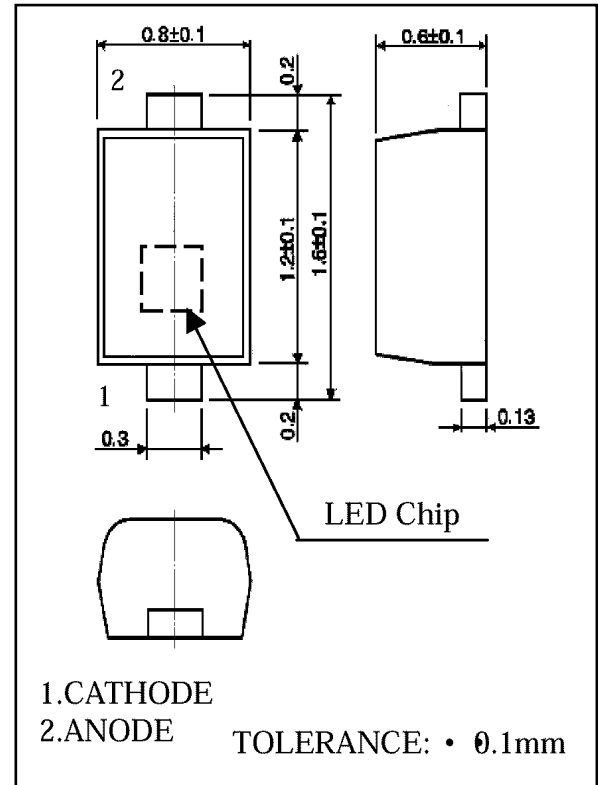


### Features

1.6(L)x0.8(W)x0.6(H)mm Size  
InGaAlP Technology  
High Luminous Intensity  
Low Power Consumption  
Suitable for Backlighting

### Applications

Backlighting



### Series Line-Up

Part Number	Color	Material
TLGV1020	Ultra Bright Yellow Green	InGaAlP
TLOV1020	Ultra Bright Orange	InGaAlP
TLPGV1020	Ultra Pure Green	InGaAlP
TLRMV1020	Ultra Red	InGaAlP
TLSV1020	Ultra Bright High Efficiency Red	InGaAlP
TLYV1020	Ultra Bright Yellow	InGaAlP

### Maximum Ratings (Ta=25°C)

Part Number	Forward Current I <sub>F</sub>	Reverse Voltage V <sub>R</sub>	Power Dissipation P <sub>D</sub>	Operating Temperature T <sub>opr</sub>	Storage Temperature T <sub>stg</sub>
TLGV1020	15	4	34.50	-40 ~ +100	-40 ~ +100
TLOV1020	15	4	34.50	-40 ~ +100	-40 ~ +100
TLPGV1020	15	4	34.50	-40 ~ +100	-40 ~ +100
TLRMV1020	15	4	34.50	-40 ~ +100	-40 ~ +100
TLSV1020	15	4	34.50	-40 ~ +100	-40 ~ +100
TLYV1020	15	4	34.50	-40 ~ +100	-40 ~ +100
Unit	mA	V	mW	°C	°C

**Company Headquarters**  
3 Norhway Lane North  
Latham, New York 12110  
Toll Free: 800.984.5337  
Fax: 518.785.4725



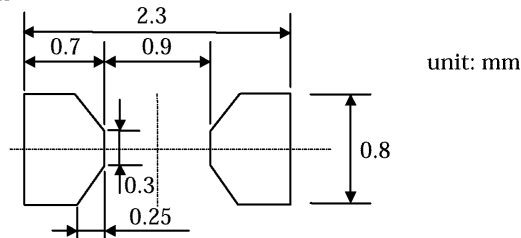
Web: [www.marktechopto.com](http://www.marktechopto.com) | Email: [info@marktechopto.com](mailto:info@marktechopto.com)

**West Coast Sales Office**  
950 South Coast Drive, Suite 265  
Costa Mesa, California 92626  
Toll Free: 800.984.5337  
Fax: 714.850.9314

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

Part Number	PWL nm $\lambda_P$	Material	View Angle $2\theta_{1/2}$	Luminous Intensity $I_v$				Forward Voltage $V_F$				Rev Current $I_R$	
				min.	typ.	max.	IF@	min.	typ.	max.	IF@	max.	VR@
TLGV1020	574	InGaAlP	140° x 130°	4.76	14.00	–	5mA	–	2.00	2.30	5mA	10	4V
TLOV1020	612	InGaAlP	140° x 130°	8.50	38.00	–	5mA	–	2.00	2.30	5mA	10	4V
TLPGV1020	562	InGaAlP	140° x 130°	1.53	3.50	–	5mA	–	2.00	2.30	5mA	10	4V
TLRMV1020	636	InGaAlP	140° x 130°	4.76	15.00	–	5mA	–	2.00	2.30	5mA	10	4V
TLSV1020	623	InGaAlP	140° x 130°	8.50	30.00	–	5mA	–	2.00	2.30	5mA	10	4V
TLVY1020	590	InGaAlP	140° x 130°	8.50	25.00	–	5mA	–	2.00	2.30	5mA	10	4V
–	nm	–	deg	mcd				V				$\mu A$	–

Recommended soldering pattern



### NOTICE:

- 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 damage to property.
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- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.

### PACKAGING

This LED device is 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 before soldering and should be stored under the following conditions.

Temperature : 5~30°C  
Relative humidity : 60% max.  
Time : 168h

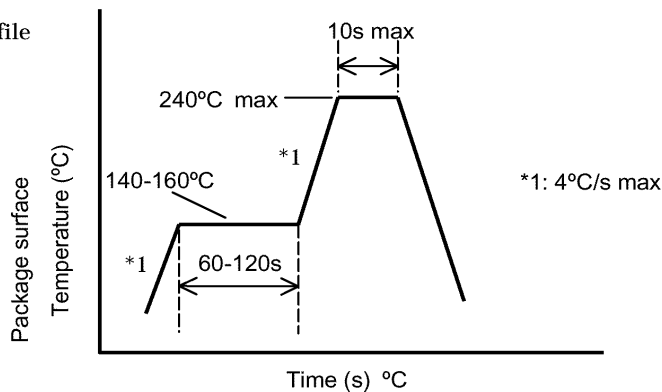
Baking is required if the device has been stored unopened for more than 6 months or if the aluminum envelope has been opened for more than 168h.

Recommended baking condition is 60°C for 12 hours minimum in a dry atmosphere.

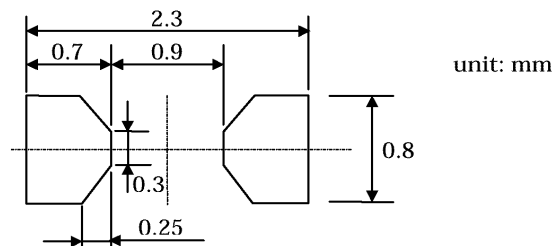
### SOLDERING

#### Reflow soldering

##### Temperature profile



#### Recommended soldering pattern



Please perform the first reflow soldering within 168h after opening the package with reference to the above temperature profile.

#### Second time reflow soldering

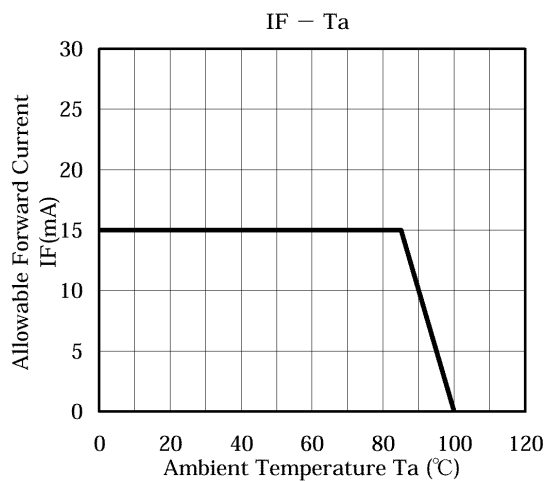
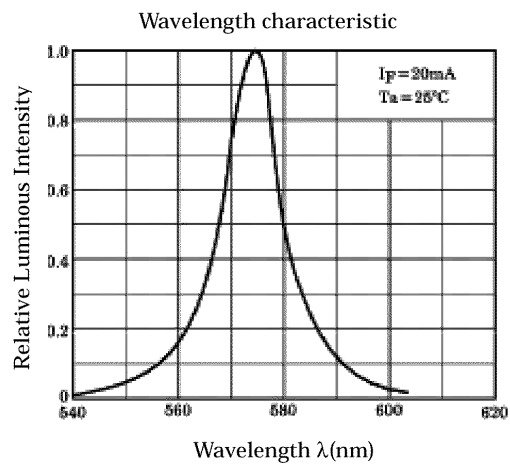
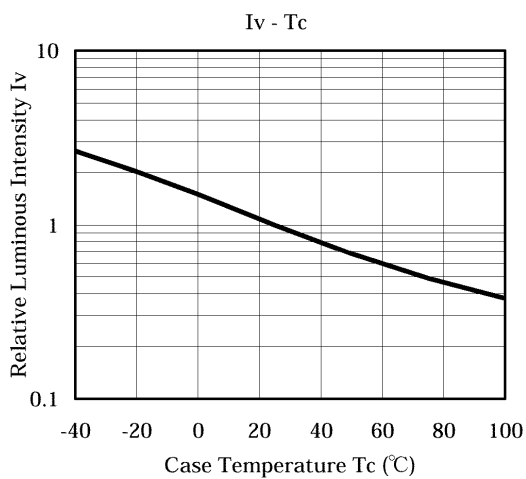
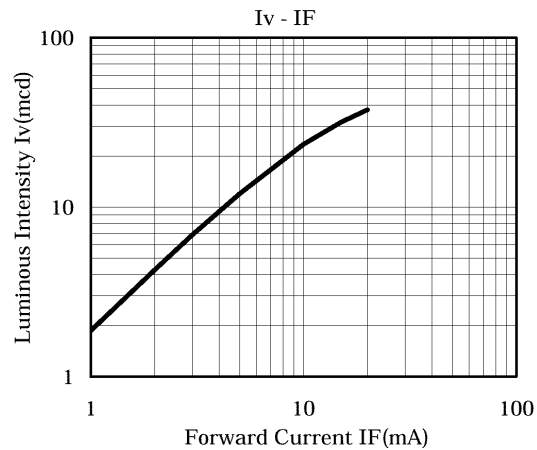
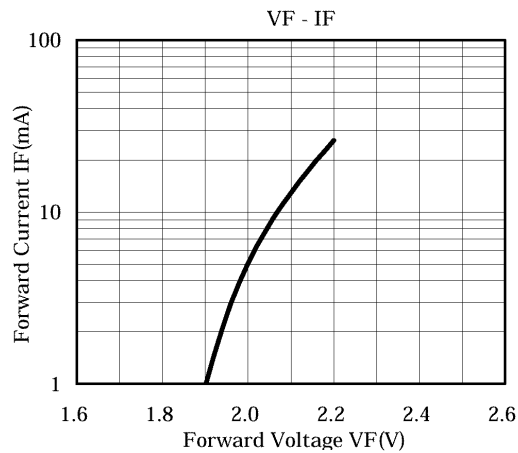
In the case of a second time reflow soldering, it should be performed within 168h after first reflow under the above conditions.

Storage conditions before second reflow soldering : 30°C, 60%RH or lower

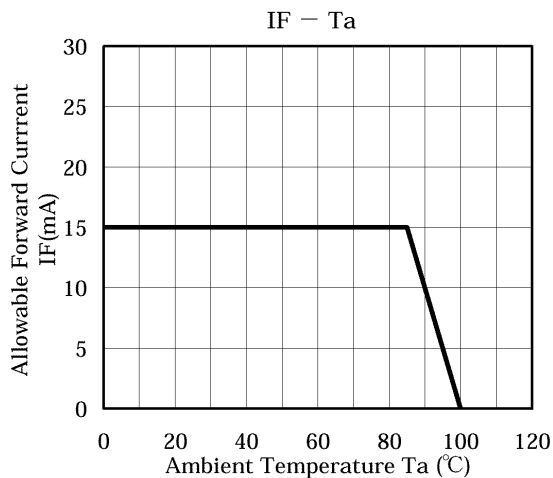
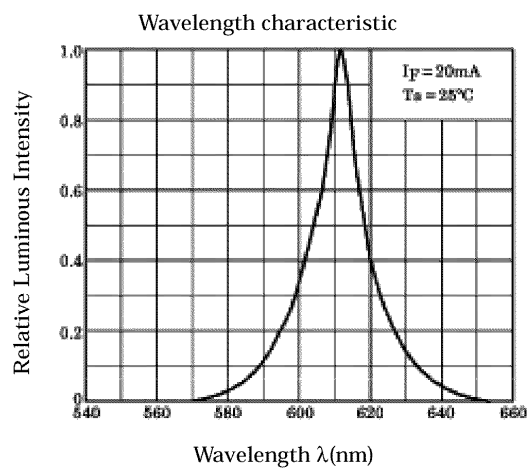
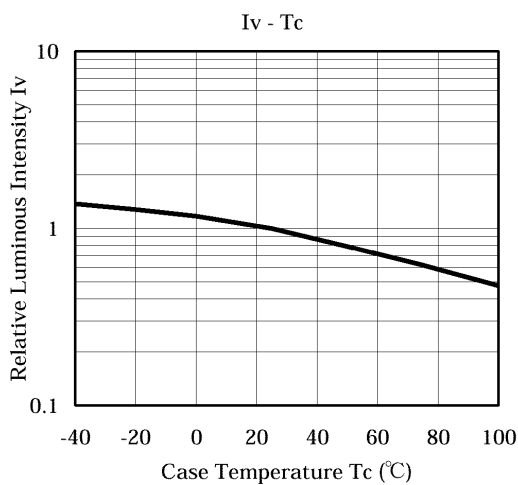
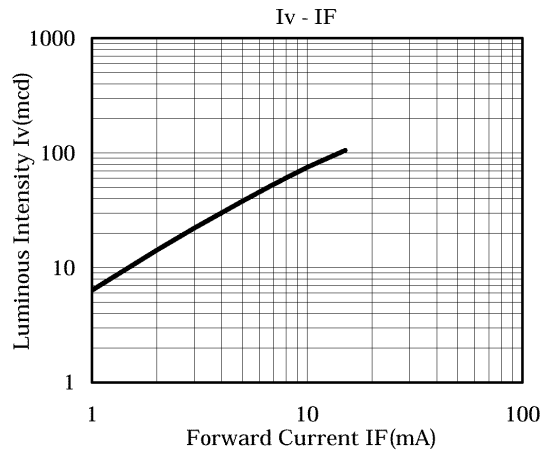
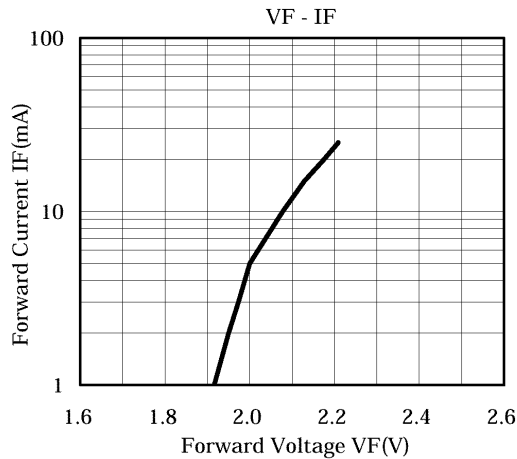
Do not perform flow soldering.

#### Recommended for manual soldering

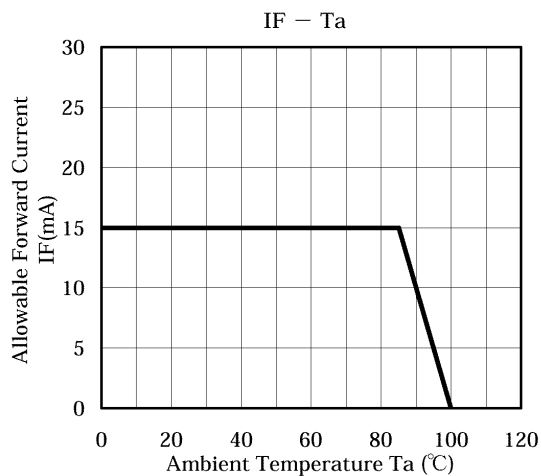
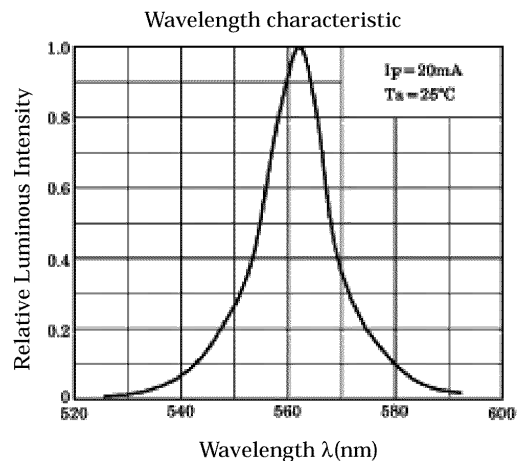
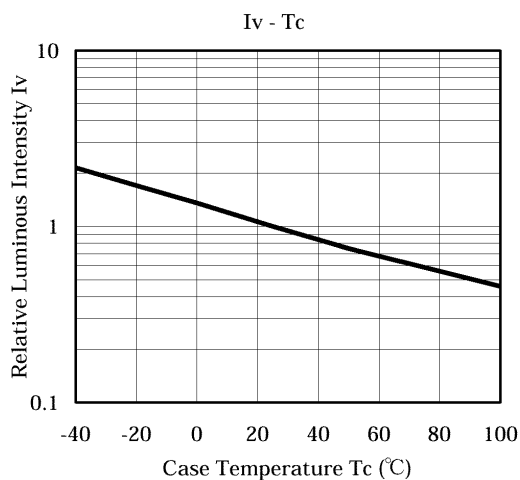
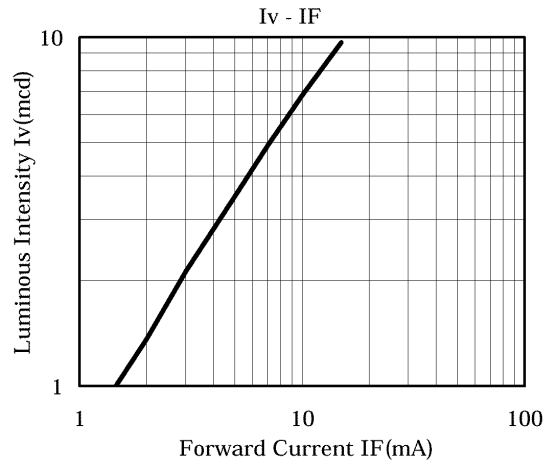
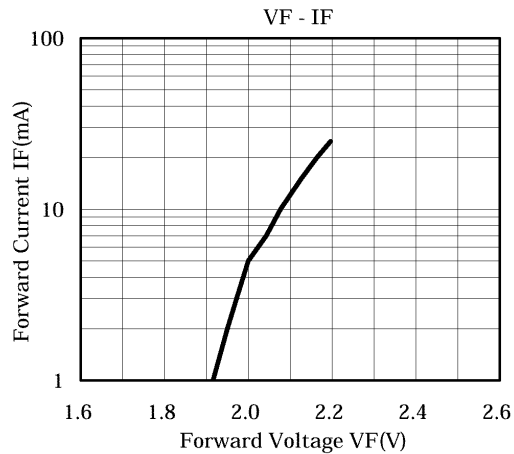
Soldering iron : Less than 25W  
Temperature : Lower than 30°C  
Time : Within 3s(Up to 1 time per place)



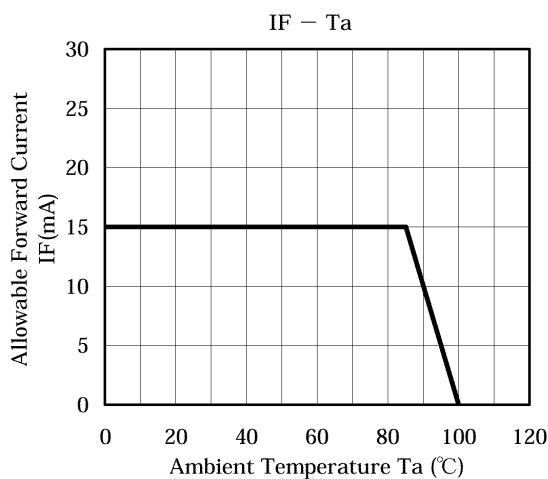
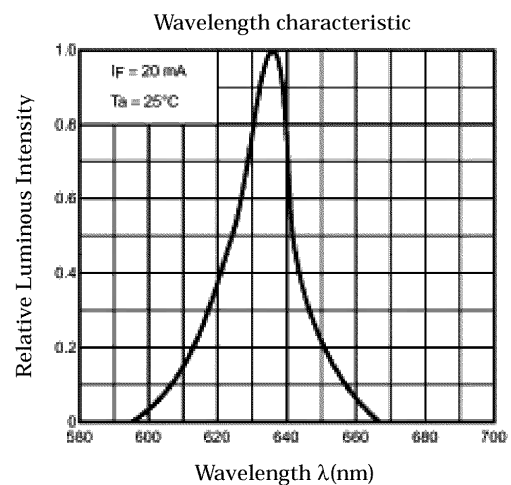
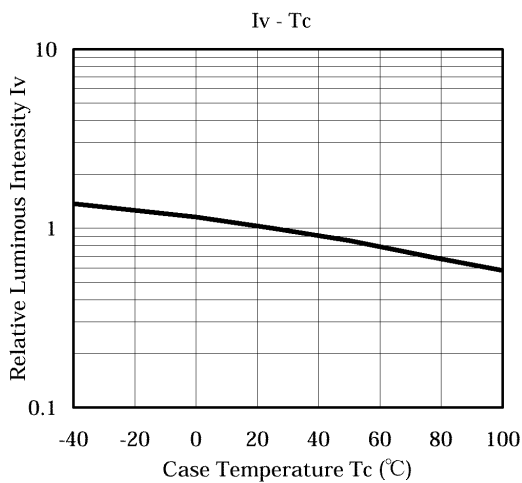
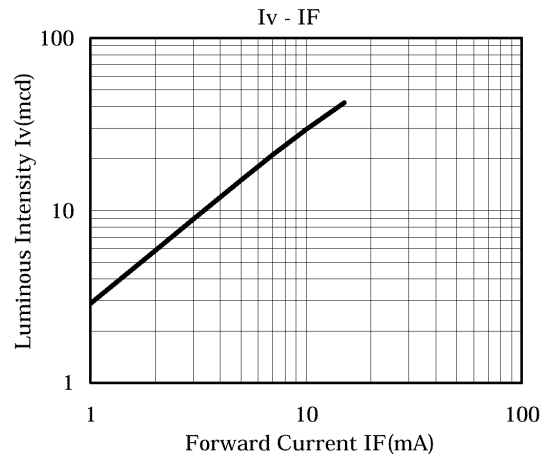
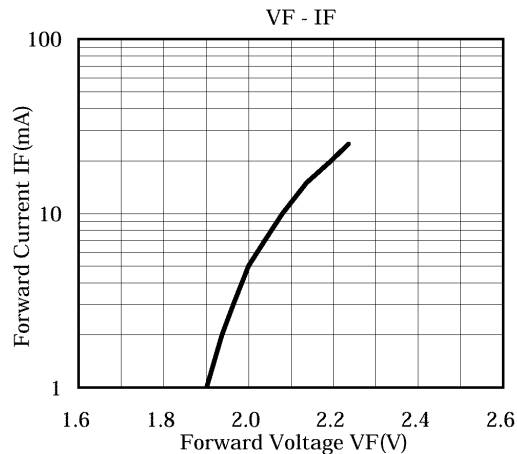
### TLOV1020 Graphs



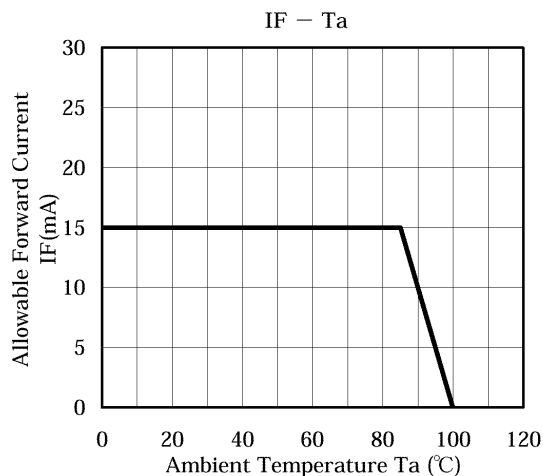
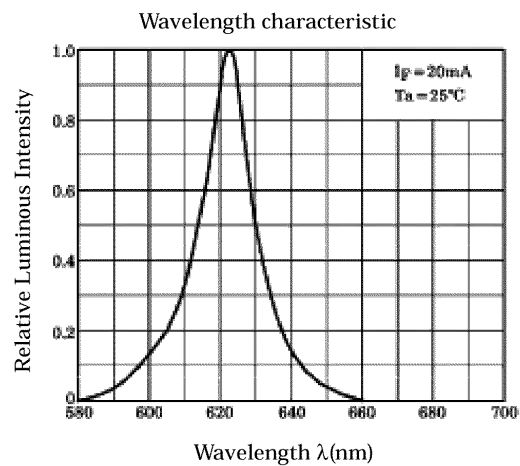
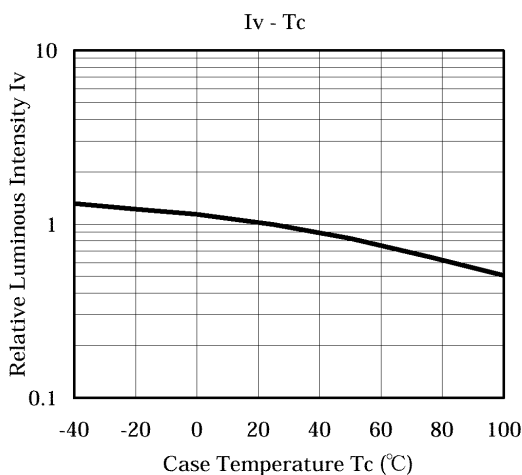
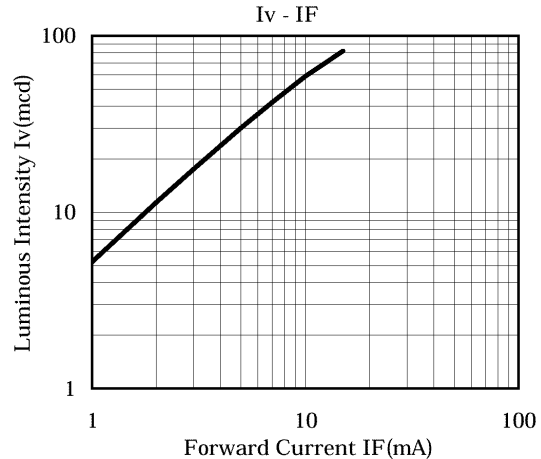
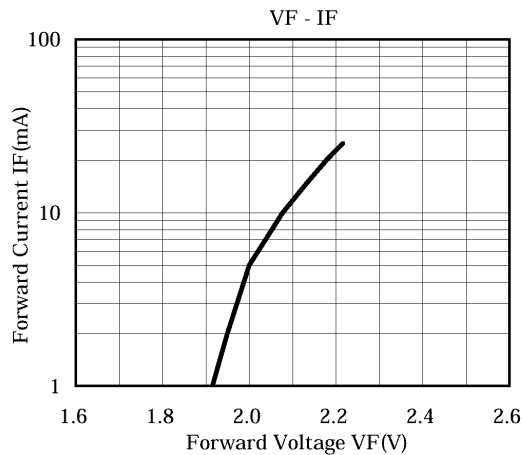
### TLPGV1020 Graphs



### TLRMV1020 Graphs

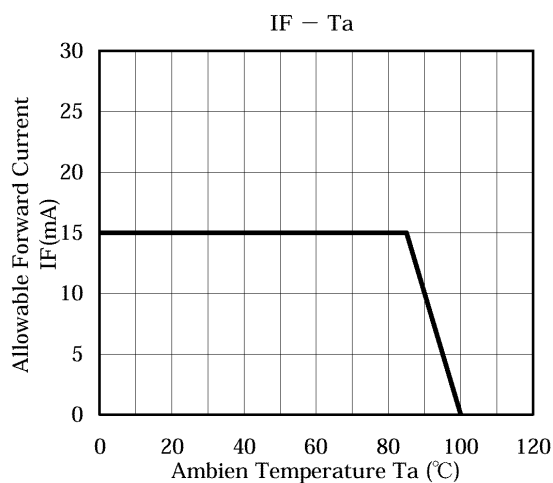
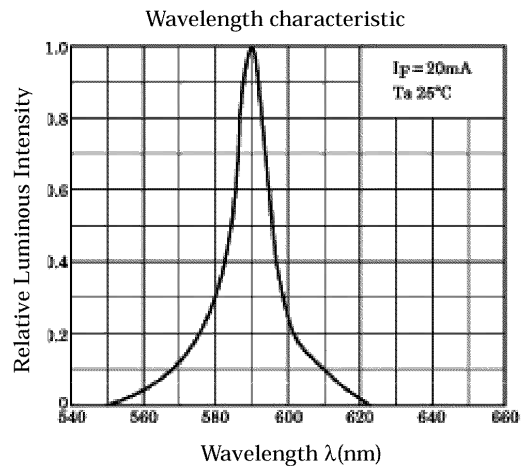
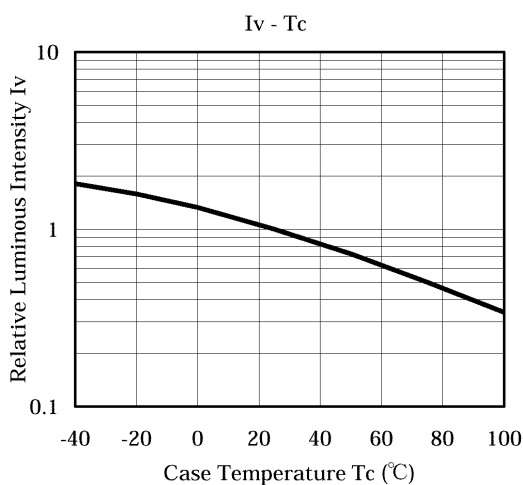
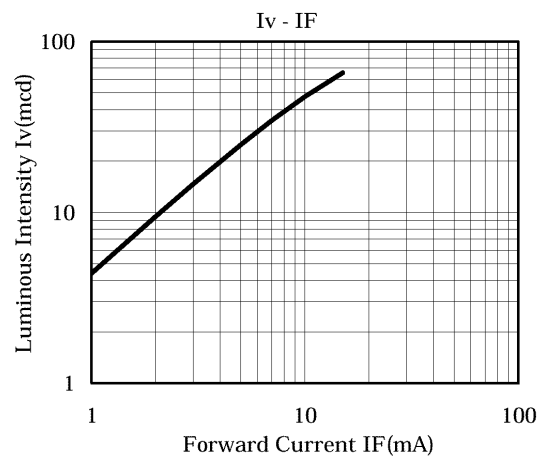
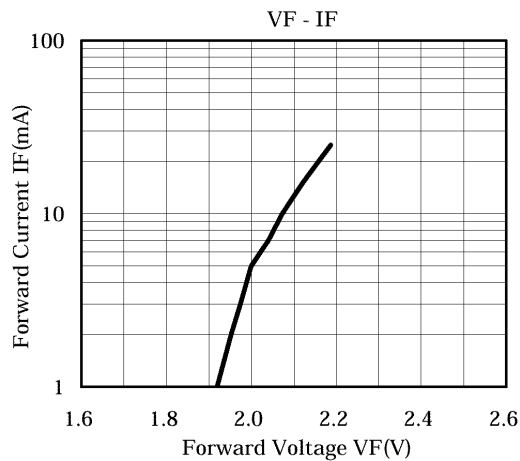


### TLxV1020 Graphs





### TLxV1020 Graphs



### TLxV1020 Radiation Pattern

