QT-Brightek SMD Display Series

0.39” Three Digit Display

Part No.: QBTS39ZXX

XX= Color Code
Z= 1: Common Cathode
Z = 0: Common Anode

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Introduction

Feature:

- 0.39” three digit seven segments display
- Low power consumption
- Packed in reel
- White segment and grey surface
- Z = 0 (common anode) or 1 (common cathode)
- XX = color code

Description:

These 0.39” three digit seven segments displays are made with white segment and grey surface. The viewing distance is up to seven meters.

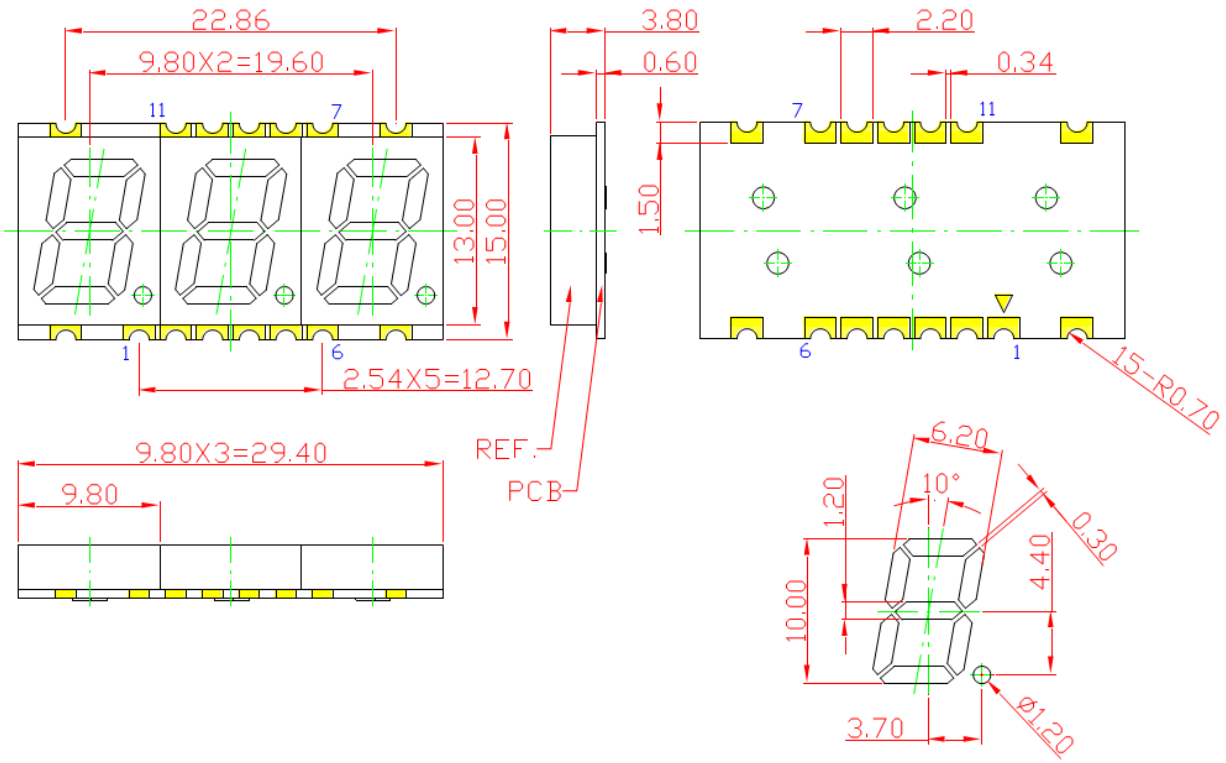
Application:

- Instrument panels
- Indoor/Outdoor display board
- Audio equipment

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant

Dimension:



Units: mm / tolerance = +/-0.25mm

Electrical / Optical Characteristic: (Ta=25 °C)

Product		Material	Color	I_F (mA)	V_F (V)		λ_D (nm)			I_V (mcd)
CC	CA				Typ.	Max.	Min.	Typ.	Max.	Typ.
QBTS391R	QBTS390R	AlInGaP	Red	20	2.0	2.6	619	624	629	40
QBTS391S	QBTS390S	AlInGaP	Deep Red	20	2.0	2.6	636	640	646	8
QBTS391Y	QBTS390Y	AlInGaP	Yellow	20	2.0	2.6	585	590	595	40
QBTS391O	QBTS390O	AlInGaP	Orange	20	2.0	2.6	604	610	614	40
QBTS391AG	QBTS390AG	AlInGaP	Yellow Green	20	2.1	2.6	566	570	576	18
QBTS391IG	QBTS390IG	InGaN	Green	20	3.2	4.0	515	520	530	120
QBTS391IB	QBTS390IB	InGaN	Blue	20	3.2	4.0	464	470	474	60

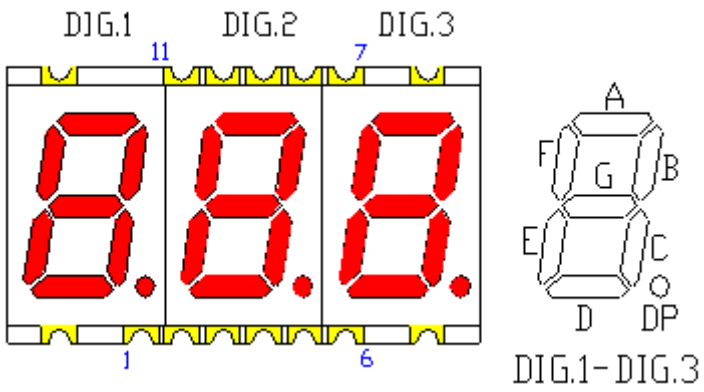
Absolute Maximum Rating:

Material	P_d (mW)	Derating linear from 25°C (mA/°C)	I_F (mA)	I_{FP} (mA)*	V_R (V)	T_{OP} (°C)	T_{ST} (°C)	T_{SOL} (°C)**
AlInGaP	70	0.28	25	90	5	-40 to +105	-40 to +105	260
InGaN	120	0.3	30	100	5	-40 to +105	-40 to +105	260

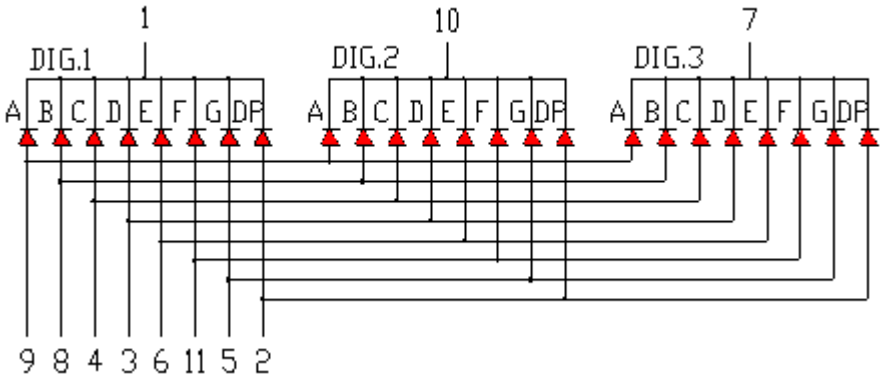
*Duty 1/10 @ 1KHz

**IR Reflow for no more than 5 sec @ 260 °C

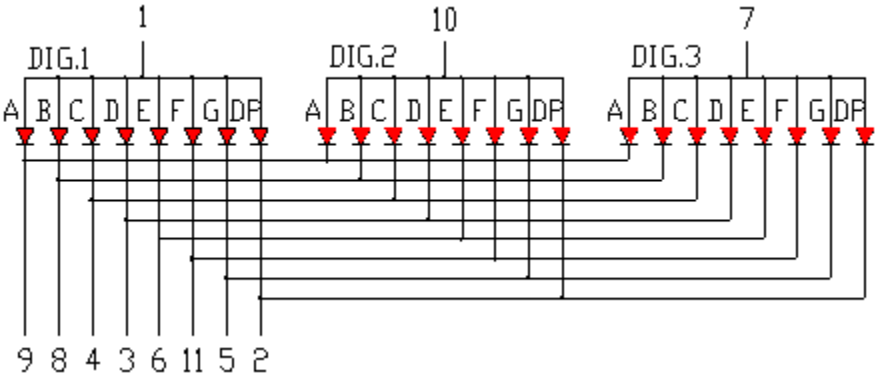
Pin Configuration:



CC



CA



Characteristic Curves

AlInGaP

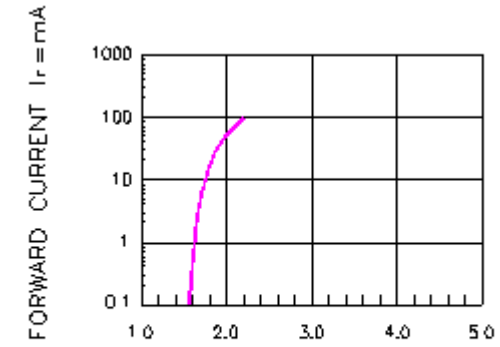


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

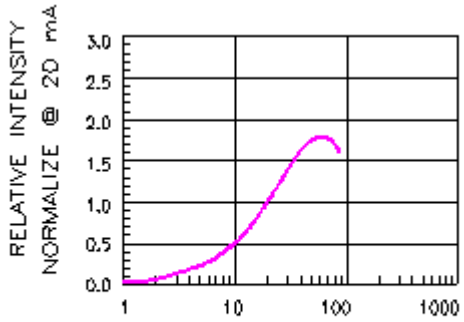


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

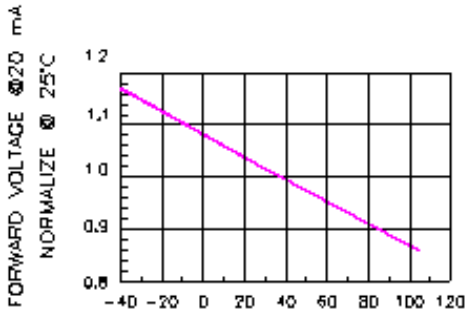


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

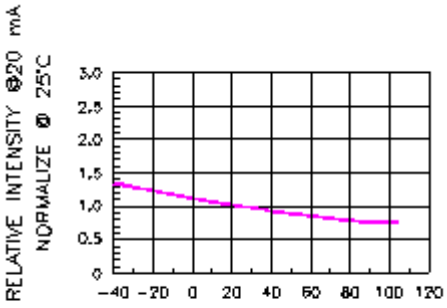
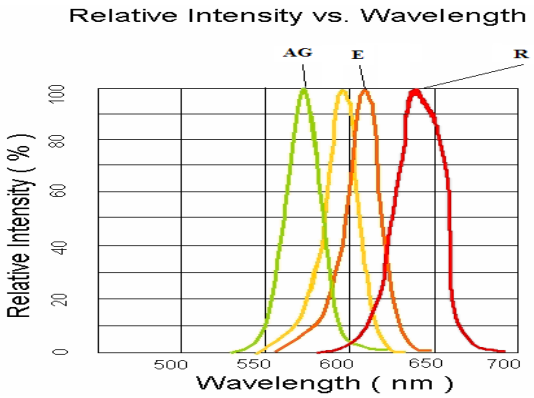


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE



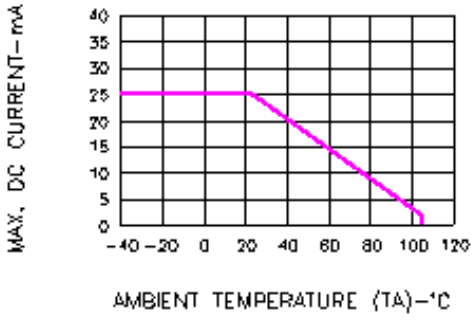


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

InGaN

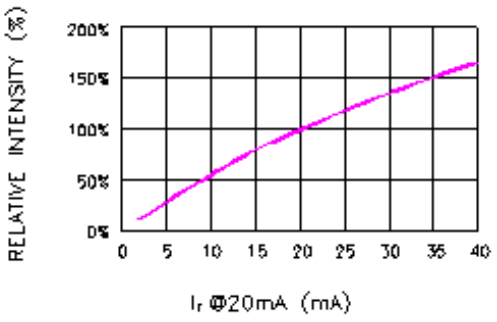


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

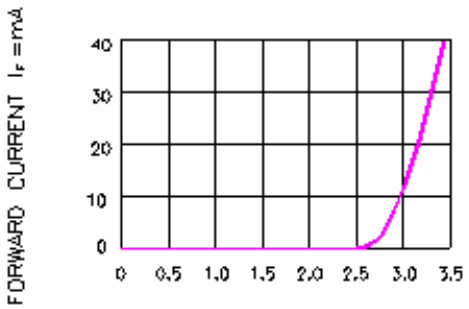


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

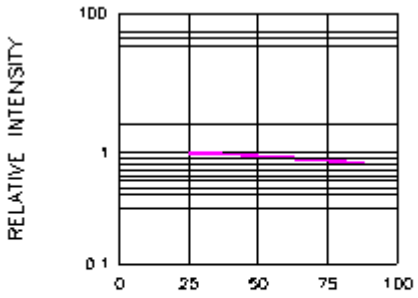


Fig.3 RELATIVE INTENSITY VS.LEAD TEMPERATURE (PULSED 20 mA; 300us PULSE,10ms PERIOD)

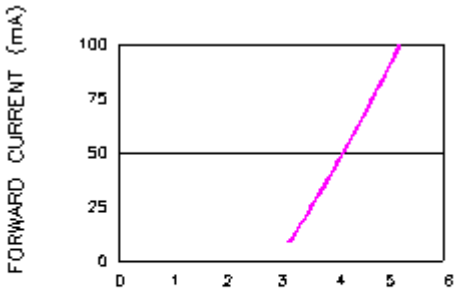
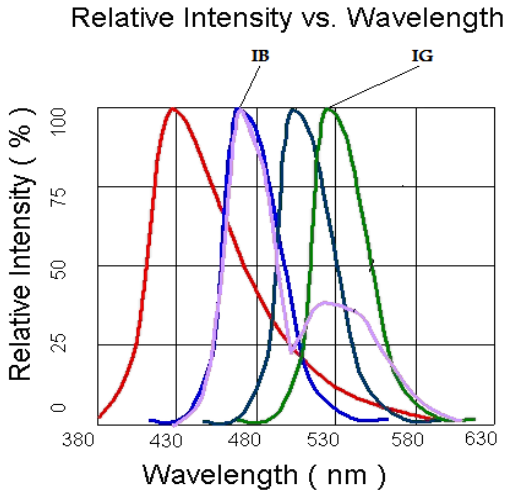


Fig.4 PEAK FORWARD VOLTAGE VS.FORWARD(100us TEST PULSE, 1% DUTY CYCLE)



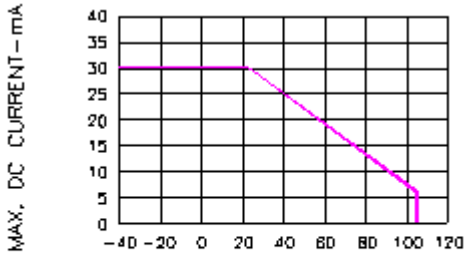
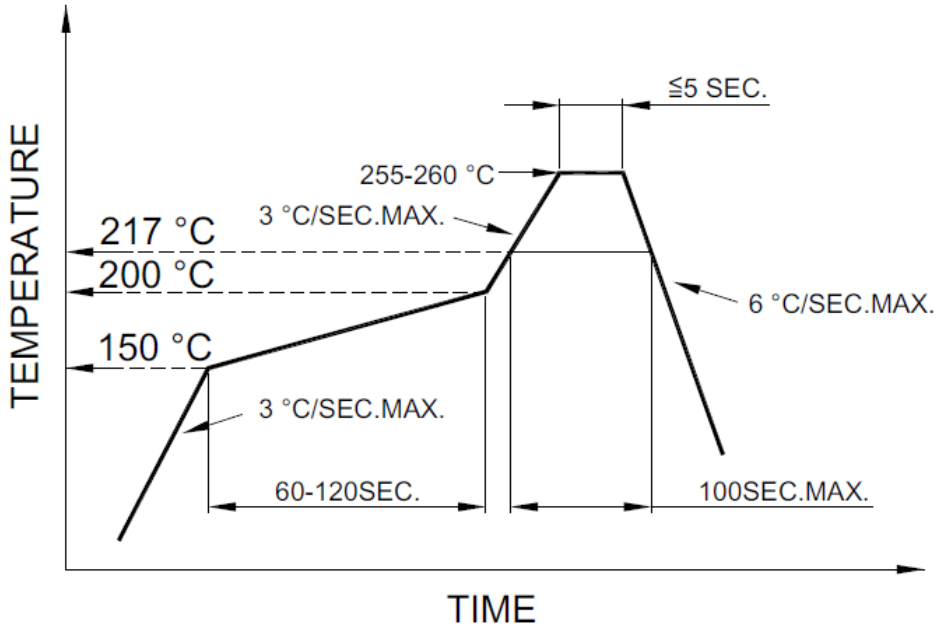


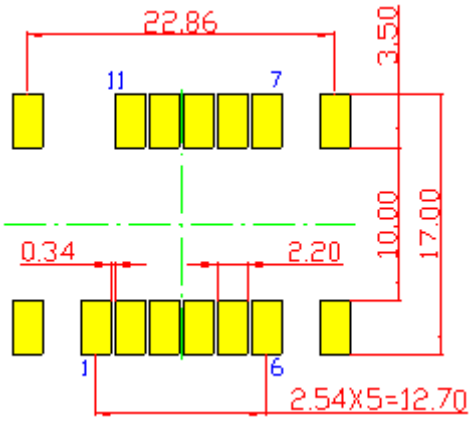
Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

Solder Profile & Footprint

Recommended Lead-free Solder Profile



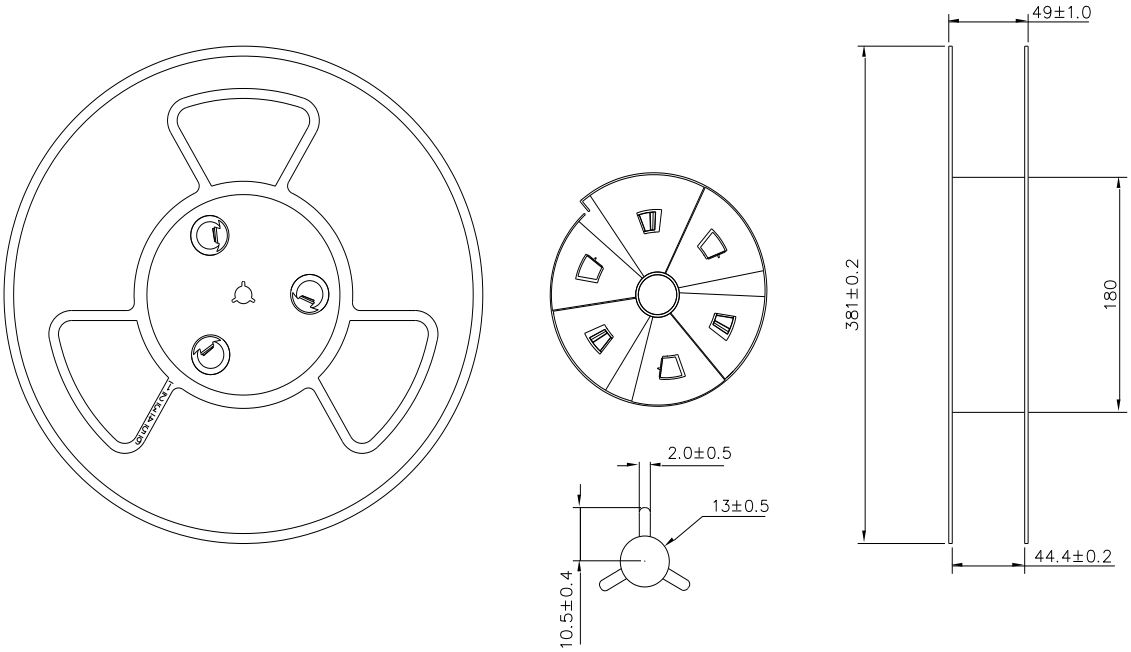
Recommended Pad Layout



Units: mm Tolerance: ±0.2mm

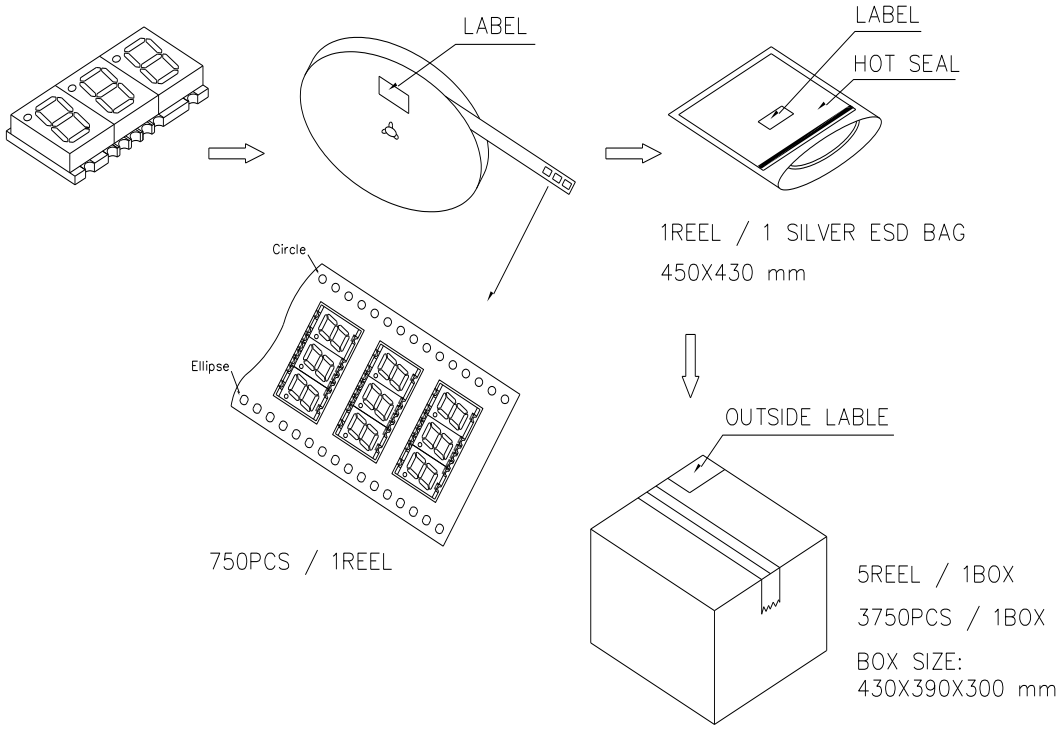
Packing

Reel Dimensions:



Unit: mm

Packing Specifications:



Ordering Information:

Product		Orderable Part #		Spec Range	Quantity per Reel
CC	CA	CC	CA		
QBTS391R	QBTS390R	QBTS391R	QBTS390R	Iv=40mcd typ. @ I_F=20mA / λ_D:624nm typ.	750
QBTS391S	QBTS390S	QBTS391S	QBTS390S	Iv=8mcd typ. @ I_F=20mA / λ_D:640nm typ.	750
QBTS391Y	QBTS390Y	QBTS391Y	QBTS390Y	Iv=40mcd typ. @ I_F=20mA / λ_D:590nm typ.	750
QBTS391O	QBTS390O	QBTS391O	QBTS390O	Iv=40mcd typ. @ I_F=20mA / λ_D:610nm typ.	750
QBTS391AG	QBTS390AG	QBTS391AG	QBTS390AG	Iv=18mcd typ. @ I_F=20mA / λ_D:570nm typ.	750
QBTS391IG	QBTS390IG	QBTS391IG	QBTS390IG	Iv=120mcd typ. @ I_F=20mA / λ_D:520nm typ.	750
QBTS391IB	QBTS390IB	QBTS391IB	QBTS390IB	Iv=60mcd typ. @ I_F=20mA / λ_D:470nm typ.	750

Revision History

Description:	Revision #	Revision Date
New Release of QBTS39ZXX	V1.0	6/24/2011
Update spec / Amend to new format / Add more color options	V2.0	03/24/2015
Update luminous intensity / Update dimension drawing	V2.1	10/13/2015

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1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.

2. A critical component in 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.