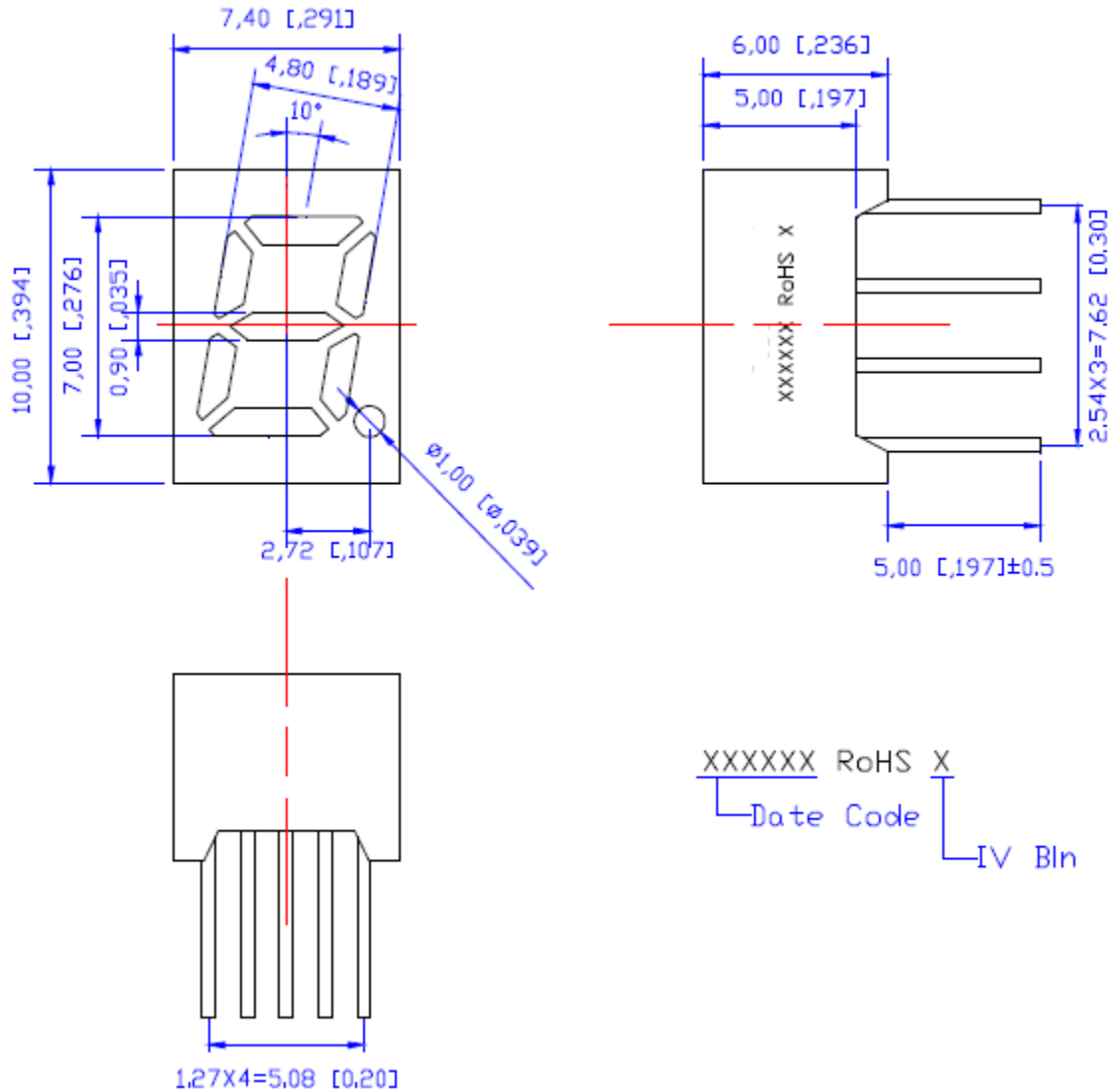




MECHANICAL DIMENSIONS



Chip Material	Color		Description
	Emitted	Face / Segment	
AlGaInP	Red	Gray / White	Common Cathode

Notes:

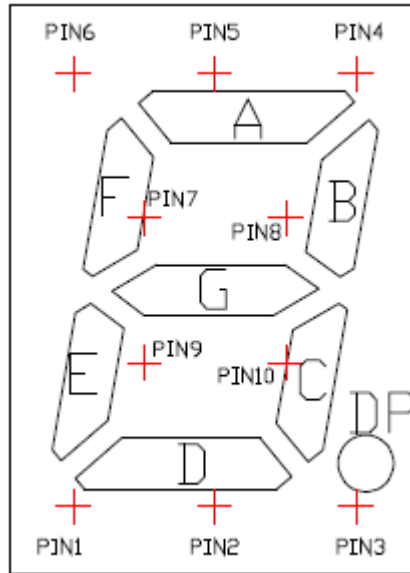
1. All pins are $\phi 0.45$ [0.018]±0.1[0.004]
2. Dimension in millimeter[inch], tolerance is ±0.25[0.010] and angle is ±1° unless otherwise noted



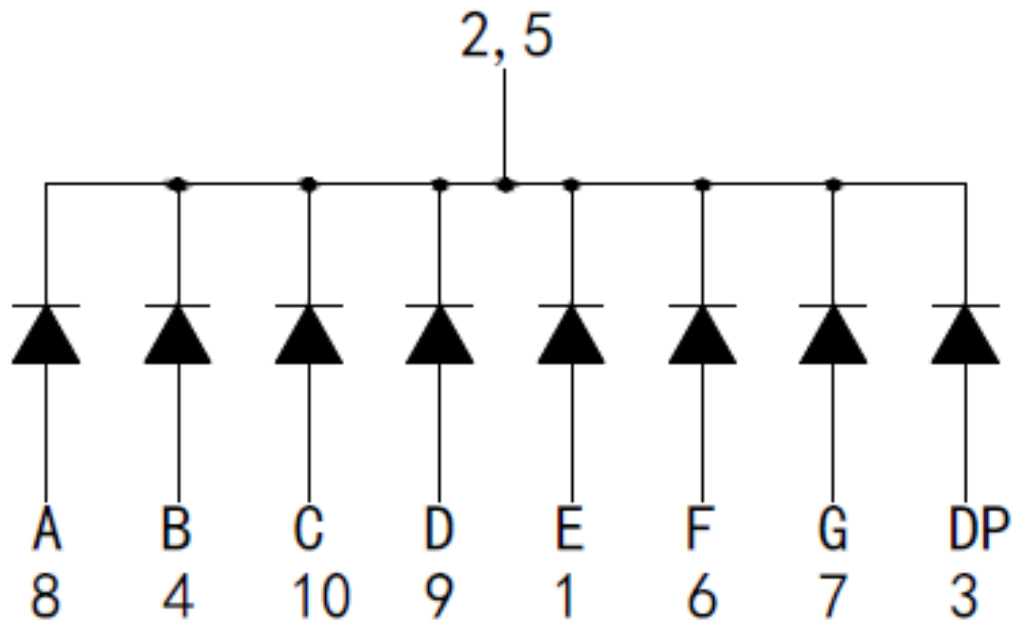
American Opto Plus LED Corp.

0.28" Red Single Digit Display

ALL LIGHT ON SEGMENTS FEATURE



INTERNAL CIRCUIT DIAGRAMS





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ABSOLUTE MAXIMUM RATING

(Ta=25°C)

	Symbol	Rating	Unit
Power Dissipation (Per Dice)	P _D	70	mW
Continuous Forward Current (Per Dice)	I _F	25	mA
Peak Current (Per Dice, duty cycle 1/10, 1KHz)	I _{FP}	90	mA
Derating Liner from 25°C(Per Dice)	ΔI _r / ΔT	0.33	mA/°C
Reverse Voltage (Per Dice)	V _R	5	V
Operating Temp.	T _{OPR}	-35 ~ +85	°C
Storage Temp.	T _{STG}	-35 ~ +85	°C
Hand Soldering Temp.	T _{SOL}	350	°C

ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25°C)

	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage (Per Dice)	V _F	IF=20mA	--	2	2.8	V
Luminous Intensity (Per Segment)	I _V	IF=10mA	--	20	--	mcd
Peak Emission Wavelength	λ _P	IF=20mA	--	632	--	Nm
Dominant Wavelength	λ _d	IF=20mA	--	625	--	Nm
Spectrum Radiation Bandwidth	Δλ	IF=20mA	--	20	--	Nm
Luminous Intensity Matching Ratio	I _v -m	IF=10mA	--	--	2:1	--
Reverse Current	I _R	V _r =5V	--	--	100	μA

LUMINOUS GENERAL I_V BIN GRADE

(IF = 10mA)

A	B	C	D	E	F	G	H	J	K	L	M
0.155	0.249	0.399	0.640	1.025	1.641	2.627	4.204	6.727	10.764	17.224	27.559
0.248	0.398	0.639	1.024	1.640	2.626	4.203	6.726	10.763	17.223	27.558	44.095
N	P	Q	R	S	T	U	V	W	X	Y	1
44.096	70.555	112.889	180.622	288.997	462.397	739.836	1183.738	1893.982	3030.372	4848.597	7757.756
70.554	112.888	180.622	288.996	462.396	739.835	1183.737	1893.981	3030.371	4848.596	7757.755	12412.409
2	3	4	5	6	7	8	9				
4034.034	19859.858	31775.773	50841.238	81345.982	130153.573	208245.718	333193.149				
19859.857	31775.772	50841.237	81345.981	130153.572	208245.717	333193.148	533109.039				

Notes:

1. Unit= mcd; Tolerance is ± 20%



ELECTRICAL/OPTICAL CHARACTERISTICS CURVES

(Ta=25°C)

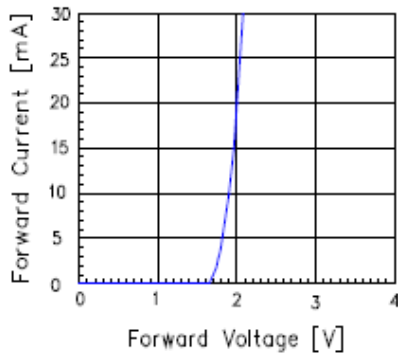


Fig 1. Forward Current vs. Forward Voltage

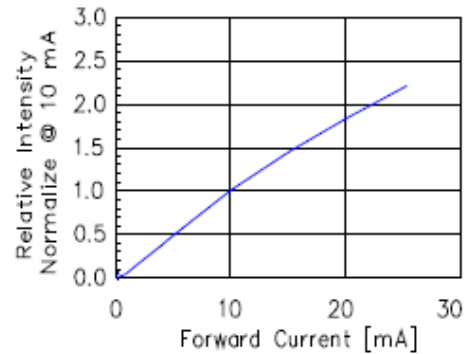


Fig 2. Relative Intensity vs. Forward Current

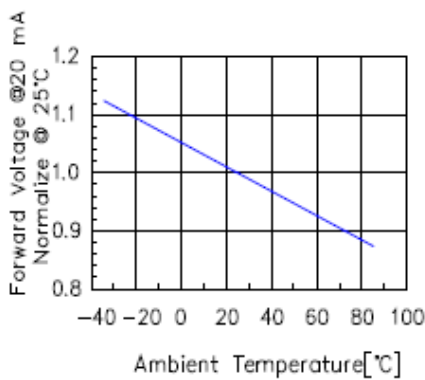


Fig 3. Forward Voltage vs. Temperature

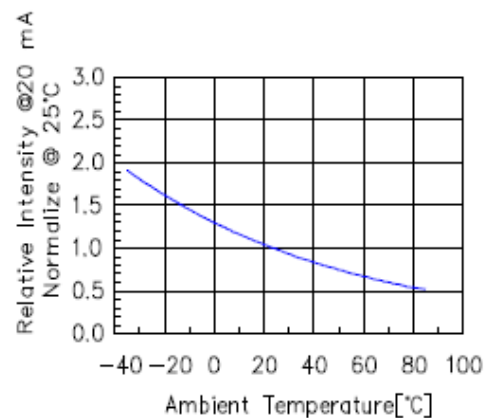


Fig 4. Relative Intensity vs. Temperature

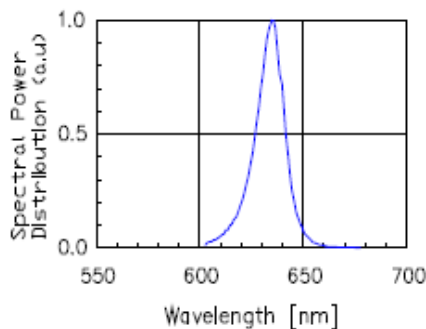


Fig 5. Spectral Power Distribution vs. Wavelength

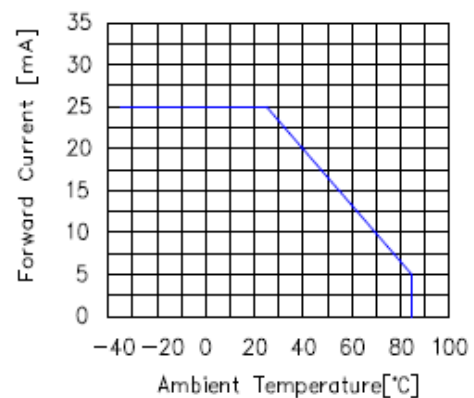


Fig 6. Forward current vs. Temperature

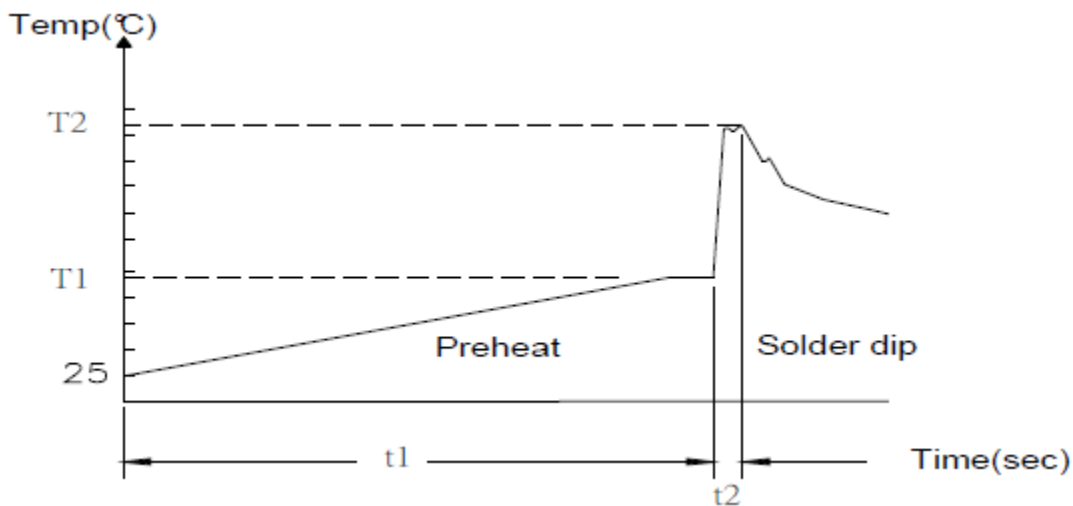


SOLDERING CHARACTERISTICS

- 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 - 180 sec	
Solder Dip	Temperature T2	230 - 260°C	Bath temperature
	Time t2	2 - 4 sec	Solder tank passage time



- Hand Soldering (Iron Condition)**

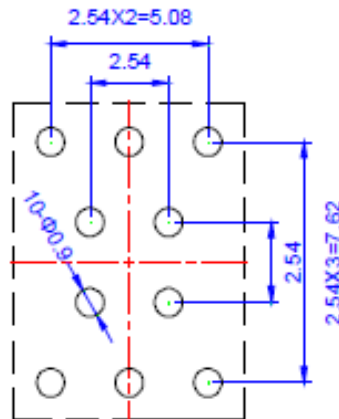
Solder Iron : 30W Max

Temperature 350°C Max

Soldering Time: 3 Seconds Max (One Time)

Distance: 1.6mm min (From Seating plane)

- Recommended PCB layout**





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STORAGE METHOD

1. Products can not be placed on the location of the sunlight to be.
2. Product storage environment: Temperature : -35°C— 85 °C RH : 45% — 85%
3. After unpacking the product be use within 1 year.
4. After unpacking, can't take anything on the product up in order to avoid PIN shift.