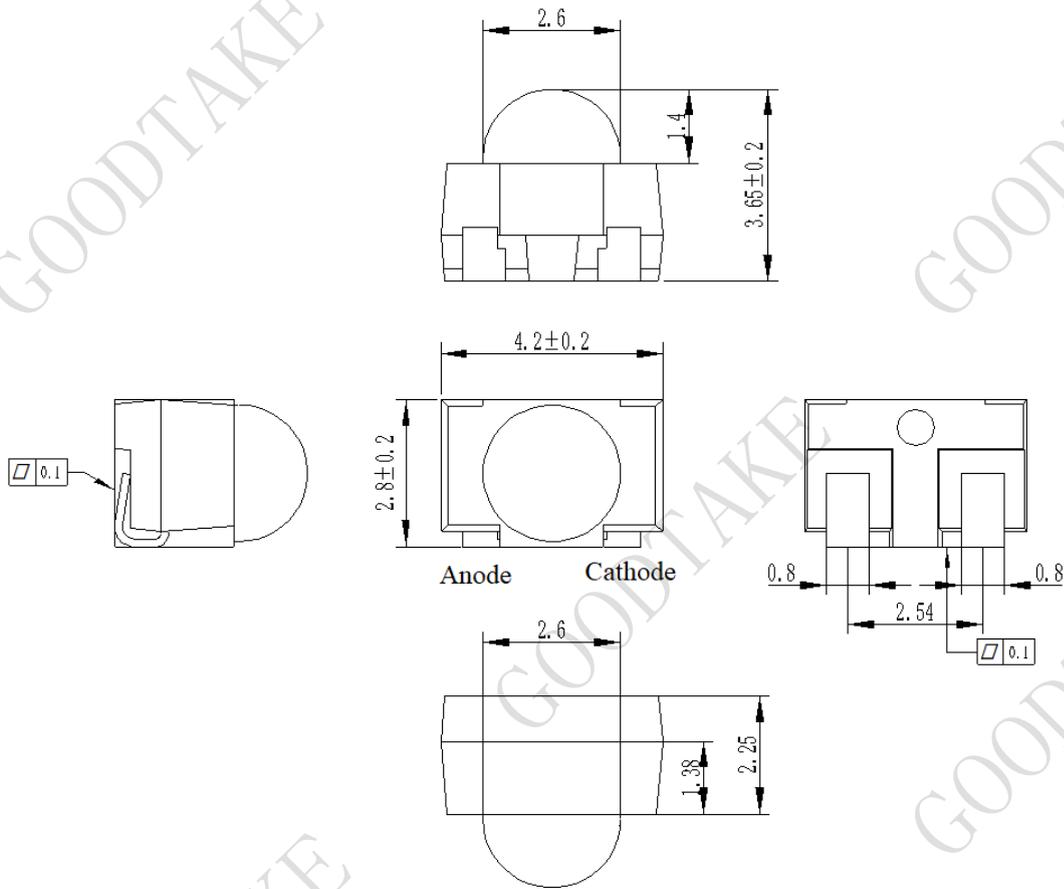


Fig.6 Angle Vs Radiant Intensity

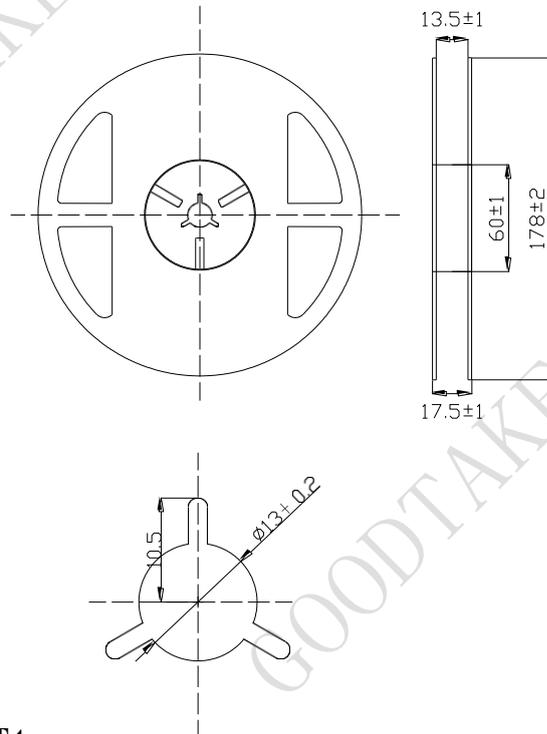
7. PACKAGE DIMENSIONS



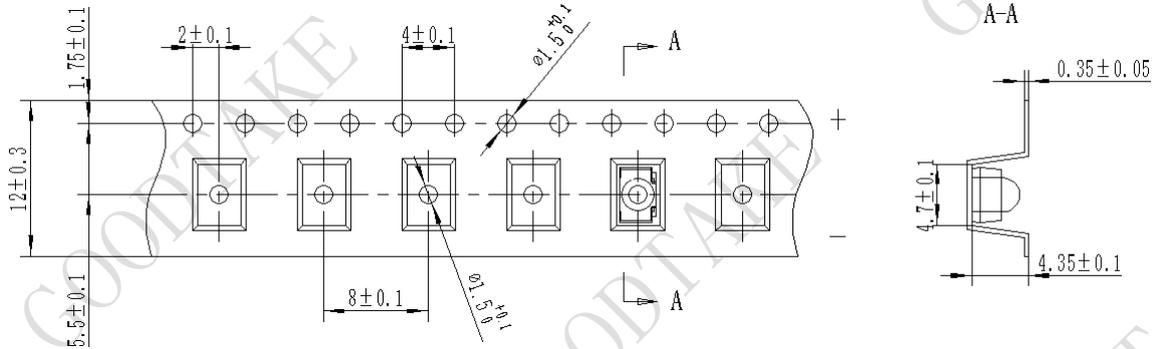
- 1. All dimensions are in millimeters
- 2. Tolerance is ±0.15 unless otherwise noted

8. PACKAGE DIMENSIONS

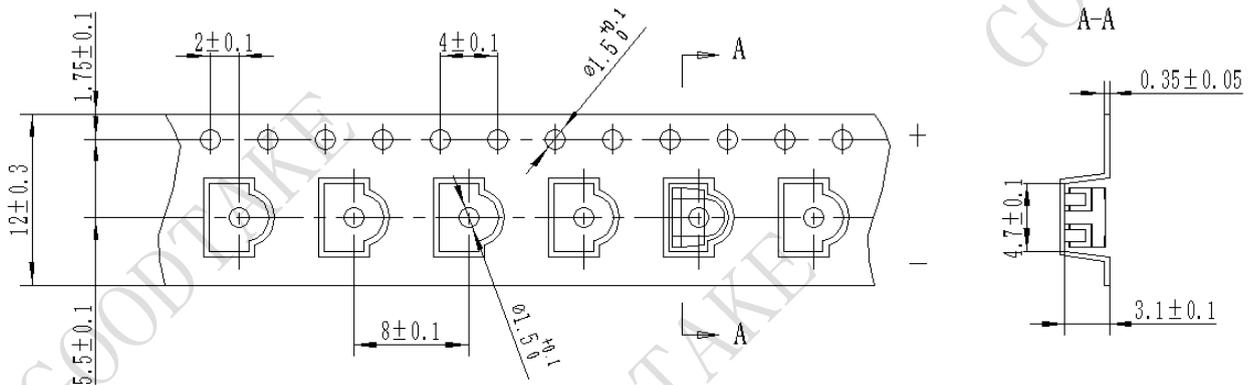
(1) Shape and dimensions of reels: unit in mm



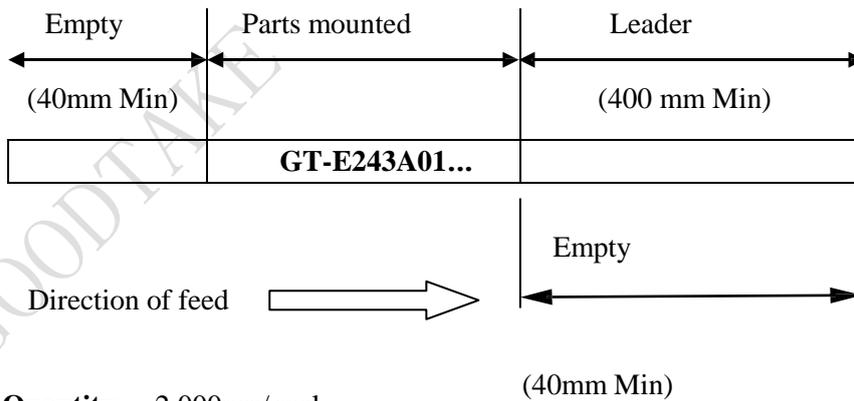
(2) Dimensions of TT tape:



(3) Dimensions of TR tape:

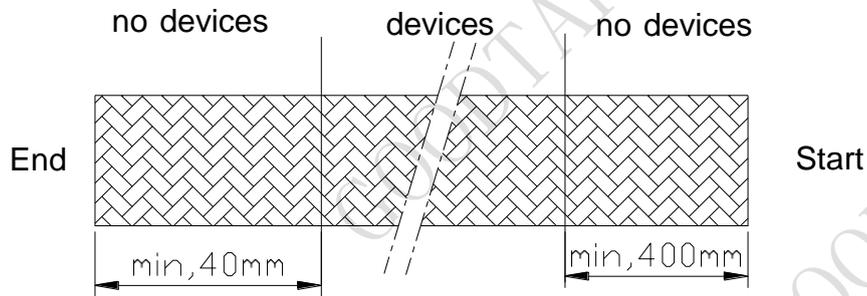


(4) Configuration of tape



(5) Quantity: 2,000pcs/ reel

Leader And Trailer Dimensions



Antistatic dry packing

Opto devices in SMD package may be sensitive to moisture. Devices are taped & reeled, sealed in antistatic bag with silica gel desiccants.

Do not open the sealed moisture-proof bag before ready to use. If sealing is void, baking treatment may be required.

Storage

Shelf life – Devices should be stored in its original packing, in a controlled environment of temperature less than 40 °C and relative humidity below 90%.

Suggested shelf life is 12 months in its original packing.

Floor life – After opening of the sealed package, the reeled devices should be consumed within 72 hours, in a controlled environment condition of $T_{amb} < 30\text{ °C}$, $RH = < 60\%$.

Remaining unused parts should be stored in Dry Box chamber.

Drying (Baking Process)

If original packing is voided (such as faded silica gel or exceeded storage time), baking treatment should be performed with the following conditions:- $T_{storage} = 40 + 5\text{ °C}$, $RH < 5\%$, $time = 192\text{ hours}$.