

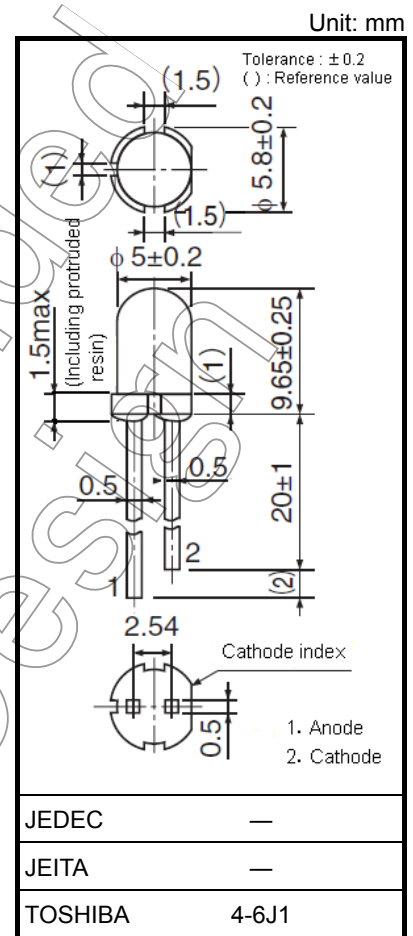
**TLRE20TP(F),TLRME20TP(F),TLSE20TP(F),
TLOE20TP(F),TLYE20TP(F)**

Panel Circuit Indicator

- ϕ 5mm package
- InGaAlP technology
- Transparent lens
- High intensity light emission
- Excellent low current light output
- Applications: Various types of information panels, backlightings, etc.
- Stopper lead type is also available
TLRE20T(F), TLRME20T(F), TLSE20T(F), TLOE20T(F),
TLYE20T(F)

Lineup

Product Name	Color	Material
TLRE20TP(F)	Red	InGaAlP
TLRME20TP(F)	Red	
TLSE20TP(F)	Red	
TLOE20TP(F)	Orange	
TLYE20TP(F)	Yellow	



Weight: 0.31 g (typ.)

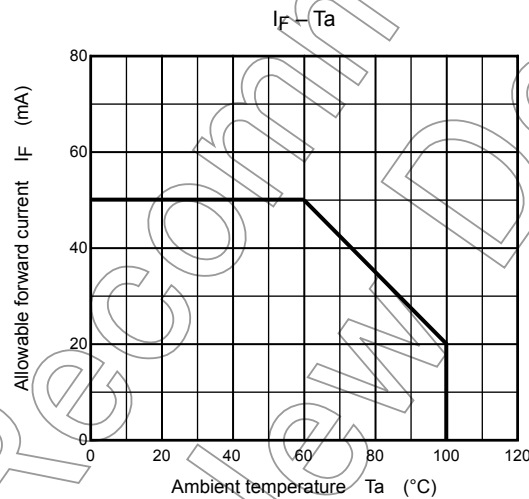
Absolute Maximum Ratings (Ta = 25°C)

Product Name	Forward Current I _F (mA) (Note 1)	Reverse Voltage V _R (V)	Power Dissipation P _D (mW)	Operating Temperature T _{opr} (°C)	Storage Temperature T _{stg} (°C)
TLRE20TP(F)	50	4	120	-40 to 100	-40 to 120
TLRME20TP(F)	50	4	120		
TLSE20TP(F)	50	4	120		
TLOE20TP(F)	50	4	120		
TLYE20TP(F)	50	4	120		

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Note 1: Forward current derating



Electrical and Optical Characteristics (Ta = 25°C)

Product Name	Typ. Emission Wavelength				Luminous Intensity I _v			Forward Voltage V _F			Reverse Current I _R	
	λ _d	λ _p	Δλ	I _F	Min	Typ.	I _F	Typ.	Max	I _F	Max	V _R
TLRE20TP(F)	630	644	20	20	2720	7000	20	1.9	2.4	20	50	4
TLRME20TP(F)	626	636	23	20	2720	8000	20	1.9	2.4	20	50	4
TLSE20TP(F)	613	623	20	20	2720	9000	20	1.9	2.4	20	50	4
TLOE20TP(F)	605	612	20	20	4760	10000	20	2.0	2.4	20	50	4
TLYE20TP(F)	587	590	17	20	2720	9500	20	2.0	2.4	20	50	4
Unit	nm			mA	mcd		mA	V	mA		μA	V

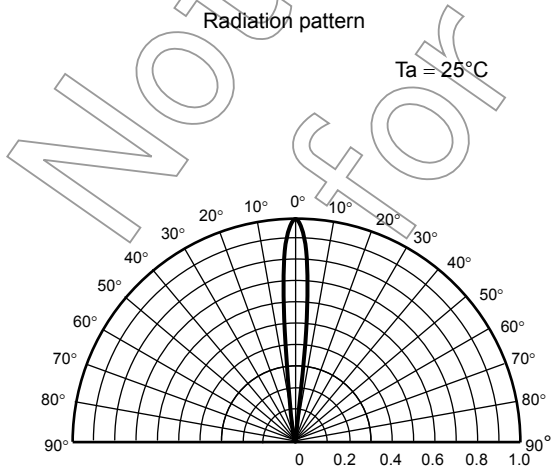
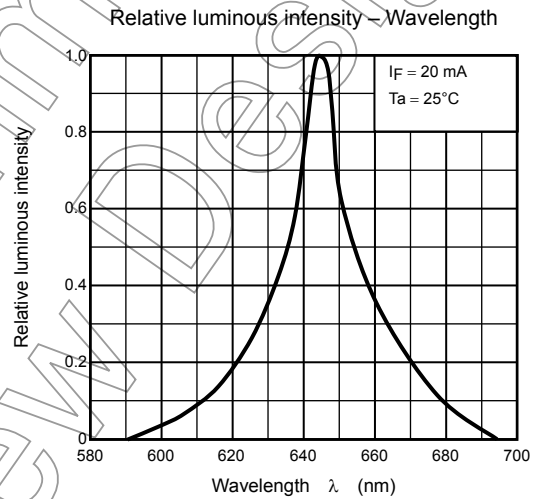
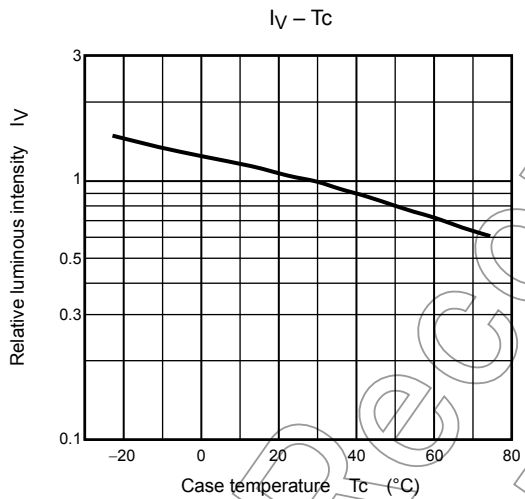
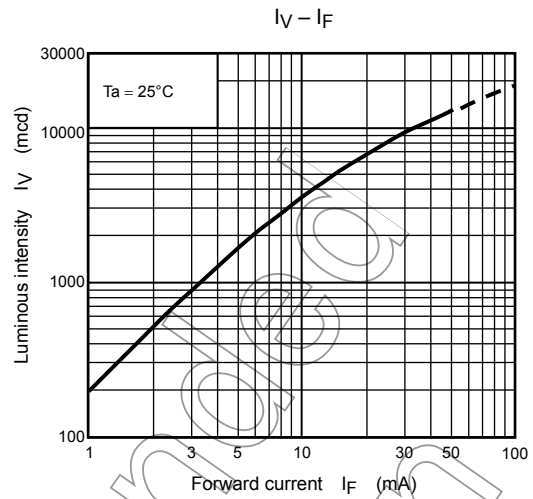
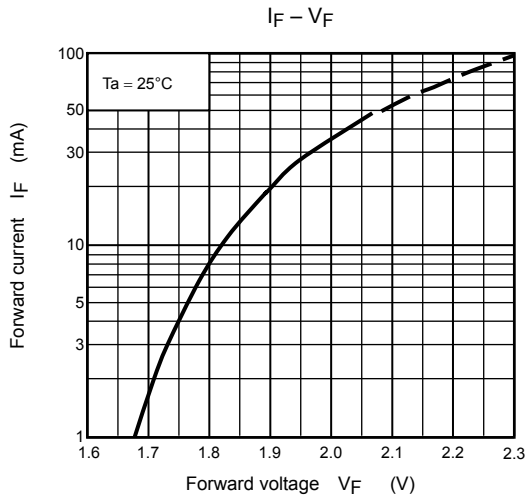
Precautions

Please be careful of the following:

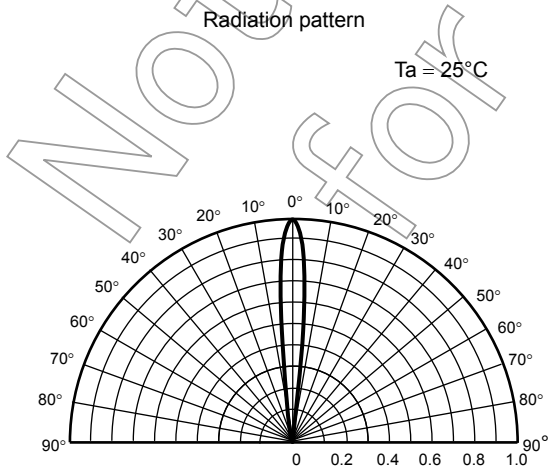
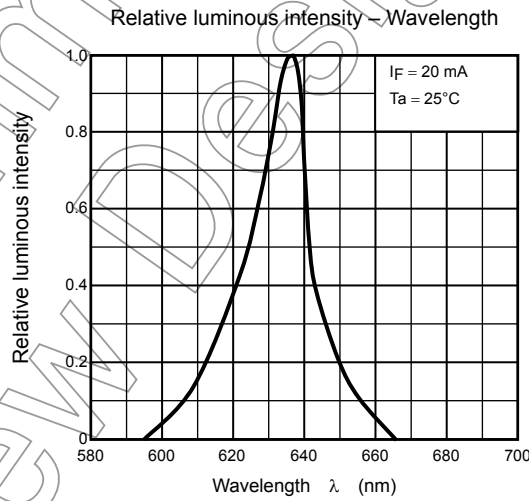
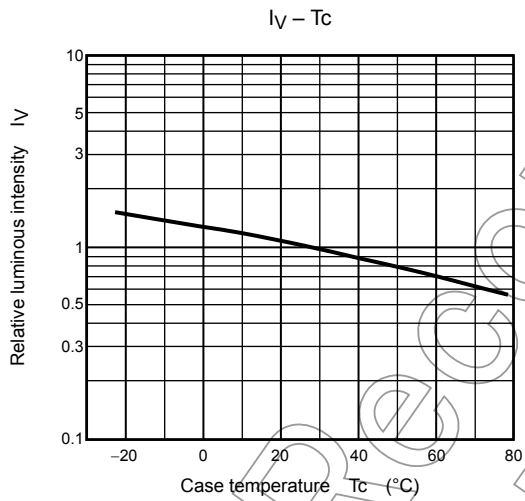
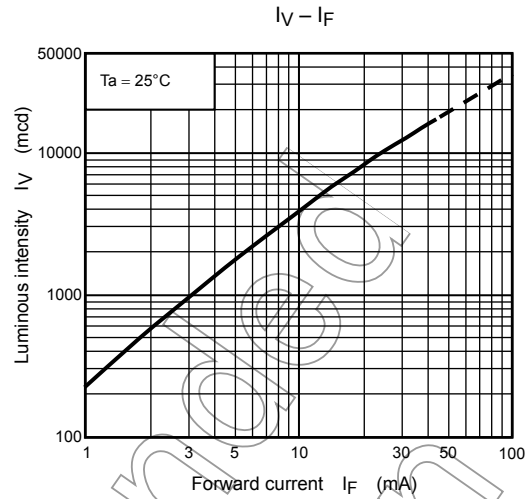
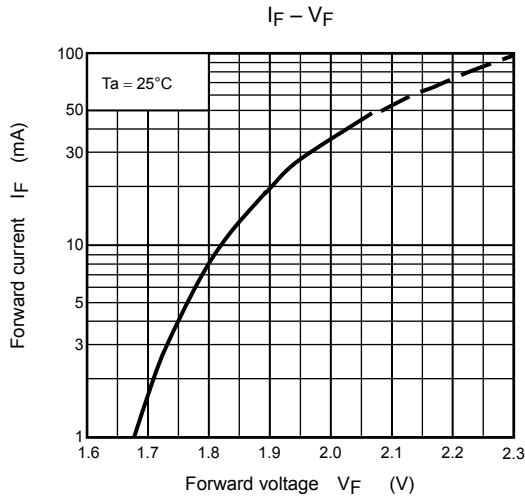
- Soldering temperature: 260°C max, soldering time: 3 s max (soldering portion of lead: up to 1.6 mm from the body of the device)
- If the lead is formed, the lead should be formed up to 1.6 mm from the body of the device without forming stress to the resin. Soldering should be performed after lead forming.
- 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.

Not Recommended for New Design

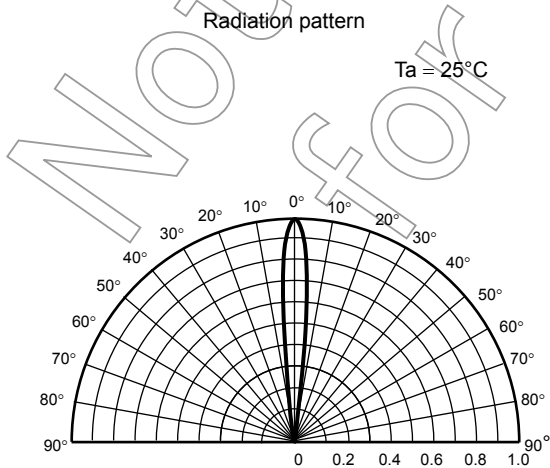
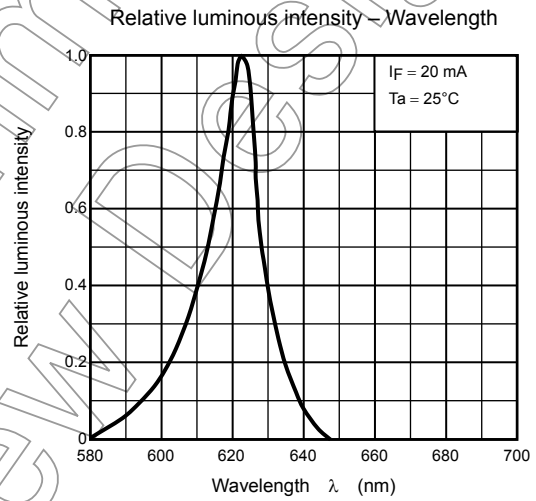
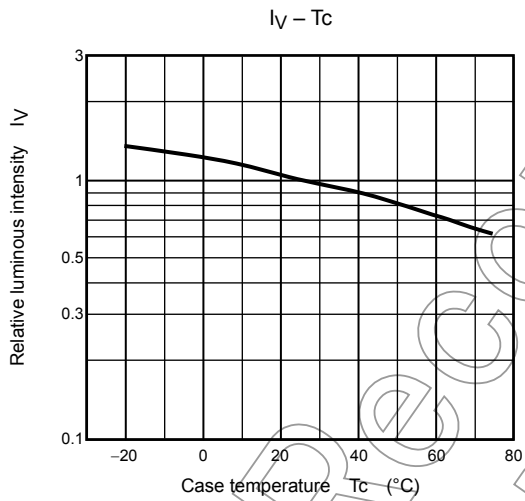
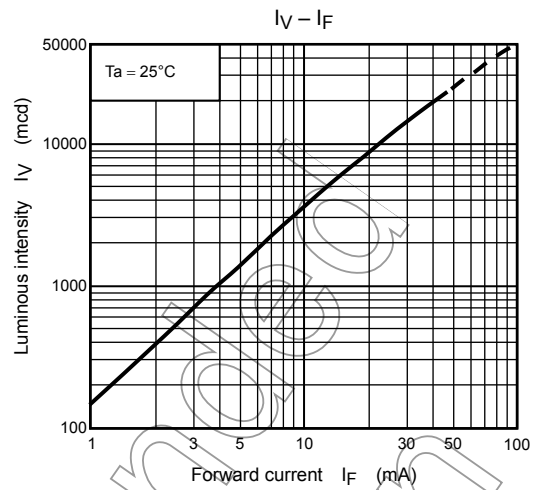
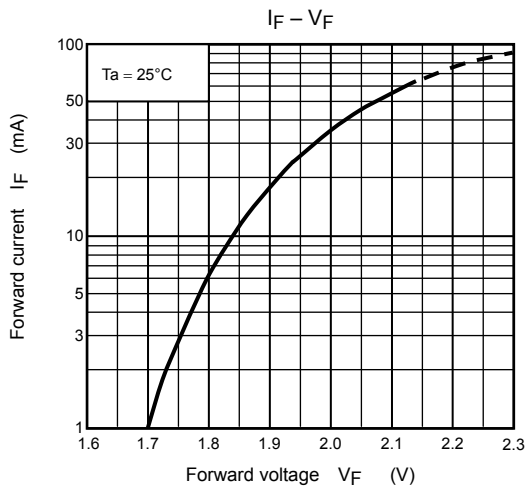
TLRE20TP(F)



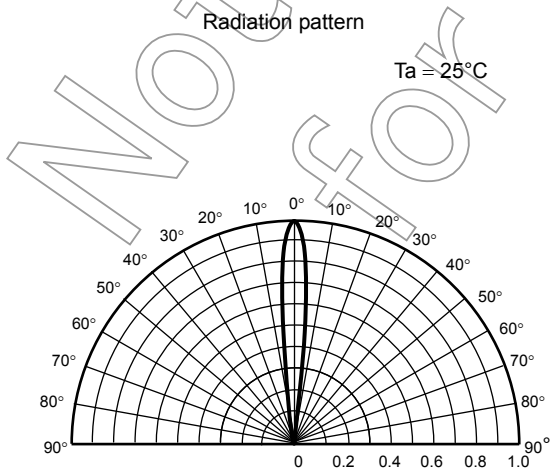
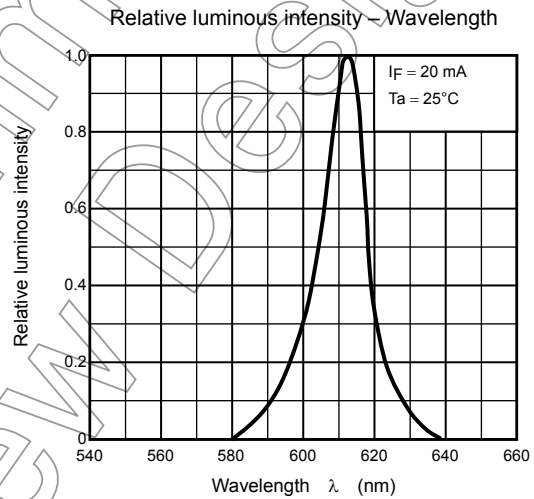
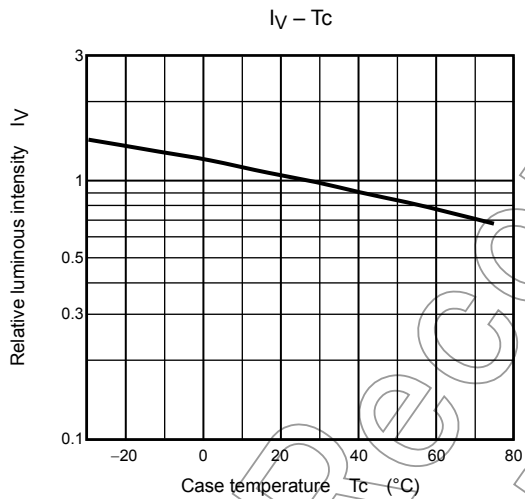
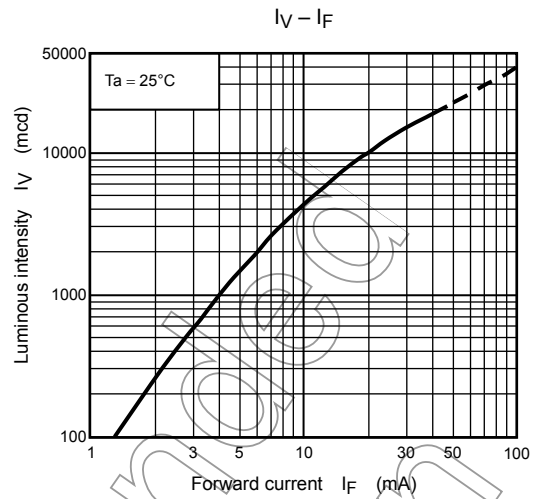
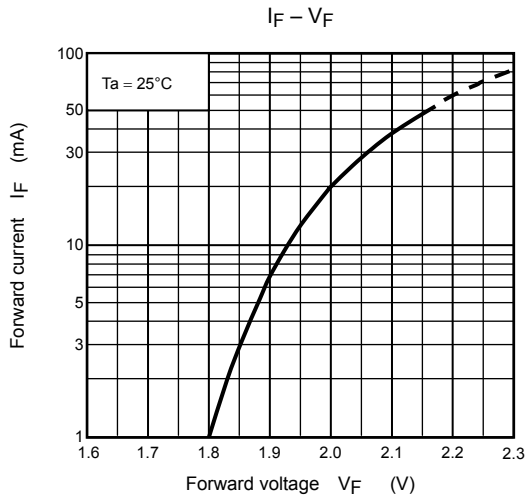
TLRME20TP(F)



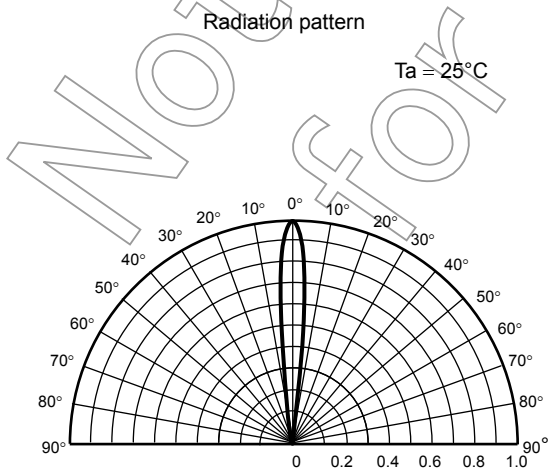
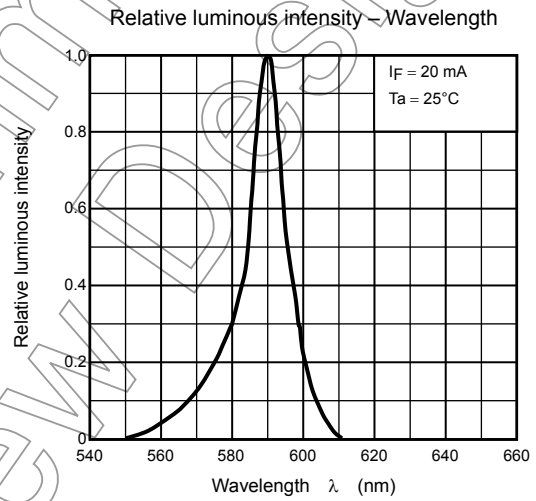
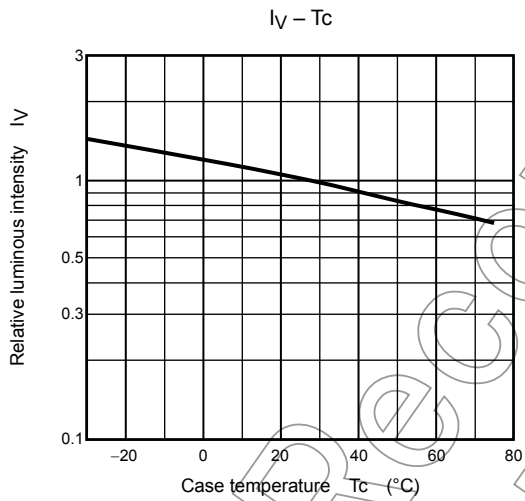
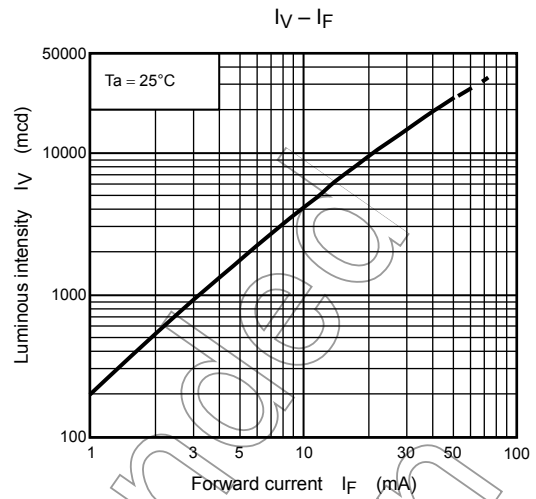
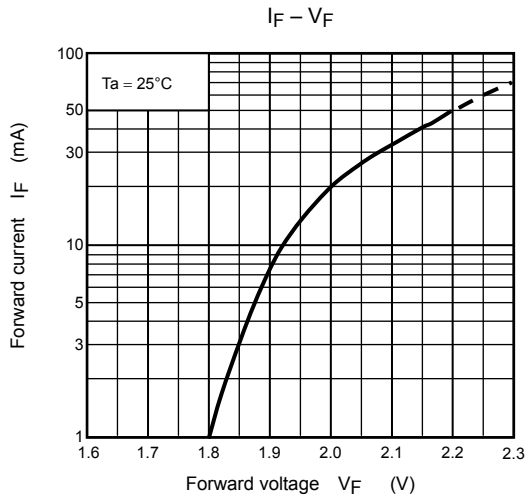
TLSE20TP(F)



TLOE20TP(F)



TLYE20TP(F)



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