

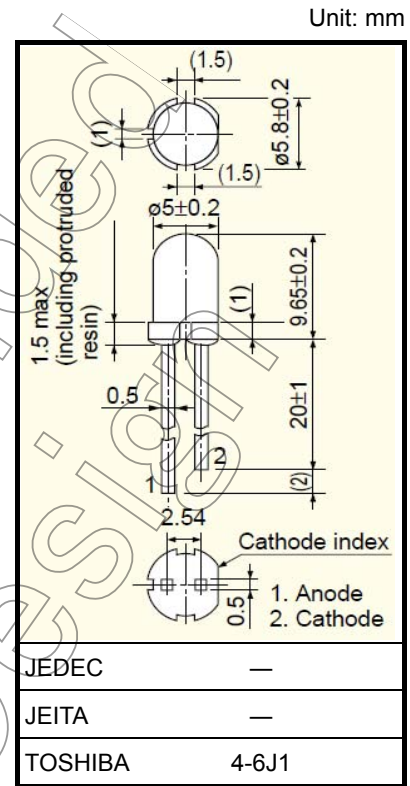
**TLRMH20TP(F), TLSH20TP(F), TLOH20TP(F), TLYH20TP(F)**

Panel Circuit Indicator

- 5mm package
  - InGaAlP 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
- TLRMH20T(F), TLSH20T(F), TLOH20T(F), TLYH20T(F)

Lineup

Product Name	Color	Material
TLRMH20TP(F)	Red	InGaAlP
TLSH20TP(F)	Red	
TLOH20TP(F)	Orange	
TLYH20TP(F)	Yellow	



Weight: 0.31 g(Typ.)

**Absolute Maximum Ratings (Ta = 25°C)**

Product Name	Forward Current IF (mA)	Reverse Voltage VR (V)	Power Dissipation PD (mW)	Operating Temperature Topr (°C)	Storage Temperature Tstg (°C)
TLRMH20TP(F)	50	4	120	-40~100	-40~120
TLSH20TP(F)					
TLOH20TP(F)					
TLYH20TP(F)					

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).

**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>	
	λ <sub>d</sub>	λ <sub>P</sub>	Δλ	I <sub>F</sub>	Min	Typ.	I <sub>F</sub>	Typ.	Max	I <sub>F</sub>	Max	V <sub>R</sub>
TLRMH20TP(F)	626	(636)	13	20	2720	9000	20	1.9	2.4	20	50	4
TLSH20TP(F)	613	(623)	13	20	4760	11000	20	2.0	2.4	20	50	4
TLOH20TP(F)	605	(612)	13	20	4760	15000	20	2.0	2.4	20	50	4
TLYH20TP(F)	587	(590)	13	20	4760	13000	20	2.0	2.4	20	50	4
Unit	nm			mA	mcd		mA	V	mA	μA	V	

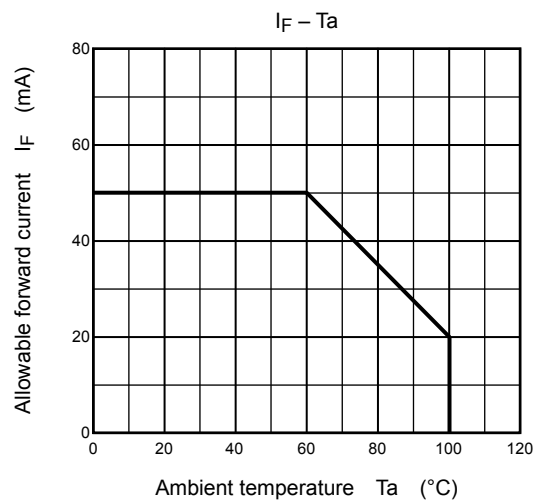
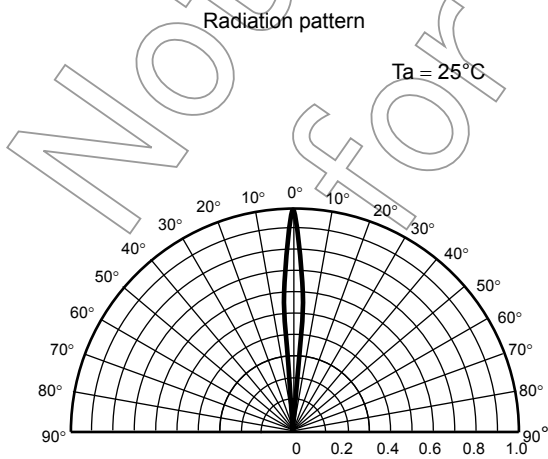
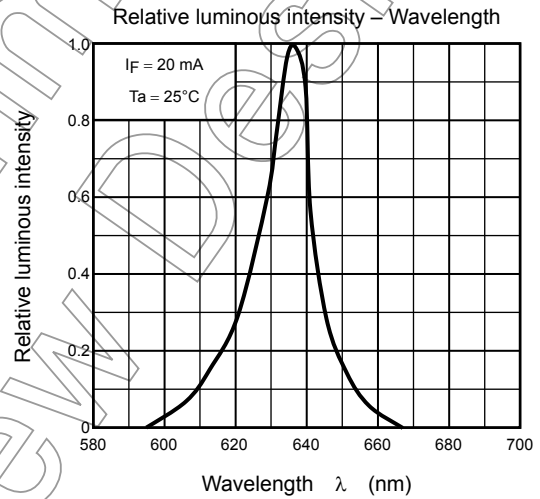
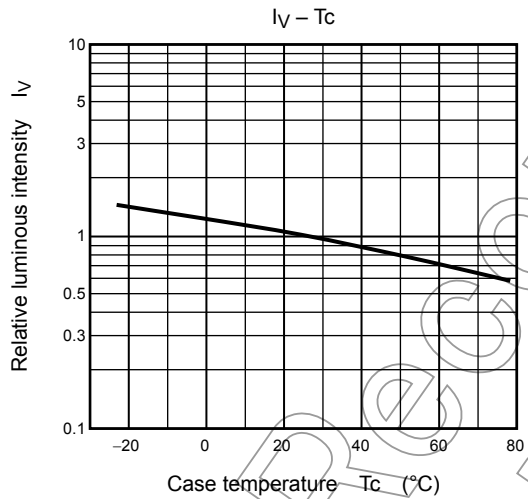
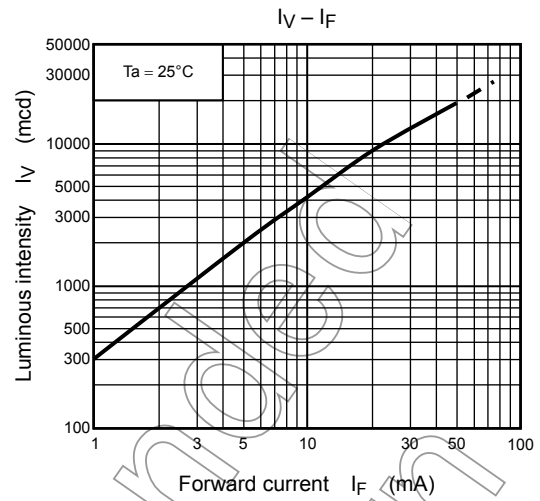
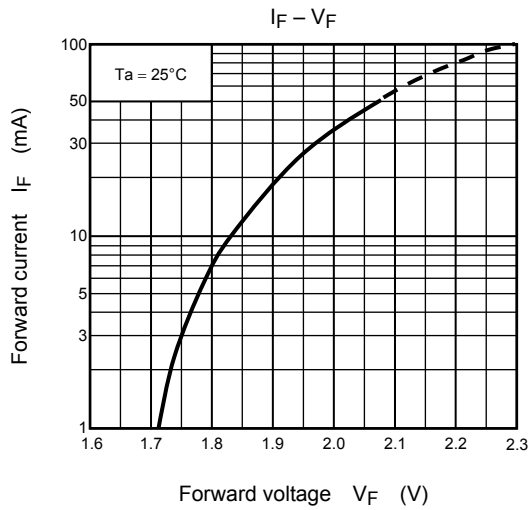
**Precautions**

Please be careful of the following:

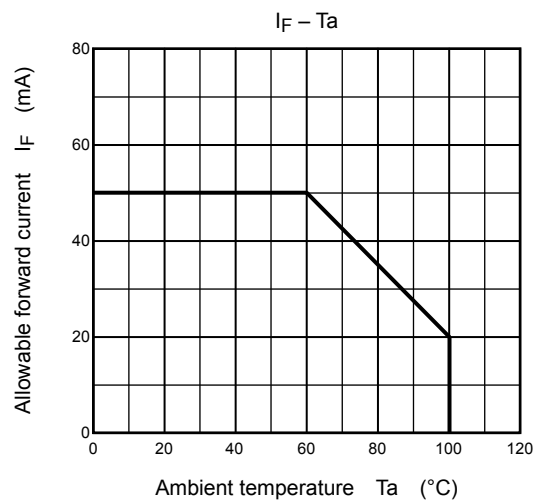
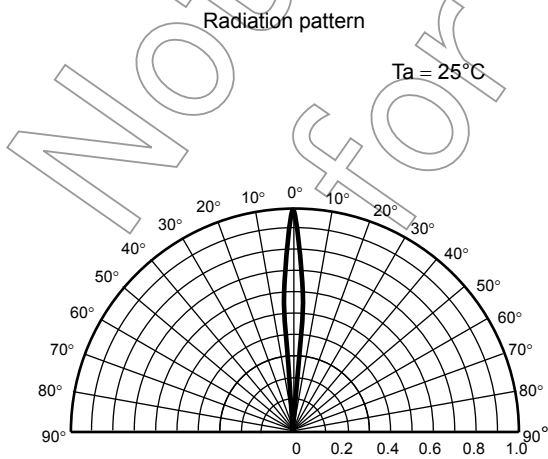
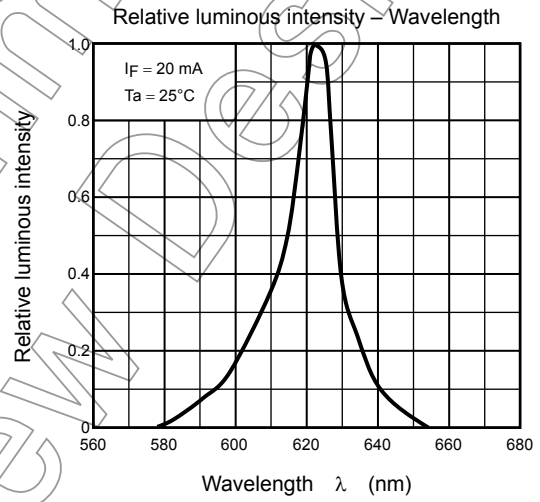
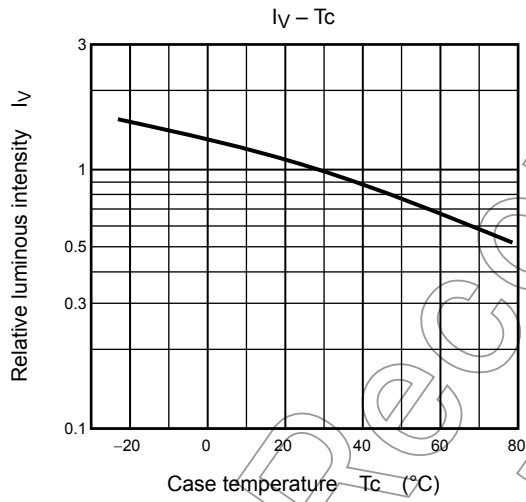
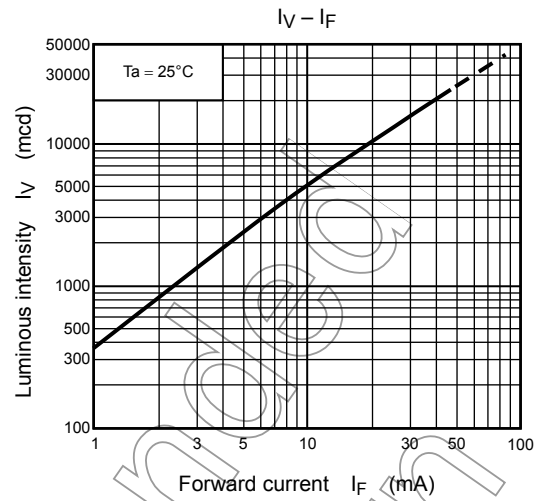
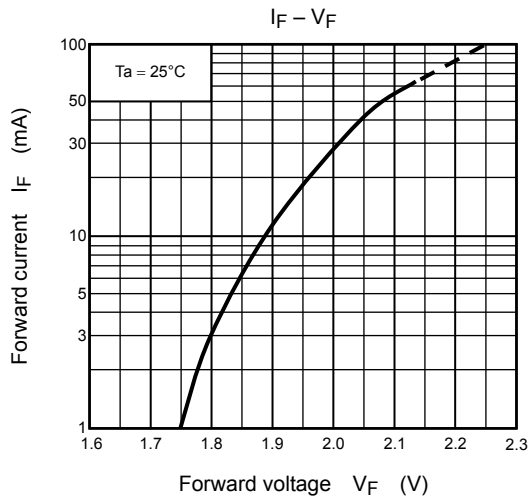
- Soldering temperature: 260°C max, soldering time: 3 s max  
(soldering portion of lead: up to 1.6 mm from the body of the device)
- If the lead is formed, the lead should be formed up to 1.6 mm from the body of the device without forming stress to the resin. Soldering should be performed after lead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

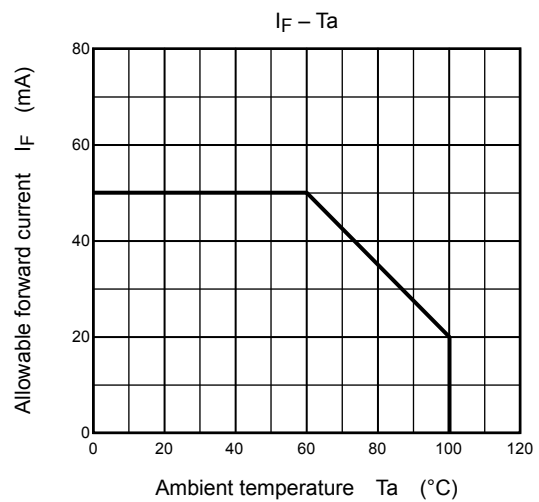
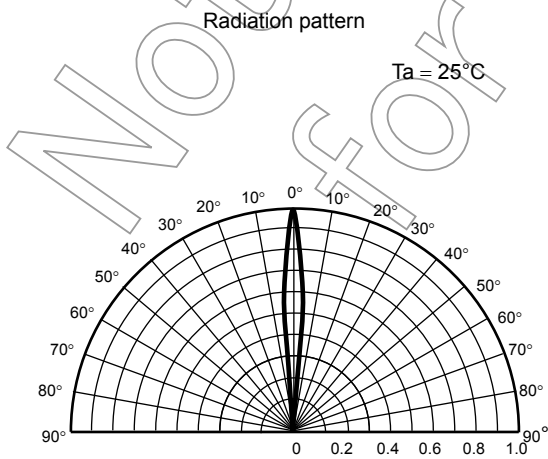
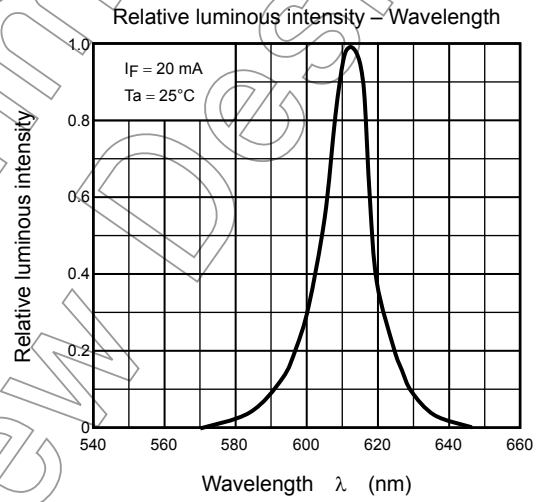
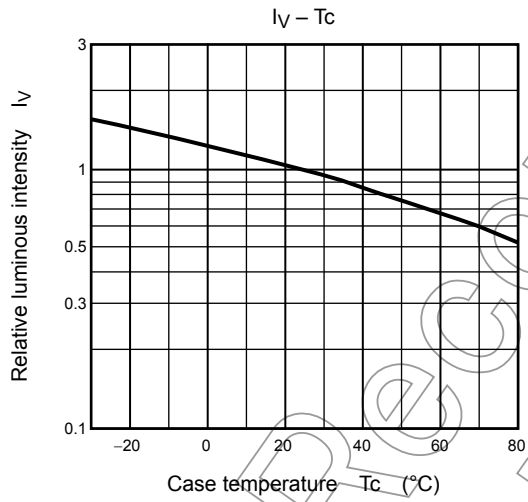
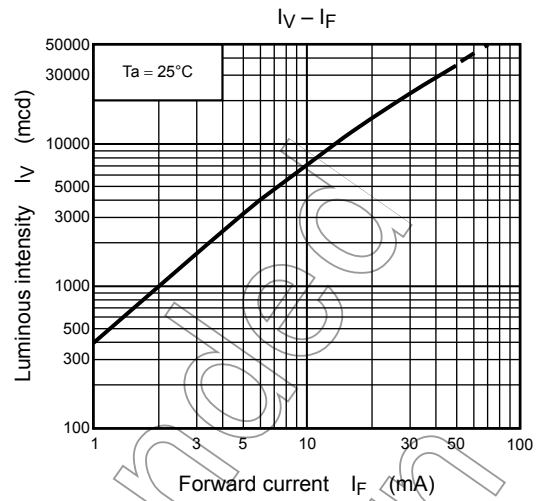
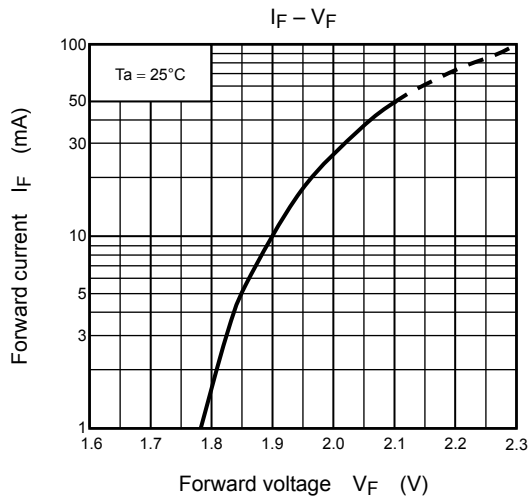
**TLRMH20TP(F)**



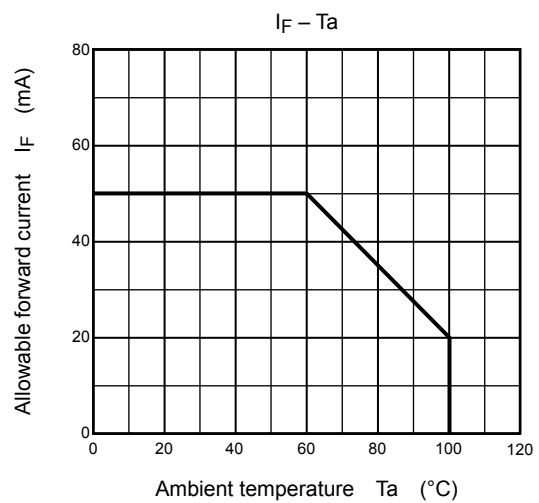
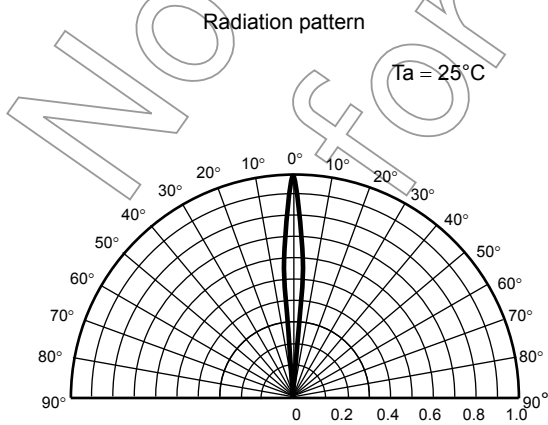
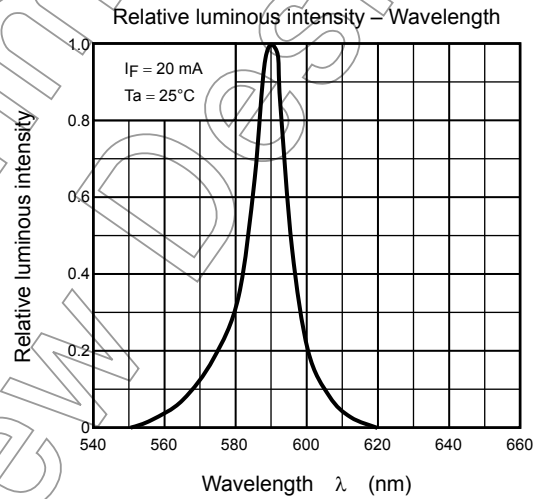
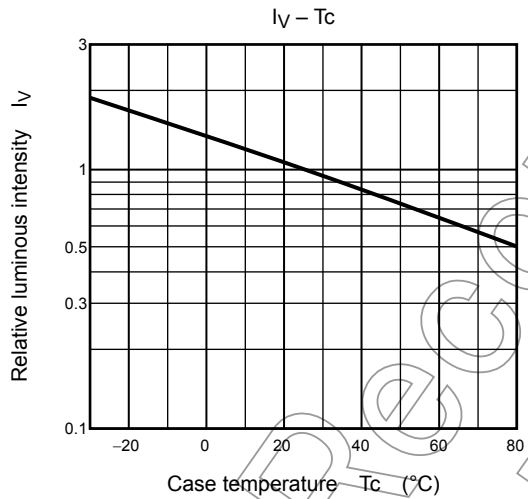
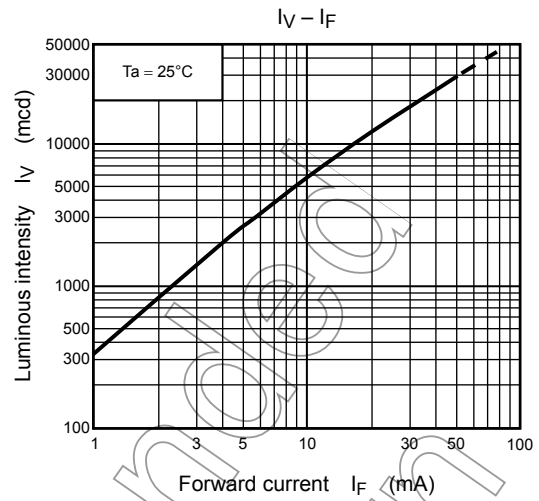
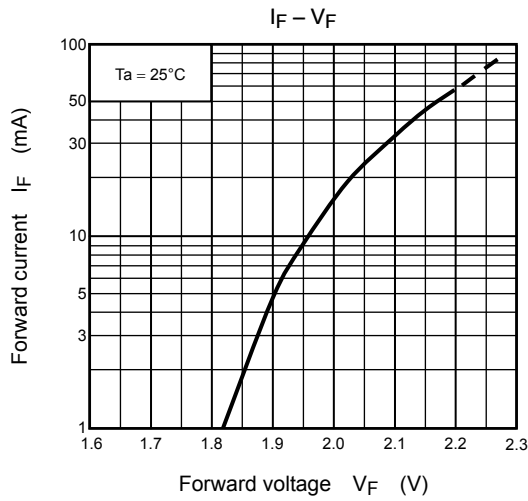
**TLSh20TP(F)**



**TLOH20TP(F)**



**TLYH20TP(F)**



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