

### TLPGE23TP(F), TLFGE23TP(F), TLGE23TP(F), TLPYE23TP(F)

#### Panel Circuit Indicator

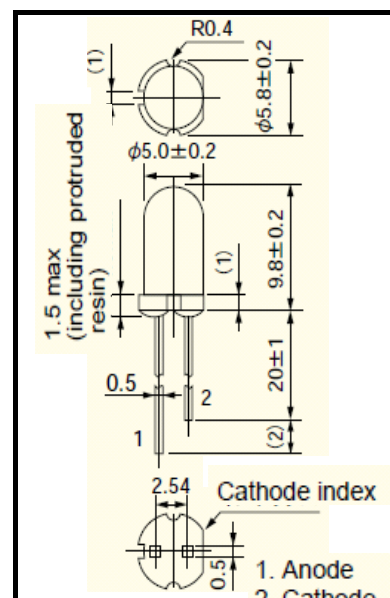
Unit: mm

- Lead(Pb)-free products (lead: Sn-Ag-Cu)
- 5mm package
- InGaAlP technology
- All plastic mold type
- Transparent lens
- Lineup: 3 colors (pure green, green, pure yellow)
- High intensity light emission
- Excellent low current light output
- Stopper lead type is also available
- Applications: traffic signals, safety equipment, etc.

TLPGE23T(F), TLFGE23T(F), TLGE23T(F), TLPYE23T(F)

#### Lineup

Product Name	Color	Material
TLPGE23TP(F)	Pure Green	InGaAlP
TLFGE23TP(F)	Green	
TLGE23TP(F)	Green	
TLPYE23TP(F)	Pure Yellow	

	
JEDEC	—
JEITA	—
TOSHIBA	4-5AL2

Weight: 0.31 g(Typ.)

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

Product Name	Forward Current I <sub>F</sub> (mA)	Reverse Voltage V <sub>R</sub> (V)	Power Dissipation P <sub>D</sub> (mW)	Operating Temperature T <sub>opr</sub> (°C)	Storage Temperature T <sub>stg</sub> (°C)
TLPGE23TP(F)	50	4	120	-40~100	-40~120
TLFGE23TP(F)	50	4	120		
TLGE23TP(F)	50	4	120		
TLPYE23TP(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).

**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>
TLPGE23TP(F)	558	(562)	14	20	850	3000	20	2.1	2.4	20	50	4
TLFGE23TP(F)	565	(568)	15	20	1530	5000	20	2.0	2.4	20	50	4
TLGE23TP(F)	571	(574)	17	20	2720	7000	20	2.0	2.4	20	50	4
TLPYE23TP(F)	580	(583)	14	20	2720	8000	20	2.0	2.4	20	50	4
Unit	nm			mA	mcd		mA	V		mA	μA	V

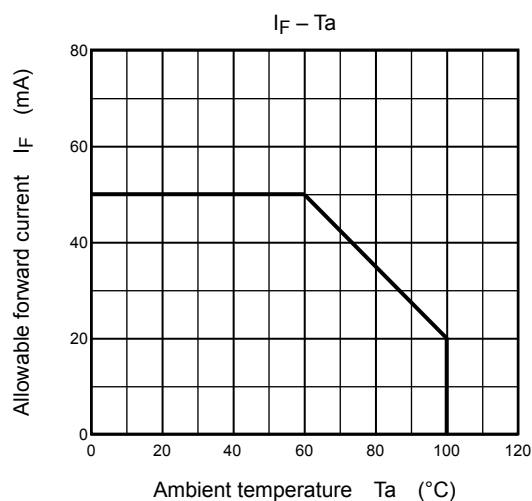
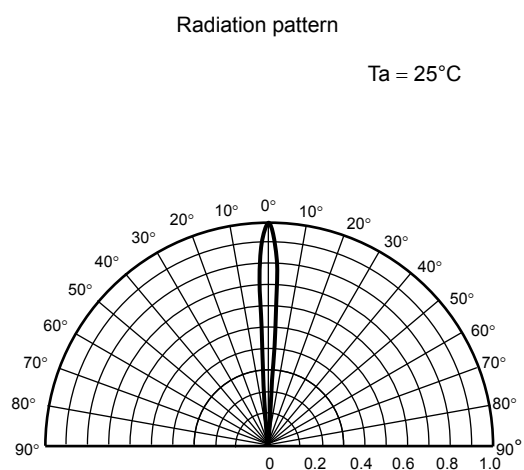
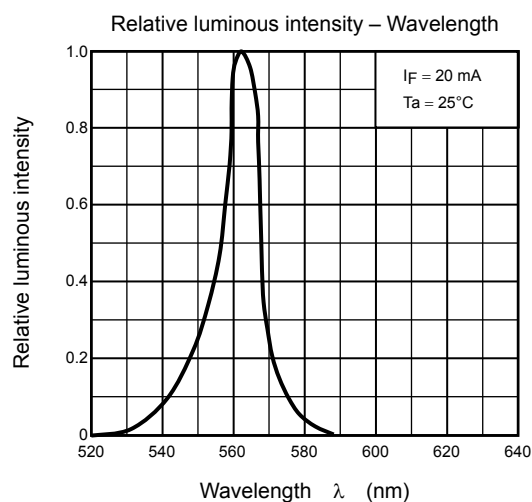
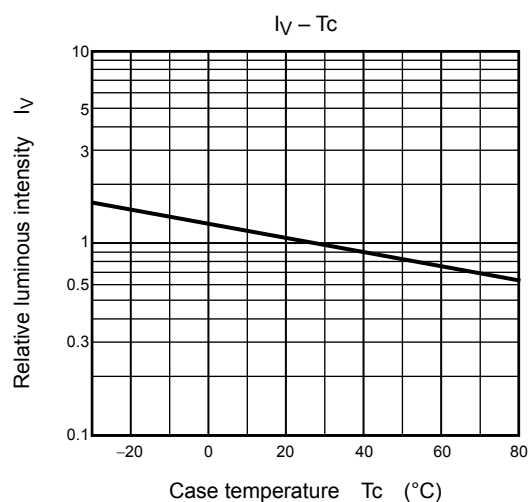
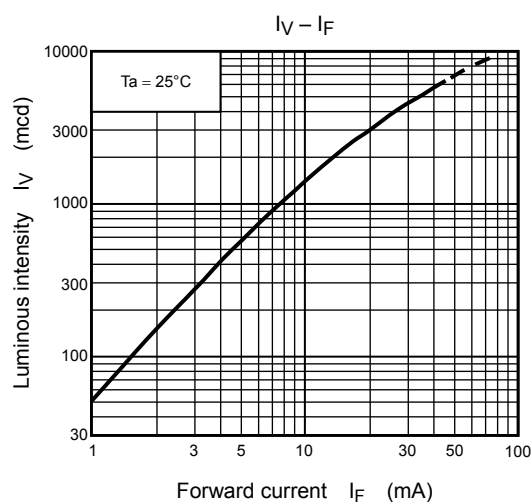
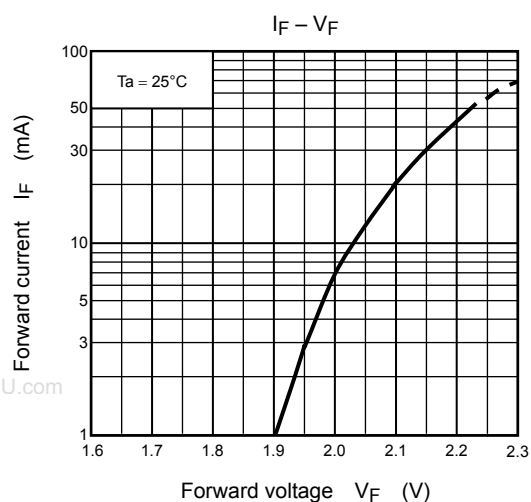
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**Precautions**

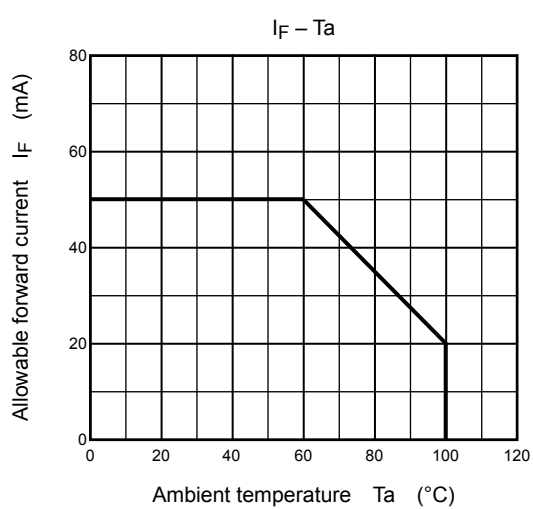
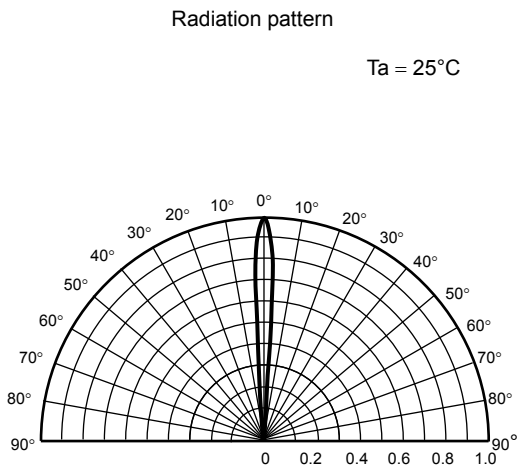
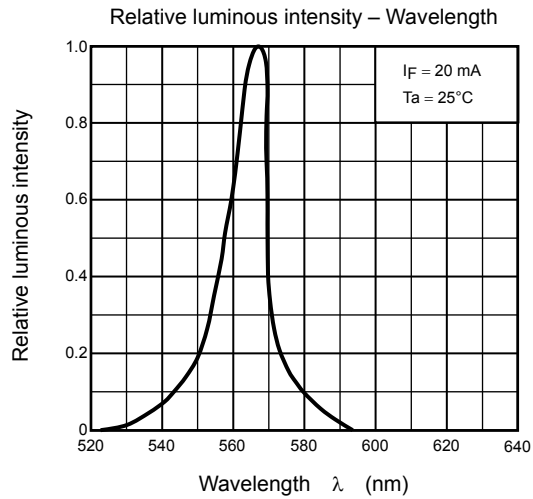
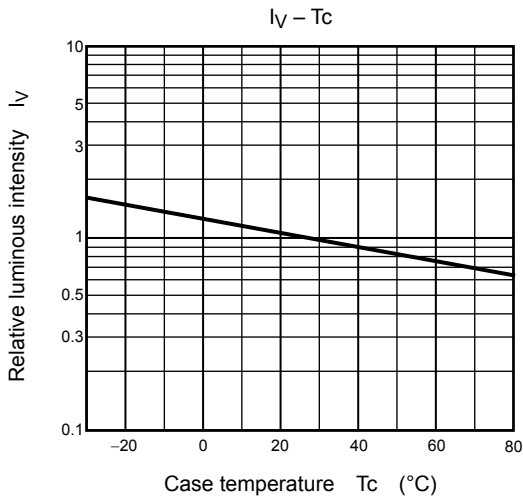
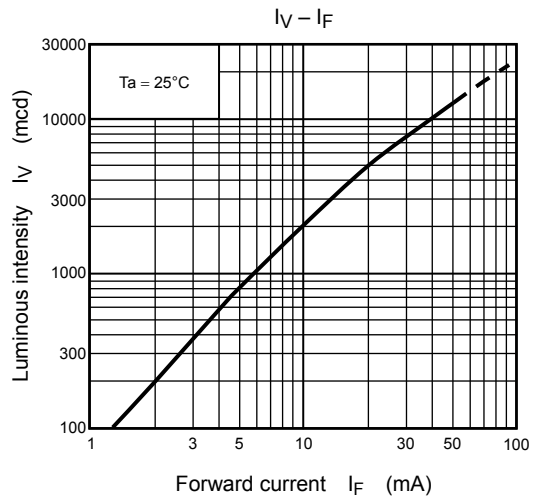
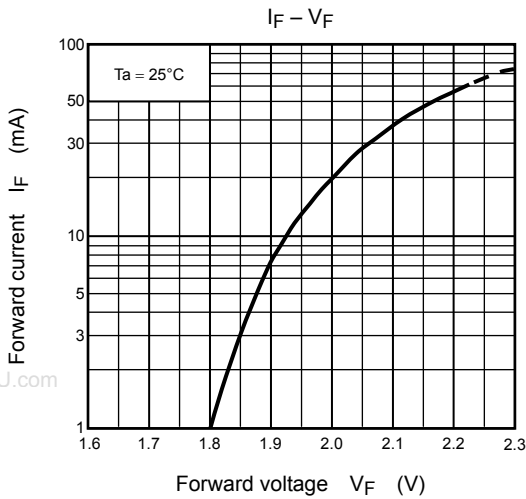
Please be careful of the following:

- 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 photo detector is located near the LED lamp, please ensure that it will not be affected by this IR light.

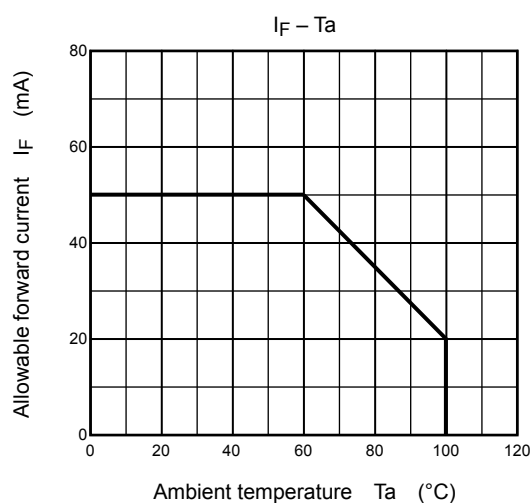
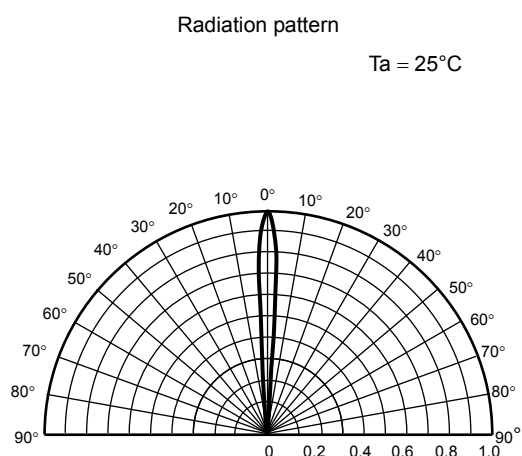
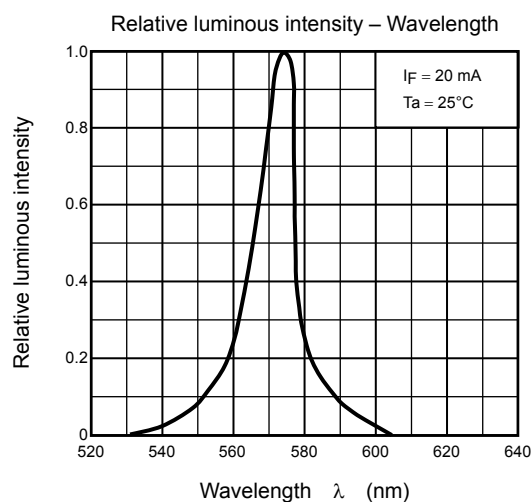
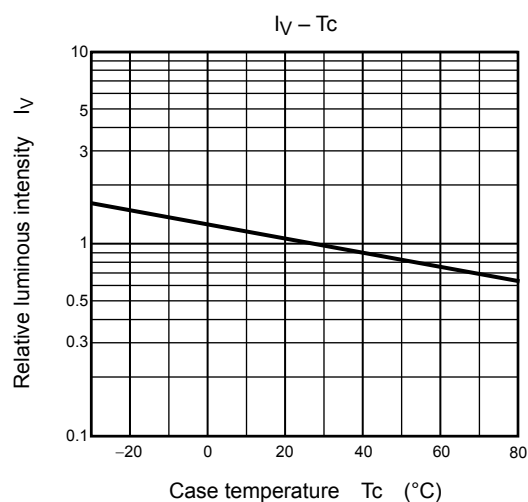
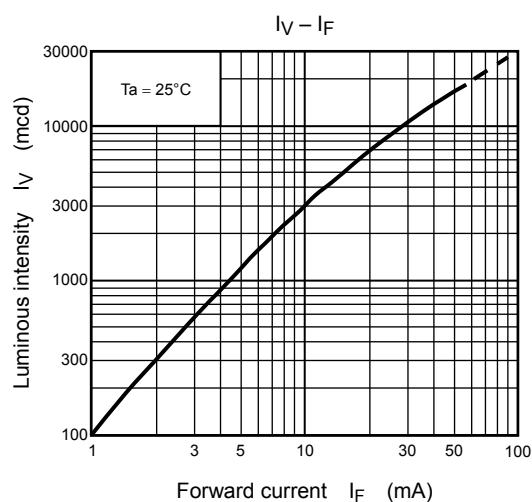
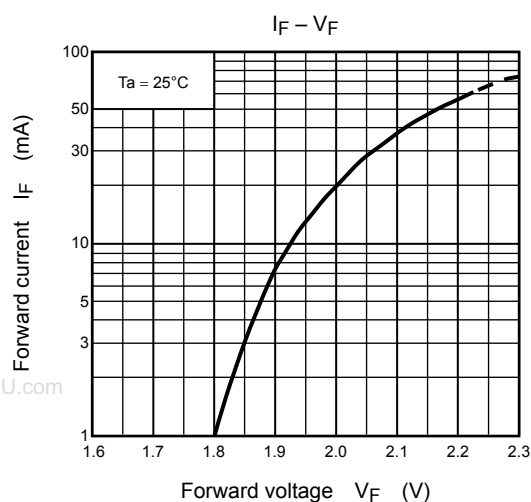
## TLPGE23TP(F)



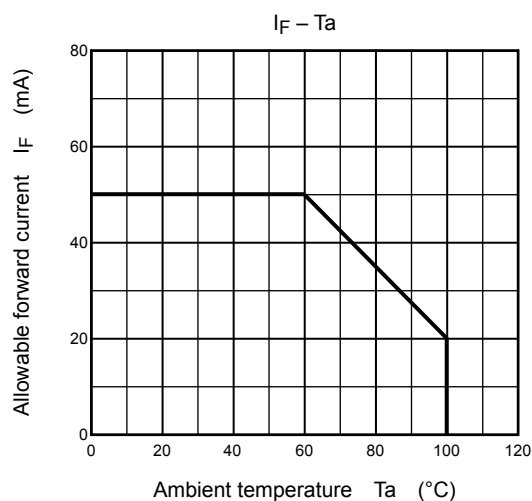
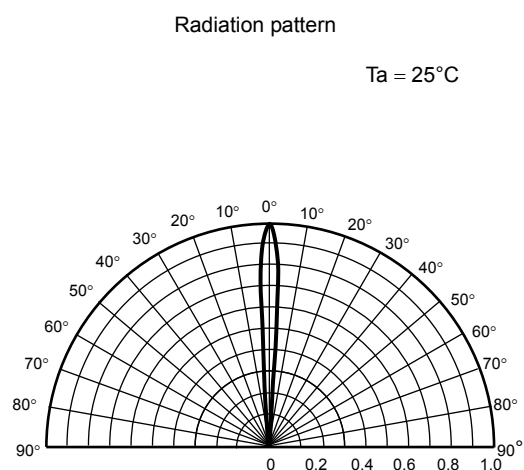
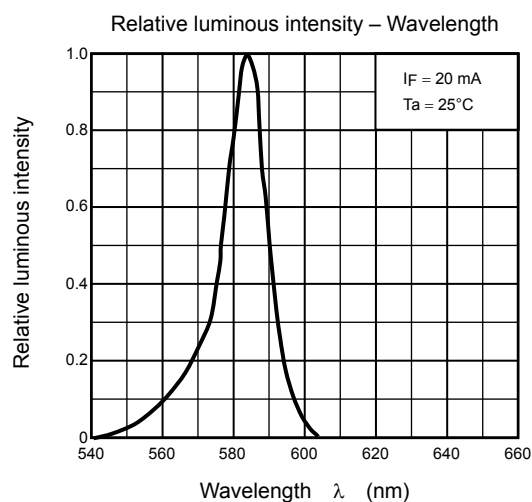
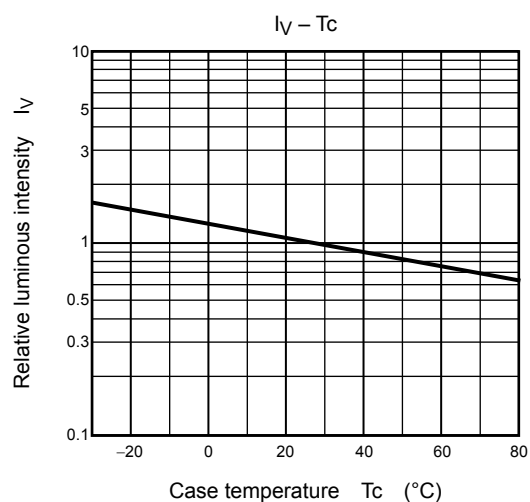
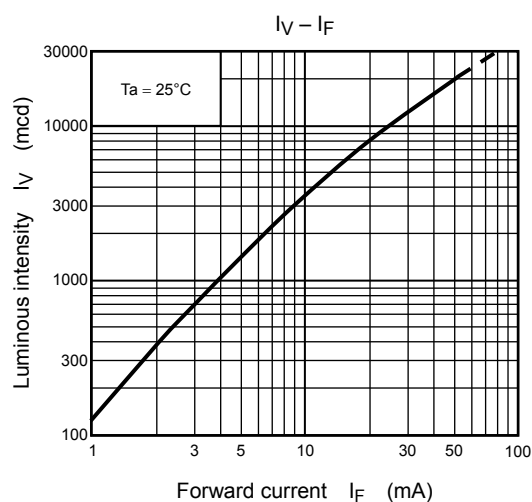
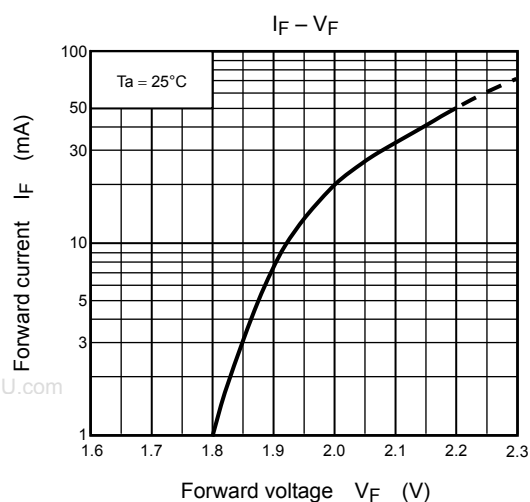
**TLFGE23TP(F)**



## TLGE23TP(F)



## TLPYE23TP(F)



**RESTRICTIONS ON PRODUCT USE**

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- 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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