TOSHIBA

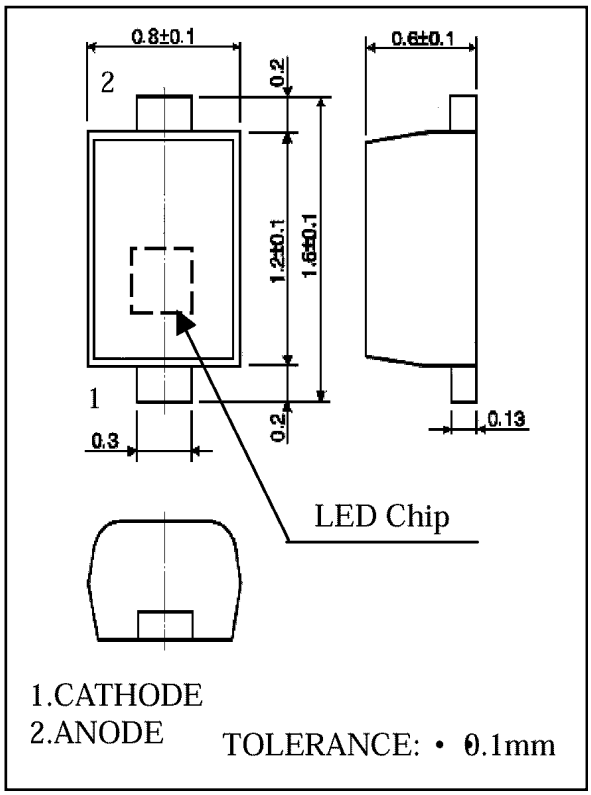
Toshiba TLxV1020 SMT LED

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 Efficency Red	InGaAlP
TLYV1020	Ultra Bright Yellow	InGaAlP

Maximum Ratings (Ta=25ºC)

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**

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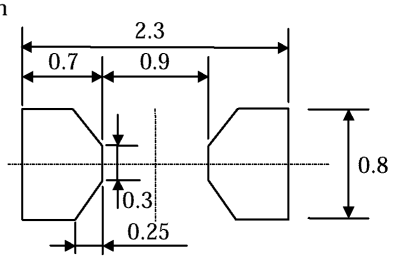
Electrical and Optical Characteristics (Ta=25°C)

Part Number	PWL nm λP	Material	View Angle 2θ1/2	Luminous Intensity Iv				Forward Voltage VF				Rev Current IR	
				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
TLYV1020	590	InGaAlP	140° x 130°	8.50	25.00	–	5mA	–	2.00	2.30	5mA	10	4V
–	nm	–	deg	mcd			–	V			–	μA	–

Recommended soldering pattern



unit: mm

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.

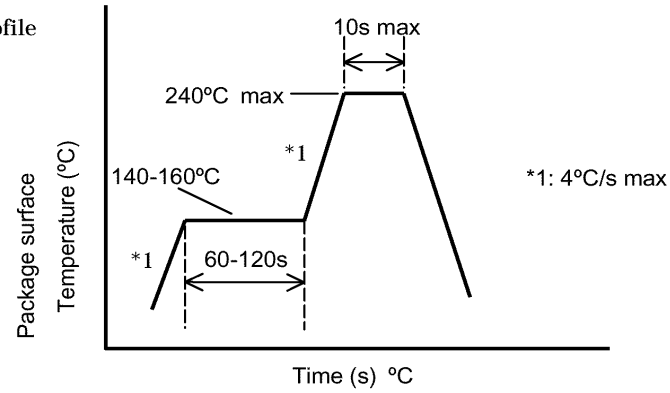
Temperature : 5~30ºC
Relative humidity : 60% max.
Time : 168h

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 60ºC for 12 hours minimum in a dry atmosphere.

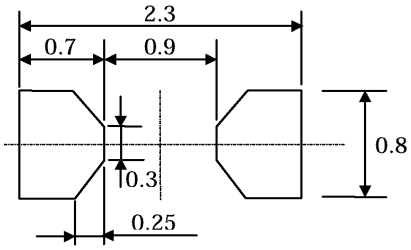
SOLDERING

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

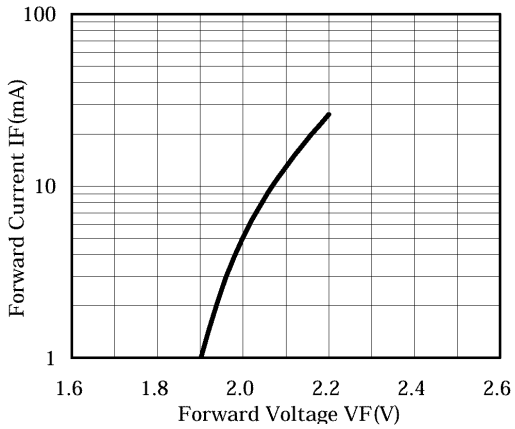
In the case of a second time reflow soldering, it should be performed within 168h after first reflow under the above conditions.
Storage conditions before second reflow soldering : 30ºC, 60%RH or lower

Do not perform flow soldering.

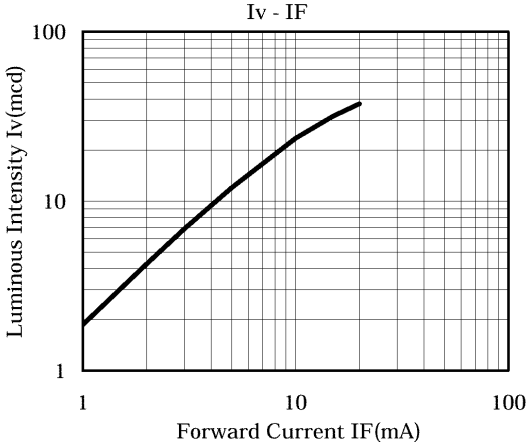
Recommended for manual soldering

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

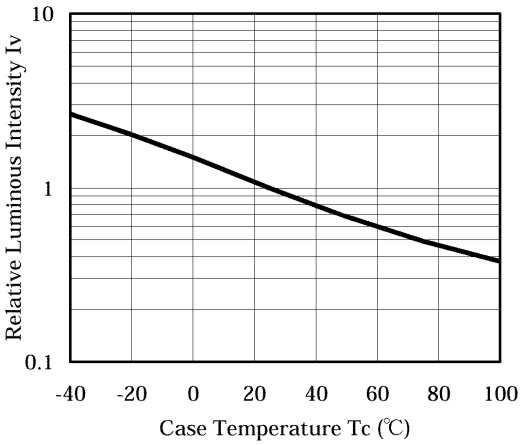
VF - IF



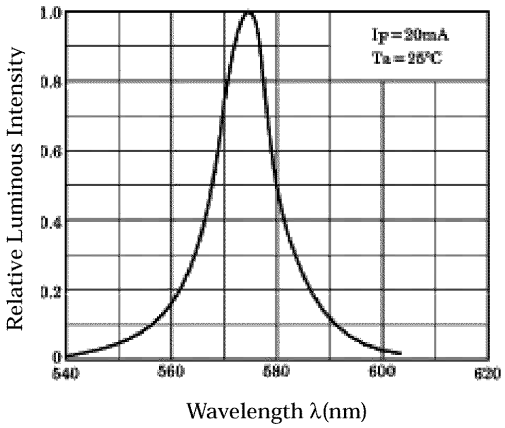
Iv - IF



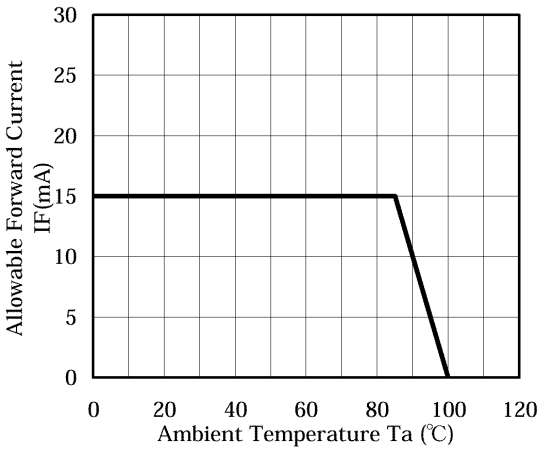
Iv - Tc



Wavelength characteristic



IF — Ta



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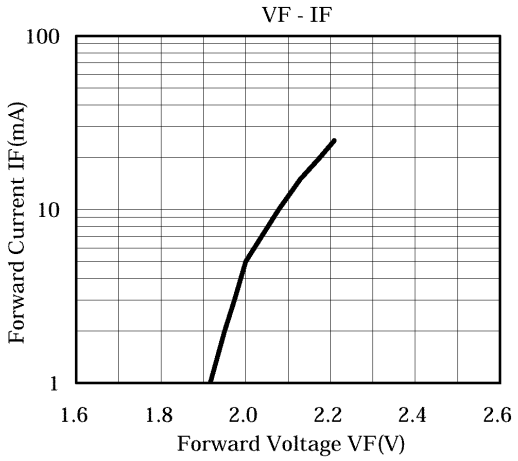
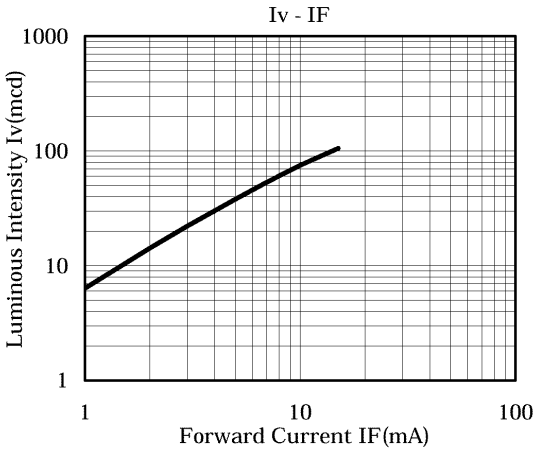
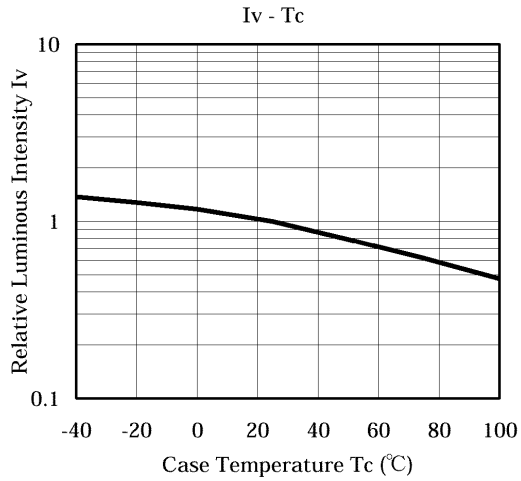
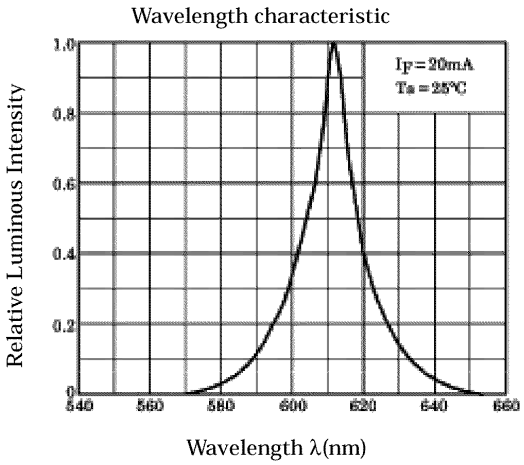
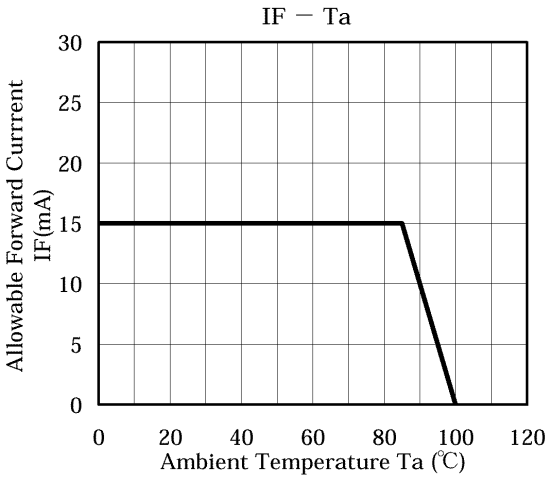
TLOV1020 Graphs











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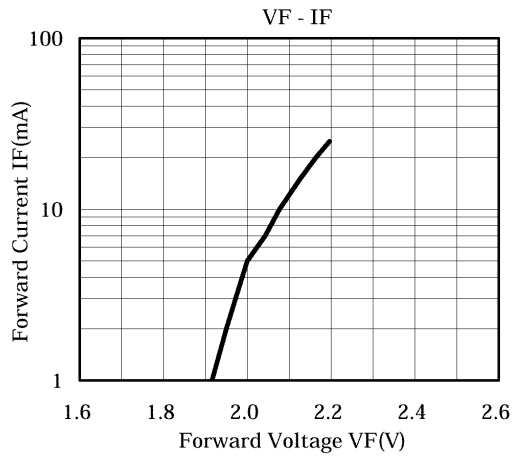
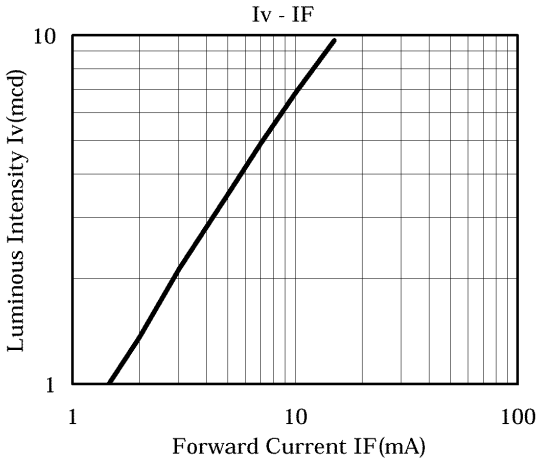
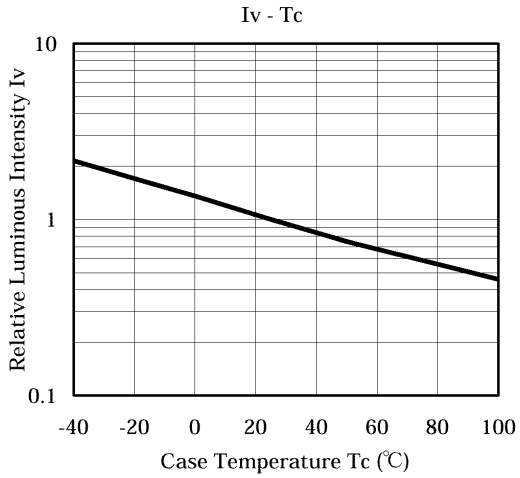
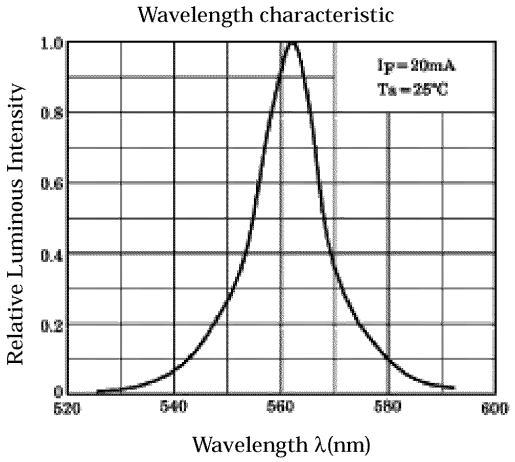
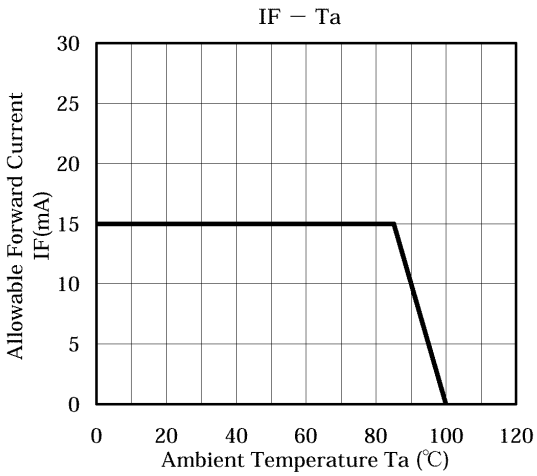
TLPGV1020 Graphs











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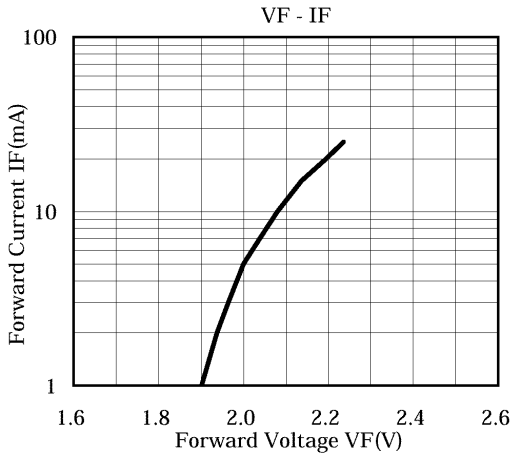
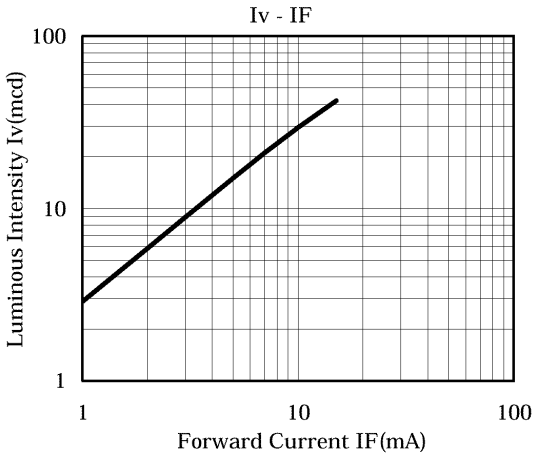
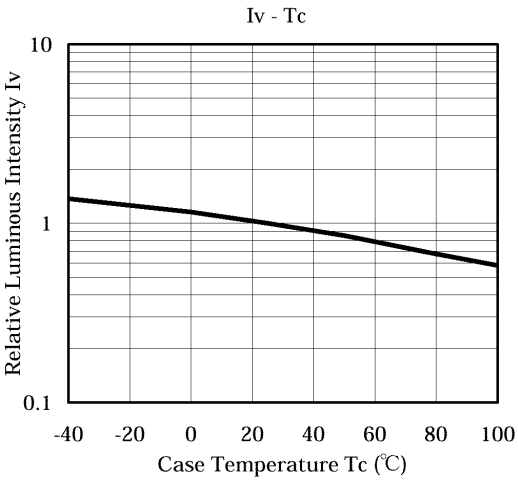
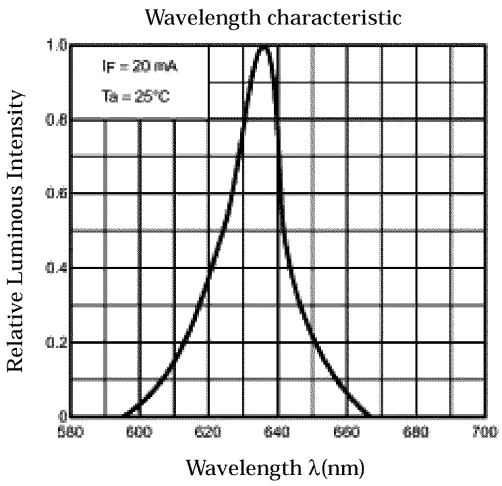
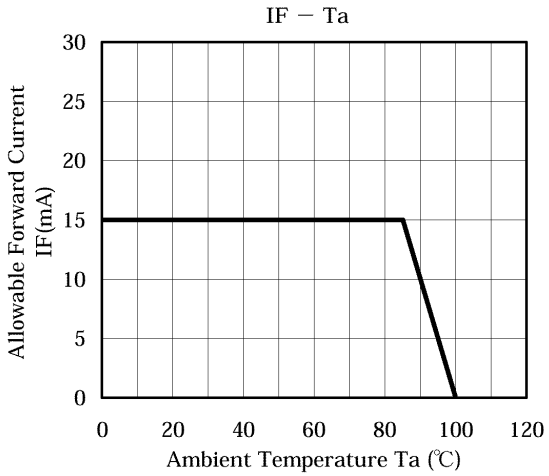
TLRMV1020 Graphs











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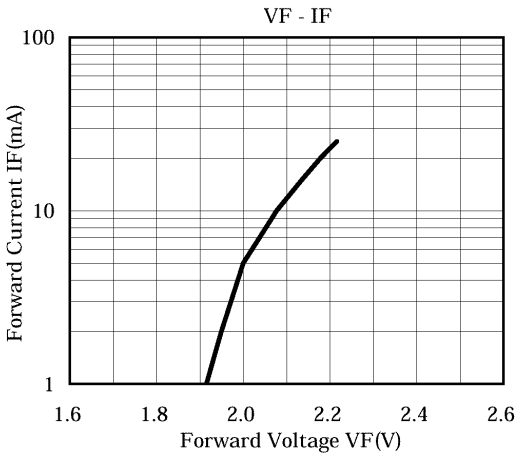

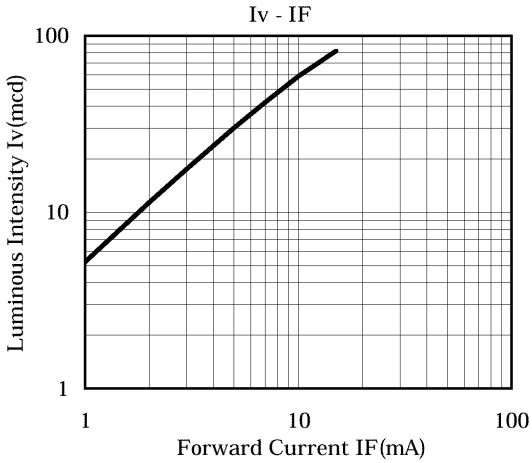

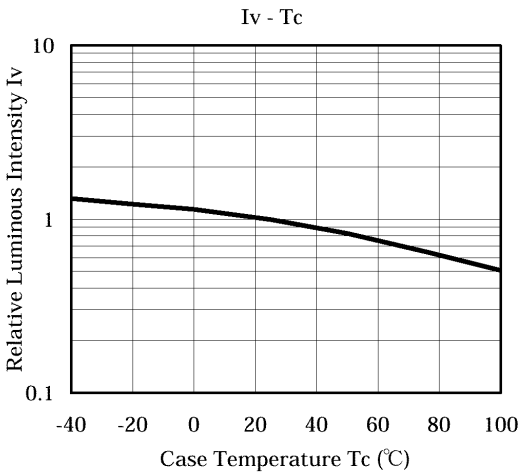

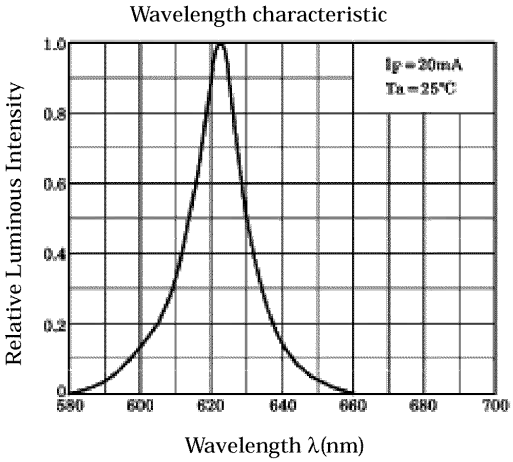

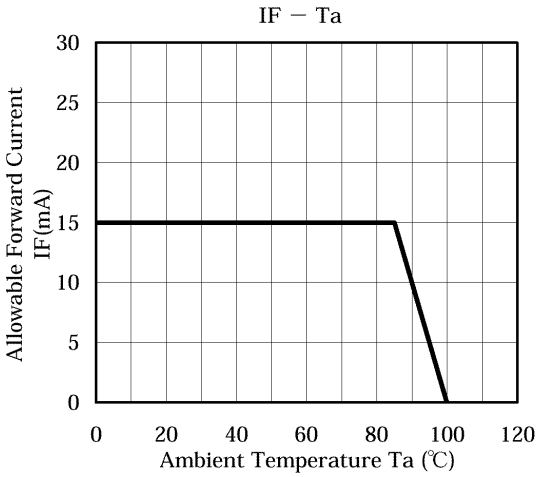

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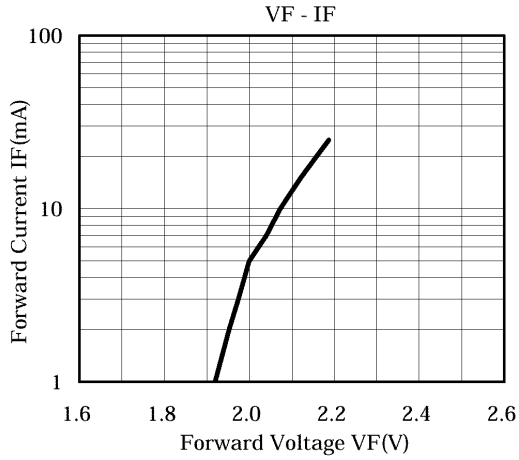
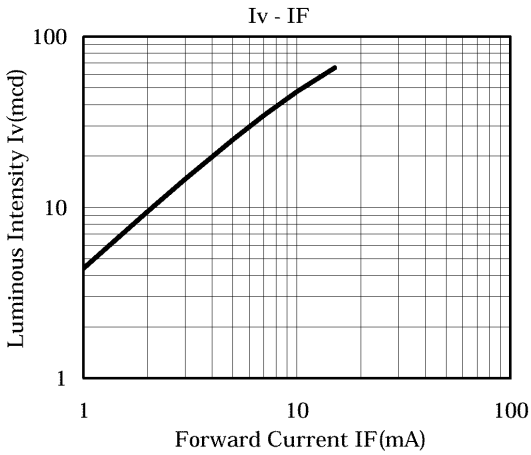
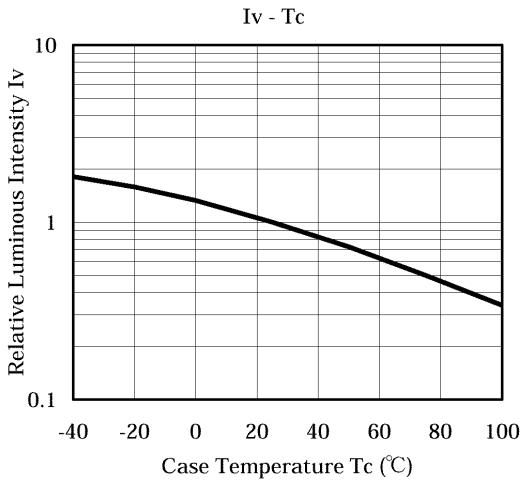
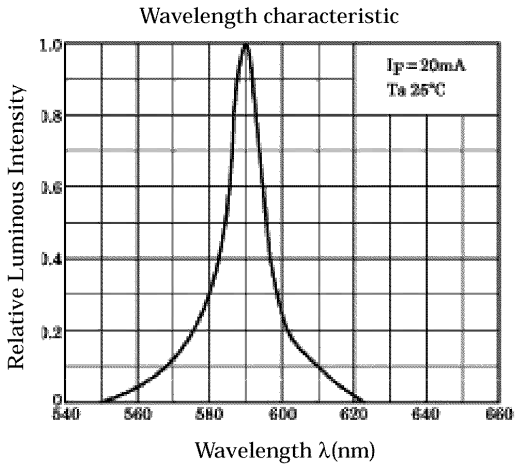
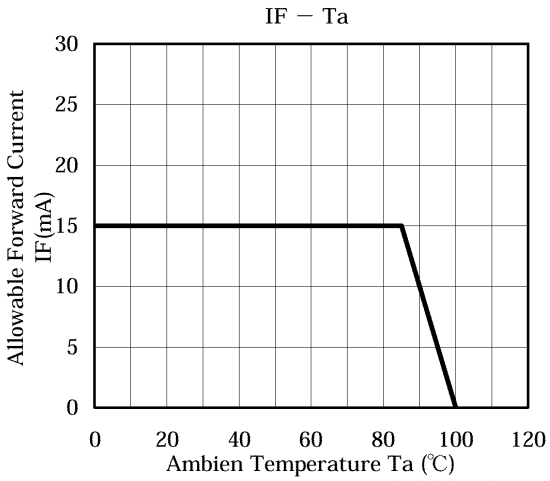
TLYV1020 Graphs











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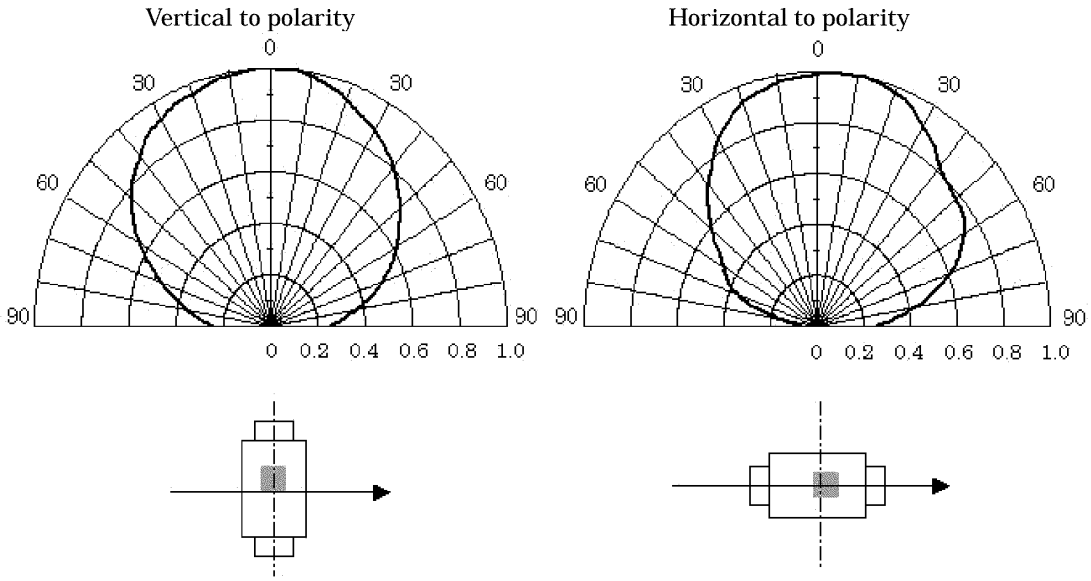
TLxV1020 Radiation Pattern



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