TOP VIEW LED

Super Luminosity RGB LED

MODEL LMTP50SPRGB-Z

Customer		Model	LMTP50SPRGB-Z	
		Issued Date	2007 – 03 - 29	
Checked By	Approved By	Description	Chip Type RGB LED	
		Written By	Checked By	Approved by

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◆ Features

[1] Built-in 3 Chip LED

[2] High-luminosity chip LED

[3] Using a package with high heat dissipation

Properties, it can be driven with a large current

[4] Wide viewing angle

[5] External dimensions: 5.0 x 5.5 x 1.6t mm

[6] Lead frame package with individual 6 pin

3 LED Chip Die (Red + Green + Blue)

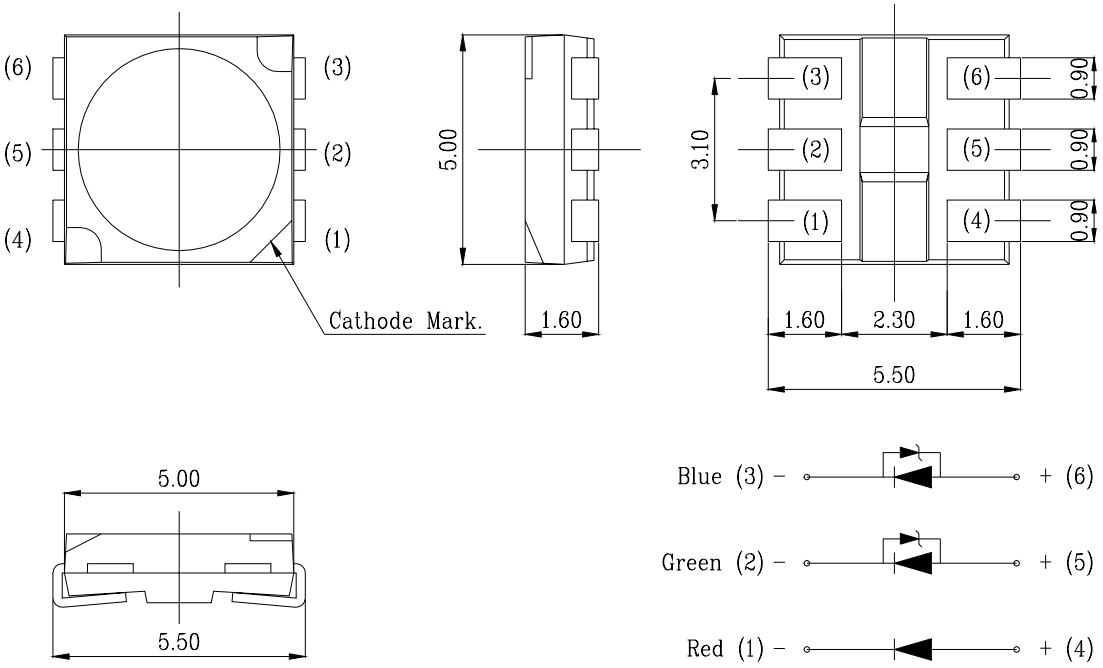
Model : LMTP50SPRGB-Z

◆ Applications

[1] Camera Flash

[2] Hand Carrier Flash

◆ Outline Dimensions & LED Circuit Diagram



◆ Absolute Maximum Ratings.

Parameter	Symbol	Rating Value		Unit
Power Dissipation	PD	RED	70	mW
		GREEN	100	
		BLUE	100	
Forward Current	IF	RED	30	mA
		GREEN	30	
		BLUE	30	
Forward Pulse Current	IPF	RED	100	mA
		GREEN	100	
		BLUE	100	
Reverse Voltage	VR	ALL COLOR	5	V
Operating Temperature	TOT	-30 to +85		℃
Storage Temperature	TST	-40 to +100		℃
Soldering Temperature	TSD	Reflow: 260℃ for 10sec Hand Soldering: 350℃ for 10sec		℃

* Duty ratio=1/10, Pulse width < 30ms.

◆ Elector-optical Spec

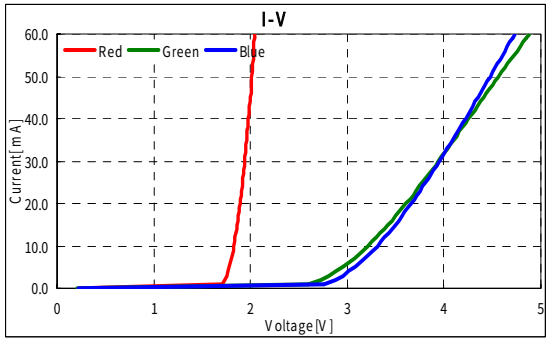
Parameter	Symbol	Condition		Min	Typ.	Max	Unit
Forward Voltage 1	VF 1	IF=20mA/ each chip	RED	1.9	-	2.3	V
			GREEN	3.0	-	3.4	
			BLUE	3.0	-	3.4	
Reverse Current	IR 1	VR=5V /each chip	RED			50	uA
			GREEN			50	
			BLUE			50	
Dominant Wavelength	λd	IF=20mA/ each chip	RED	620	625	630	nm
			GREEN	520	525	530	
			BLUE	454	457	460	
Luminous Intensity	IV	IF=20mA/ each chip	RED	200	400	-	mcd
			GREEN	600	900	-	
			BLUE	100	200	-	

◆ Elector-optical Rank

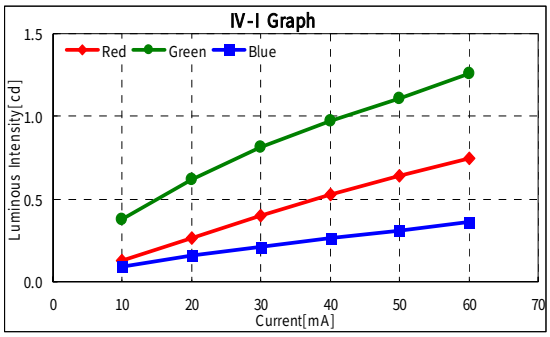
Parameter	Symbol	Condition	Color	Rank	Min	Typ.	Max	Unit
Dominant Wavelength	λd	IF=20mA/ each chip	RED	RW1	620		625	nm
				RW2	625		630	
			GREEN	GW1	520	-	525	
				GW2	525	-	530	
			BLUE	BW1	454	-	460	
Luminous Intensity	IV	IF=20mA/ each chip	RED	RL1	200	-	400	mcd
				RL2	400		600	
			GREEN	GL1	600	-	900	
				GL2	900		1200	
			BLUE	BL1	100		200	
				BL2	200	-	300	

◆ Electrical & Optical Characteristics

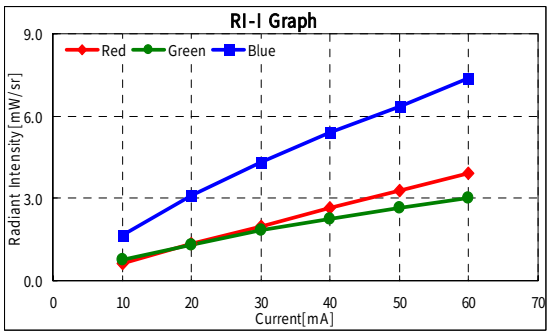
Forward Current vs Voltage



Relative Luminosity vs Forward Current

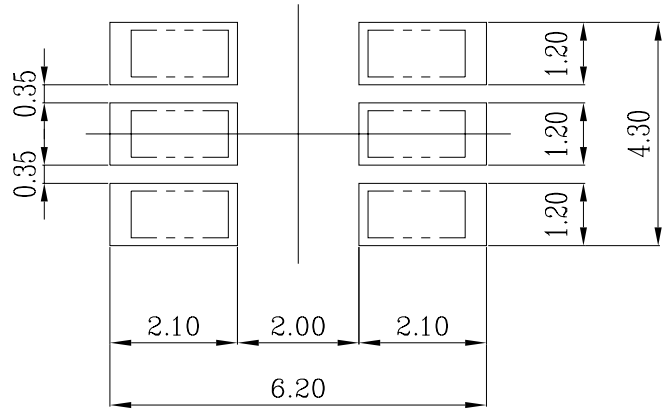


Relative Radial vs Forward Current

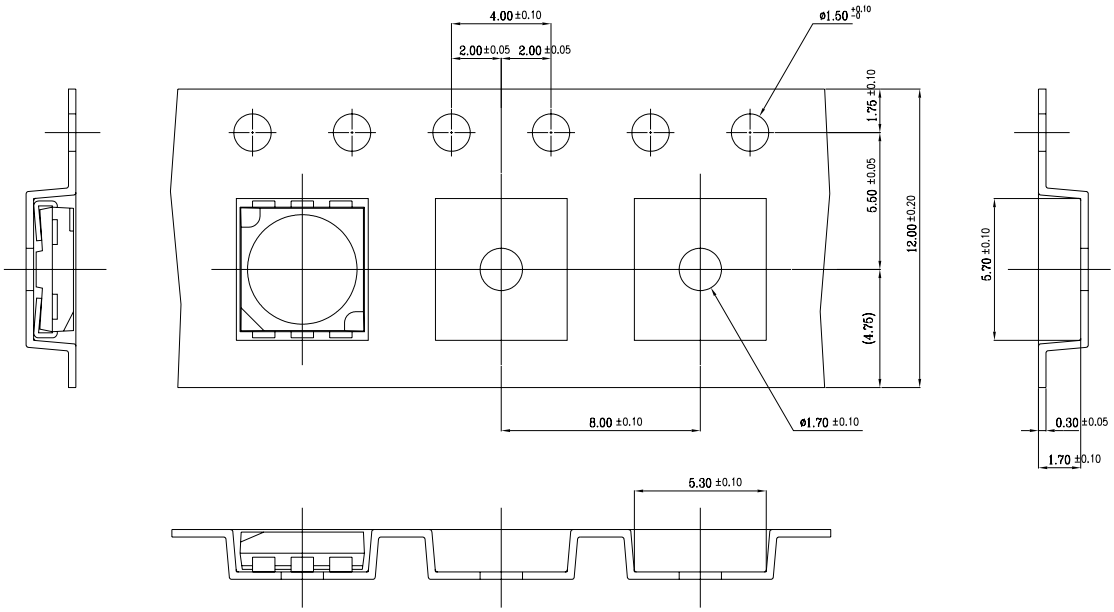


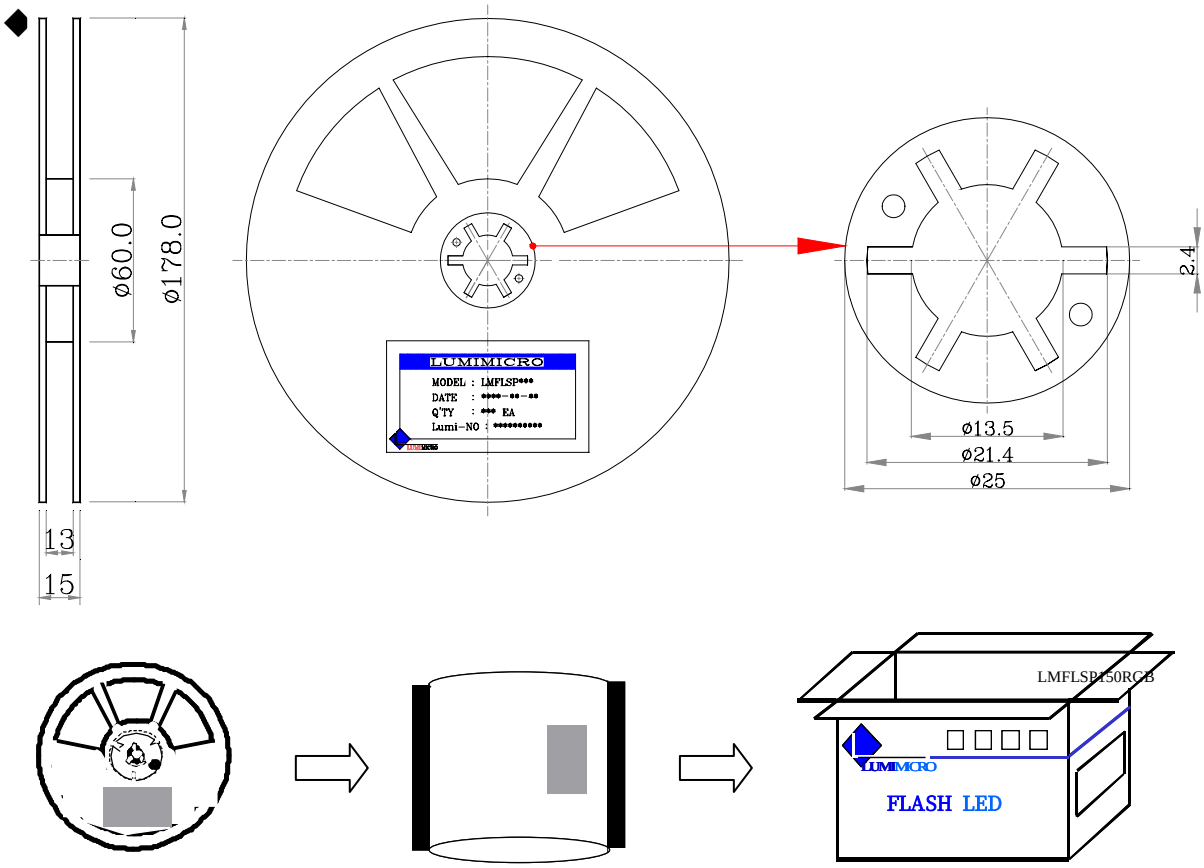
[VF : Forward Voltage(V), IF : Forward Current(m A)]

◆ Recommended Pad Pattern



◆ Taping pocket Dimension





◆ Packing Spec

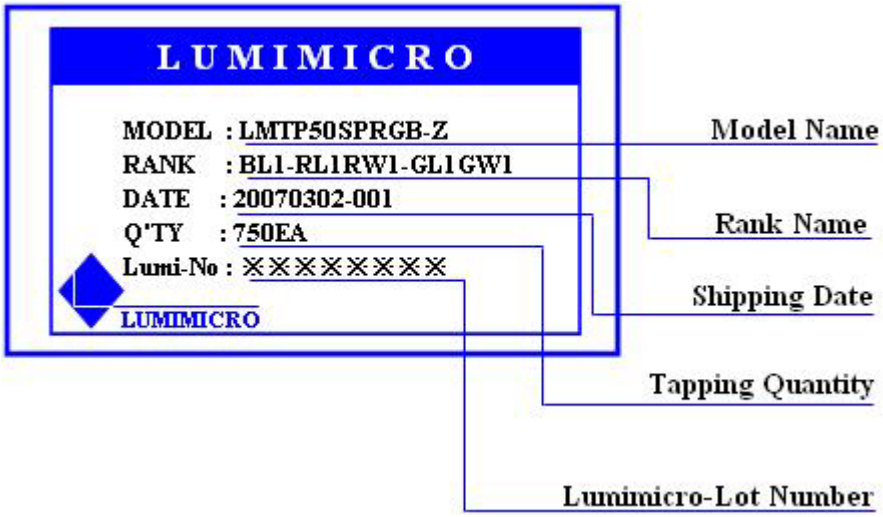
- Aluminum Bag Spec.

	Reel in a Bag	Silica in a Bag	Goods QNT in a Bag
Aluminum Bag	1 Reel	1 Silica	Max : 750ea

- Box packing Spec.

	Dimensions(Width/Thickness) Unit : mm	Reels in Box	Goods in QNT in Box
Box	275/ 285/ 200	10	Max : 7,500ea

◆ **Label Spec.**


LUMIMICRO
MODEL : LMTP50SPRGB-Z
RANK : BL1-RL1RW1-GL1GW1
DATE : 20070302-001
Q'TY : 750EA
Lumi-No : ※※※※※※※※
LUMIMICRO
Model Name
Rank Name
Shipping Date
Tapping Quantity
Lumimicro-Lot Number

◆ Precautions For Use

(1) This device should not be used in any type of fluid such as water, oil, organic solvent, etc.

(2) When washing is required, IPA should be used.

(3) When the LEDs are illuminating, operating current should be decided after considering the ambient maximum temperature.

(4) LEDs must be stored to maintain a clean atmosphere. If the LEDs are stored for 3months or more after being shipped from LUMIMICRO, sealed container with a nitrogen atmosphere should be used for storage.

(5) The LEDs must be dip soldered within seven days after opening the moisture-proof packing. Repack unused Products with anti-moisture packing, fold to close any opening and then store in dry place.

(6) The appearance and specifications of the product may be modified for improvement without notice.

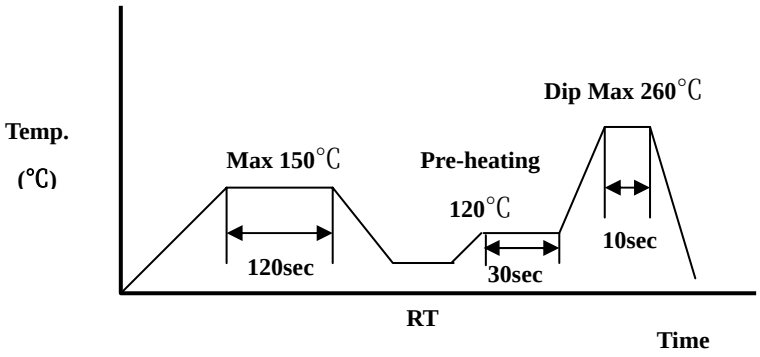
(7) This LEDs are sensitive to the static electricity and surge. It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs. If Over voltage which exceeds the absolute maximum rating is applied to LEDs, it will cause damage in LEDs and result in destruction.

(8) Damaged LEDs will show some unusual characteristics such as remarkably increased leak current, turn-on voltage becomes lower and the LEDs get unlighted at low current.

◆ Reflow Conditions

1. Solder Dip Conditions

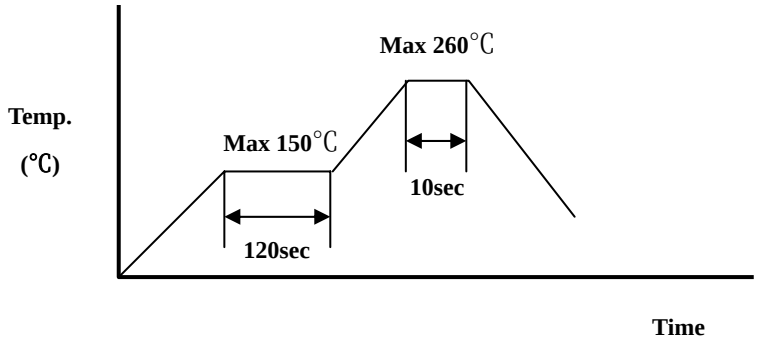
The Immersion of leads into a solder bath @ MAX 260℃ shall be to 10 seconds max.



2. Reflow Conditions

Preliminary heating to be at 150℃ max. for 2 minutes max.

Soldering heat to be at 260℃ max. for 10 seconds max.



3. For Manual Soldering

Not more than 5 seconds @ MAX 300℃, under Soldering iron.

◆ Reliability Test Conditions

	ITEMS	CONDITION	NOTE	Fail/Sample
1	RESISTANCE TO SOLDERING HEAT (REFLOW SOLDERING)	TSID=260℃ , 10sec (PRE TREATMENT 30℃, 70%, 168hr)	2TIMES	0/20
2	SOLDERBILITY (REFLOW SOLDERING)	TSID=215℃±5℃, 3sec (LEAD SOLDER)	1TIME OVER 95%	0/20
3	THERMAL SHOCK	-40℃ ~ 100℃, 15min AT EACH TEMP.	20CYCLES	0/20
4	MOISTURE RESISTANCE CYCLE	25℃ ~ 65℃ ~ -10℃, 90%RH 24hr/ 1cycle	500HRS	0/20
5	HIGH TEMPERATURE STORAGE	Ta = 100℃	500HRS	0/20
6	TEMPERATURE HUMIDITY STORAGE	Ta = 60℃ , RH = 90%	500HRS	0/20
7	LOW TEMPERATURE STORAGE	Ta = -40℃	500HRS	0/20
8	LIFE TIME 1	25mA /Chip Each@ ROOM TEMP.	500HRS	0/20
9	LIFE TIME 2	15mA /Chip Each@ 60℃, 90%RH	500HRS	0/20
10	ON/OFF TEST	IF = 20mA/Chip Each , Pulse Width 2sec, Duty Ratio 1/2	100,000CYCLES	0/20

◆ Failure Criteria

ITEM	SYMBOL	Failure Criteria	
		MIN	MAX
Forward Voltage	VF	-	U.S.L*)×1.2
C.I.E. x, y	x, y	L.S.L*)×0.8	U.S.L*)×1.2
Luminous Intensity	IV	L.S.L*)×0.7	-

U.S.L*) ; Upper Standard Level

L.S.L*) ; Lower Standard Level