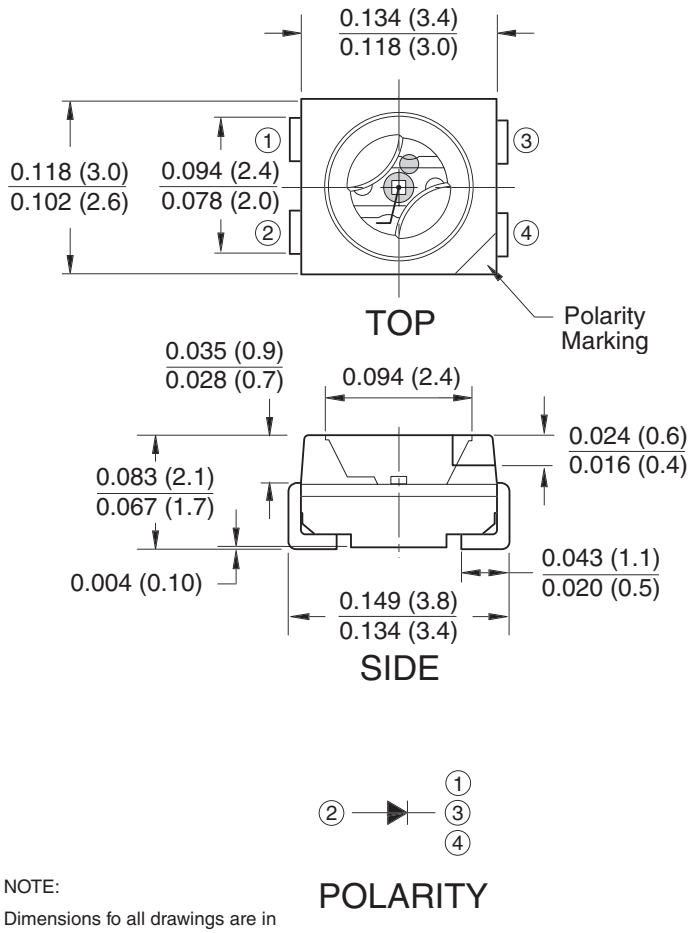
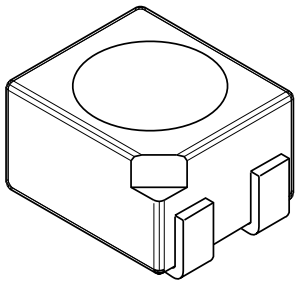
SURFACE MOUNT LED LAMP
POWER PLCC-4 QTLP673C

QTLP673C-O Yellow-Orange
QTLP673C-Y Yellow
QTLP673C-E Orange
QTLP673C-R Red
QTLP673C-IB Blue
QTLP673C-IC Cyan
QTLP673C-IG True Green

PACKAGE DIMENSIONS



NOTE:
Dimensions fo all drawings are in



APPLICATIONS

- Automotive interior lighting
- Status indication for consumer electronics and office equipment
- Information display lighting

DESCRIPTION

This ultra bright high current surface mount LED is designed with flat top and sides for the ease of pick-and-place by automatic placement equipment. It is compatible with both IR reflow and TTW (Through-the-Wave) soldering. These LEDs are ideal for back-lighting and optical coupling into light pipes.

FEATURES

- Small package dimensions of 3.2(L) x 2.8(W) x 1.8(H) mm
- AlInGaP technology for -Y, -O, -R, and -E
- InGaN technology for -IB, -IC, and -IG
- Wide viewing angle of 120°
- Water clear optics
- Available in 0.315" (8mm) width tape on 7" (178mm) diameter reel; 2,000 units per reel

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ABSOLUTE MAXIMUM RATINGS (T_A =25°C Unless otherwise specified)

Parameter	Symbol	QTLP673C-Y/-E/-O/-R	Units
Continuous Forward Current	I_F	70	mA
Peak Forward Current (f = 100 KHz, Duty Factor = 1/10)	I_{FM}	100	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	180	mW
Junction Temperature	T_J	125	°C
Operating Temperature	T_{OPR}	-40 to +100	°C
Storage Temperature	T_{STG}	-40 to +100	°C
Lead Soldering Time	T_{SOL}	260 for 5 sec	°C

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)

Part Number	Symbol	QTLP673C				Condition
		-Y	-E	-O	-R	
Luminous Intensity (mcd)	I_V	T1: 285-355	T1: 285-355	T1: 285-355	T1: 285-355	I_F = 50mA
		T2: 355-450	T2: 355-450	T2: 355-450	T2: 355-450	
		U1: 450-560	U1: 450-560	U1: 450-560	U1: 450-560	
		U2: 560-715	U2: 560-715	U2: 560-715	U2: 560-715	
Forward Voltage (V) 51	V_F	2.0-2.3	2.0-2.3	2.0-2.3	2.0-2.3	I_F = 50mA
52		2.3-2.6	2.3-2.6	2.3-2.6	2.3-2.6	
Dominant Wavelength (nm)	λ_D	W: 582-585	W: 610-615	W: 600-603	—	I_F = 50mA
		X: 585-588	X: 615-621	X: 603-606	—	
		Y: 588-591	—	Y: 606-609	—	
		Z: 591-594	—	Z: 609-612	—	
		—	—	—	Full: 620-630	
Viewing Angle (°)	$2\Theta^1/_2$	120	120	120	120	I_F = 50mA

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ABSOLUTE MAXIMUM RATINGS (T_A =25°C Unless otherwise specified)

Parameter	Symbol	QTLP673C-IG/IC/IB	Units
Continuous Forward Current	I_F	30	mA
Peak Forward Current (f = 100 KHz, Duty Factor = 1/10)	I_{FM}	200	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	135	mW
Junction Temperature	T_J	125	°C
Operating Temperature	T_{OPR}	-40 to +100	°C
Storage Temperature	T_{STG}	-40 to +100	°C
Lead Soldering Time	T_{SOL}	260 for 5 sec	°C

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)

Part Number	Symbol	QTLP673C			Condition
		-IG	-IB	-IC	
Luminous Intensity (mcd)	I_V	T1: 285-355	Q2: 90-112.5	T1: 285-355	I_F = 30mA
		T2: 355-450	R1: 112.5-140	T2: 355-450	
		U1: 450-560	R2: 140-180	U1: 450-560	
		U2: 560-715	S1: 180-224	U2: 560-715	
		V1: 715-900	S2: 280-355	V1: 715-900	
		V2: 900-1125		V2: 900-1125	
Forward Voltage (V) Typ	V_F	3.9	3.9	3.9	I_F = 30mA
Max		4.55	4.55	4.55	
Dominant Wavelength (nm)	λ_D	W: 520-524	W: 464-468	W: 499-503	I_F = 30mA
		X: 524-528	X: 468-472	X: 503-507	
		Y: 528-532	Y: 472-476	Y: 507-511	
		Z: 532-536	Z: 476-480	—	
		—	—	—	
Viewing Angle (°)	$2\Theta^1/_2$	120	120	120	I_F = 30mA

Tolerance for Luminous Intesity (I_V): ±11%
Tolerance for V_F: ±0.1V
Tolerance for λ_D: ±1nm

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TYPICAL PERFORMANCE CURVES QTLP673C-O/-R/-Y/-E

Fig. 1 Forward Current (mA) vs. Forward Voltage

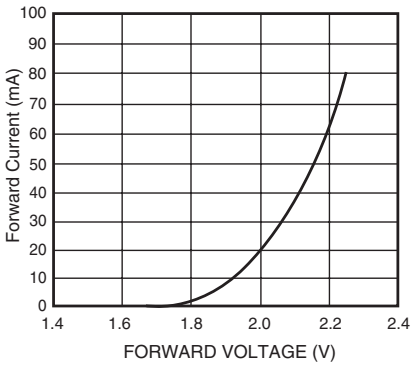


Fig. 2 Relative Luminuous Intensity vs. Forward Current

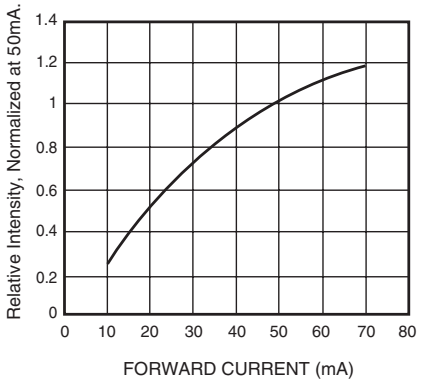


Fig. 3 Relative Intensity vs. Peak Wavelength

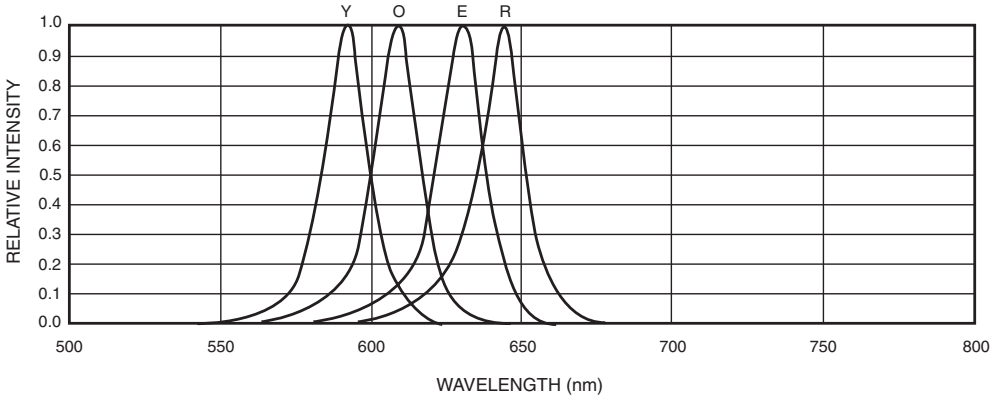


Fig. 4 Radiation Diagram

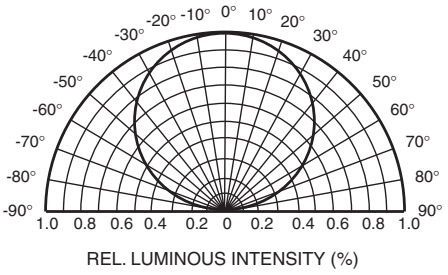
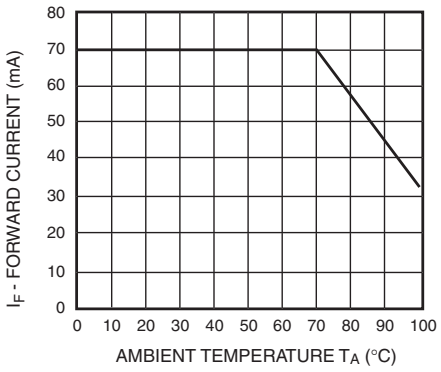


Fig. 5 Maximum Forward Current vs. Ambient Temperature



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TYPICAL PERFORMANCE CURVES QTLP673C-IC/-IB/-IG

Fig. 1 Forward Current (mA) vs. Forward Voltage

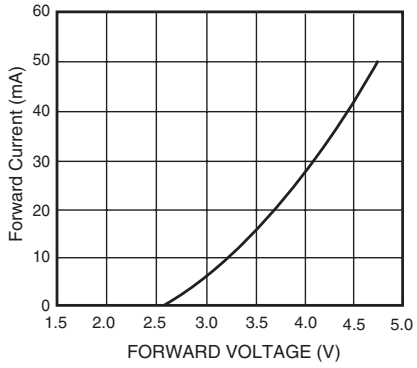


Fig. 2 Relative Luminuous Intensity vs. Forward Current

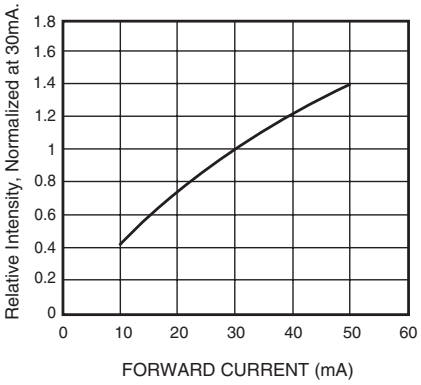


Fig. 3 Relative Intensity vs. Peak Wavelength

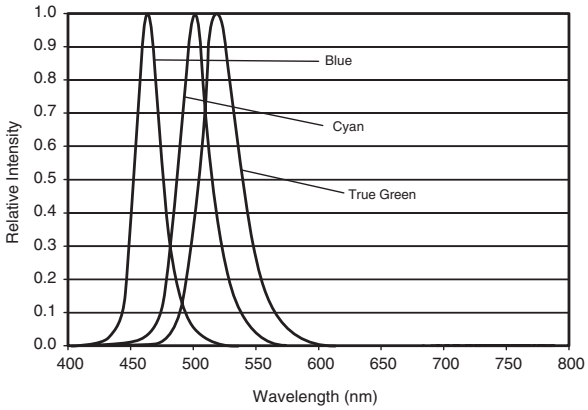


Fig. 4 Radiation Diagram

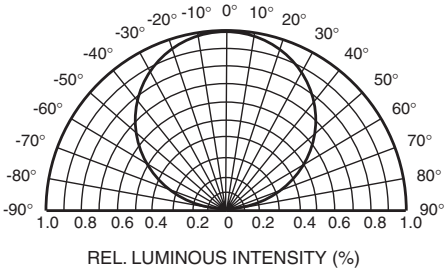
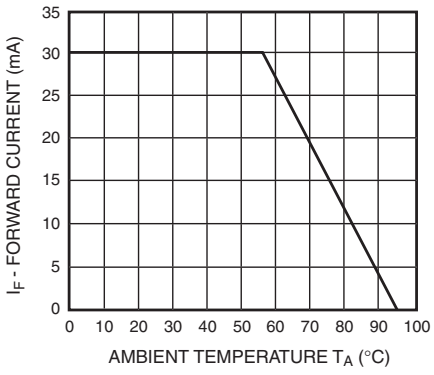


Fig. 5 Maximum Forward Current vs. Ambient Temperature



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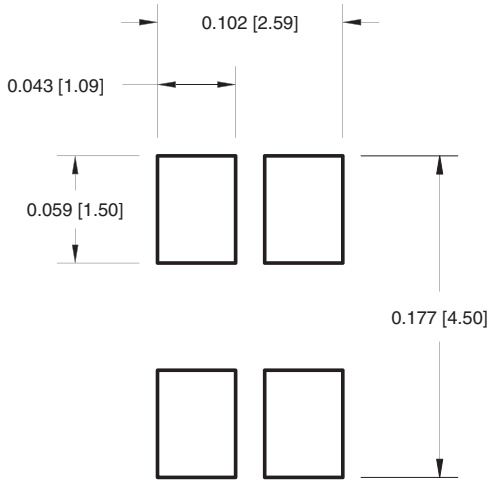
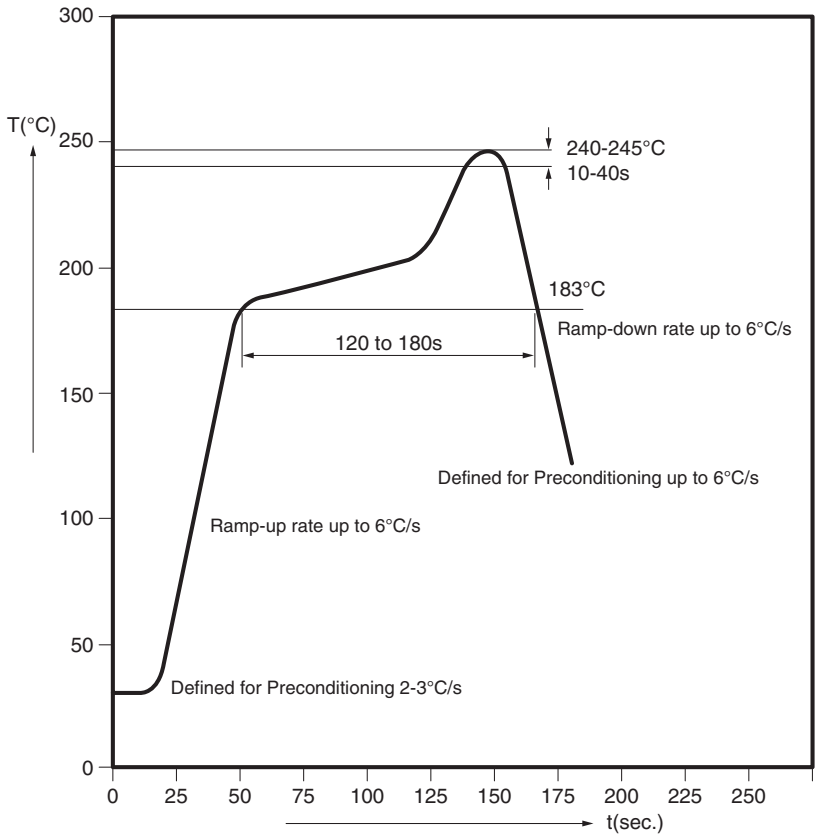
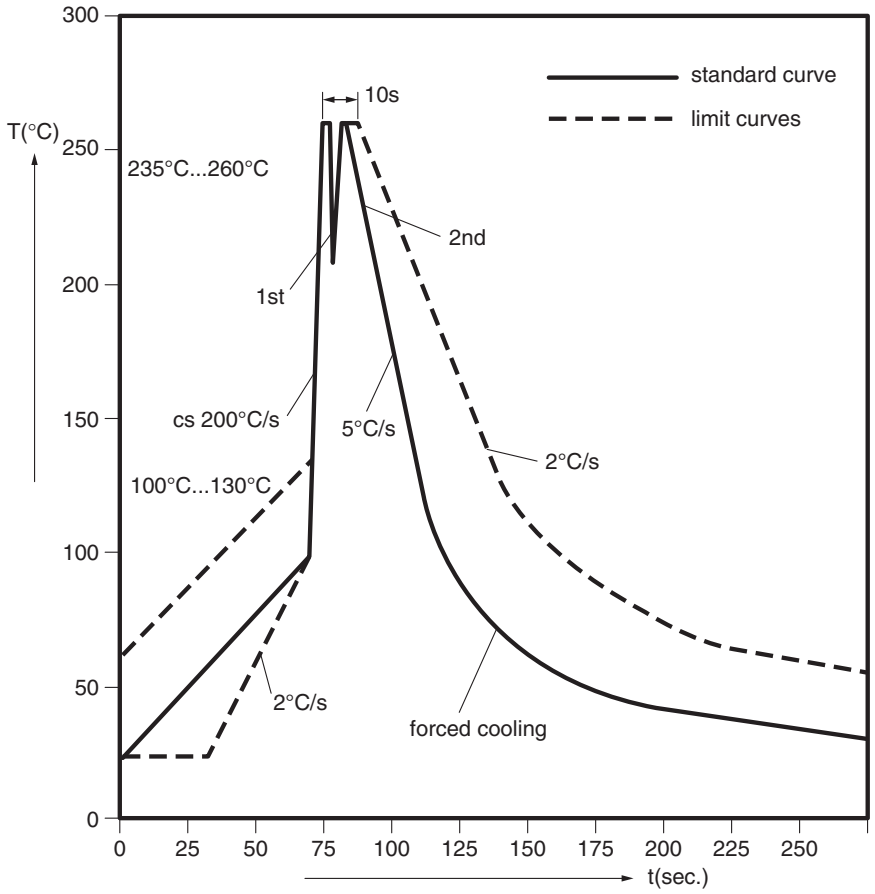
RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



RECOMMENDED IR REFLOW SOLDERING PROFILE



RECOMMENDED TTW REFLOW SOLDERING PROFILE



ORDERING INFORMATION

Orderable Part Number	Color	Package
QTLP673C-OTR	Yellow-Orange	Power PLCC-4
QTLP673C-RTR	Red	Power PLCC-4
QTLP673C-IGTR	True Green	Power PLCC-4
QTLP673C-YTR	Yellow	Power PLCC-4
QTLP673C-IBTR	Blue	Power PLCC-4
QTLP673C-ETR	Orange	Power PLCC-4
QTLP673C-ICTR	Cyan	Power PLCC-4

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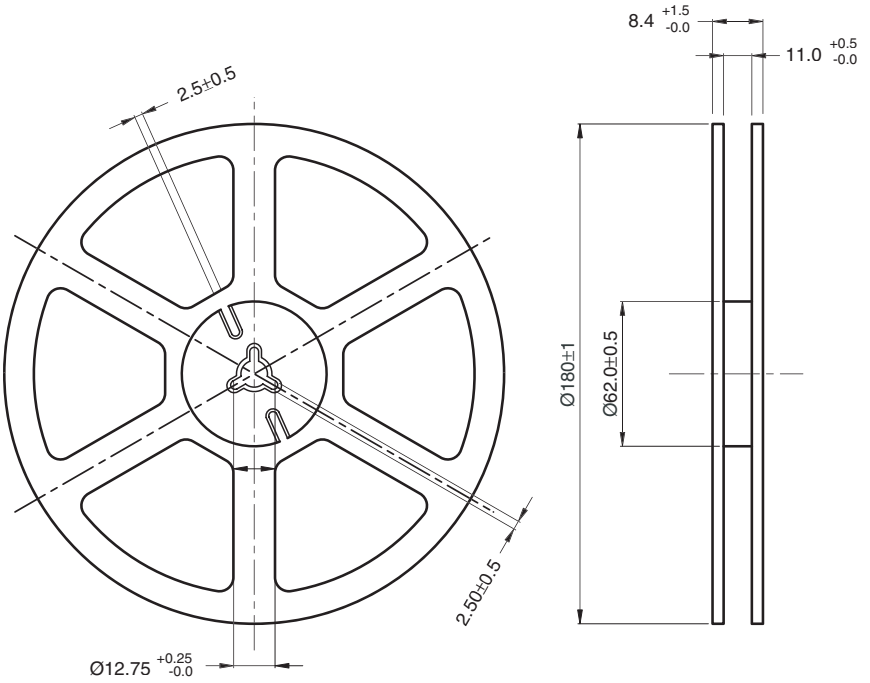
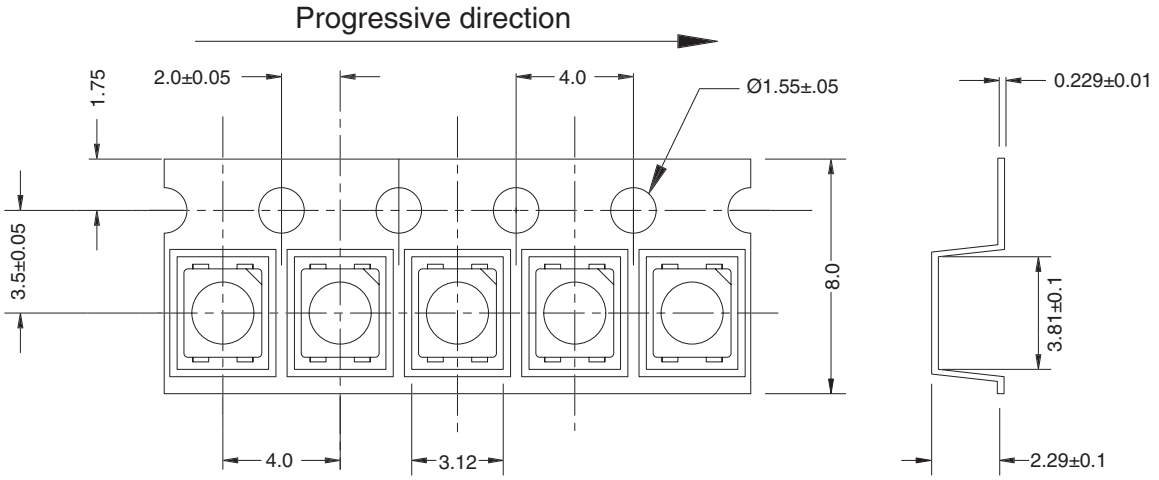
TAPE AND REEL DIMENSIONS





Dimensional tolerance is ± 0.1mm unless otherwise specified

Angle: ± 0.5

Unit: mm

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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.