

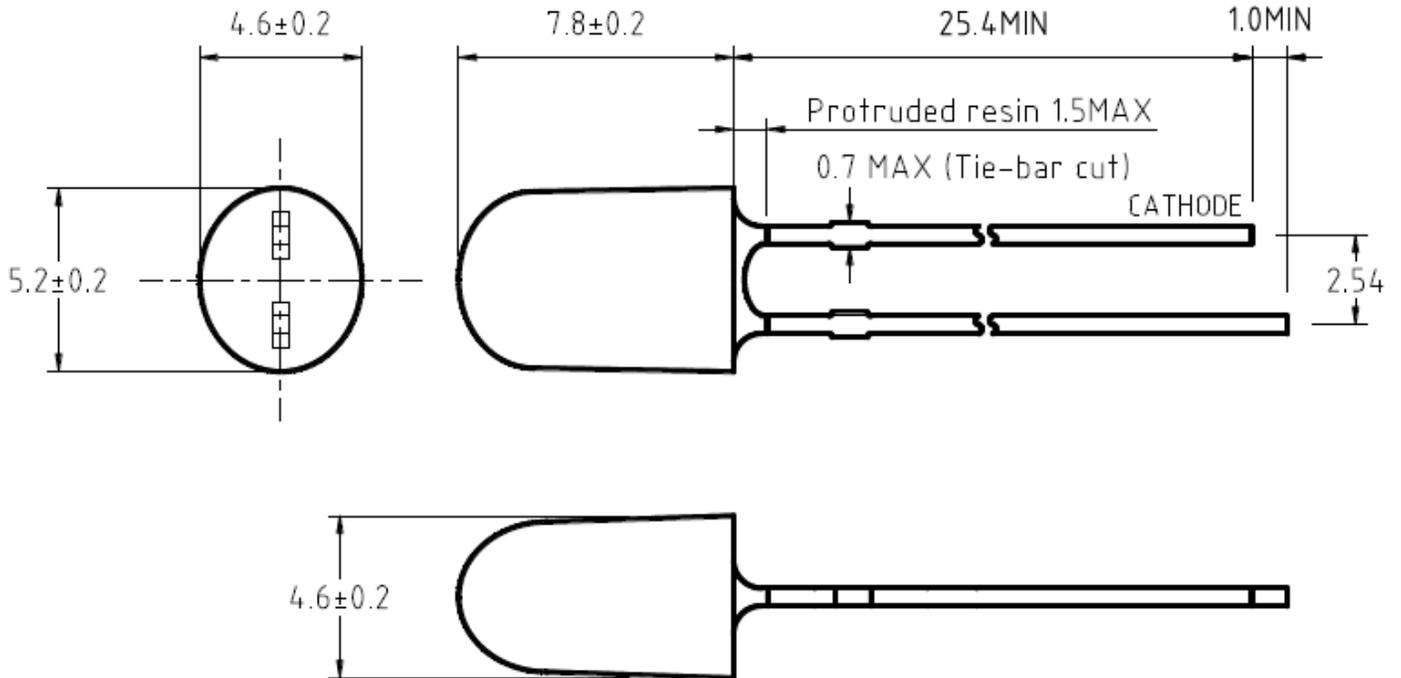


American Opto Plus LED Corp.

L783MED-70D

4.6mm Red LED Lamp

PACKAGE DIMENSION



Item	Materials
Resin	Epoxy Resin
Lead Frame	Ag Plating on SPCC
Chip Technology	AllnGaP/Sapphire
Lens Color	Red Diffused

Notes

1. All dimensions are in millimeters



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ABSOLUTE MAXIMUM RATINGS

	Symbol	Rating	Unit
DC Forward Current	I_F	50	mA
Peak Pulsed Forward Current	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_d	120	mW
Operating temperature	T_{opr}	-30~+85	°C
Storage temperature	T_{stg}	-40~+100	°C
Solder Temperature	T_{sld}	260°C for 5 sec	--

Notes: I_{fp} = pulse width ≤ 10 ms, Duty Ratio $\leq 1/10$

OPTICAL-ELECTRICAL CHARACTERISTICS

($T_a=25^\circ\text{C}$)

	Symbol	Test condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F=20\text{mA}$	--	2.1	2.4	V
Luminous Intensity	I_v		1900	2500	4200	mcd
Dominant Wavelength	λ_d		615	625	635	nm
Peak Wavelength	λ_p		--	635	--	nm
Spectral Half Width	$\Delta\lambda_{1/2}$		--	15	--	nm
Viewing Angle	$2\theta_{1/2}$	--	--	70/35	--	deg
Reverse Current	I_R	$V_R=5\text{V}$	--	--	50	μA



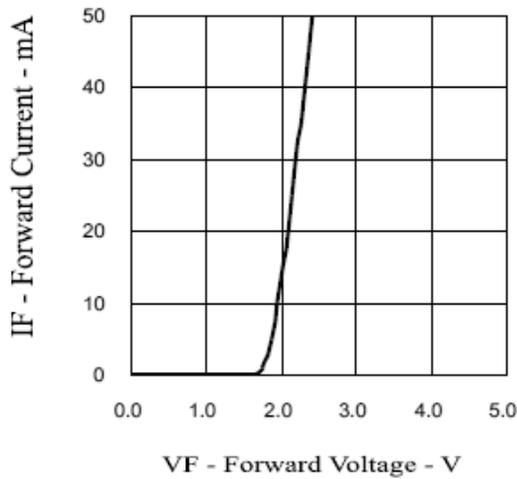
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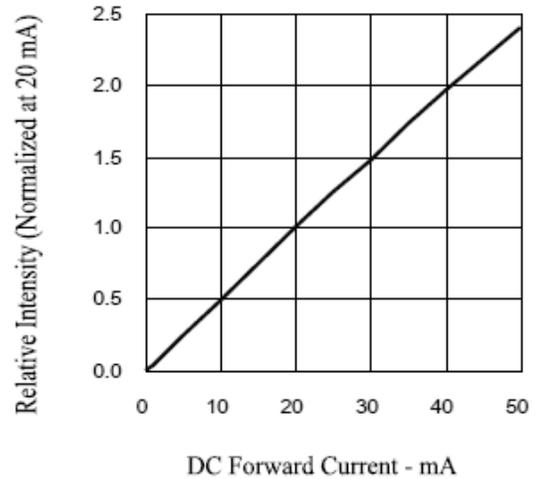
4.6mm Red LED Lamp

TYPICAL ELECTRICAL-OPTICAL CHARACTERISTIC CURVES

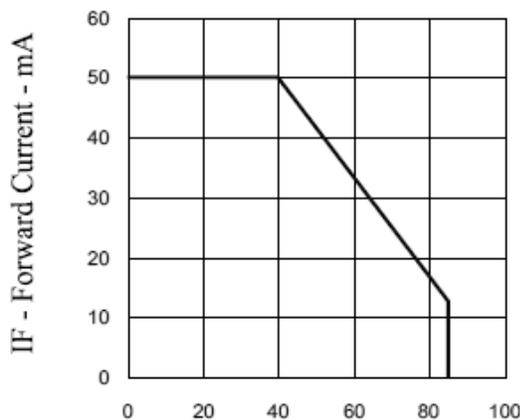
Forward Current vs. Forward Voltage



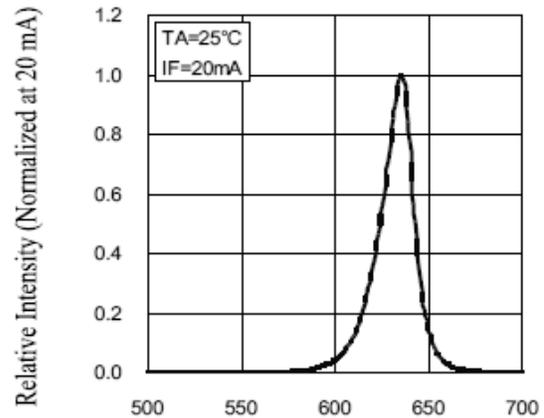
Relative Intensity vs. Forward Current



Forward Current vs. Ambient Temperature



Relative Intensity vs. Wavelength





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4.6mm Red LED Lamp

LUMINOUS INTENSITY BIN TABLE

IF=20mA

Rank Name	Min(mcd)	Max(mcd)
S	1900	2500
T	2500	3200
U	3200	4200

Tolerance for each bin limit is $\pm 15\%$

COLOR BIN TABLE

IF=20mA

Rank Name	Min(nm)	Max(nm)
1	615	620
2	620	625
3	625	630
4	630	635

Tolerance for each bin limit is $\pm 1\text{nm}$

Notes:

1. One delivery will include several color ranks and Iv ranks of products. The quantity ratio of the different rank is decided by AOP
2. Bin name typed on label: IV Rank + Color Rank. For example, Bin S2 means IV: 1900~2500 mcd and Color: 620~625nm
3. AOP has the right to update the information without notice. Please double confirm the spec details before placing an order



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4.6mm Red LED Lamp

SOLDERING CONDITIONS

Solder the LED no closer than 3mm from the base of the epoxy bulb. Soldering beyond the base of the tie bar is recommended

Recommended soldering conditions:

Dip Soldering	
Pre Heat	100°C max.
Pre Heat Time	60 sec. max.
Solder Bath Temperature	260°C max.
Dipping Time	10 sec. max.
Dipping Position	No lower than 3mm from base of epoxy bulb

Hand Soldering		
	3Φ Series	Others(including Lead-Free Solder)
Temperature	300°C max.	350°C max
Soldering Time	3 sec. max.	3 sec. max.
Position	No closer than 3mm from base of epoxy bulb	No closer than 3mm from base of epoxy bulb

Notes:

1. Do not apply any stress to lead, particularly when heated
2. The LEDs must not be reposition after soldering
3. After soldering the LEDs, the epoxy bulb should be protected from mechanical shock or vibration until the LEDs return to room temperature
4. Direct soldering onto a PC board should be avoided. Mechanical stress to resin may be caused by the PC board warping or from the clinching and cutting of the leadframes. When it is absolutely necessary, the LEDs may be mounted in this fashion, but the user will assume responsibility for any problems. Direct soldering should only be done after testing has confirmed that no damage, such as wire bond failure or resin deterioration will occur. AOP's LED should not be soldered directly to double sided PC boards because the heat will deteriorate the epoxy resin
5. When it is necessary to clamp the LEDs to prevent the soldering failure, it is important to minimize the mechanical stress on LEDs
6. Cut the LED leadframes at room temperature. Cutting the leadframes at high temperatures may cause LED failure