

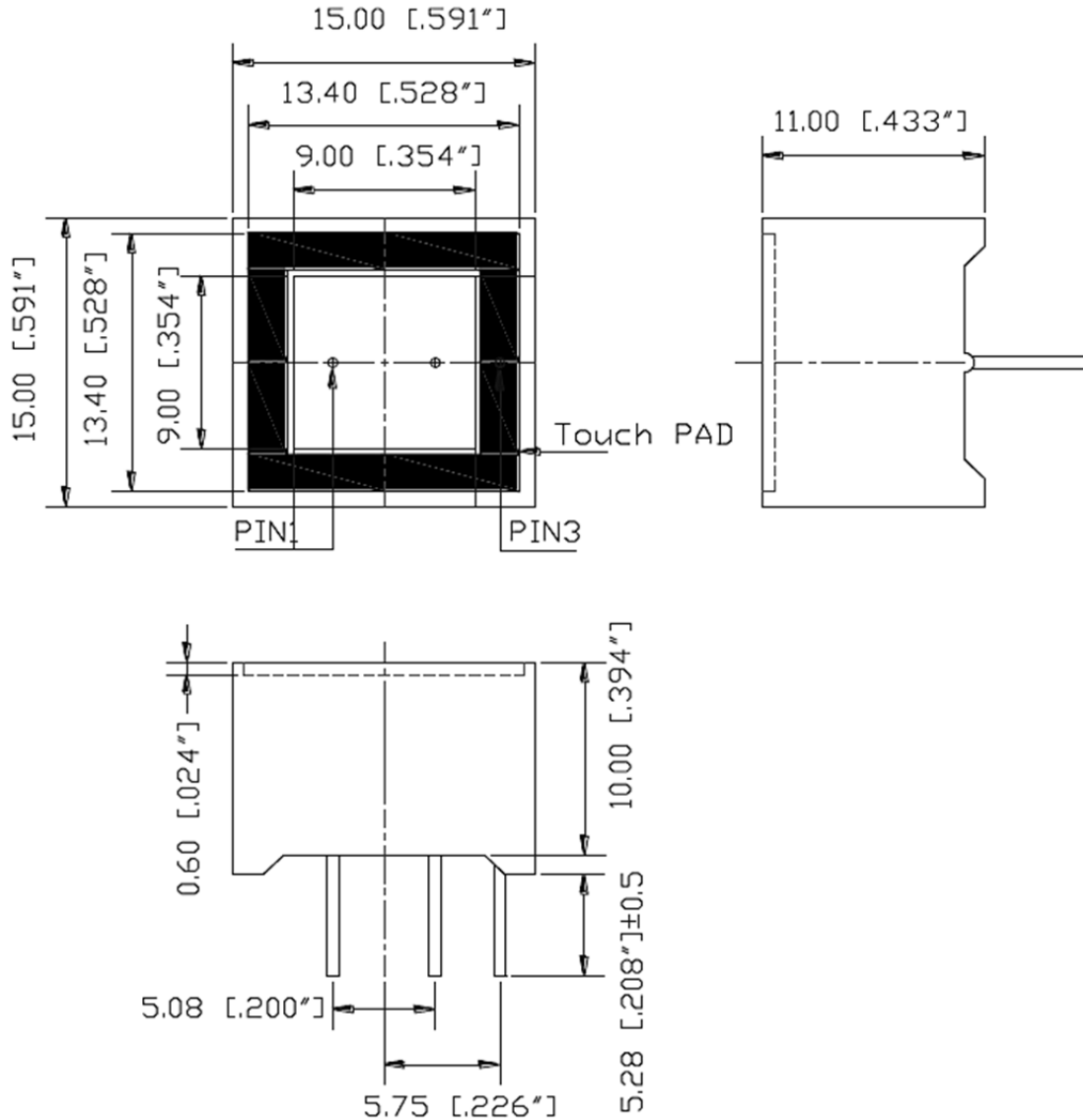


# American Opto Plus LED Corp.

## CTD591B-W/W

15.0 x 15.0 x 11.0 mm Touch LED Blue Display

### PACKAGE DIMENSION



#### Notes:

1. All pins are  $\Phi 0.60[0.24]$ , dimensions in millimeter.
2. Tolerances are  $\pm 0.25[.01]$  unless otherwise noted.

Part No.	Chip Material	Chip Emitted	Face/Segment
CTD591B-W/W	InGaN	Blue	White/ White

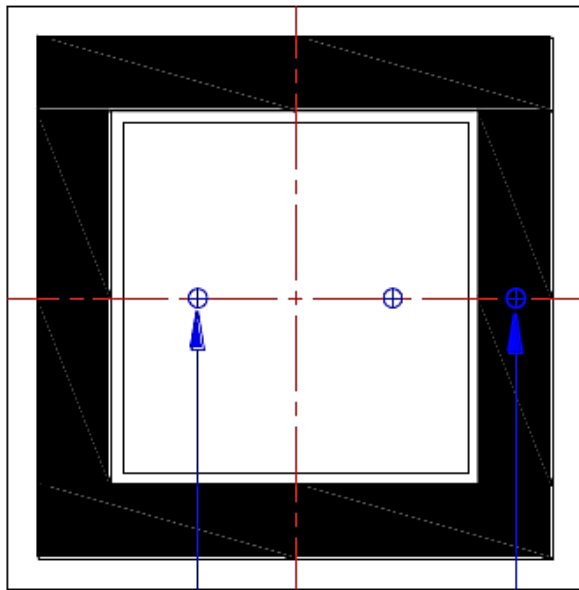


**American Opto Plus LED Corp.**

**CTD591B-W/W**

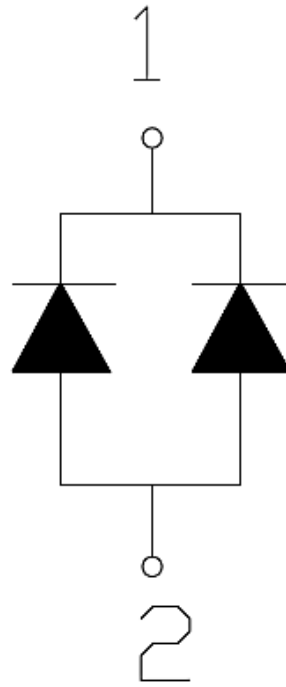
**15.0 x 15.0 x 11.0 mm Touch LED Blue Display**

**PIN POSITION & INTERNAL CIRCUIT DIAGRAM**



PIN1

PIN3



Touch PAD



3



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### ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Parameter	Symbol	Value	Unit
Power Dissipation Per Dice	$P_D$	114	mW
Derating Liner from 25°C Per Dice	--	0.4	mA/°C
Continuous Forward Current Per Dice	$I_F$	30	mA
Peak Current Per Dice (duty cycle 1/10, 1KHz)	$I_{FP}$	100	mA
Reverse Voltage Per Dice	$V_R$	5	V
Operating Temperature Range	$T_{OPR}$	-35~+85	°C
Storage Temperature Range	$T_{STG}$	-35~+85	°C

### OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C)

Parameter	Symbol	Test Condition	Value			Unit
			Min	Typ	Max	
Forward Voltage	$V_F$	$I_F=20mA$	--	3.2	3.8	V
Luminous Intensity	$I_V$		27.5	68	--	mcd
Dominant Wavelength	$\lambda_D$		--	470	--	nm
Spectrum Radiation Bandwidth	$\Delta\lambda$		--	30	--	nm
Luminous Intensity Matching Ratio	$I_{V-m}$	$I_F=10mA$	--	--	2:1	--
Reverse Current	$I_R$	$V_R=5V$	--	--	100	$\mu A$

Forward voltage tolerance:  $\pm 0.1V$

Luminous intensity tolerance:  $\pm 20\%$



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### LUMINOUS INTENSITY BIN GRADE ( $I_F=20\text{mA}$ )

M	N	P
27.559	44.096	70.555
44.095	70.554	112.888

### COLOR BIN GRADE ( $I_F=20\text{mA}$ )

1	2	3	4	5	6	7
453.0	456.0	459.0	462.0	465.0	468.0	471.0
}	}	}	}	}	}	}
455.9	458.9	461.9	464.9	467.9	470.9	474.0



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### OPTICAL CHARACTERISTIC CURVES

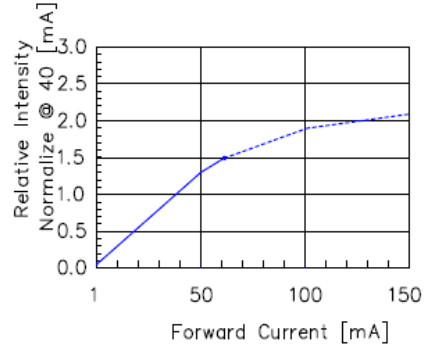
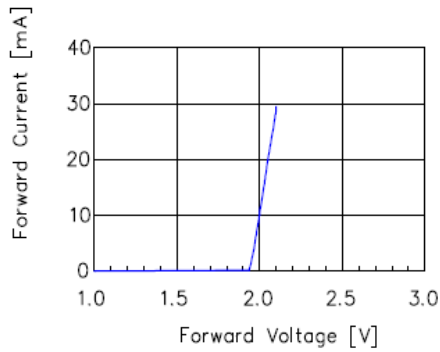


Fig 1. Forward Current vs. Forward Voltage(One chip) Fig 2. Relative Intensity vs. Forward Current

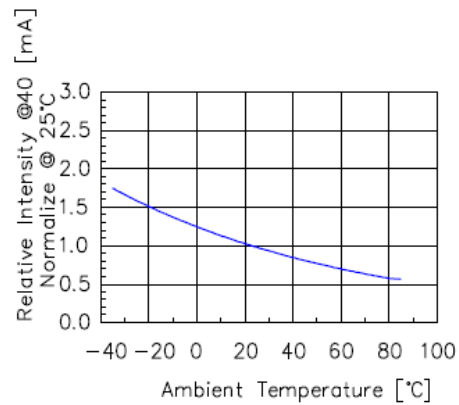
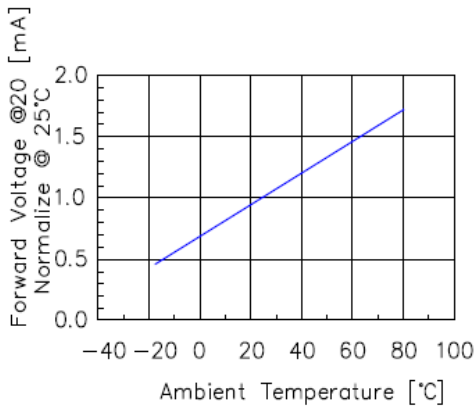


Fig 3. Forward Voltage vs. Temperature(One chip) Fig 4. Relative Intensity vs. Temperature

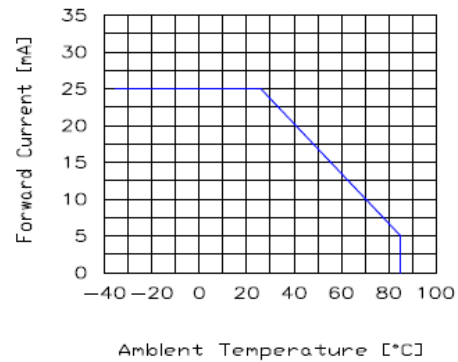
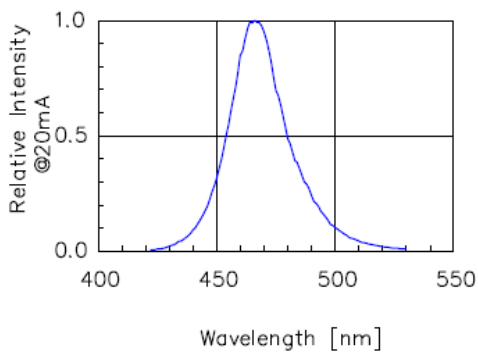


Fig 5. Relative Intensity vs. Wavelength(One chip) Fig 6. Maximum allowable DC current per segment vs. A function of ambient temperature(One chip)



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## CTD591B-W/W

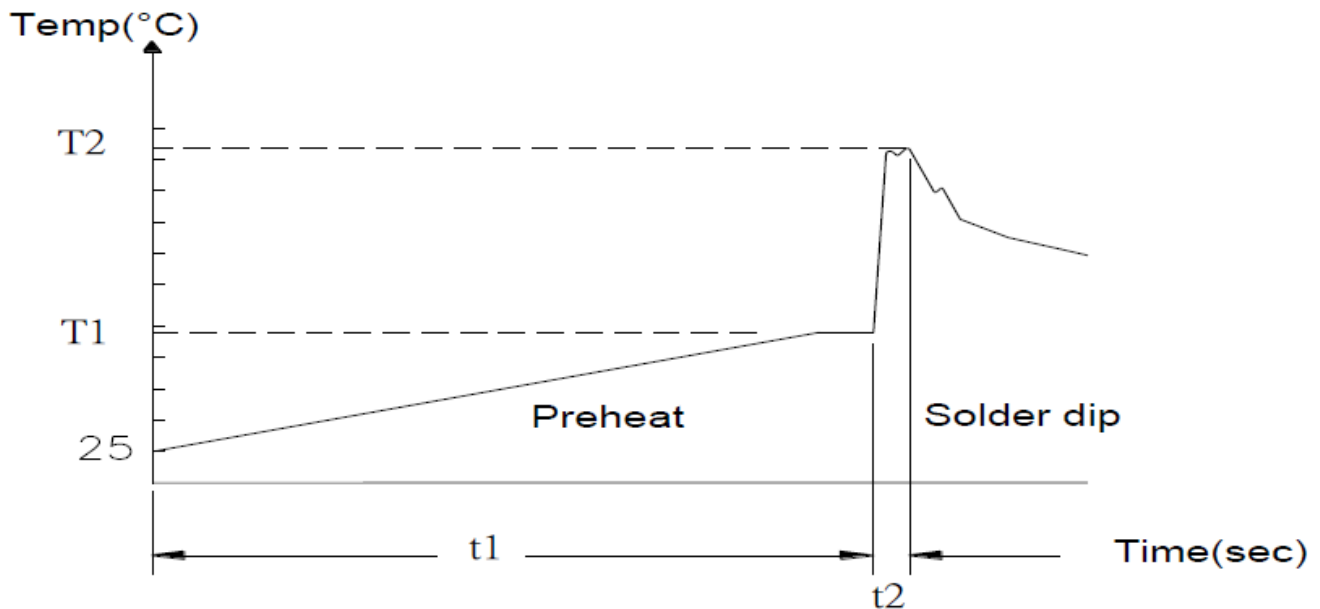
15.0 x 15.0 x 11.0 mm Touch LED Blue Display

### RECOMMENDED SOLDERING CONDITIONS

#### 1. Wave Soldering Profile

Distance: 1.6mm min (from seating plane)

Item	Condition		Note
Preheat	Temperature T1	80 – 120°C	PWB temperature (Soldering side surface)
	Time t1	60 – 180sec	
Solder Dip	Temperature T2	230 – 260°C	Bath temperature
	Time t2	2 – 4sec	Solder tank passage time



#### 2. Hand Soldering (Iron Condition)

Soldering Iron: 30W Max  
Temperature: 350°C Max  
Soldering Time: 3 seconds Max (one time)  
Distance: 1.6mm min (from seating plane)