#### TOSHIBA InGaAlP LED

# TLRMH38TP, TLSH38TP, TLOH38TP, TLYH38TP

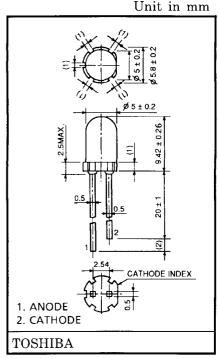
#### Panel Circuit Indicator

5 mm package

- InGaA\ellip P technology
- All plastic mold type
- Transparent lens
- Lineup: 3colors (red, orange, yellow)
- High intensity light emission
- Excellent low current light output
- Applications: Traffic signals, Safety equipment
- Stopper lead type is also available TLRMH38T, TLSH38T, TLOH38T, TLYH38T

## Line-up

Product Name	Color	Material		
TLRMH38TP	Red			
TLSH38TP	Red	InGaAℓP		
TLOH38TP	Orange	IIIGaAξF		
TLYH38TP	Yellow			



Weight: 0.31 g

## **Maximum Ratings (Ta = 25°C)**

Product Name	Forward Current I <sub>F</sub> (mA)	Reverse Voltage V <sub>R</sub> (V)	Power Dissipation P <sub>D</sub> (mW)	Operating Temperature T <sub>opr</sub> (°C)	Storage Temperature T <sub>stg</sub> (°C)
TLRMH38TP					
TLSH38TP	50	4	120	<b>−40~100</b>	−40~120
TLOH38TP			120	-40~100	<u>-40~120</u>
TLYH38TP					

TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or

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In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc..

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Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.

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# **Electrical and Optical Characteristics (Ta = 25°C)**

Product Name	Typ. Emission Wavelength			Luminous Intensity I <sub>V</sub>		Forward Voltage V <sub>F</sub>		Reverse Current I <sub>R</sub>				
	$\lambda_{d}$	λ <sub>P</sub>	Δλ	I <sub>F</sub>	Min	Тур.	I <sub>F</sub>	Тур.	Max	IF	Max	$V_{R}$
TLRMH38TP	626	(636)	13	20	1530	4800	20	1.9	2.4	20	50	4
TLSH38TP	613	(623)	13	20	2720	6500	20	2.0	2.4	20	50	4
TLOH38TP	605	(612)	13	20	2720	7500	20	2.0	2.4	20	50	4
TLYH38TP	587	(590)	13	20	2720	7000	20	2.0	2.4	20	50	4
Unit		nm		mA	m	cd	mA	\	/	mA	μΑ	V

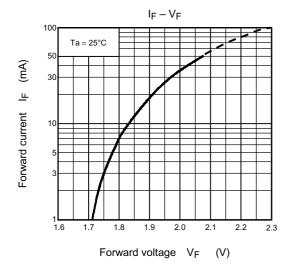
### **Precautions**

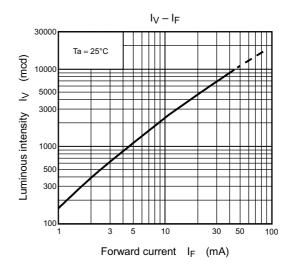
Please be careful of the following:

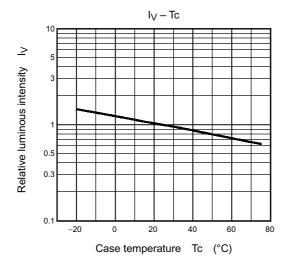
- Soldering temperature:  $260^{\circ}$ C max, soldering time: 3 s max (soldering portion of lead: up to 2 mm from the body of the device)
- If the lead is formed, the lead should be formed up to 5 mm from the body of the device without forming stress to the resin. Soldering should be performed after lead forming.
- This visible LED lamp also emits some IR light.

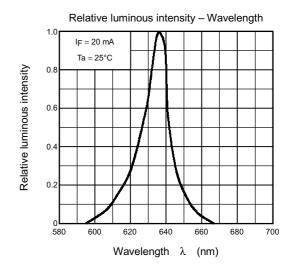
  If a photodetector is located near the LED lamp, please ensure that it will not be affected by this IR light.

#### **TLRMH38TP**

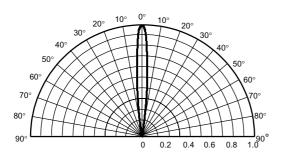


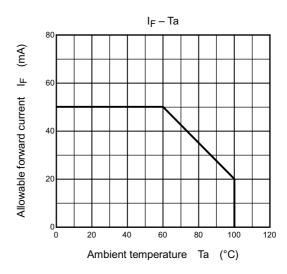




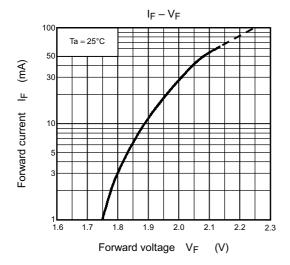


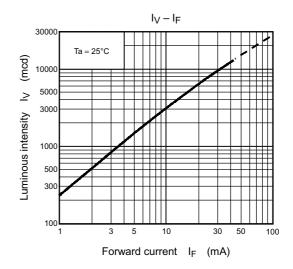
Radiation pattern

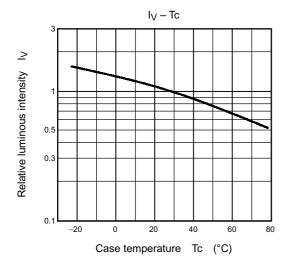


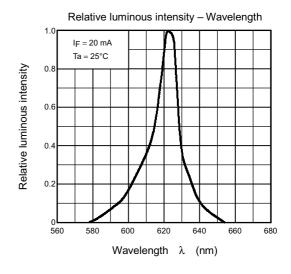


#### **TLSH38TP**

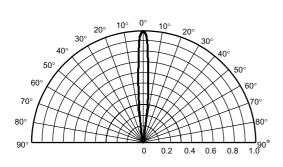


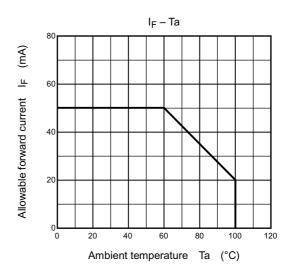




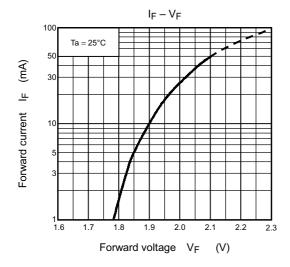


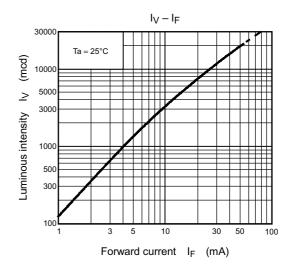


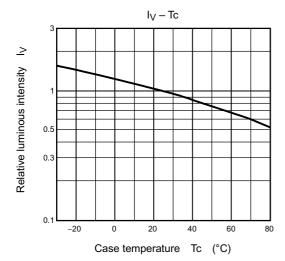


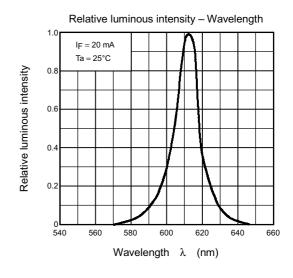


#### **TLOH38TP**

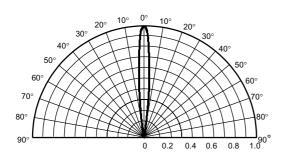


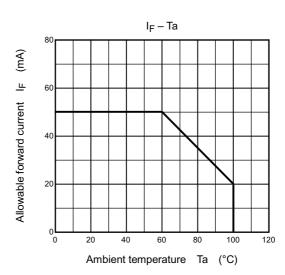






Radiation pattern





#### **TLYH38TP**

