

SPECIFICATION FOR GoPro TOP LED

Part No.: GPTM5050RGBC3-3

REV: 1.0

RECEIVED
<input checked="" type="checkbox"/> MASS PRODUCTION
<input type="checkbox"/> PRELIMINARY
<input type="checkbox"/> CUSTOMER DESIGN
DEVICE NUMBER : YG217-07026
PAGE: 8
CUSTOMER'S APPROVAL

Designed By	Checked By	Approved By
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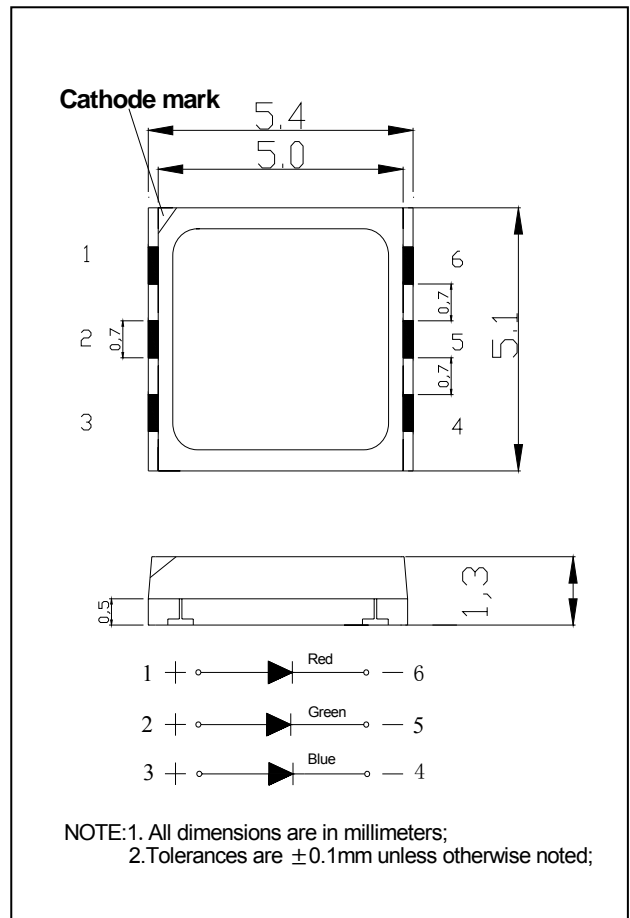
● **Features:**

1. Chip material: AlInGaP\InGaN\InGaN
2. Emitted color: Red\Green\Blue
3. Resin Color: water clear
4. Low power consumption.
5. High efficiency.
6. Compatible with infrared and vapor phase reflow solder process.
7. Low current requirement.
8. Tape/1000pcs.
9. This product don't contained restriction substance, compliance RoHS standard.

● **Applications:**

1. TV set
2. Monitor
3. Mobile telephone
4. Computer
5. Circuit board
6. BackLight
7. Telephone

● **Package dimensions:**



● **Absolute maximum ratings(Ta=25°C)**

Parameter	Symbol	Rating			Unit
		R	G	B	
Power Dissipation	Pd	500	600	600	mW
Forward Current	I _F	180	180	180	mA
Peak Forward Current* ₁	I _{FP}	1000			mA
Reverse Voltage	V _R	5			V
Operating Temperature	T _{opr}	-40~+80			°C
Storage Temperature	T _{stg}	-40~+85			°C
Junction temperature	T _j	+120			°C
Soldering Temperature	T _{sol}	260 (for 5 seconds)			°C
Electrostatic discharge(HBM)	ESD	1000			V

*₁Condition for I_{FP} is pulse of 1/10 duty and 0.1msec width

● Electrical and optical characteristics(Ta=25°C)

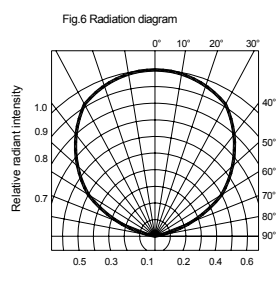
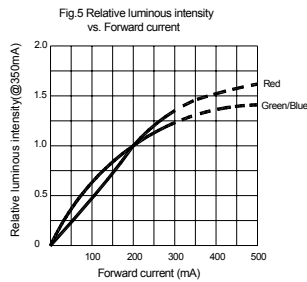
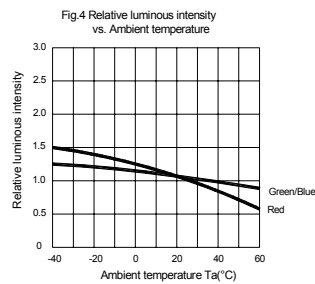
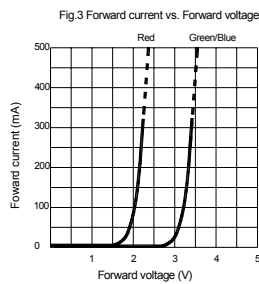
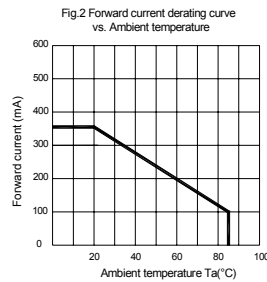
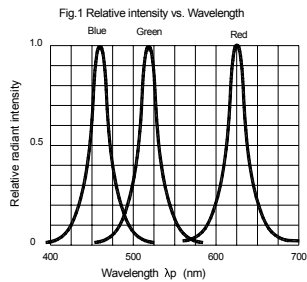
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V _F	R	2.00	-	3.00	V
		G	2.80	-	3.60	
		B	2.80	-	3.60	
Luminous Flux	φ	R	15	22	-	lm
		G	40	45	-	
		B	5	8	-	
Dominant wavelength	λ _d	R	615	-	625	nm
		G	515	-	525	
		B	455	-	465	
Reverse Current	I _R	V _R =5V	-	-	10	μA
Viewing Angle	2θ1/2	I _F =150mA	-	120	-	deg

*Measurement Uncertainty of Luminous Intensity: ±10%

*Measurement Uncertainty of Forward Voltage: ±0.1V

*Measurement Uncertainty of Dominant wavelength: ±1nm

● Typical electro-optical characteristics curves



● Bin Limits

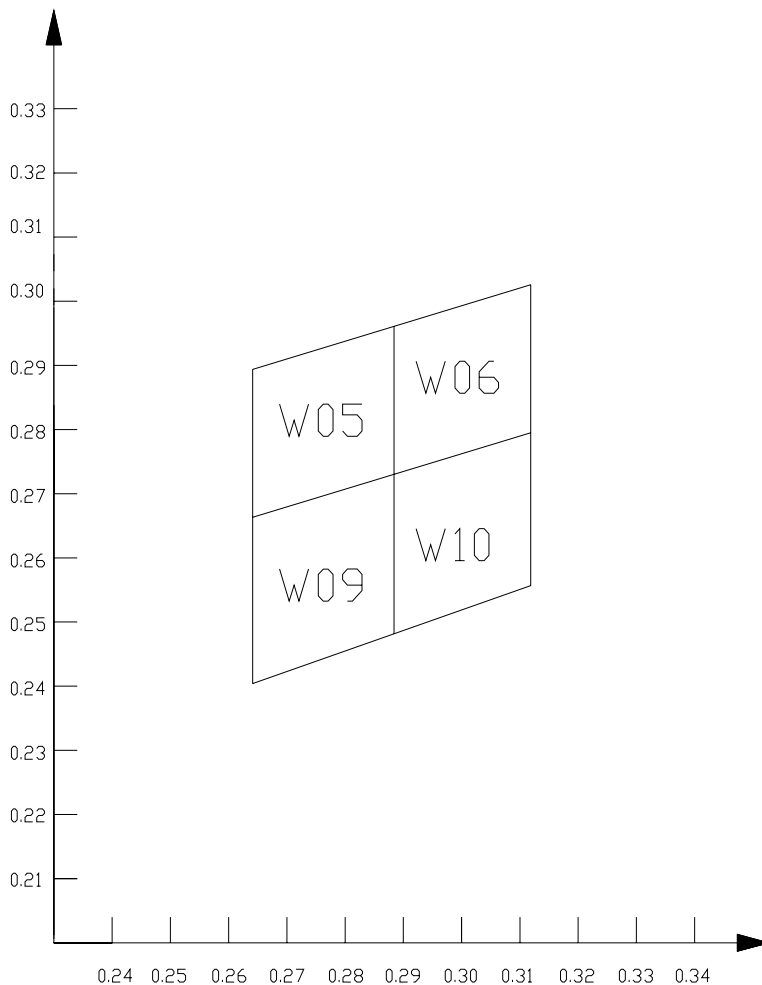
1. Intensity bin limits (At Ta=25°C R: If= 150mA G: If= 150mA B: If= 150mA)

R (lm)	G (lm)	B (lm)	W (lm)
J2 (15-25)	K2 (40-50)	L2 (5-10)	W2 (50-80)

2. Voltage Bin limits (At Ta=25°C R: If= 150mA G: If= 150mA B: If= 150mA)

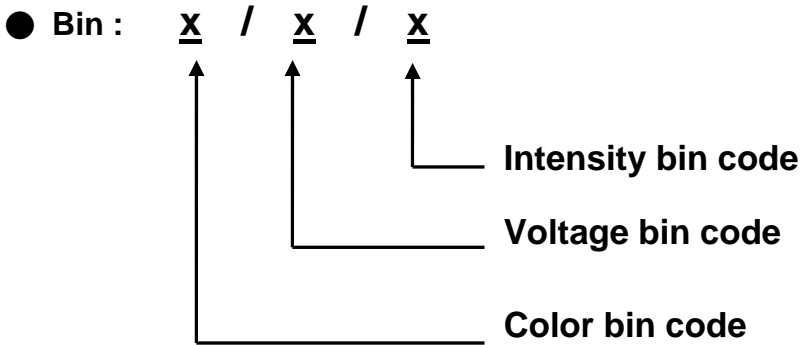
R (V)	G (V)	B (V)
R-1 (2.0-3.0)	G-1 (2.8-3.6)	B-1 (2.8-3.6)

● CIE Chromaticity Diagram:

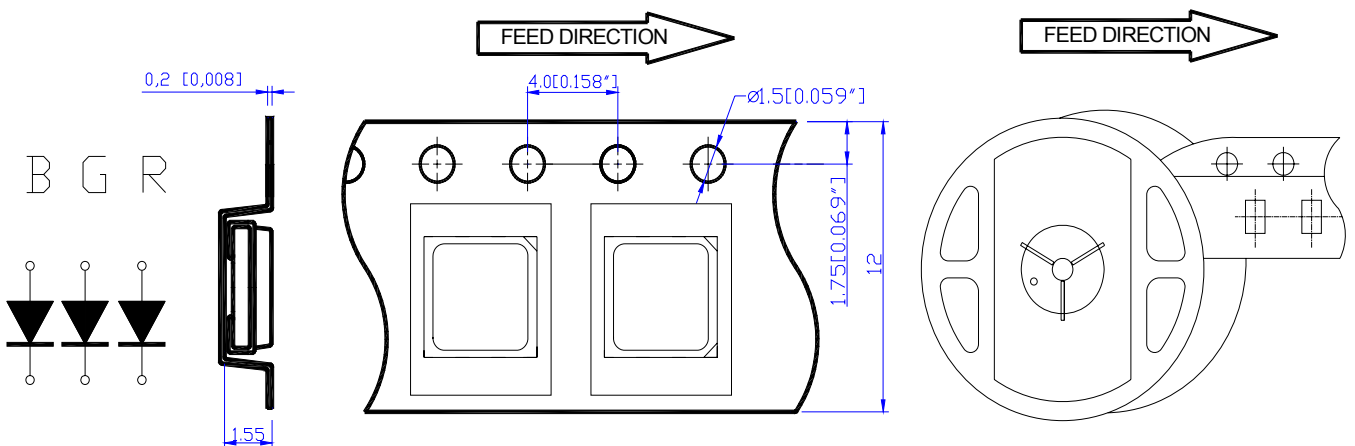


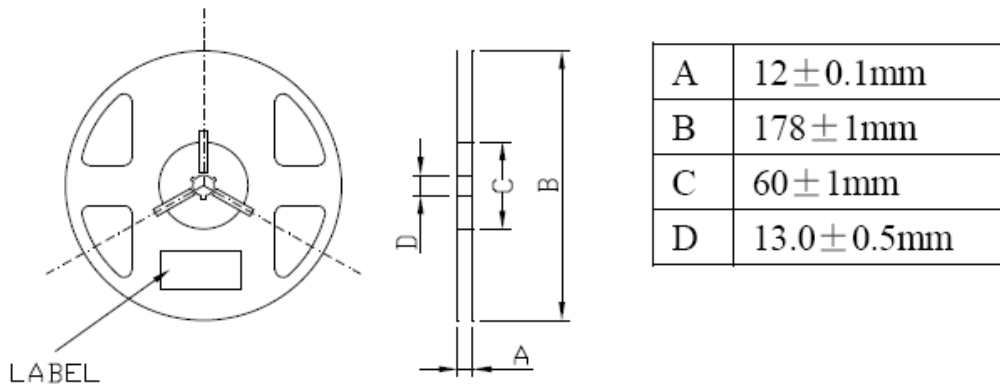
● Bin Range of Chromaticity Coordinates(At Ta=25°C R: I_F= 150mA G: I_F= 150mA B: I_F= 150mA)

W05		W06		W09		W10	
CIE X	CIE Y	CIE X	CIE Y	CIE X	CIE Y	CIE X	CIE Y
0.2570	0.2700	0.2820	0.2800	0.2570	0.2450	0.2820	0.2550
0.2570	0.2950	0.2820	0.3050	0.2570	0.2700	0.2820	0.2800
0.2820	0.3050	0.3070	0.3150	0.2820	0.2800	0.3070	0.2900
0.2820	0.2800	0.3070	0.2900	0.2820	0.2550	0.3070	0.2650



● Taping

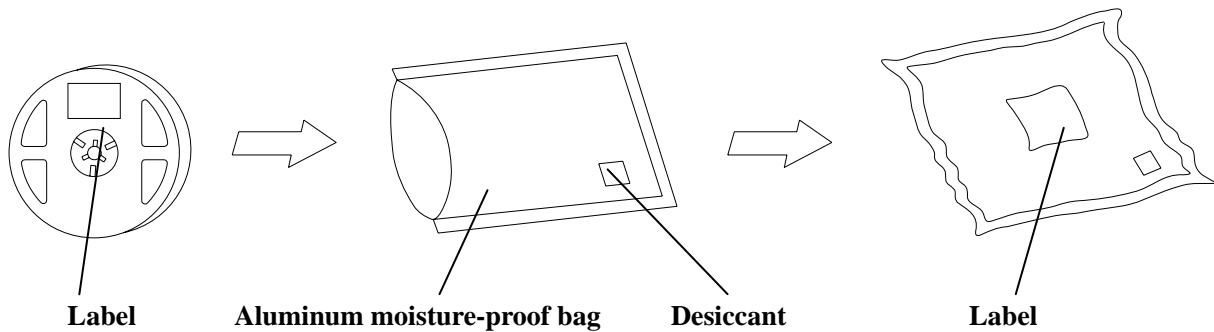




Notes:

1. All dimensions are in millimeters(inches), Tolerance is ±0.1mm unless otherwise noted .
2. 1000pcs/tape

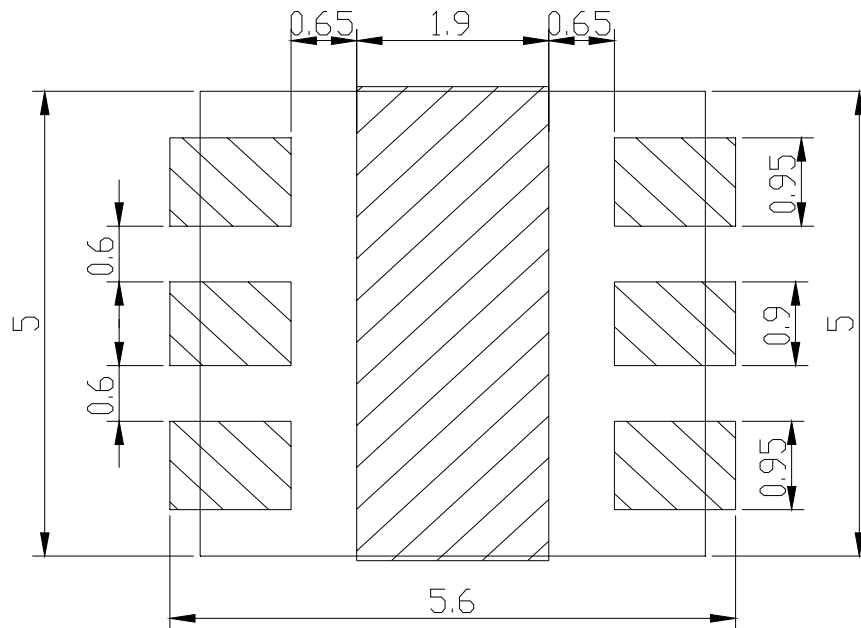
● Moisture Resistant Packaging



Notes:

1. All Dimensions are in millimeters, Tolerance is ±2.0mm Unless otherwise noted .
2. Specifications are subject to change without notice.
3. ESD Resistant Package.
4. Used vacuum packing mode ,Moisture Resistant Package.
5. Desiccant are put into the each bag.

● Suggest Soldering Pad Dimensions:

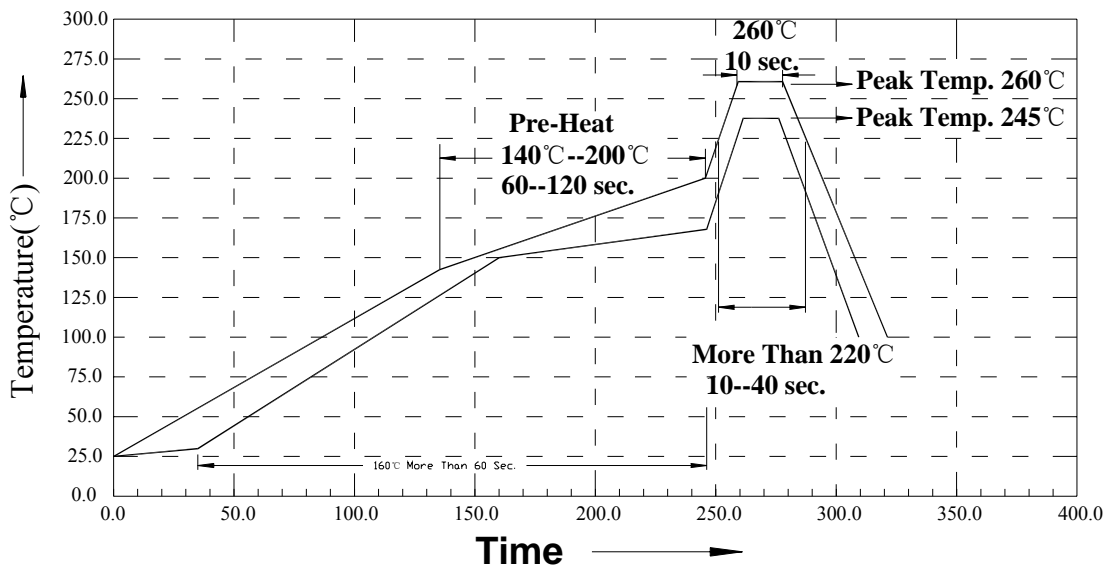


Notes:

- a) All Dimensions are in millimeters.

● Suggestion IR Reflow Profile For Pb Free Process

Degree.C. Recommended Profile between Assemble And Heat-Resistance Line



The Profile is available that must to use SnAg_(x=3.3-3.8)Cu_(y=0.2-0.7)Solder paste

● Reliability Test

No.	Test Item	Test Conditions	Equipment	Result
1	Temperature cycle	-40 °C ~ +25°C ~ +100°C ~ +25°C 30min 5min 30min 5min Test Time=100cycle	T/H chamber	0/50
2	High temperature storage	High Ta=+100°C Test time=1,000hrs	Oven	0/50
3	Thermal shock	0°C ~ 100°C 15sec ~15sec Test time=20cycles	T/S chamber	0/50
4	Steady state operating life condition 1	Ta=25°C I _F =150mA Test time=1,000hrs	Burn in sys	0/50
5	Steady state operating life condition 2	Ta= 25 °C I _F =150mA Test time=500hrs	Burn in sys	0/50
6	Steady state operating life of high temperature	Ta= 85 °C I _F =150mA Test time=1,000hrs	Oven	0/50
7	High Temperature High Humidity Storage	Ta=+65°C RH=90% I _F =150mA Test time=500hrs	T/H chamber	0/50
8	Solder Resistance	Operation heating: 260°C (Max.), within 10seconds. (Max.) Test time=2 times	Reflow	0/50

● ESD NOTES:

1. This product is electrostatic insensitive device, so static electricity and surge will damage the SMD. It is required to wear a wrist-band when handling the SMD. All device, equipment, machinery, desk and ground must be properly grounded.
2. ESD parameters:
 - Operator grounding $R_O < 3M\Omega$;
 - Equipment grounding $R_E < 4\Omega$;
 - Test environment ESD voltage $V_T < 50V$.
3. Not to be hand SMD by unauthorized personnel out ESD bag.
4. Advise put ESD tablecloth on the worktable, and grounding. Use the ion fan If the environment ESD voltage out of limit. Especially The equipment of wave crest solder and circumfluence solder.
5. Do not directory voltage on the SMD in Testing. Note the current not out of 30mA.
6. When using SMD, it must use a protective resistor in series. The reverse voltage is not out of 5V.

● CAUTION:

1. Before the bag is opened, please keep the following storage condition:
Temperature: 5°C-30 °C, Humidity: RH 60% Max, Time: 12 Months.
2. After this bag is opened, The device that will be applied to infrared reflow, vapor-phase reflow, or equivalent soldering process must be :
 - a) Mounted within 168 hours, Temperature: 30°C Max, Humidity: RH 60% Max;
 - b) Stored at less than 20% RH.
 - c) if opened the Bag, the value of Humidity card is exceed 30%, Baking is required before mounting.
3. If above conditions are not met, baking is required before mounting.
Baking condition : 12 hours at $60 \pm 3^\circ\text{C}$ and $< 5\%$ RH.
4. The temp. of the iron should be lower than 280°C and soldering within 3sec per solder-pad is to be observed.