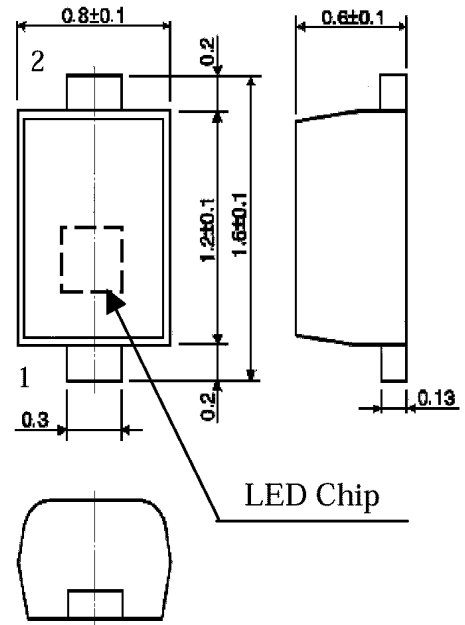


Features

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

Applications

Backlighting



1.CATHODE
 2.ANODE TOLERANCE: • 0.1mm

Series Line-Up

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

Maximum Ratings (Ta=25°C)

Part Number	Forward Current I _F	Reverse Voltage V _R	Power Dissipation P _D	Operating Temperature T _{opr}	Storage Temperature T _{stg}
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 Norway Lane North
 Latham, New York 12110
 Toll Free: 800.984.5337
 Fax: 518.785.4725



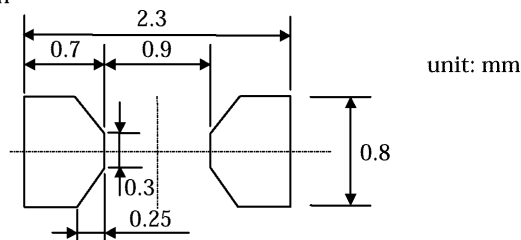
Web: www.marktechopt.com | Email: info@marktechopt.com

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 λ_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	InGaAIP	140° x 130°	4.76	14.00	–	5mA	–	2.00	2.30	5mA	10	4V
TLOV1020	612	InGaAIP	140° x 130°	8.50	38.00	–	5mA	–	2.00	2.30	5mA	10	4V
TLPGV1020	562	InGaAIP	140° x 130°	1.53	3.50	–	5mA	–	2.00	2.30	5mA	10	4V
TLRMV1020	636	InGaAIP	140° x 130°	4.76	15.00	–	5mA	–	2.00	2.30	5mA	10	4V
TLSV1020	623	InGaAIP	140° x 130°	8.50	30.00	–	5mA	–	2.00	2.30	5mA	10	4V
TLYV1020	590	InGaAIP	140° x 130°	8.50	25.00	–	5mA	–	2.00	2.30	5mA	10	4V
–	nm	–	deg	mcd				–	V		–	μA	–

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.
- 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..
- The TOSHIBA products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These TOSHIBA products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc.. Unintended Usage of TOSHIBA products listed in this document shall be made at the customer's own risk.
- 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.
- 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

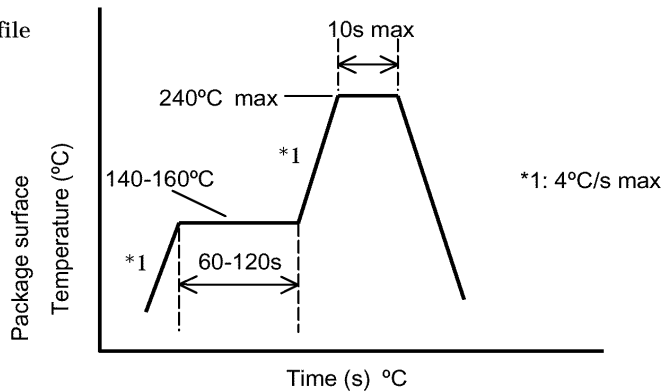
Backing is required if the device has been stored unopened for more than 6 months or if the aluminum envelope has been opened for more than 168h.

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

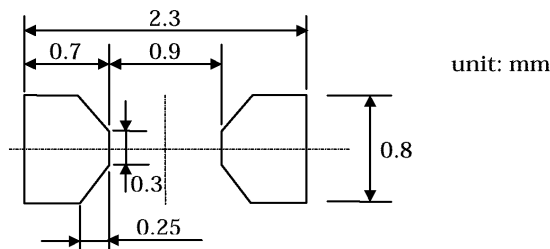
SOLDERING

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

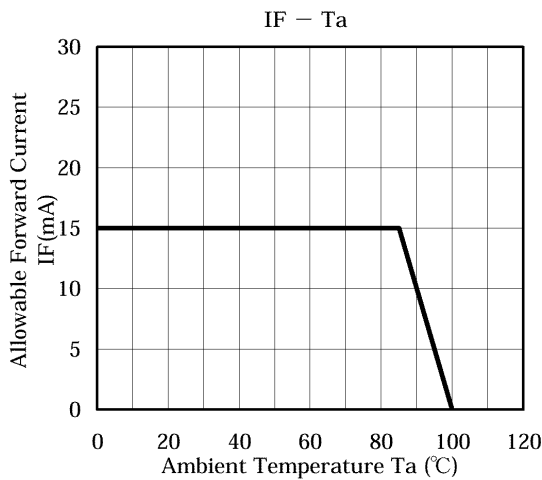
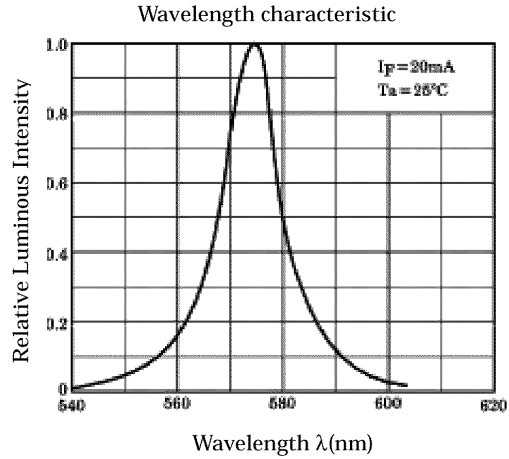
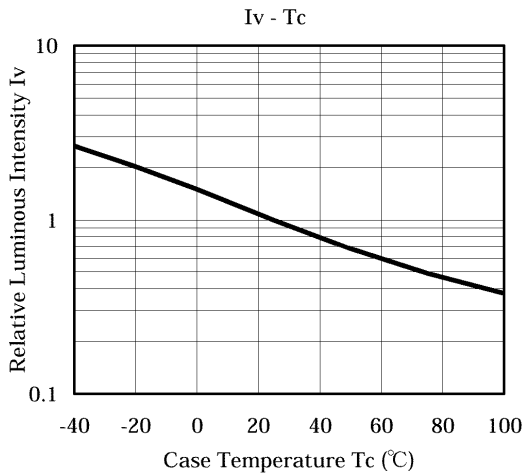
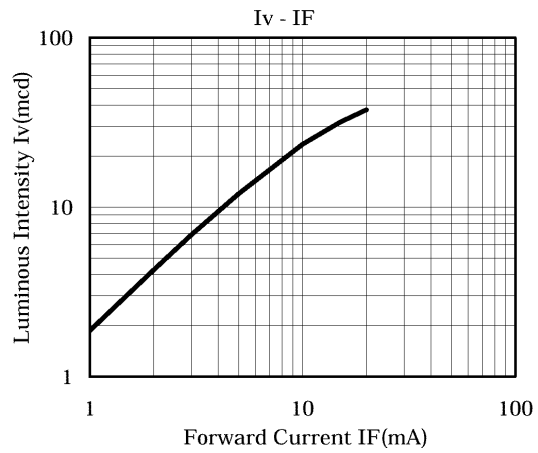
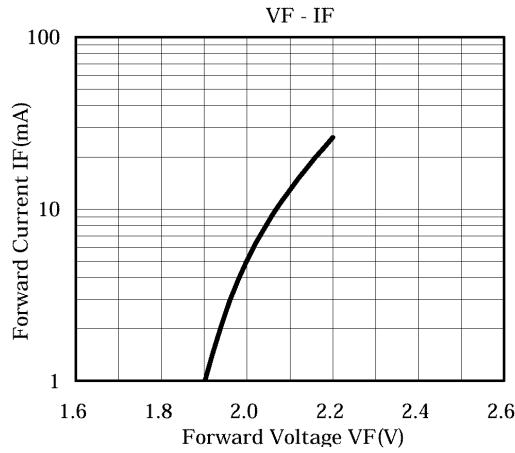
In the case of a second time reflow soldering, it should be performed within 168h after first reflow under the above conditions.

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

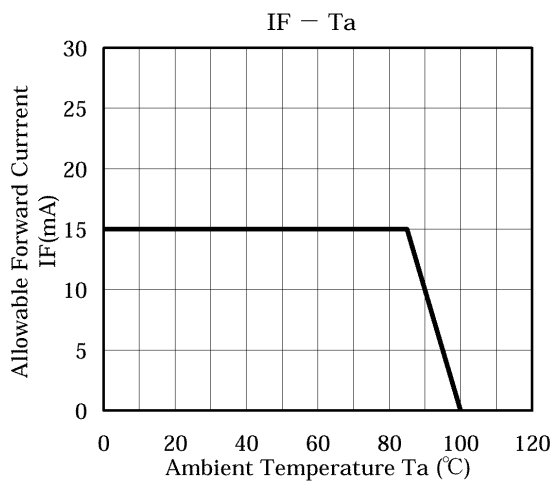
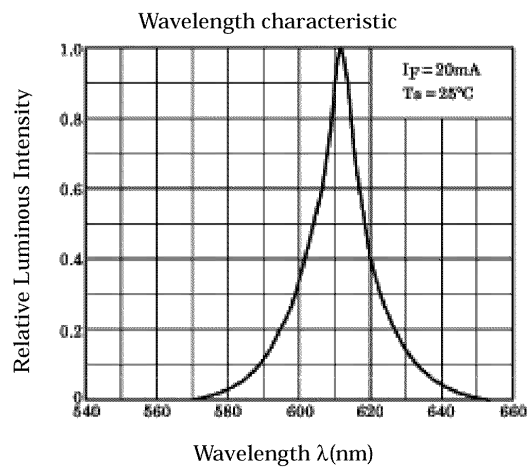
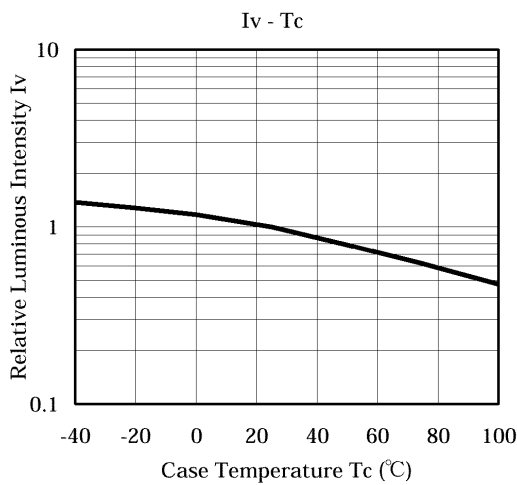
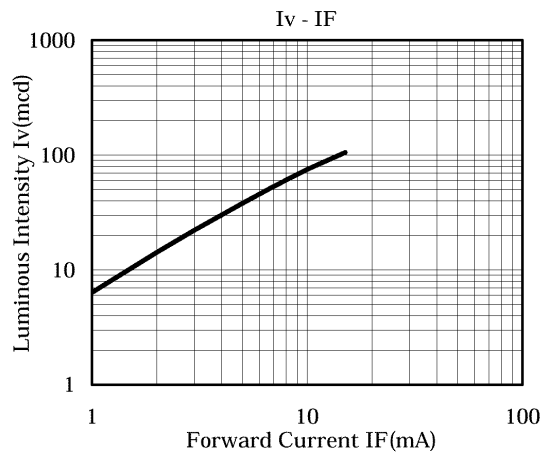
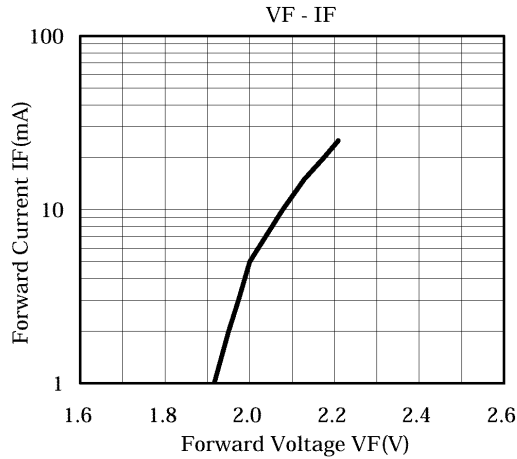
Do not perform flow soldering.

Recommended for manual soldering

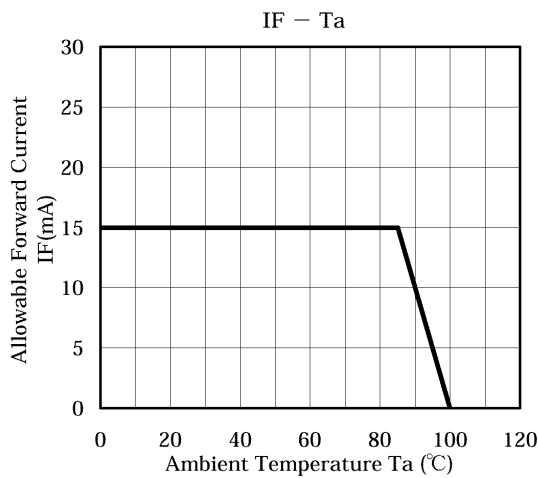
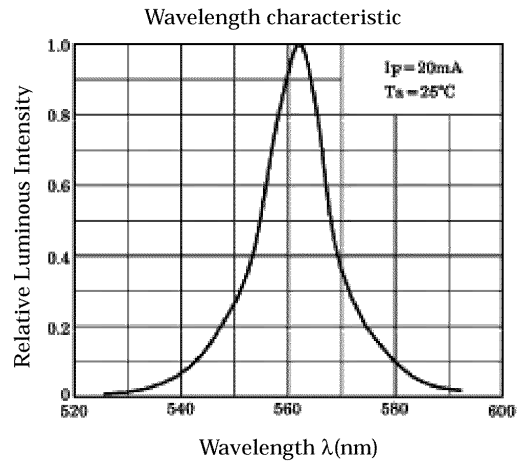
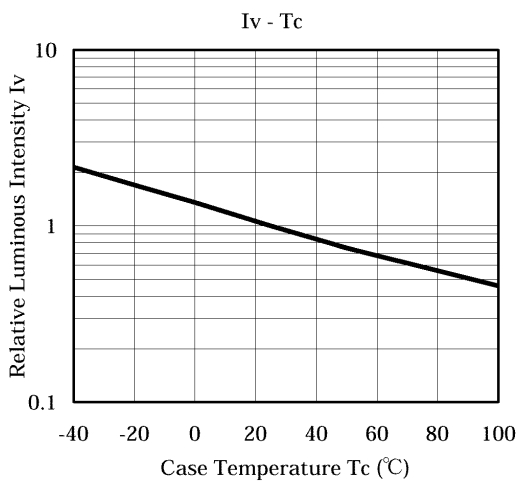
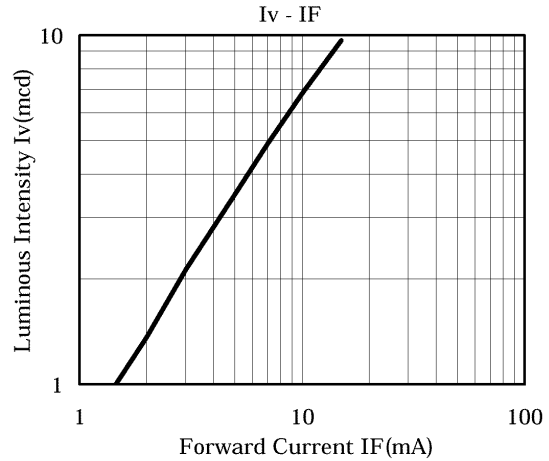
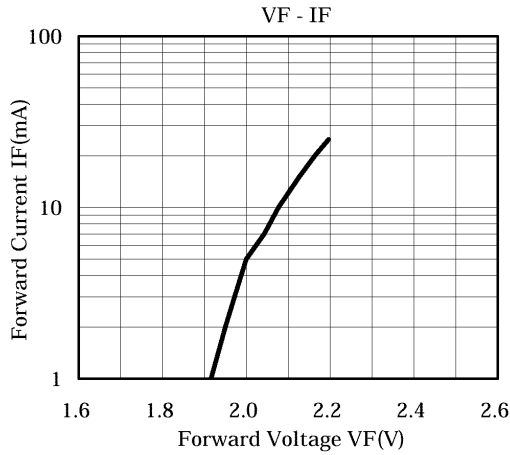
- Soldering iron : Less than 25W
- Temperature : Lower than 30°C
- Time : Within 3s(Up to 1 time per place)



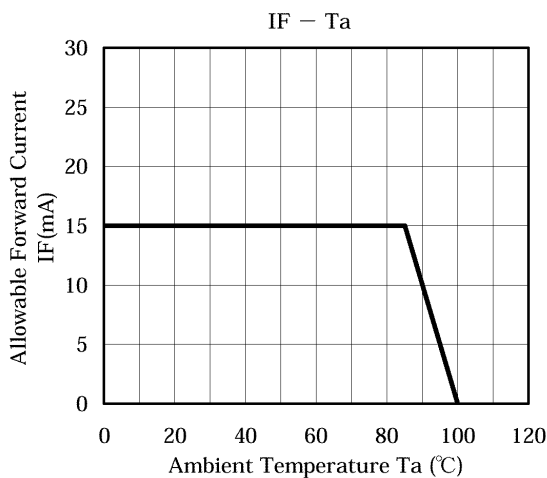
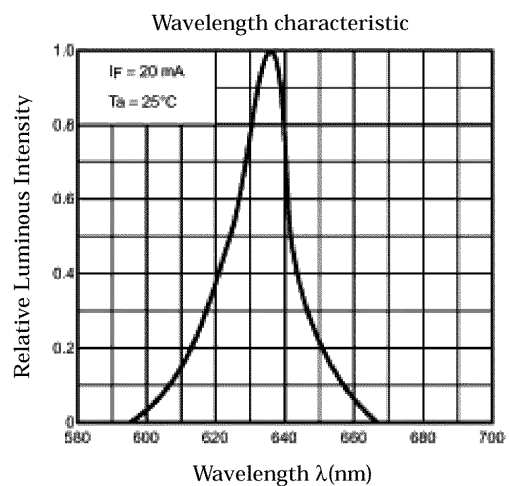
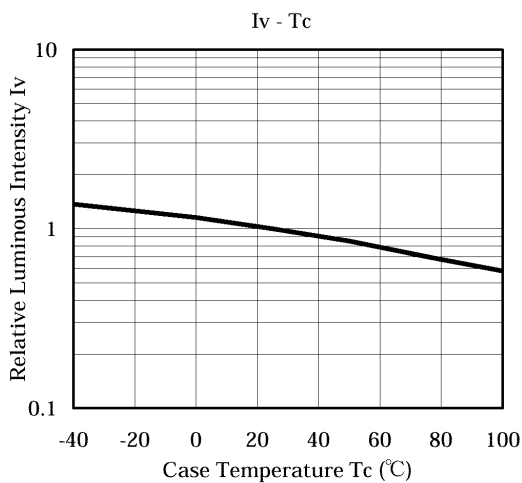
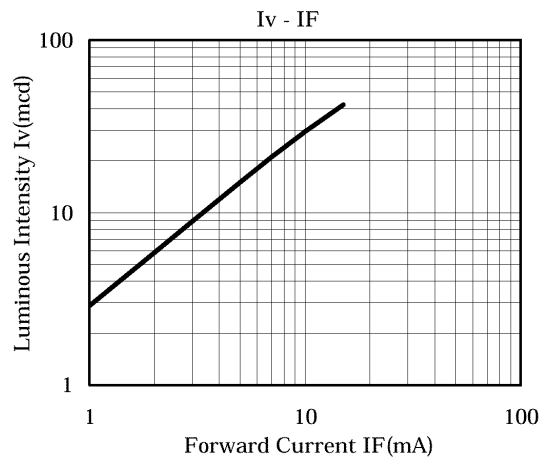
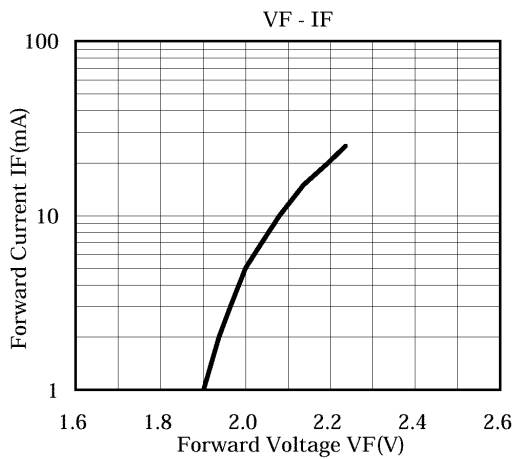
TLOV1020 Graphs



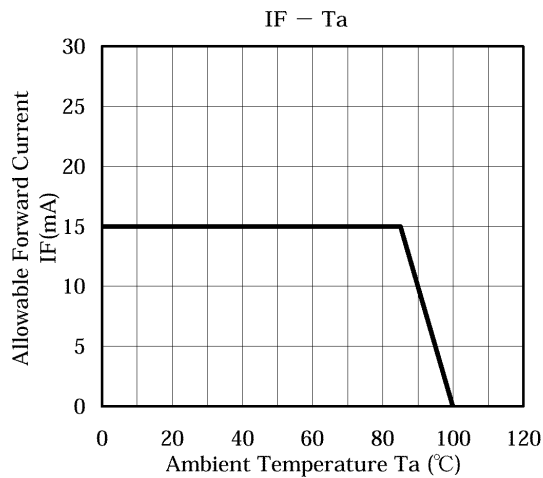
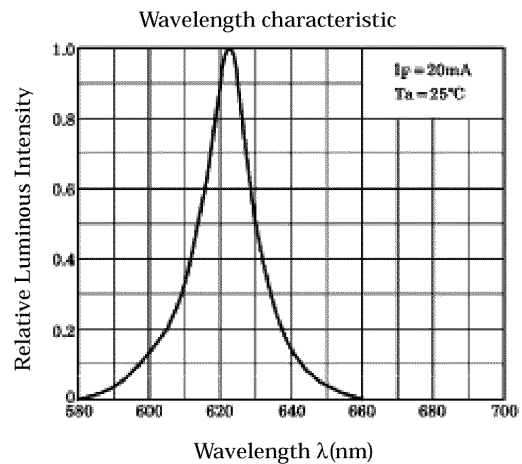
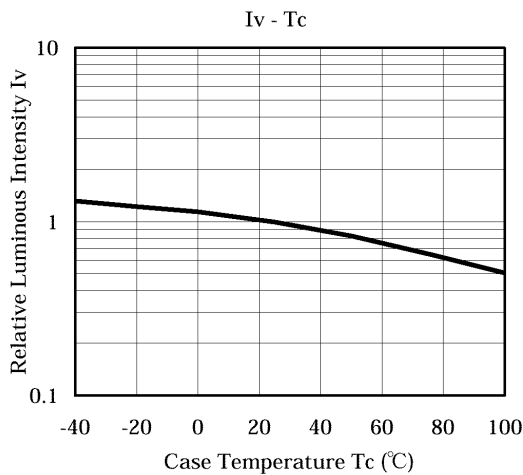
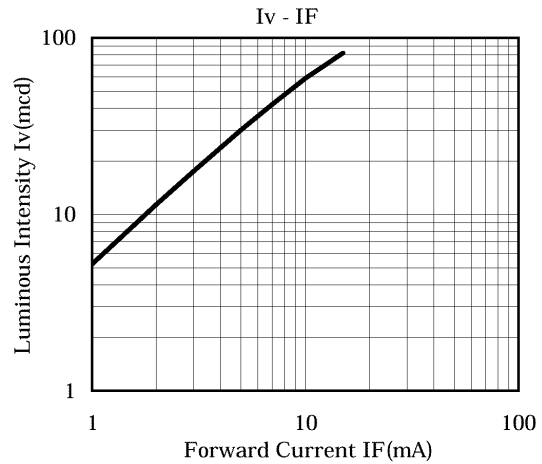
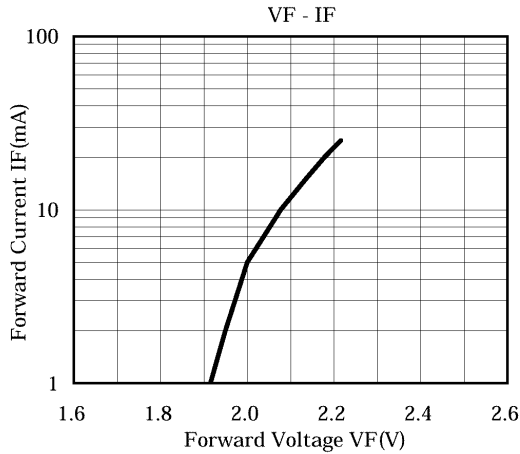
TLPGV1020 Graphs



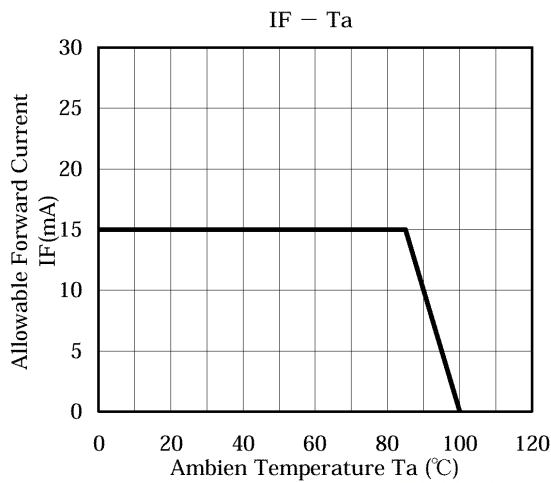
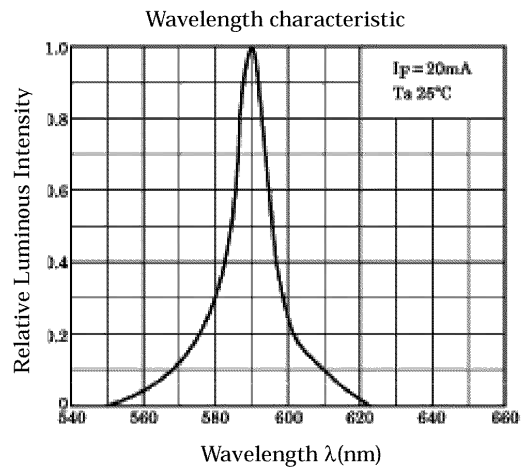
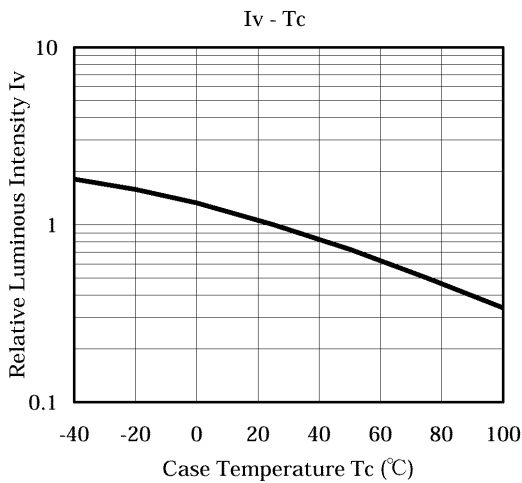
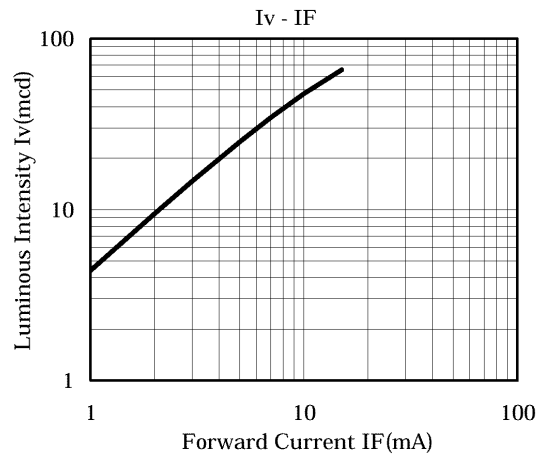
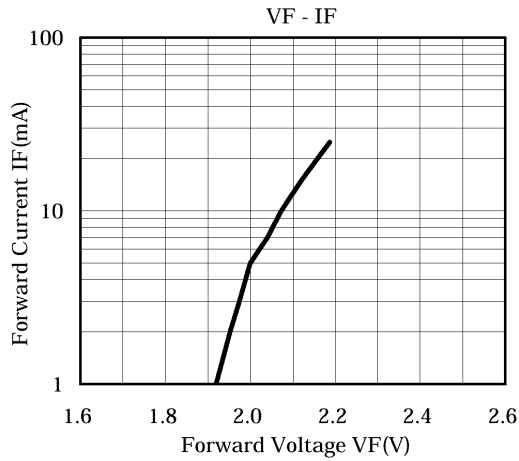
TLRMV1020 Graphs



TLSV1020 Graphs



TLxV1020 Graphs



TLxV1020 Radiation Pattern

