



## YGRP160803-CTC3

### Dual Wavelength SMD Type Emitter

#### Features

- Top view 0603 package
- Viewing Angle =  $\pm 65^\circ$
- Compatible with infrared and vapor phase reflow solder process
- High reliability
- Dual dominant wavelength (YG=572nm , R=624nm)
- RoHS compliance

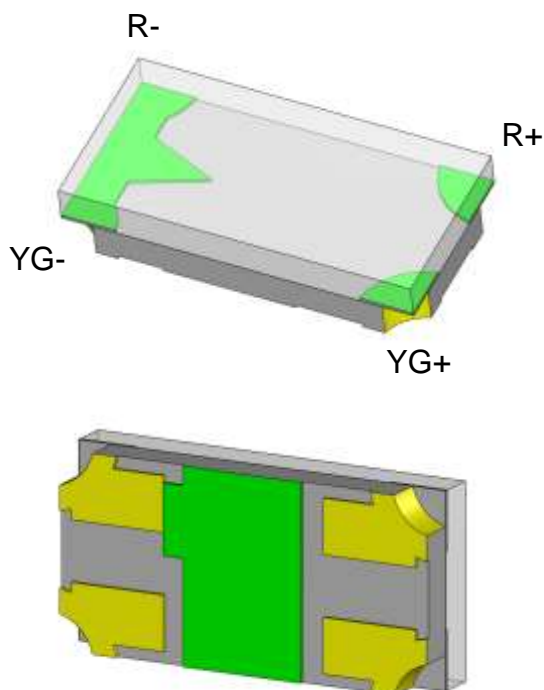
#### Description

The YGRP160803-CTC3 is a double LED housed in a miniature SMD package. The device has a dominant wavelength of 572nm and 624nm LED.

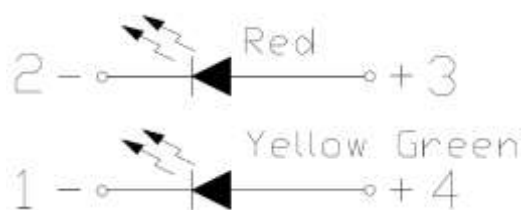
#### Applications

- Optical indicator.
- Switch and Symbol Display.

#### Package Outline



#### Schematic



**Absolute Maximum Rating at 25°C**

Symbol	Parameters		Ratings	Units	Notes
I <sub>F</sub>	Continuous Forward Current	YG	25	mA	
		R	25		
I <sub>FP</sub>	Peak Forward Current	YG	60	mA	1
		R	60		
V <sub>R</sub>	Reverse Voltage		5	V	
T <sub>opr</sub>	Operating Temperature		-40 ~ +85	°C	
T <sub>stg</sub>	Storage Temperature		-40 ~ +100	°C	
T <sub>sol</sub>	Soldering Temperature		260	°C	2
P <sub>D</sub>	Power Dissipation at(or below) 25°C Free Air Temperature	YG	60	mW	
		R	60		

**Electro-Optical Characteristics** *TA = 25°C (unless otherwise specified)***Optical Characteristics (Yellow Green)**

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I <sub>v</sub>	Luminous Intensity	I <sub>F</sub> =5mA	7.2	-	18	mcd	3
λ <sub>p</sub>	Peak Wavelength	I <sub>F</sub> =5mA	-	574	-	nm	
λ <sub>D</sub>	Dominant Wavelength	I <sub>F</sub> =5mA	567.5	-	575.5	nm	4
θ <sub>1/2</sub>	Angle of Half Intensity	I <sub>F</sub> =5mA	-	±65	-	deg	

**Electrical Characteristics**

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =5mA	1.6	-	2.2	V	
I <sub>R</sub>	Reverse Current	V <sub>R</sub> =5V	-	-	1	μA	

**Optical Characteristics (Red)**

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I <sub>v</sub>	Luminous Intensity	I <sub>F</sub> =5mA	22.5	-	57.0	mcd	3
λ <sub>p</sub>	Peak Wavelength	I <sub>F</sub> =5mA	-	632	-	nm	
λ <sub>D</sub>	Dominant Wavelength	I <sub>F</sub> =5mA	617.5	-	629.5	nm	
θ <sub>1/2</sub>	Angle of Half Intensity	I <sub>F</sub> =5mA	-	±65	-	deg	

**Electrical Characteristics**

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =5mA	1.6	-	2.2	V	
I <sub>R</sub>	Reverse Current	V <sub>R</sub> =5V	-	-	1	μA	

**Notes:**

1. I<sub>FP</sub> Conditions--Pulse Width ≤ 100μs and Duty ≤ 10%.
2. Soldering time ≤ 10 seconds.
3. Bin Range of Luminous Intensity

Yellow Green				
Bin Code	Min	Max	Unit	Condition
K1	7.2	9.0	mcd	I <sub>F</sub> =5mA
K2	9.0	11.5		
L1	11.5	14.5		
L2	14.5	18.0		
Red				
MA	22.5	36.0	mcd	I <sub>F</sub> =5mA
NA	36.0	57.0		

Tolerance of: Luminous Intensity ±10%

4. Bin Range of Dominant Wavelength

Yellow Green				
Bin Code	Min	Max	Unit	Condition
AG15	567.5	569.5	nm	I <sub>F</sub> =5mA
AG16	569.5	571.5		
AG17	571.5	573.5		
AG18	573.5	575.5		

Tolerance of Dominant Wavelength: ±1nm



## Typical Characteristic Curves

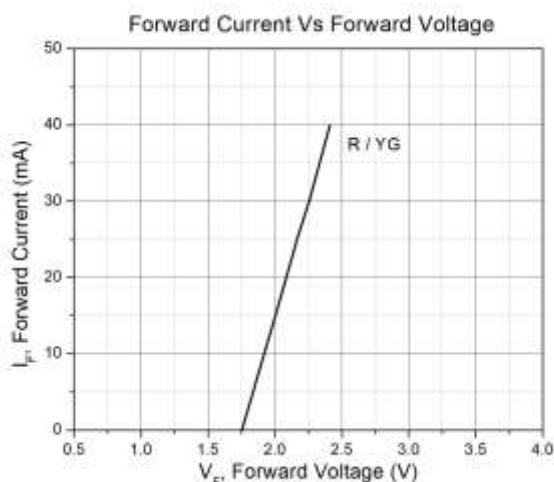


Figure 1

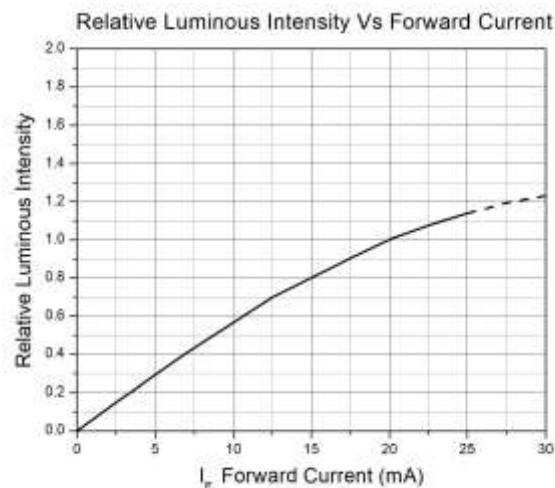


Figure 2

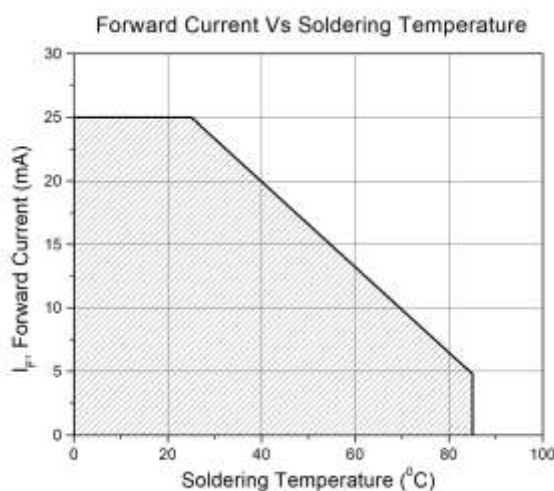


Figure 3

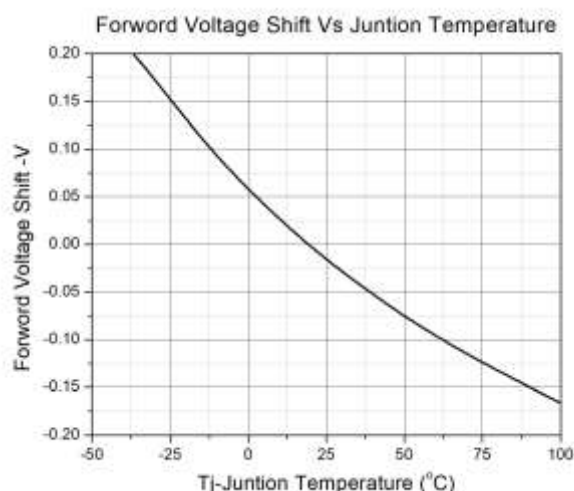


Figure 4

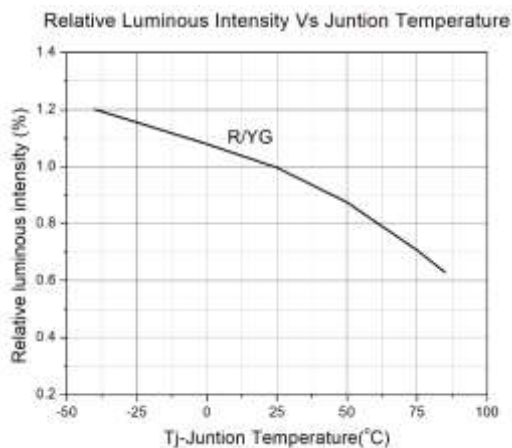


Figure 5

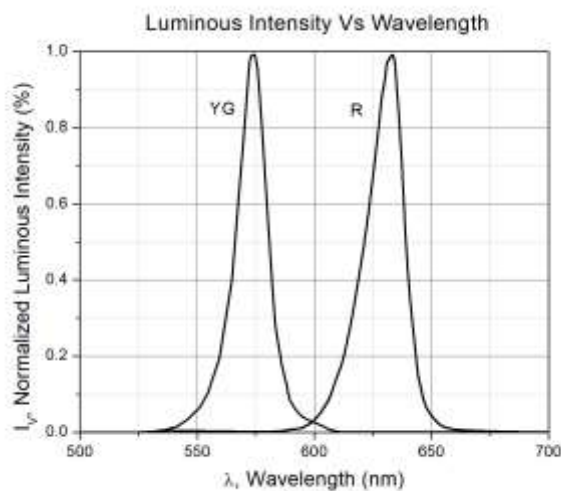
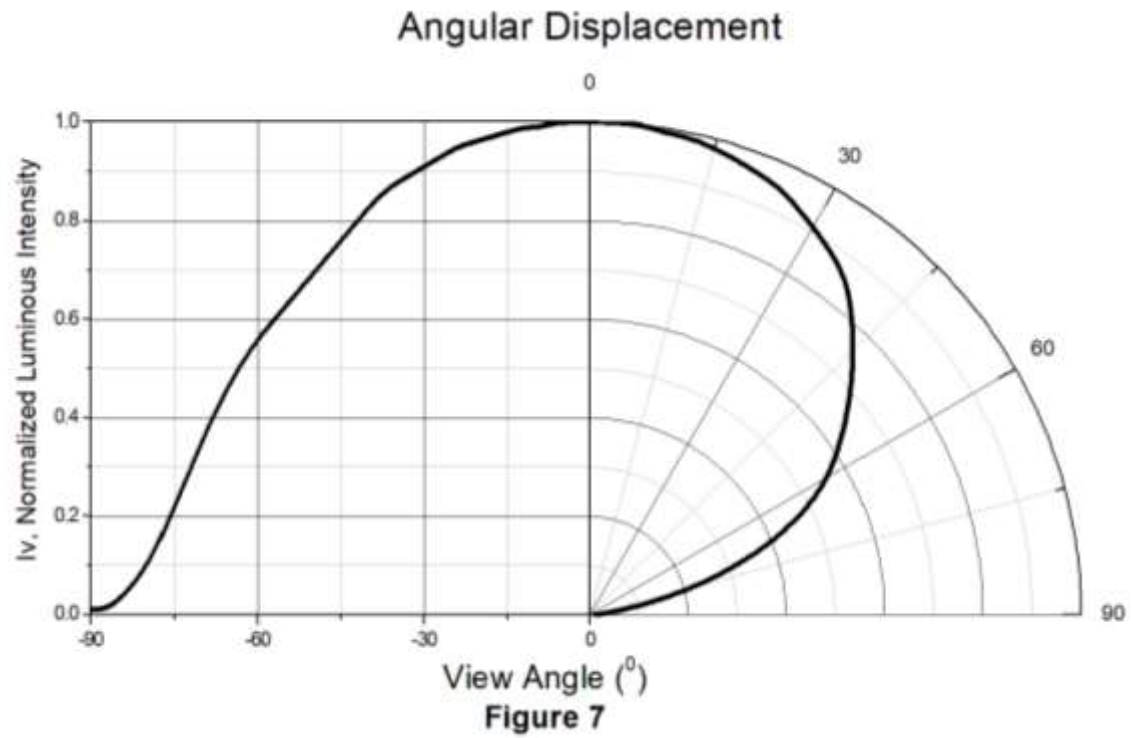


Figure 6

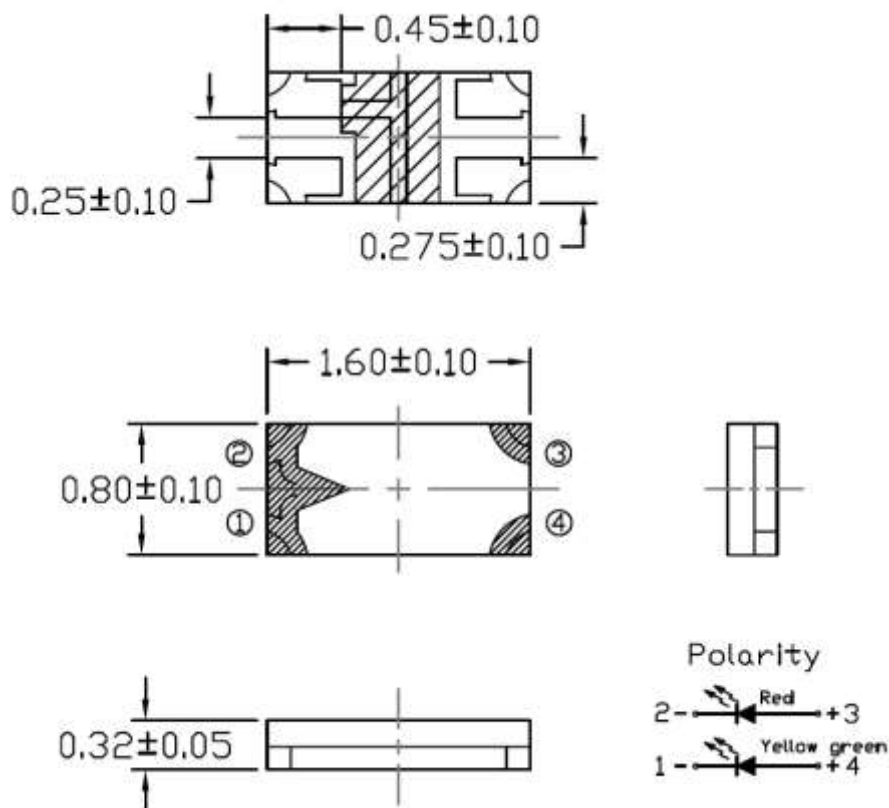


## Typical Characteristic Curves



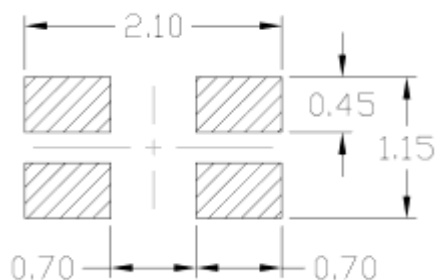


**Package Dimension** *All dimensions are in mm, unless otherwise stated*



Note: Tolerance unless mentioned is  $\pm 0.1$ mm.

**Recommended Soldering Mask** *All dimensions are in mm, unless otherwise stated*



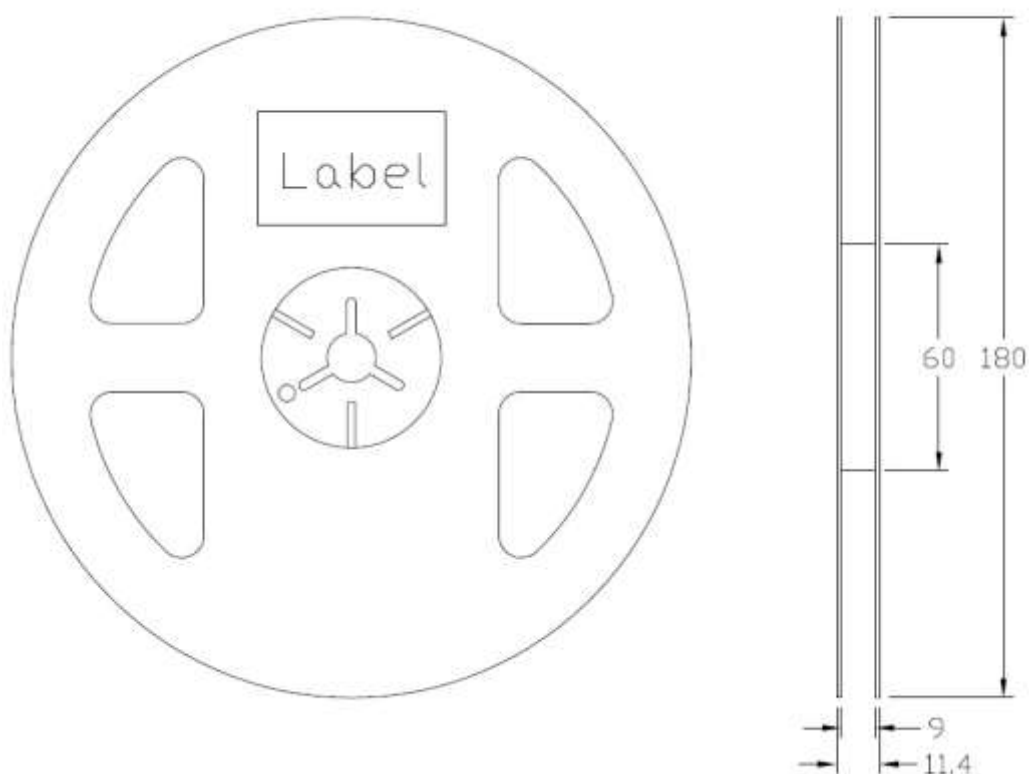
Note: Tolerance unless mentioned is  $\pm 0.1$ mm.

**Ordering Information**

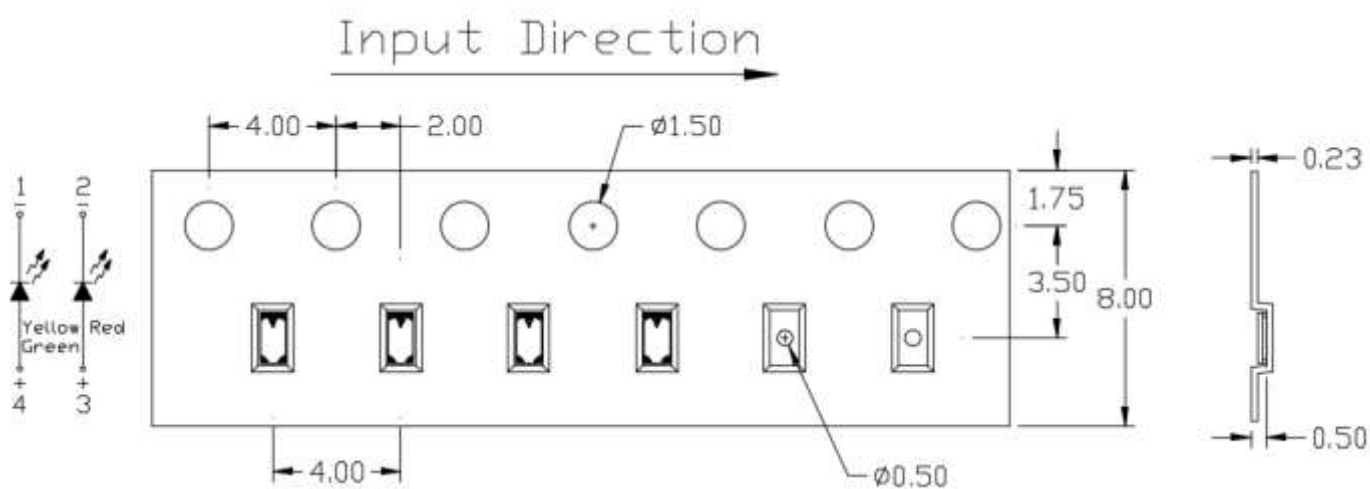
Part Number	Description	Quantity
YGRP160803-CTC3	Tape & Reel	3000 pcs



**Reel Dimension** *All dimensions are in mm, unless otherwise stated*



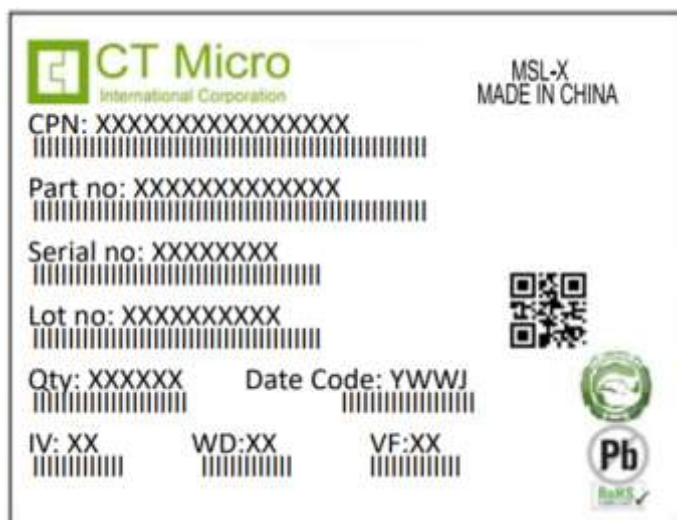
**Tape Dimension** *All dimensions are in mm, unless otherwise stated*



Note: Tolerance unless mentioned is  $\pm 0.1$ mm.



## Label Form Specification



CPN : Customer Part Number  
Part no: CTM Production Number  
Serial no: Production Number  
Lot no: Lot number  
Q'ty: Packing Quantity  
Date Code: Manufacture Date  
IV : Bin Code of Luminous Intensity  
WD : Bin Code of Dominant Wavelength  
VF : Bin Code of Forward Voltage  
MADE IN CHINA: Production Place

## Storage Condition

1. Do not open moisture proof bag before the products are ready to use.
2. The moisture barrier bag should be stored at 30°C and 90%R.H. max. before opening.  
Shelf life of non-opened bag is 12 months after the bag sealing date.
3. After opening the moisture barrier bag floor life is 1 year at 30°C/60%RH. max. Unused LEDs should be resealed into moisture barrier bag. (Refer to J-STD-020 Standard)
4. If the moisture absorbent material has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the J-STD-033 Standard conditions.





## Reflow Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. ( $T_{smin}$ )	150°C
Temperature Max. ( $T_{smax}$ )	200°C
Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	60-120 seconds
Ramp-up Rate ( $t_L$ to $t_P$ )	3°C/second max.
Liquidous Temperature ( $T_L$ )	217°C
Time ( $t_L$ ) Maintained Above ( $T_L$ )	60 – 150 seconds
Peak Body Package Temperature	260°C +0°C / -5°C
Time ( $t_P$ ) within 5°C of 260°C	30 seconds
Ramp-down Rate ( $T_P$ to $T_L$ )	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.



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- 2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.*