

TOSHIBA**TLR1002(ZD)**

TOSHIBA LED LAMP GaP RED LIGHT EMISSION

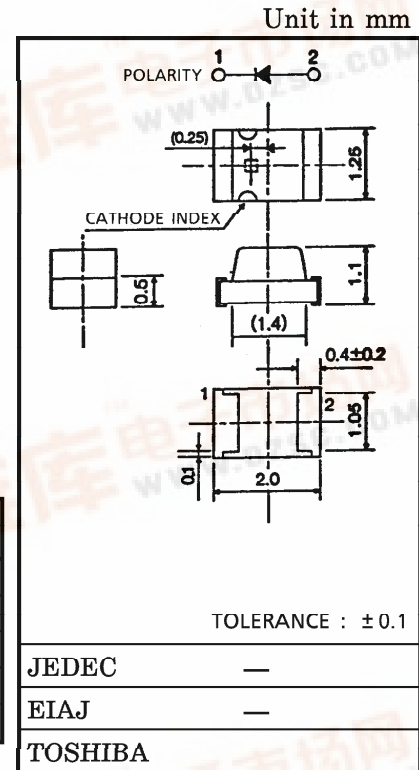
TLR1002(ZD)

LED SURFACE MOUNT DEVICE

- 2.0 (L)×1.25 (W)×1.1 (H) mm Size
Small Package-High Density Mounting is Available
- Available of Automounting Machine Use
- Reflow Soldering is Applicable
- Low Drive Current (10 μ A), Stable Forward Voltage (1.65V)
Recommended Forward Current : I_F=10 μ A (DC)
- Applications : Solar Battery Equipment etc.

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current (DC)	I _F	25	mA
Reverse Voltage	V _R	4	V
Power Dissipation	P _D	70	mW
Operating Temperature Range	T _{opr}	-25~80	°C
Storage Temperature Range	T _{stg}	-30~85	°C



Weight : 2mg

ELECTRO-OPTICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Voltage	V _F	I _F = 10 μ A	1.53	1.65	1.73	V
	V _F	I _F = 1mA	1.7	1.8	1.9	V
Reverse Current	I _R	V _R = 4V	—	—	5	μ A
Luminous Intensity	I _V	I _F = 10mA	—	0.8	—	mcd
Peak Emission Wave Length	λ _P	I _F = 10mA	—	700	—	nm
Spectral Line Half Width	$\Delta\lambda$	I _F = 10mA	—	100	—	nm

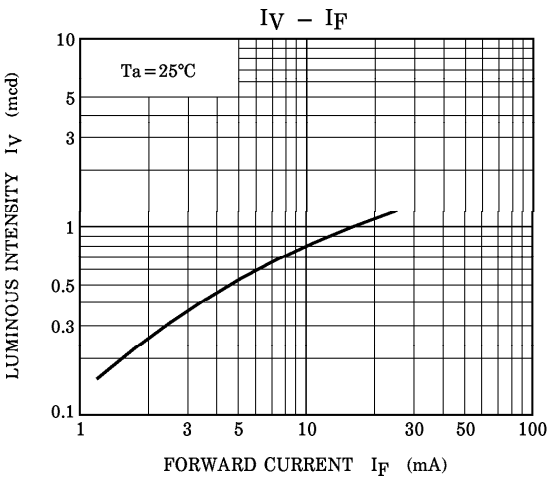
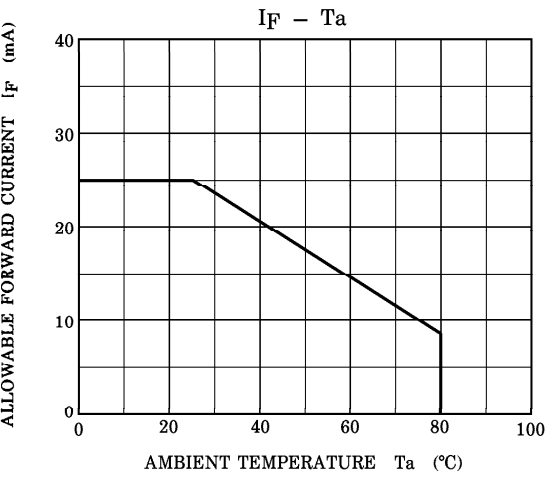
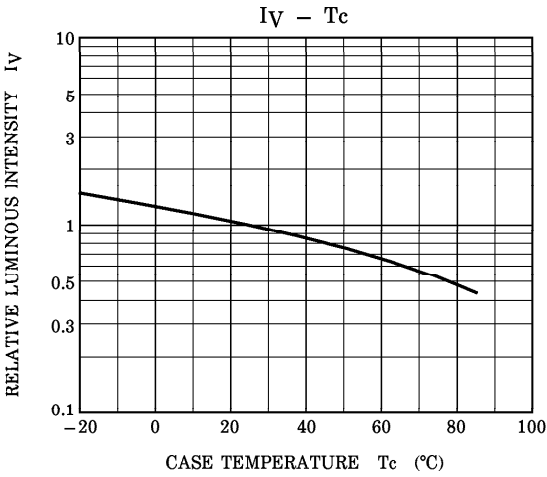
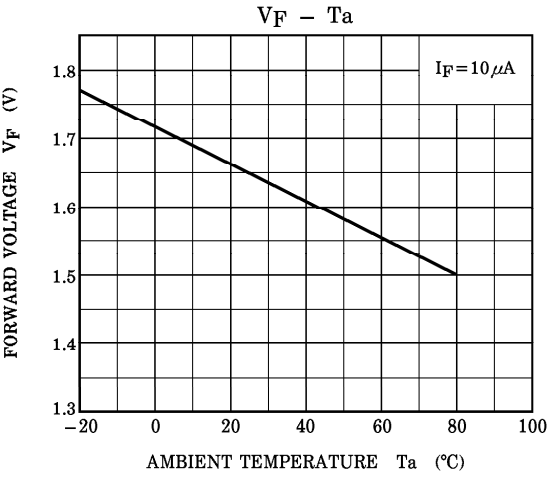
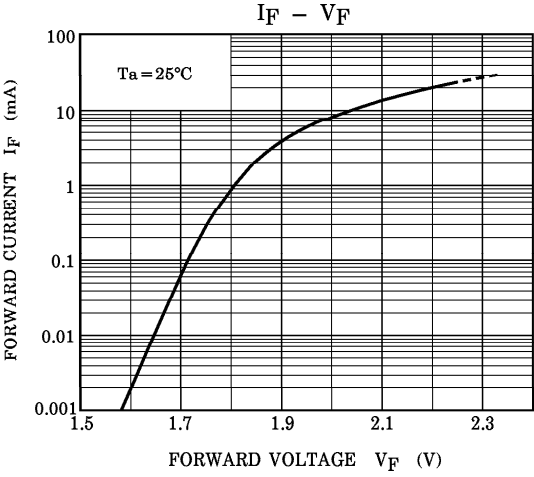
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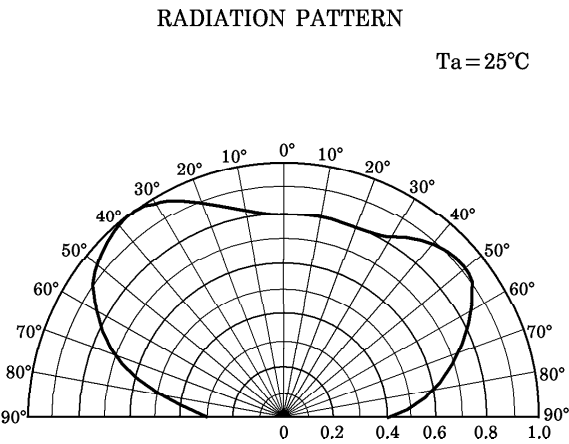
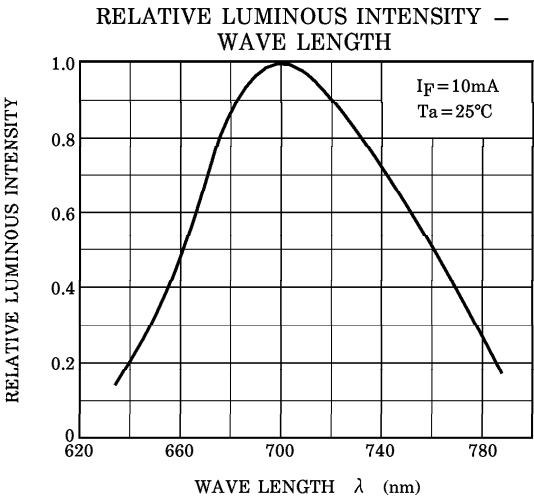
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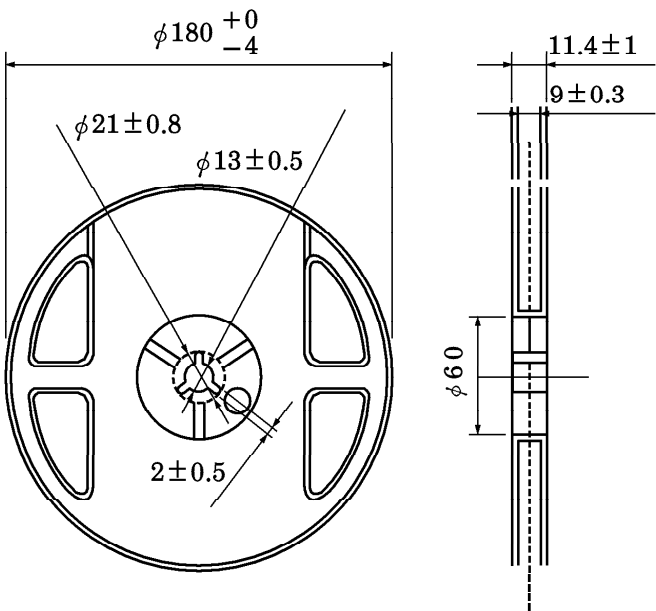






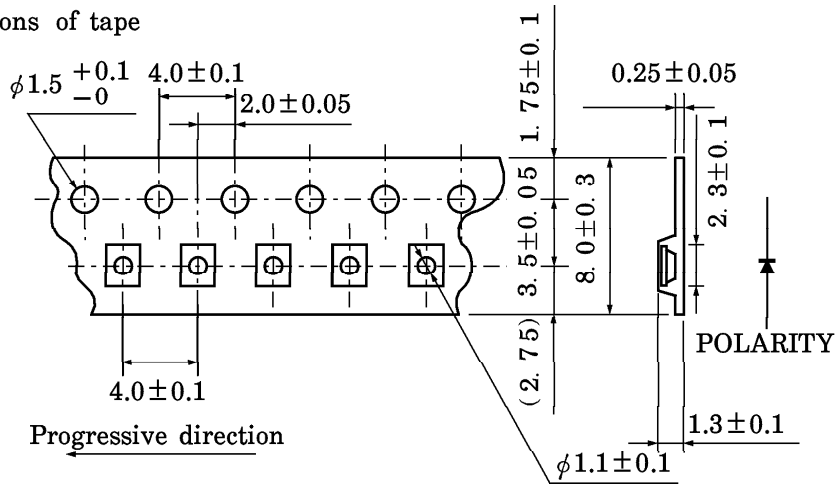
TAPING SPECIFICATIONS :

Dimensions of reel



Unit : mm

Dimensions of tape



(START)

(END)

Leading part			
150-360mm	over 40mm	LEDs	over 40mm

Loaded quantity per reel 3000pcs

Packaging

These LED devices are packed in an aluminum envelope with silica-gel to avoid moisture absorption. The optical characteristics may be affected by exposure to moisture in the air prior to soldering and storage at the following condition is recommended :

Temperature : 5~30°C

Relative Humidity : 60% Maximum

Baking is required if the devices have been stored unopened for more than 6 months or if the aluminum envelope has been opened for more than 1 week.

Recommended baking condition is 60°C for more than 12 hours.

Precaution for mounting

Do not apply force to the plastic part of the LED in high temperature conditions.

Do not apply friction using a hard object or surface to avoid injuring the plastic part of the LED.

Avoid contact between the LED and any other parts when assembling the components into board.

SOLDERING

Reflow soldering

- * It is recommended to use a reflow furnace of the upper and lower heater type.
- * The temperature profile as shown Fig.1 is recommended for soldering LEDs by the reflow furnace.

Temperature profile

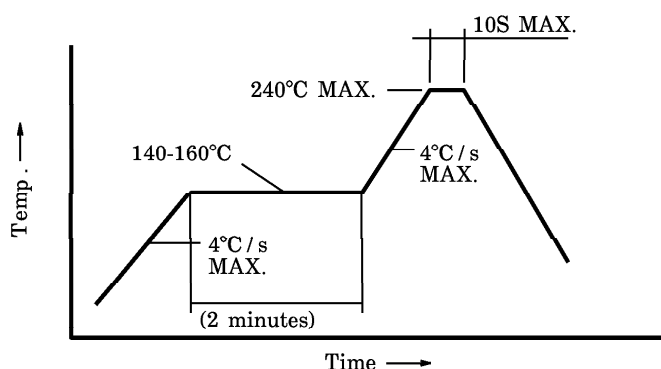
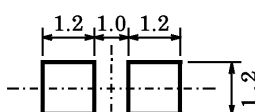


Fig.1

Recommended soldering pattern



Recommendations for manual soldering :

Soldering iron	: Less than 25W
Temperature	: Lower than 300°C
Time	: Within 3 seconds

Post solder cleaning :

When cleaning after soldering is needed, the following condition must be adhered to.

Cleaning solvents	: AK225 or Alcohol
Temperature	: 50°C (112°F) max. for 30 seconds or 30°C (86°F) max. for 3 minutes max.
Ultrasonic	: 300W max.