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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

LM561B – 5630 Middle Power LED(Full kitting)

Introduction

Features

- Beam Angle: 120˚
- Precondition : JEDEC Level 2a
- Dimension : 5.6 x 3.0 x 0.8 mm
- ESD withstand Voltage : up to ± 5KV [HBM]

Applications

- INDOOR LIGHTING : Ambient Light, LED tube, Down light, LED bulb and Ceiling Light

SAMSUNG ELECTRONICS

95, Samsung2-Ro, Giheung-Gu,
Yongin-City, Gyeonggi-Do 446-711, KOREA

Contents

1. Product Code Information

1) Luminous Flux Bins (T$_s$ = 25℃)

| Nominal CCT	Product Code	Flux Rank	Sorting Condition lm @65mA
			Flux Range (Φ$_v$, lm)
2700K	SPMWHT541MD5WAWKS2	S2 ↑	26.0 ~
	SPMWHT541MD5WAWKS3	S3 ↑	28.0 ~
3000K	SPMWHT541MD5WAVKS2	S2 ↑	26.5 ~
	SPMWHT541MD5WAVKS3	S3 ↑	28.5 ~
3500K	SPMWHT541MD5WAUKS2	S2 ↑	27.0 ~
	SPMWHT541MD5WAUKS3	S3 ↑	29.0 ~
4000K	SPMWHT541MD5WATKS2	S2 ↑	28.0 ~
	SPMWHT541MD5WATKS3	S3 ↑	30.0 ~
5000K	SPMWHT541MD5WARKS2	S2 ↑	29.0 ~
	SPMWHT541MD5WARKS3	S3 ↑	31.0 ~
5700K	SPMWHT541MD5WAQKS2	S2 ↑	28.5 ~
	SPMWHT541MD5WAQKS3	S3 ↑	30.5 ~
6500K	SPMWHT541MD5WAPKS2	S2 ↑	28.0 ~
	SPMWHT541MD5WAPKS3	S3 ↑	30.0 ~

Notes: SAMSUNG ELECTRONICS maintains a tolerance of ±5% on Luminous Flux measurements.

2) Color Bins (T$_s$ = 25℃)

1) Color Binning

Nominal CCT	Product Code	Color Rank	Chromaticity Bins
2700K	SPMWHT541MD5WAWKS2 SPMWHT541MD5WAWKS3	WK	Kitting Bin
3000K	SPMWHT541MD5WAVKS2 SPMWHT541MD5WAVKS3	VK	Kitting Bin
3500K	SPMWHT541MD5WAUKS2 SPMWHT541MD5WAUKS3	UK	Kitting Bin
4000K	SPMWHT541MD5WATKS2 SPMWHT541MD5WATKS3	TK	Kitting Bin
5000K	SPMWHT541MD5WARKS2 SPMWHT541MD5WARKS3	RK	Kitting Bin
5700K	SPMWHT541MD5WAQKS2 SPMWHT541MD5WAQKS3	QK	Kitting Bin
6500K	SPMWHT541MD5WAPKS2 SPMWHT541MD5WAPKS3	PK	Kitting Bin

2) Chromaticity Region & Coordinates

2) Chromaticity Region & Coordinates (Continued)

Region	CIE X	CIE Y	Region	CIE X	CIE Y
W rank (2700K)					
W1	0.4373	0.3893	W9	0.4465	0.4071
	0.4418	0.3981		0.4513	0.4164
	0.4475	0.3994		0.4573	0.4178
	0.4428	0.3906		0.4523	0.4085
W2	0.4428	0.3906	WA	0.4523	0.4085
	0.4475	0.3994		0.4573	0.4178
	0.4532	0.4008		0.4634	0.4193
	0.4483	0.3919		0.4582	0.4099
W3	0.4483	0.3919	WB	0.4582	0.4099
	0.4532	0.4008		0.4634	0.4193
	0.4589	0.4021		0.4695	0.4207
	0.4538	0.3931		0.4641	0.4112
W4	0.4538	0.3931	WC	0.4641	0.4112
	0.4589	0.4021		0.4695	0.4207
	0.4646	0.4034		0.4756	0.4221
	0.4593	0.3944		0.4700	0.4126
W5	0.4418	0.3981	WD	0.4513	0.4164
	0.4465	0.4071		0.4562	0.4260
	0.4523	0.4085		0.4624	0.4274
	0.4475	0.3994		0.4573	0.4178
W6	0.4475	0.3994	WE	0.4573	0.4178
	0.4523	0.4085		0.4624	0.4274
	0.4582	0.4099		0.4687	0.4289
	0.4532	0.4008		0.4634	0.4193
W7	0.4532	0.4008	WF	0.4634	0.4193
	0.4582	0.4099		0.4687	0.4289
	0.4641	0.4112		0.4750	0.4304
	0.4589	0.4021		0.4695	0.4207
W8	0.4589	0.4021	WG	0.4695	0.4207
	0.4641	0.4112		0.4750	0.4304
	0.4700	0.4126		0.4813	0.4319
	0.4646	0.4034		0.4756	0.4221

Region	CIE X	CIE Y	Region	CIE X	CIE Y
V rank (3000K)					
V1	0.4147	0.3814	V9	0.4221	0.3984
	0.4183	0.3898		0.4259	0.4073
	0.4242	0.3919		0.4322	0.4096
	0.4203	0.3833		0.4281	0.4006
V2	0.4203	0.3833	VA	0.4281	0.4006
	0.4242	0.3919		0.4322	0.4096
	0.4300	0.3939		0.4385	0.4119
	0.4259	0.3853		0.4342	0.4028
V3	0.4259	0.3853	VB	0.4342	0.4028
	0.4300	0.3939		0.4385	0.4119
	0.4359	0.3960		0.4449	0.4141
	0.4316	0.3873		0.4403	0.4049
V4	0.4316	0.3873	VC	0.4403	0.4049
	0.4359	0.3960		0.4449	0.4141
	0.4418	0.3981		0.4513	0.4164
	0.4373	0.3893		0.4465	0.4071
V5	0.4183	0.3898	VD	0.4259	0.4073
	0.4221	0.3984		0.4299	0.4165
	0.4281	0.4006		0.4364	0.4188
	0.4242	0.3919		0.4322	0.4096
V6	0.4242	0.3919	VE	0.4322	0.4096
	0.4281	0.4006		0.4364	0.4188
	0.4342	0.4028		0.4430	0.4212
	0.4300	0.3939		0.4385	0.4119
V7	0.4300	0.3939	VF	0.4385	0.4119
	0.4342	0.4028		0.4430	0.4212
	0.4403	0.4049		0.4496	0.4236
	0.4359	0.3960		0.4449	0.4141
V8	0.4359	0.3960	VG	0.4449	0.4141
	0.4403	0.4049		0.4496	0.4236
	0.4465	0.4071		0.4562	0.4260
	0.4418	0.3981		0.4513	0.4164

2) Chromaticity Region & Coordinates (Continued)

Region	CIE X	CIE Y	Region	CIE X	CIE Y
U rank (3500K)					
U1	0.3889	0.3690	U9	0.3941	0.3848
	0.3915	0.3768		0.3968	0.3930
	0.3981	0.3800		0.4040	0.3966
	0.3953	0.3720		0.4010	0.3882
U2	0.3953	0.3720	UA	0.4010	0.3882
	0.3981	0.3800		0.4040	0.3966
	0.4048	0.3832		0.4113	0.4001
	0.4017	0.3751		0.4080	0.3916
U3	0.4017	0.3751	UB	0.4080	0.3916
	0.4048	0.3832		0.4113	0.4001
	0.4116	0.3865		0.4186	0.4037
	0.4082	0.3782		0.4150	0.3950
U4	0.4082	0.3782	UC	0.4150	0.3950
	0.4116	0.3865		0.4186	0.4037
	0.4183	0.3898		0.4259	0.4073
	0.4147	0.3814		0.4221	0.3984
U5	0.3915	0.3768	UD	0.3968	0.3930
	0.3941	0.3848		0.3996	0.4015
	0.4010	0.3882		0.4071	0.4052
	0.3981	0.3800		0.4040	0.3966
U6	0.3981	0.3800	UE	0.4040	0.3966
	0.4010	0.3882		0.4071	0.4052
	0.4080	0.3916		0.4146	0.4089
	0.4048	0.3832		0.4113	0.4001
U7	0.4048	0.3832	UF	0.4113	0.4001
	0.4080	0.3916		0.4146	0.4089
	0.4150	0.3950		0.4222	0.4127
	0.4116	0.3865		0.4186	0.4037
U8	0.4116	0.3865	UG	0.4186	0.4037
	0.4150	0.3950		0.4222	0.4127
	0.4221	0.3984		0.4299	0.4165
	0.4183	0.3898		0.4259	0.4073

Region	CIE X	CIE Y	Region	CIE X	CIE Y
T rank (4000K)					
T1	0.367	0.3578	T9	0.3702	0.3722
	0.3726	0.3612		0.3763	0.376
	0.3744	0.3685		0.3782	0.3837
	0.3686	0.3649		0.3719	0.3797
T2	0.3726	0.3612	TA	0.3763	0.3760
	0.3783	0.3646		0.3825	0.3798
	0.3804	0.3721		0.3847	0.3877
	0.3744	0.3685		0.3782	0.3837
T3	0.3783	0.3646	TB	0.3825	0.3798
	0.3840	0.3681		0.3887	0.3836
	0.3863	0.3758		0.3912	0.3917
	0.3804	0.3721		0.3847	0.3877
T4	0.384	0.3681	TC	0.3887	0.3837
	0.3898	0.3716		0.395	0.3875
	0.3924	0.3794		0.3978	0.3958
	0.3863	0.3758		0.3912	0.3917
T5	0.3686	0.3649	TD	0.3719	0.3797
	0.3744	0.3685		0.3782	0.3837
	0.3763	0.376		0.3802	0.3916
	0.3702	0.3722		0.3736	0.3874
T6	0.3744	0.3685	TE	0.3782	0.3837
	0.3804	0.3721		0.3847	0.3877
	0.3825	0.3798		0.3869	0.3958
	0.3763	0.376		0.3802	0.3916
T7	0.3804	0.3721	TF	0.3847	0.3877
	0.3863	0.3758		0.3912	0.3917
	0.3887	0.3836		0.3937	0.4001
	0.3825	0.3798		0.3869	0.3958
T8	0.3863	0.3758	TG	0.3912	0.3917
	0.3924	0.3794		0.3978	0.3958
	0.395	0.3875		0.4006	0.4044
	0.3887	0.3836		0.3937	0.4001

2) Chromaticity Region & Coordinates (Continued)

Region	CIE X	CIE Y	Region	CIE X	CIE Y
R rank (5000K)					
R1	0.3366	0.3369	R6	0.3456	0.3601
	0.3441	0.3428		0.3539	0.3669
	0.3449	0.3515		0.3551	0.3760
	0.3369	0.3451		0.3464	0.3688
R2	0.3441	0.3428	R7	0.3363	0.3287
	0.3515	0.3487		0.3433	0.3341
	0.3527	0.3578		0.3441	0.3428
	0.3449	0.3515		0.3366	0.3369
R3	0.3369	0.3451	R8	0.3433	0.3341
	0.3449	0.3515		0.3503	0.3396
	0.3456	0.3601		0.3515	0.3487
	0.3373	0.3534		0.3441	0.3428
R4	0.3449	0.3515	R9	0.3376	0.3616
	0.3527	0.3578		0.3464	0.3688
	0.3539	0.3669		0.3471	0.3775
	0.3456	0.3601		0.3379	0.3698
R5	0.3373	0.3534	RA	0.3464	0.3688
	0.3456	0.3601		0.3551	0.3760
	0.3464	0.3688		0.3564	0.3851
	0.3376	0.3616		0.3471	0.3775
Q rank (5700K)					
Q1	0.3222	0.3243	Q6	0.3292	0.3461
	0.3294	0.3306		0.3373	0.3534
	0.3293	0.3384		0.3376	0.3616
	0.3217	0.3316		0.3292	0.3539
Q2	0.3294	0.3306	Q7	0.3227	0.3170
	0.3366	0.3369		0.3295	0.3228
	0.3369	0.3451		0.3294	0.3306
	0.3293	0.3384		0.3222	0.3243
Q3	0.3217	0.3316	Q8	0.3295	0.3228
	0.3293	0.3384		0.3363	0.3287
	0.3292	0.3461		0.3366	0.3369
	0.3212	0.3389		0.3294	0.3306
Q4	0.3293	0.3384	Q9	0.3207	0.3462
	0.3369	0.3451		0.3292	0.3539
	0.3373	0.3534		0.3291	0.3617
	0.3292	0.3461		0.3202	0.3535
Q5	0.3212	0.3389	QA	0.3292	0.3539
	0.3292	0.3461		0.3376	0.3616
	0.3292	0.3539		0.3379	0.3698
	0.3207	0.3462		0.3291	0.3617

Region	CIE X	CIE Y	Region	CIE X	CIE Y
P rank (6500K)					
P1	0.3068	0.3113	P6	0.3126	0.3324
	0.3145	0.3187		0.3210	0.3408
	0.3135	0.3256		0.3205	0.3481
	0.3055	0.3177		0.3117	0.3393
P2	0.3145	0.3187	P7	0.3081	0.3049
	0.3221	0.3261		0.3154	0.3119
	0.3216	0.3334		0.3145	0.3187
	0.3135	0.3256		0.3068	0.3113
P3	0.3055	0.3177	P8	0.3154	0.3119
	0.3135	0.3256		0.3226	0.3188
	0.3126	0.3324		0.3221	0.3261
	0.3041	0.3240		0.3145	0.3187
P4	0.3135	0.3256	P9	0.3028	0.3304
	0.3216	0.3334		0.3117	0.3393
	0.3210	0.3408		0.3107	0.3461
	0.3126	0.3324		0.3015	0.3368
P5	0.3041	0.3240	PA	0.3117	0.3393
	0.3126	0.3324		0.3205	0.3481
	0.3117	0.3393		0.3200	0.3554
	0.3028	0.3304		0.3107	0.3461

Notes: SAMSUNG ELECTRONICS maintains ±0.005 tolerance of Cx, Cy

2. Characteristics

1) Absolute Maximum Rating

Item	Symbol	Rating	Condition
Operating temperature range	T_{op}	-40℃ ~ +85℃	–
Storage temperature range	T_{stg}	-40℃ ~ +120℃	–
LED junction temperature	T_J	110℃	–
Forward Current	I_F	150 mA	–
Peak Pulsed Forward Current	I_{FP}	300 mA	Duty 1/10 pulse width 10ms
Assembly Process Temperature	–	260℃, < 10sec	–
ESD	–	5kV	HBM

2) Electro-optical Characteristi

Item	Unit	Nominal CCT	Product Code	Rank		Min	Typ	Max
Forward Voltage[1] (V_F) (@65 mA, Ts = 25℃)	V	-	-	WA	AZ	2.70	-	2.80
					A1	2.80	-	2.90
					A2	2.90	-	3.00
					A3	3.00	-	3.10
					A4	3.10	-	3.20
Luminous Flux[2] (Φ_v) (@65 mA, Ts = 25℃)	lm	2700K	*WAWKS2	S2		26.0	-	28.0
			*WAWKS3	S3		28.0	-	30.0
		3000K	*WAVKS2	S2		26.5	-	28.5
			*WAVKS3	S3		28.5	-	30.5
		3500K	*WAUKS2	S2		27.0	-	29.0
			*WAUKS3	S3		29.0	-	31.0
		4000K	*WATKS2	S2		28.0	-	30.0
			*WATKS3	S3		30.0	-	32.0
		5000K	*WARKS2	S2		29.0	-	31.0
			*WARKS3	S3		31.0	-	33.0
		5700K	*WAQKS2	S2		28.5	-	30.5
			*WAQKS3	S3		30.5	-	32.5
		6500K	*WAPKS2	S2		28.0	-	30.0
			*WAPKS3	S3		30.0	-	32.0
Reverse Voltage (@5 mA, Ts = 25℃)	V	-	-	-		0.7	-	1.2
Color Rendering Index[3] (R_a)	-	-	-	5		80	-	-
Special CRI[4] (R9)	-	-	-	-		0	-	-
Thermal resistance (Junction to solder point)	℃/W			–		–	16	–
Beam Angle							120	

Notes:

1)~4) SAMSUNG ELECTRONICS maintains a tolerance of V_F:±0.1 V, Φ_v:±5 %, R_a :±3.0, R9 :±6.5 on measurements

5) " * " is Product Code of "SPMWHT541MD5"

3. Typical Characteristics Graph $(T_s = 25℃)$

1) Spectrum Distribution

[CCT : 2700K & 3000K]
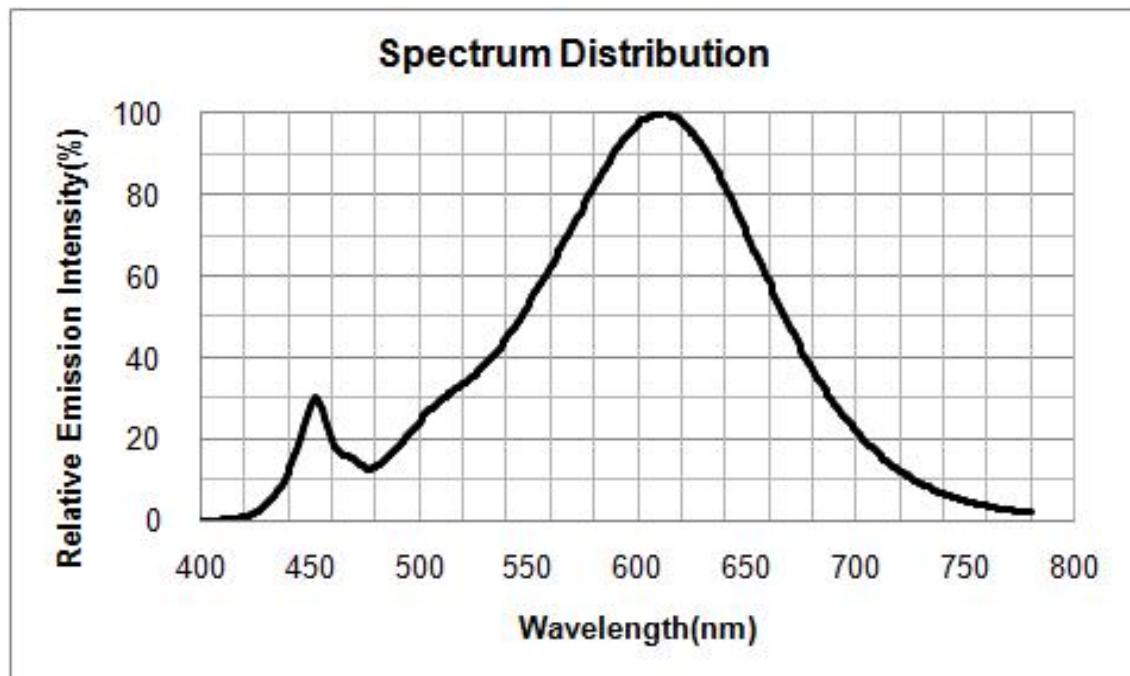
[CCT : 3500K & 4000K]
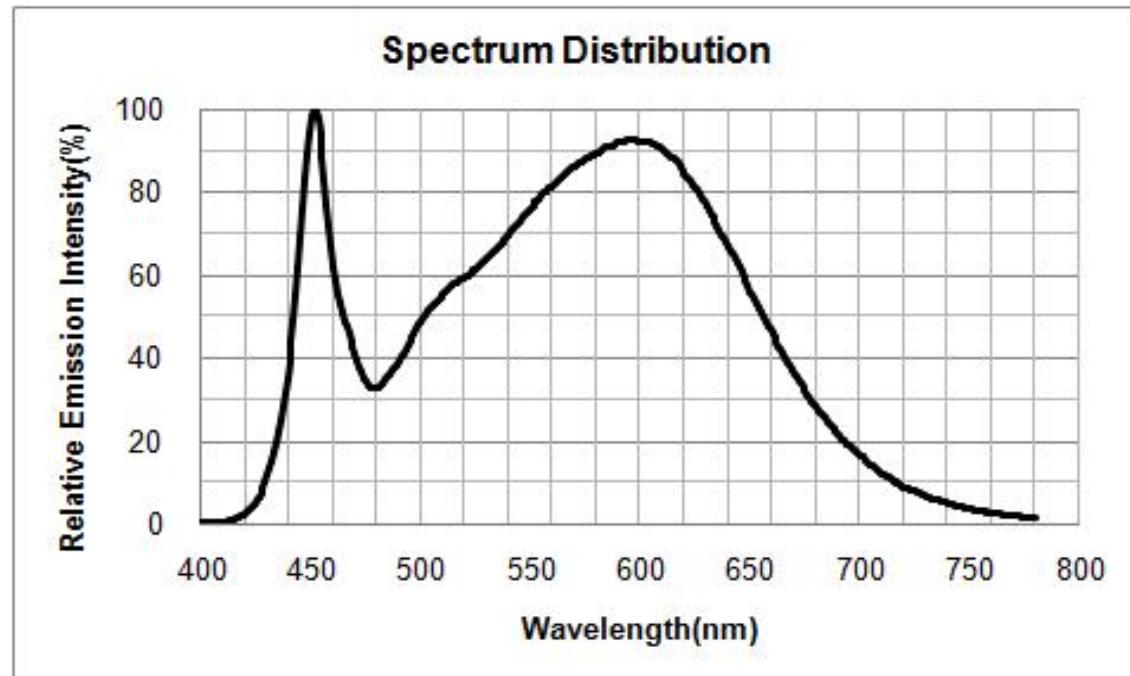
[CCT : 5000K & 5700K]
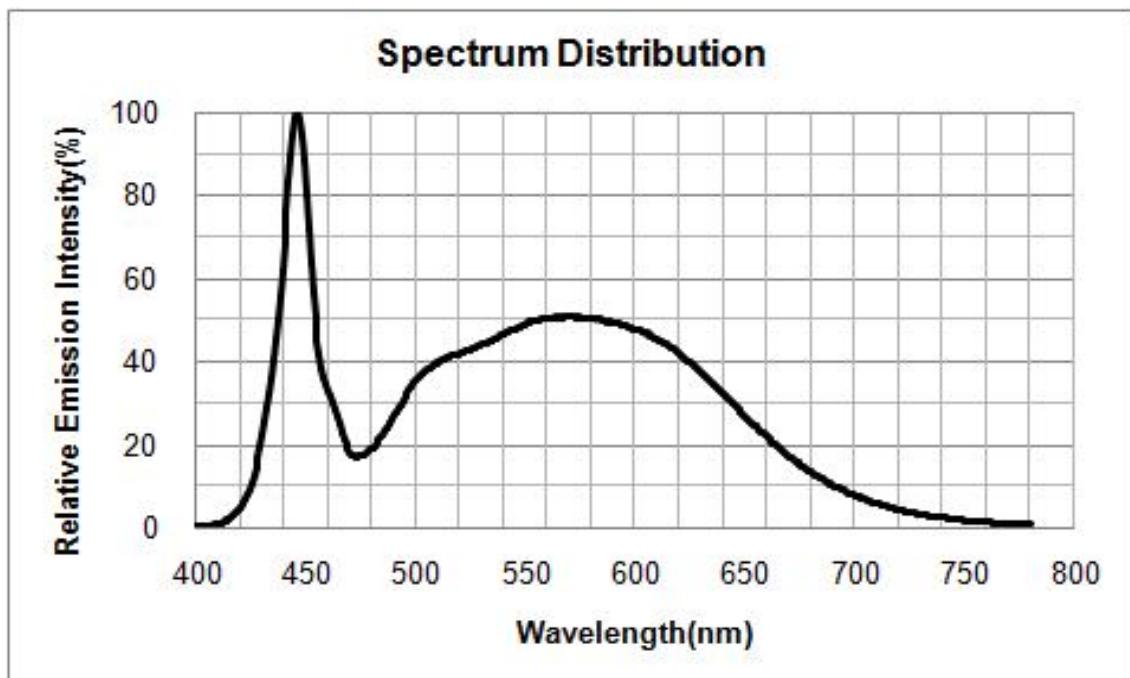
[CCT : 6500K]
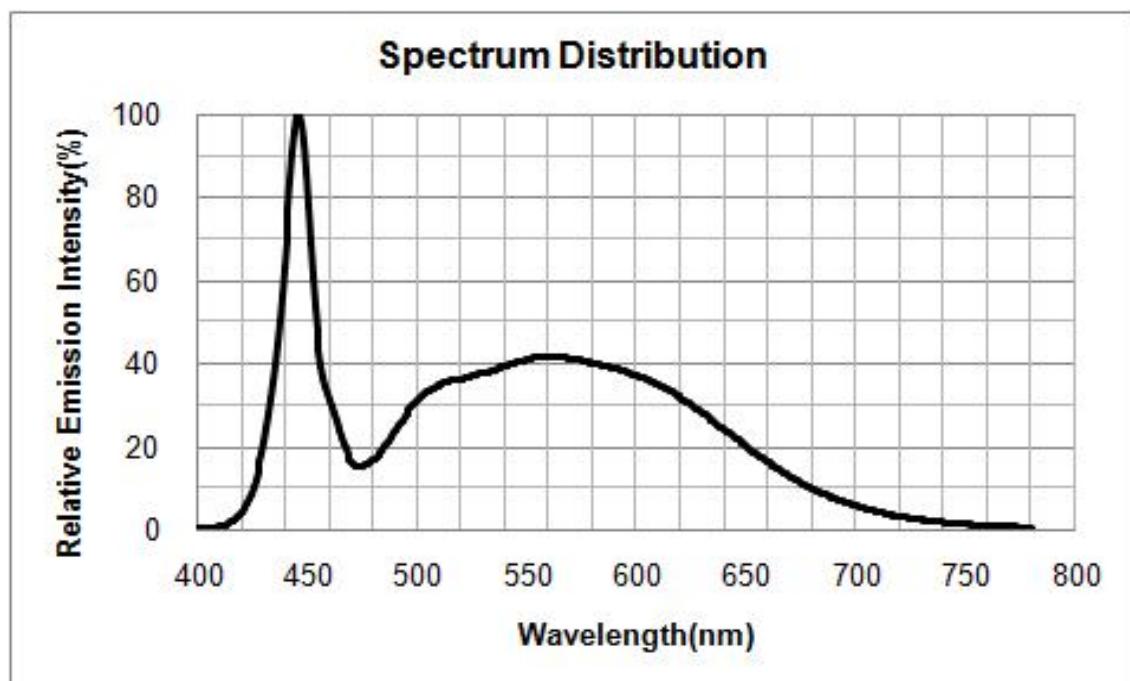
2) Forward Current Characteristics

[Relative Luminous Flux vs. Forward Current]   **(T_s = 25℃)**
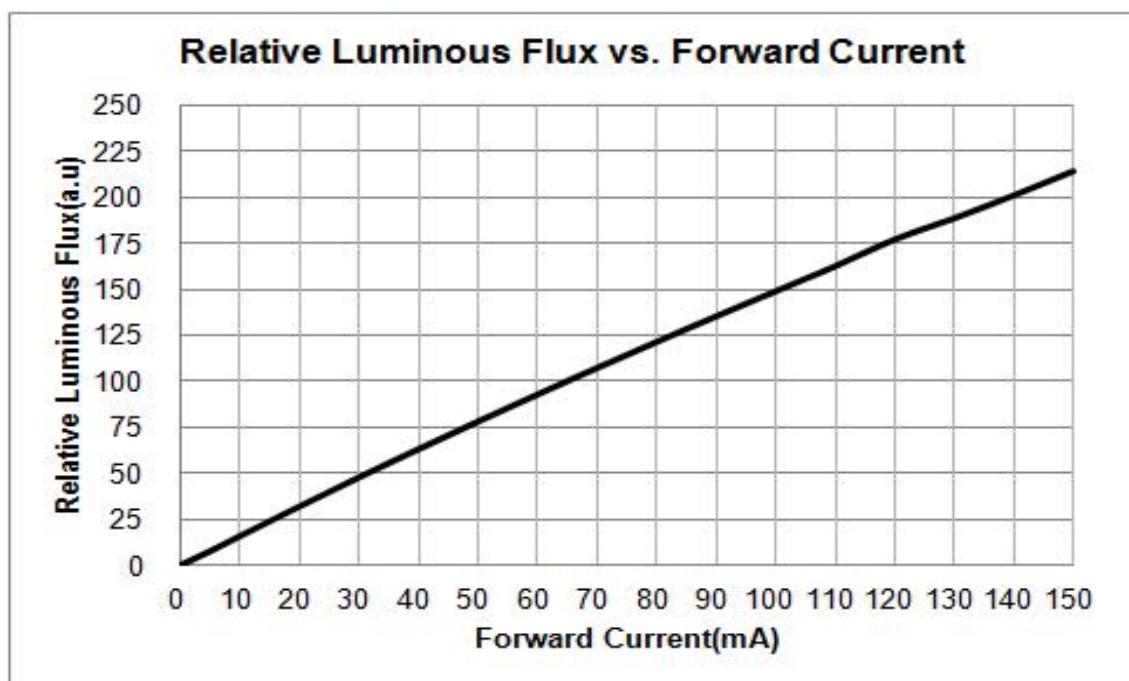

[Forward Current vs. Forward Voltage]   **(T_s = 25℃)**
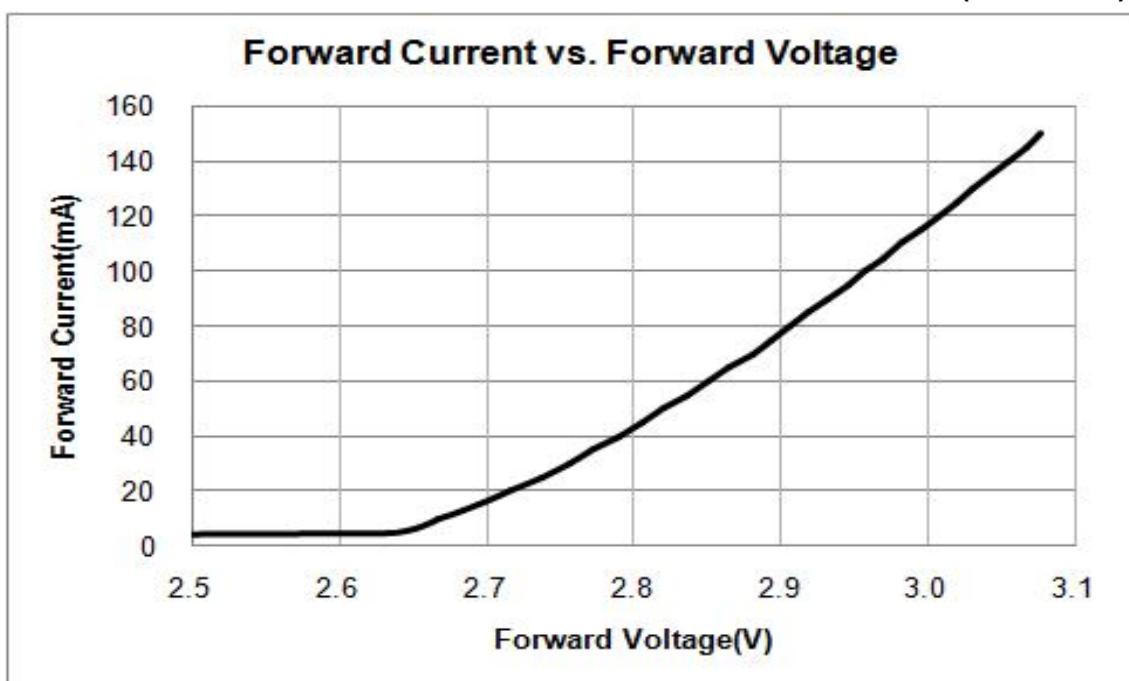
3) Temperature Characteristics

[Relative Luminous Flux vs. Ts]

(I$_F$ = 65mA)

Relative Luminous Flux vs. Temperature
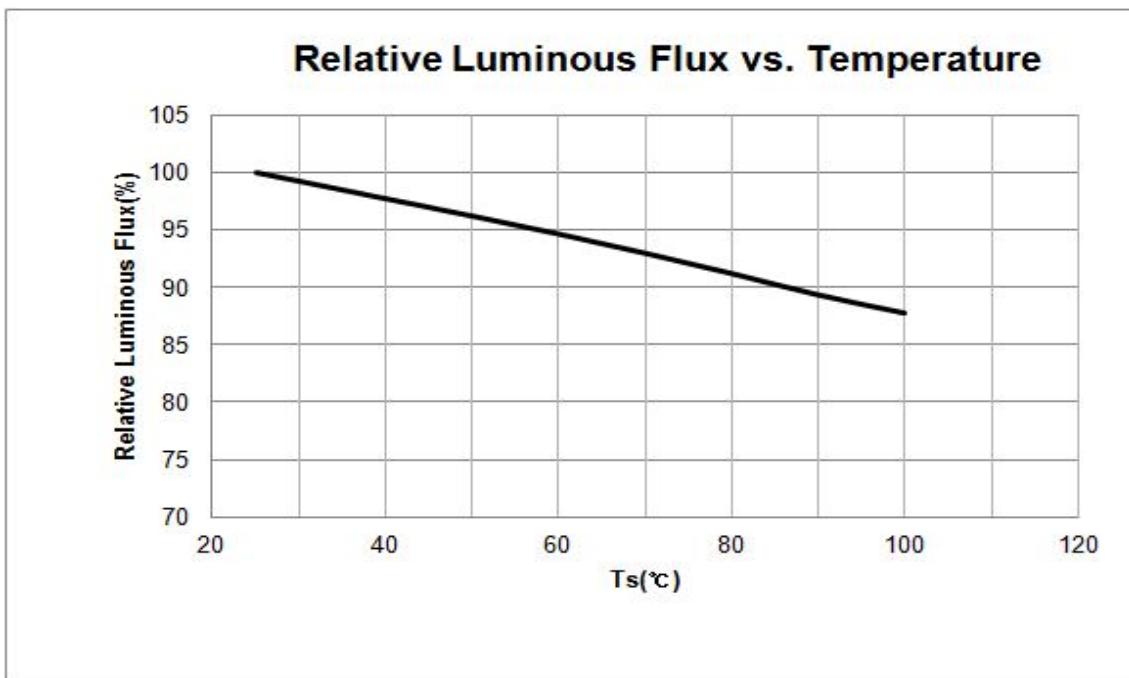
[Forward Voltage vs. Ts]

(I$_F$ = 65mA)

Forward Voltage vs. Temperature

4) Color shift Characteristics

[Color Δx, Δy vs. Forward Current] (T$_s$ = 25℃)

Color Δx, Δy vs. Forward Current

[Color Δx, Δy vs. Ts] (I$_F$ = 65mA)

Color Δx, Δy vs. Temperature (5000K)
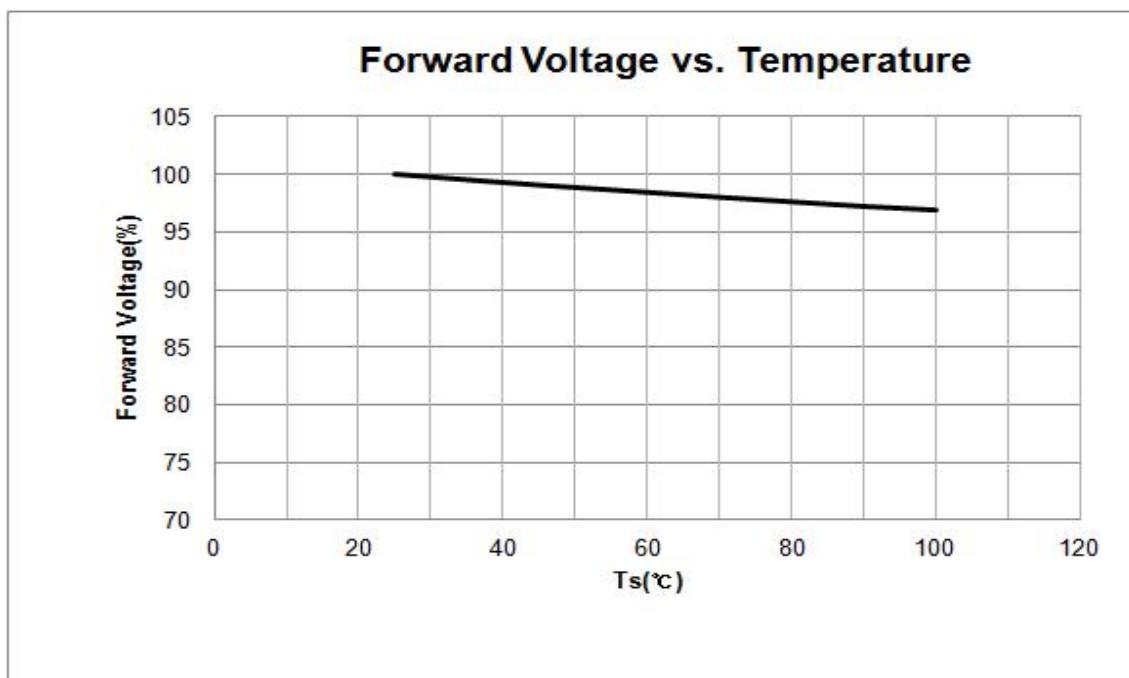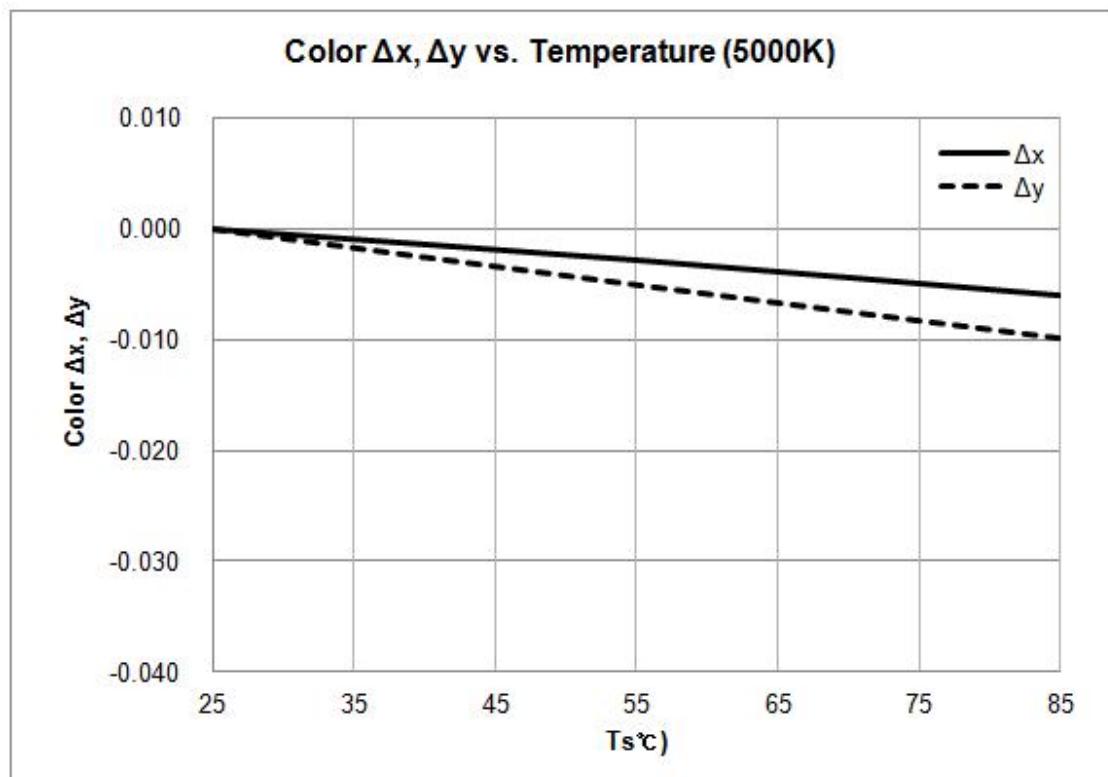
4) Color shift Characteristics

[Color x, y vs. Ts]   (I$_F$ = 65mA)
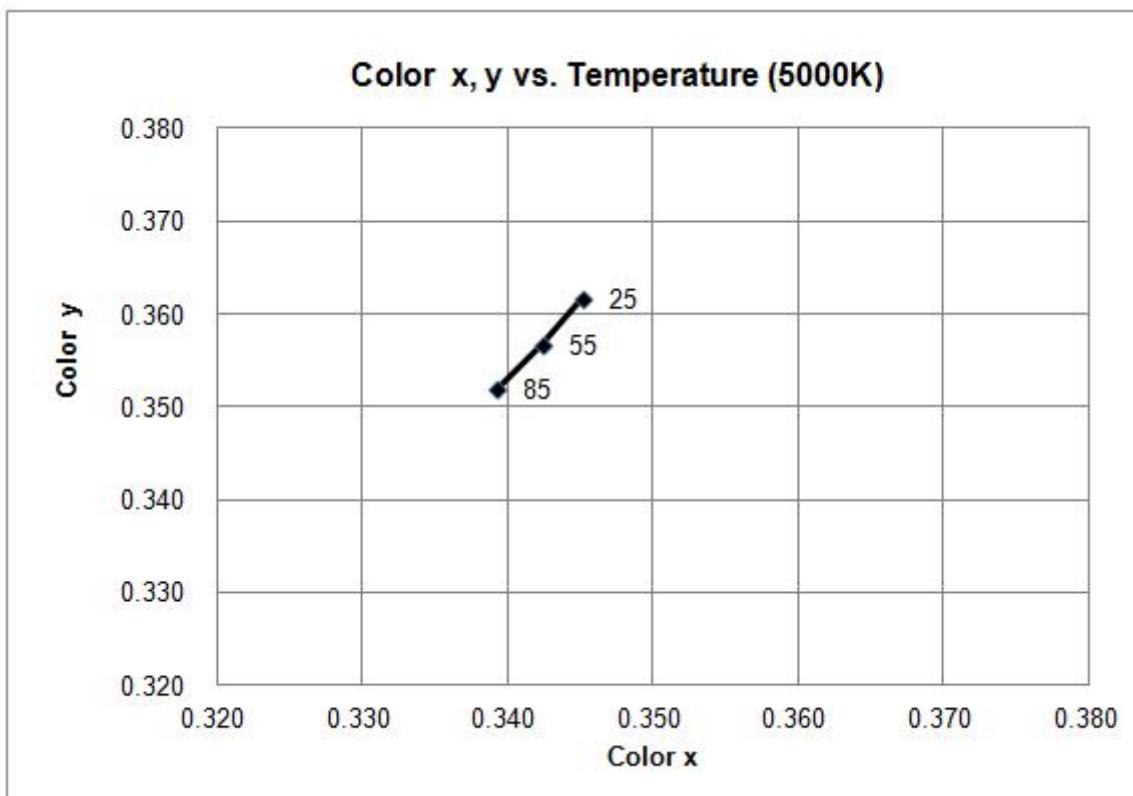
Color x, y vs. Temperature (5000K)

[Color Δx, Δy vs. Ts]   (I$_F$ = 65mA)

Color Δx, Δy vs. Temperature (3000K)

4) Color shift Characteristics

[Color x, y vs. Ts]

(T$_s$ = 25℃)

Color x, y vs. Temperature (3000K)

5) Derating Curve

Forward Current Derating Curve

Legend
Rth(j-a) = 45 ℃/W
Rth(j-a) = 65 ℃/W
Rth(j-a) = 100 ℃/W
Rth(j-a) = 150 ℃/W
Rth(j-a) = 200 ℃/W
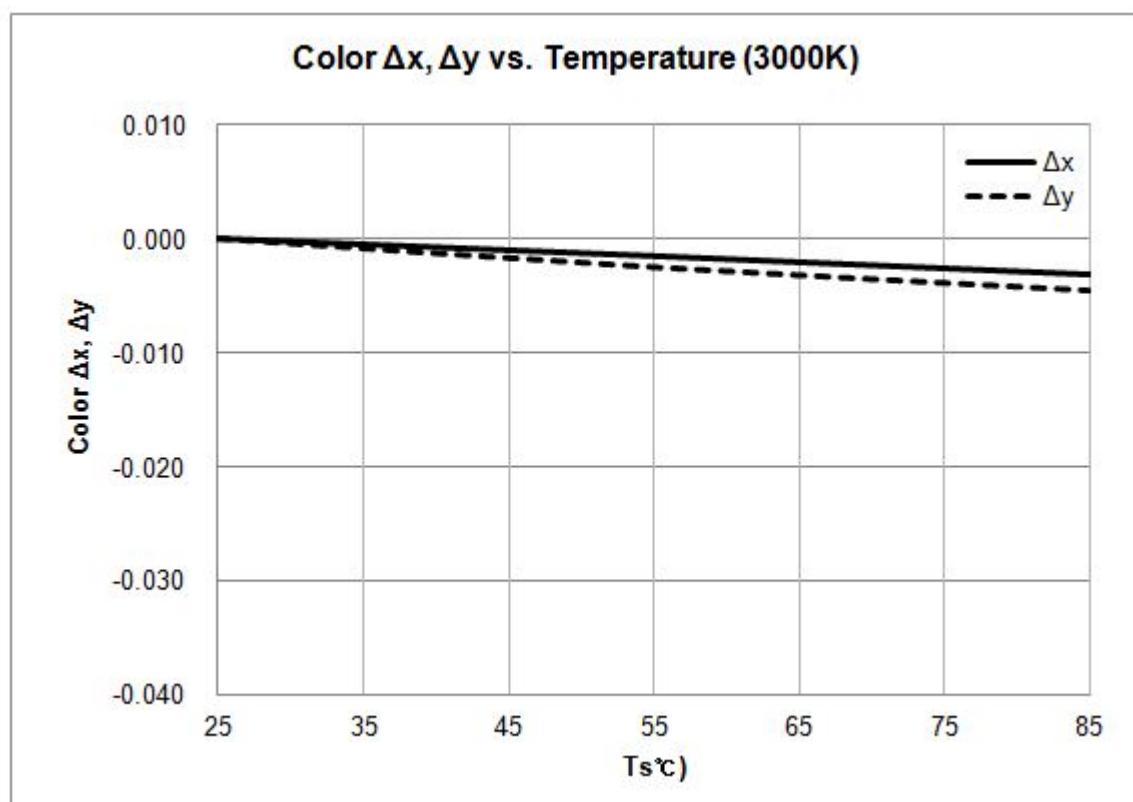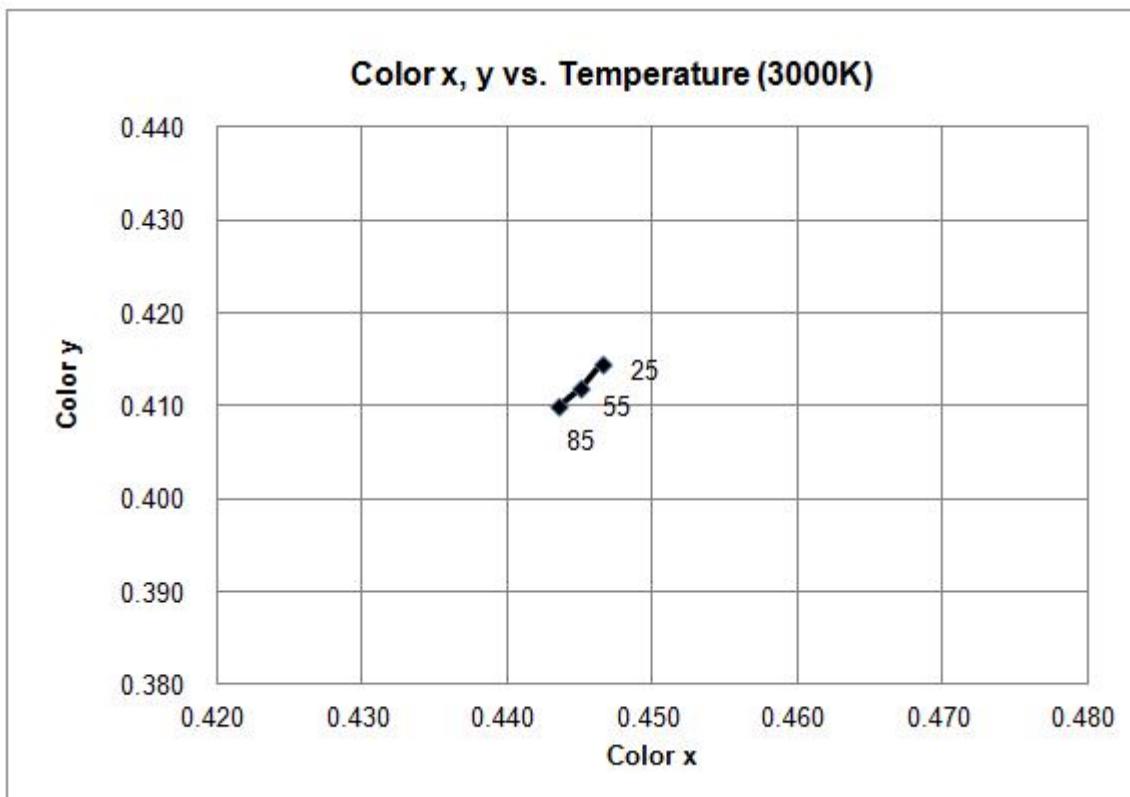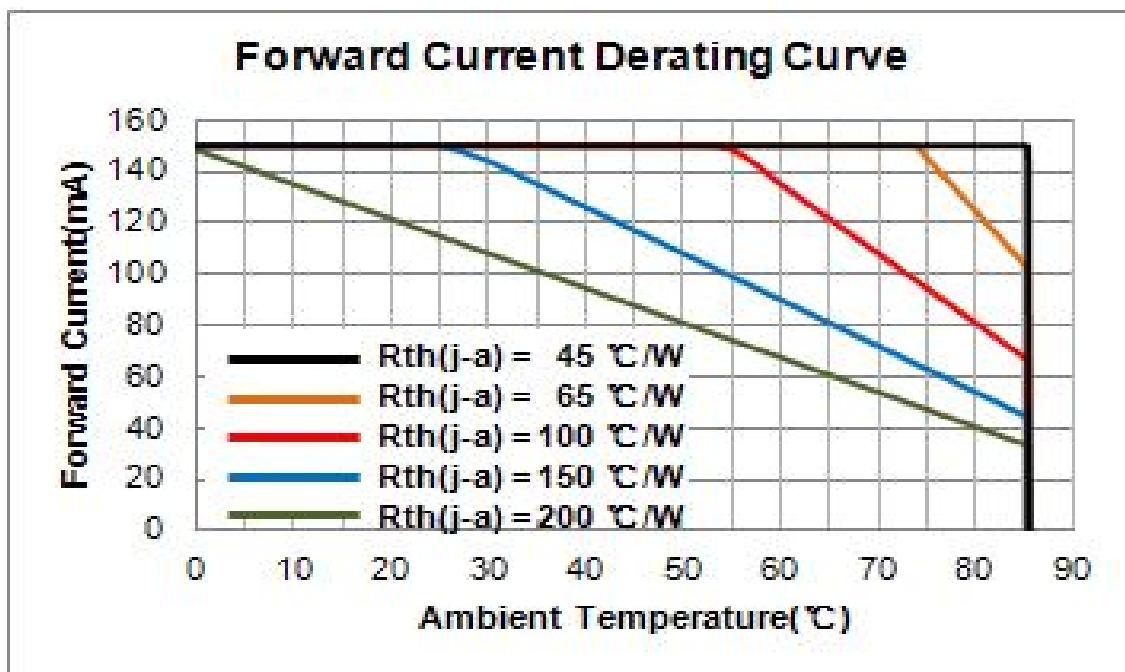
6) Beam Angle Characteristics

Radiation Diagram
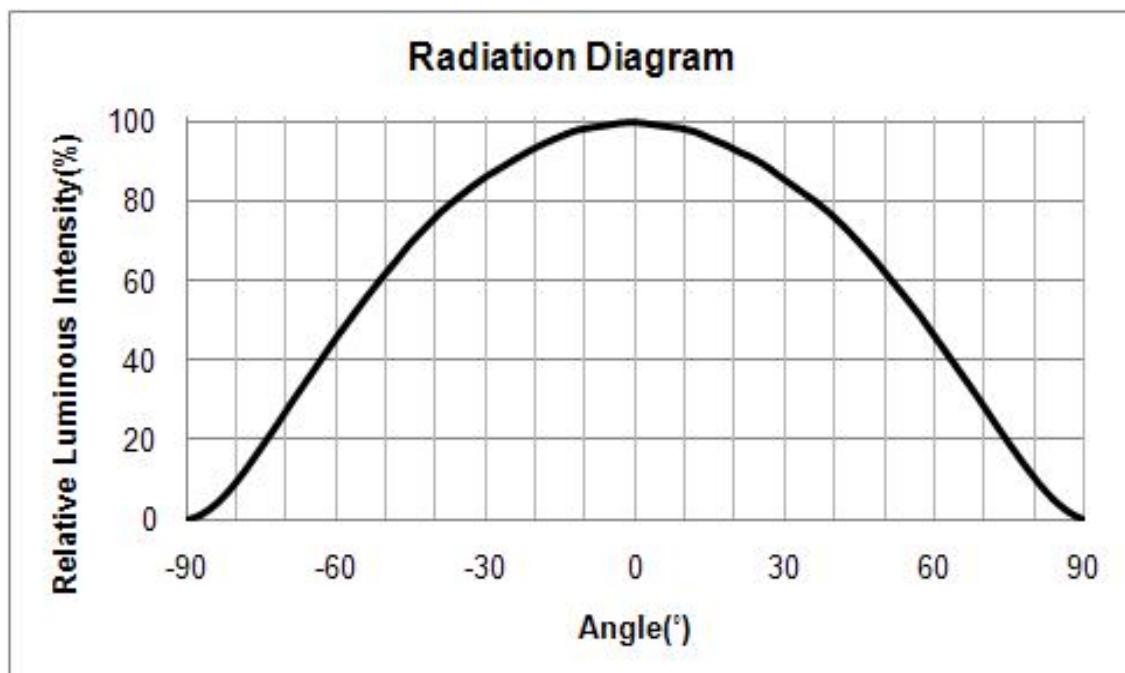
4. Outline Drawing & Dimension

1. Tolerance is ±0.10 mm
2. The maximum compressing force is 15N on the body ⓐ
3. Do not place pressure on the encapsulation resin ⓑ

Left Side View   **Top View**   **Bottom View**

Anode Mark   ⓐ   ⓑ   Cathode

Anode
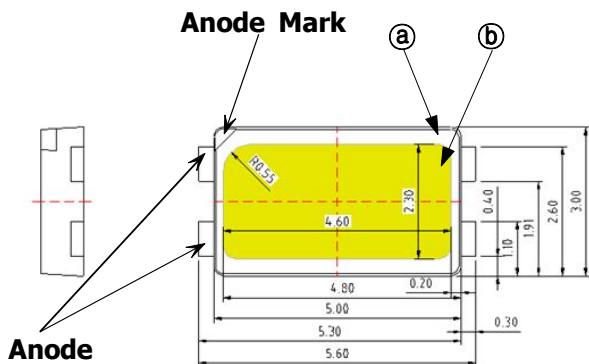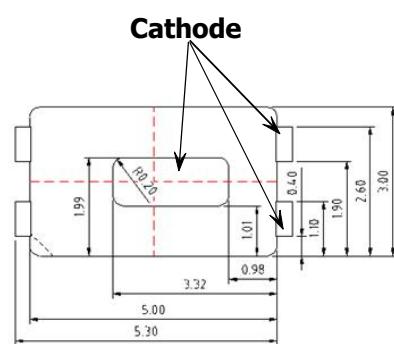
Front View   Ts
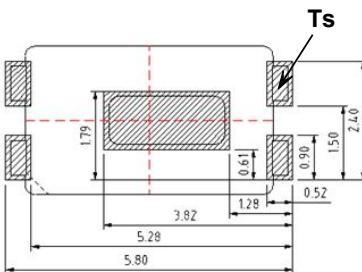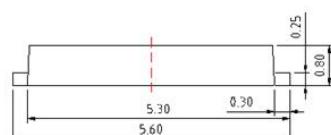
Recommended Land Pattern

Notes:

1) This LED has built-in ESD protection device(s) connected in parallel to LED Chip(s).

2) Ts point & measurement method

① Measure the nearest point to the thermal pad. If necessary, remove PSR of PCB to reach Ts point.

② Thermal pad must be soldered to the PCB to dissipate heat properly. Otherwise, LED can be damaged.

3) Precautions

① The pressure on the LEDs will influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the LEDs. Do not put stress on the LEDs during heating.

② Re-soldering should not be done after the LEDs have been soldered. If re-soldering is unavoidable, LED`s characteristics should be carefully checked before and after such repair.

③ Do not stack assembled PCBs together. Since materials of LEDs is soft, abrasion between two PCB assembled with LED might cause catastrophic failure of the LEDs.

5. Reliability Test Items and Conditions

1) Test Items

Test Item	Test Conditions	Test Hours/Cycles	Sample No
MSL Test	125 ℃ 24hrs drying → 60 ℃, 60 %RH 120hrs → 260 ℃ 10sec 3 cycles	1 cycle	11
Room Temperature life test	25 ℃±3 ℃, DC150 ㎃	1,000 hrs	22
High Temperature life test	85 ℃±3 ℃, DC150 ㎃	1,000 hrs	22
High Temperature humidity life test	85 ℃±3 ℃, 85 %±2 %RH, DC150 ㎃	1,000 hrs	22
Low Temperature life test	-40 ℃±3 ℃, DC150 ㎃	1,000 hrs	22
Powered Temperature Cycle test	-45℃/20 min ↔ 85℃/20 min, Sweep 100min cycle on/off: each 5 min, DC 150mA	100 cycle	22
Thermal Shock	-45 ℃/15 min ↔ 125 ℃/15 min → Hot plate 180 ℃	500 cycle	100
High Temperature Storage	Ta=120 ℃±3 ℃	1000 hrs	11
Low Temperature Storage	Ta=-40 ℃±3 ℃	1000 hrs	11
ESD(HBM)	R1:10 ㏁, R2:1.5 ㏀, C:100 pF, V = ±5 kV	5 times	5
ESD(MM)	R1:10 ㏁, R2: 0, C:200 pF, V = ±0.5 kV	5 times	5
Vibration Test	20~2000~20 Hz 200 m/s², Sweep 4 min X, Y, Z 3 direction, each 1 cycle	4 cycles	11
Mechanical Shock Test	1500G, 0.5 ms	5 cycles	11
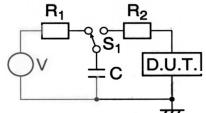
2) Criteria for Judging the Damage

Item	Symbol	Test Condition	Limit	
			Min	Max
Forward Voltage	V_F	I_F = 65 ㎃	Init. Value*0.9	Init. Value*1.1
Luminous Flux	$Φ_v$	I_F = 65 ㎃	Init. Value*0.7	Init. Value*1.2

6. Solder Conditions

## 1) Reflow Conditions (Pb Free)

Reflow Frequency : 2 times max.
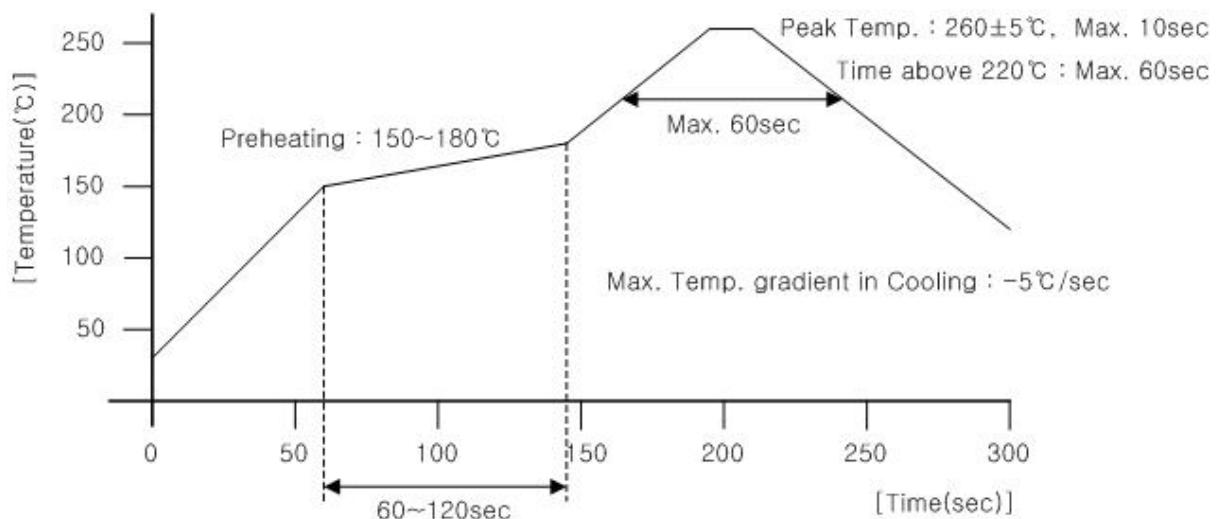
2) For Manual Soldering

Not more than 5 seconds @Max. 300℃, under soldering iron.

7. Tape & Reel

1) Taping Dimension

(unit : mm)

Anode Mark (Cutting side)

Tapping Diretion

End

Start

| More than 40㎜ Unloaded tape | Mounted with LED package | More than 100~200㎜ Unloaded tape | Leading part more than (200~400)㎜ |
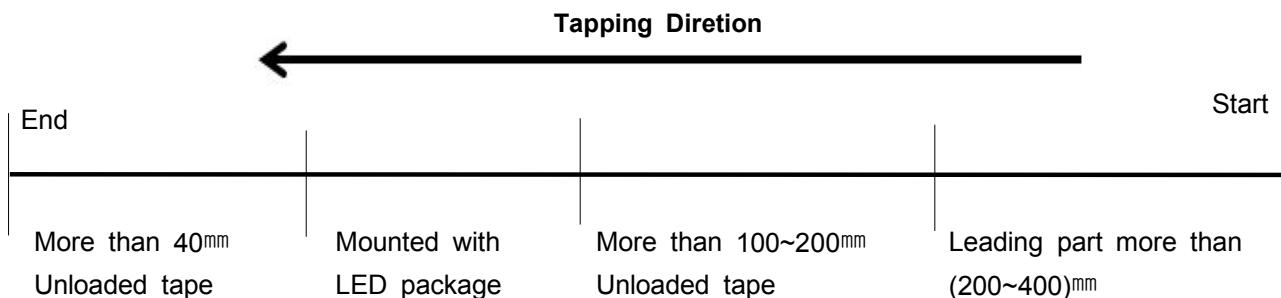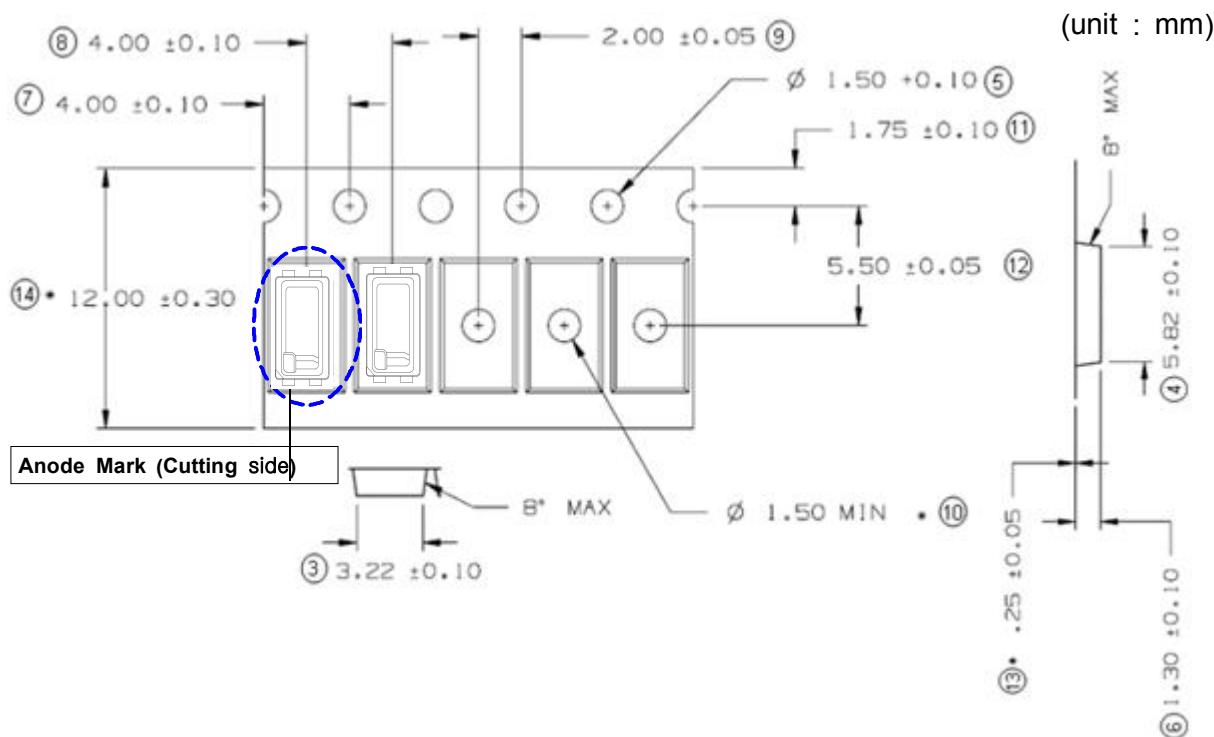
2) Reel Dimension (max 2,500 pcs)
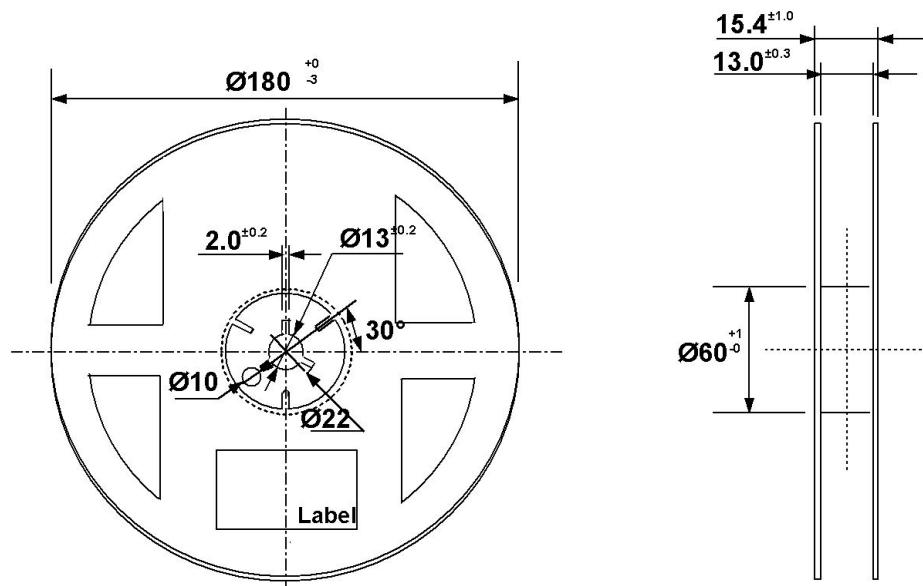
Tolerance ±0.2 , Unit:mm

(1) Quantity : The quantity/Reel to be 2,500 pcs.

(2) Cumulative Tolerance : Cumulative tolerance/10 pitches to be ±0.2mm

(3) Adhesion Strength of Cover Tape : Adhesion strength to be 0.1-0.7N when the cover tape is turned off from the carrier tape at 10℃ angle to be the carrier tape.

(4) Packaging : P/N, Manufacturing data code no. and quantity to be indicated on a damp proof Package.

8. Label Structure

1) Label Structure
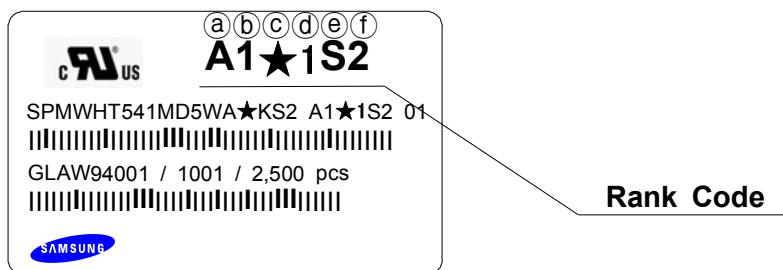
Rank Code

N.B) Denoted rank is the only example.

'★' means All kind of Chromaticity Coordinate Rank.

Rank Code

ⓐⓑ : Forward Voltage(V$_F$) Rank (refer to page. 8)

ⓒⓓ : Chromaticity Coordinate Rank (refer to page. 4~7)

ⓔⓕ : Luminous Flux(Φ$_v$, lm) Rank (refer to page. 8)

2) LOT Number

The Lot number is composed of the following characters
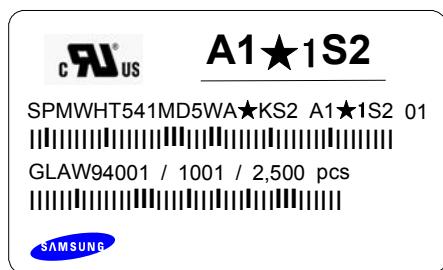
①②③④⑤⑥⑦⑧⑨ / 1ⓐⓑⓒ / 2,500 PCS

①   : Production Site (S: Giheung, Korea, G:TIAJIN CHINA)

②   : L (LED)

③   : Product State (A:Normality, B:Bulk, C:First Production, R:Reproduction, S:Sample)

④   : Year (Y: 2014, Z: 2015, A: 2016...)

⑤   : Month (1 ~ 9, A, B, C)

⑥   : Day (1 ~ 9, A, B ~ V)

⑦⑧⑨ : Product serial number (001 ~ 999)

ⓐⓑⓒ : Reel Number (001 ~ 999)

9. Packing Structure
1) Packing Process

Reel

Kitting 'A'

A1T★S2
SPMWHT541MD5WA★KS2 A1★1S2 01
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
GLAW94001 / 1001 / 2,500 pcs
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
SAMSUNG

Kitting 'B'

A1T★S2
SPMWHT541MD5WA★KS2 A1★1S2 01
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
GLAW94001 / 1001 / 2,500 pcs
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
SAMSUNG
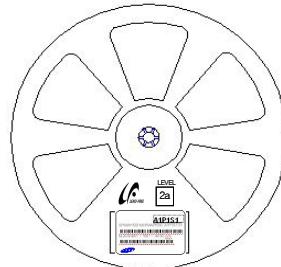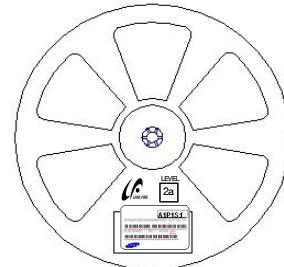
※ '★' means All kind of Chromaticity Coordinate Rank.

Kitting 'A'   **Kitting 'B'**

Aluminum Vinyl Bag

Kitting 'A'

A1T★S2
SPMWHT541MD5WA★KS2 A1★1S2 01
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
GLAW94001 / 1001 / 2,500 pcs
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
SAMSUNG

Kitting 'B'

A1T★S2
SPMWHT541MD5WA★KS2 A1★1S2 01
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
GLAW94001 / 1001 / 2,500 pcs
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
SAMSUNG
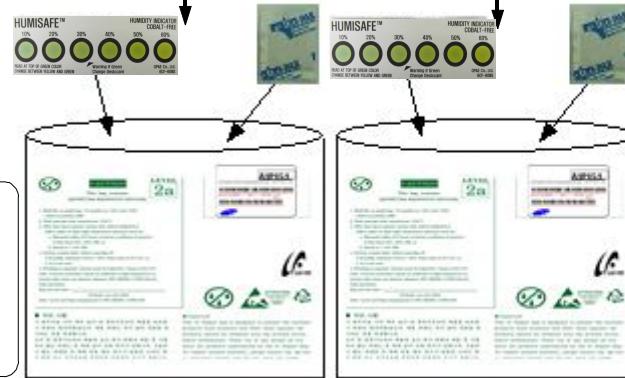
Outer Box

Kitting 'A'

A1T★S2
SPMWHT541MD5WA★KS2 A1★1S2 01
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
GLAW94001 / 1001 / 2,500 pcs
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
SAMSUNG   [BOX Label]
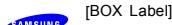
Kitting 'B'

A1T★S2
SPMWHT541MD5WA★KS2 A1★1S2 01
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
GLAW94001 / 1001 / 2,500 pcs
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
SAMSUNG   [BOX Label]
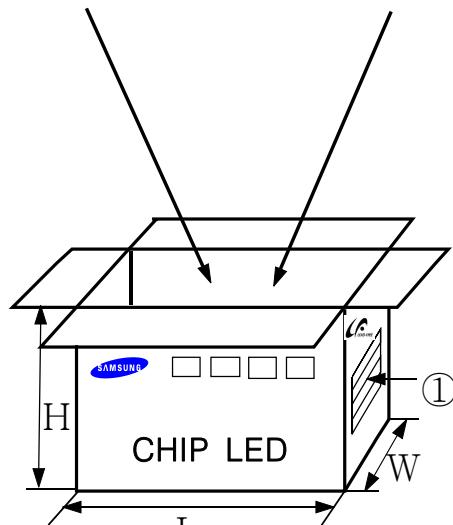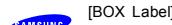
Material : Paper(SW3B(B))

TYPE	SIZE(mm)			Notes
	L	W	H	
7inch L	245±5	220±5	182±5	Up to 10 Reels
7inch S	245±5	220±5	86±5	Up to 5 Reels

CHIP LED

2) Aluminum Packing Bag

⊘ **CAUTION**
This bag contains
MOISTURE SENSITIVE DEVICES

LEVEL 2a

1. Shelf life in sealed bag: 12 months at <40℃ and <90% relative humidity (RH)
2. Peak package body temperature: 240 ℃
3. After this bag is opened, devices that will be subjected to reflow soldor or other high temperature processes must be:
   a. Mounted within 672 hours at factory conditions of equal to or less than 30℃ /60% RH, or
   b. Stored at < 10% RH
4. Devices require bake, before mounting, if:
   a. Humidity Indicator Card is > 65% when read at 23±5℃, or
   b. 2a is not met.
5. If baking is required, devices must be baked for 1 hours at 60±5℃

Note: if device containers cannot be subjected to high temperature or shorter bake times are desired, reference IPC/JEDEC J-STD-033 for bake procedure,

Bag seal due date: _____

(if blank, see code label)

Note: Level and body temperature by IPC/JEDEC J-STD-020

A1★1S2

SPMWHT541MD5WA★KS2 A1★1S2 01

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖

GLAW94001 / 1001 / 2,500 pcs

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖

ⓒ℞ᵤ us **SAMSUNG**

LEAD-FREE

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE
DEVICES

OTHER

■ 주의 사항

이 알루미늄 지퍼 백은 습기 및 정전기로부터 제품을 보호하기 위하여 제작되었습니다. 개봉 후에는 즉시 솔더 작업을 실시하는 것을 권장합니다.
습기 및 정전기로부터 제품을 보호 하기 위해서 개봉 후 사용하지 않는 자재는 본 팩에 넣어 보관 하시기 바랍니다. 사용하지 않는 자재를 본 팩에 넣을 때는 반드시 동봉된 드라이 팩과 함께 넣고 지퍼부분을 완전하게 밀봉하여 주시기 바랍니다.

■ Important

This Al Zipper bag is designed to protect the enclosed products from moisture and ESD. Once opened, the products should be soldered onto the printed circuit board immediately. When not in use, please do not leave the products unprotected by the Al Zipper Bag. To repack unused products., please ensure the zip-lock is completely sealed with the dry pack left inside.

Silica gel & Humidity Indicator Card in Aluminum Vinyl Bag

HUMISAFE™   **HUMIDITY INDICATOR COBALT-FREE**

10% 20% 30% 40% 50% 60%

READ AT TOP OF GREEN COLOR
CHANGE BETWEEN YELLOW AND GREEN

▶ Warning if Green
Change Desiccant

GP&E Co., Ltd.
6CF-60NS
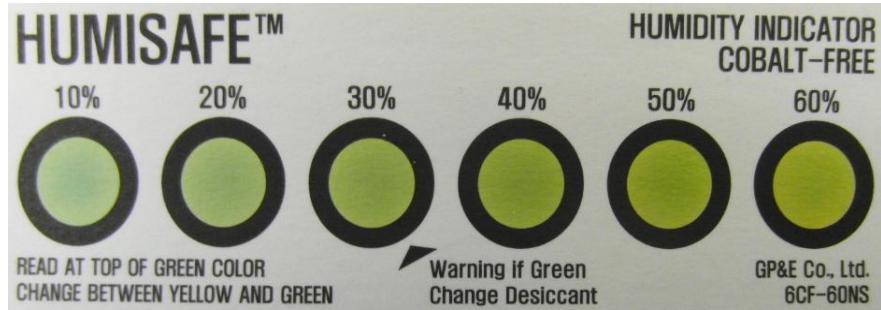
10. Kitting Rule

1) Kitting bin Concept – 2700K, 3000K and 4000K

1. This item is included to ☆K models.
2. Under agreement between customer and SAMSUNG ELECTRONICS, SAMSUNG can supply kitting bin(V_F, Color).
3. A forward voltage(V_F) of kitting bin is combined by a pair of same V_F rank such as (A1+A1), (A2+A2), (A3+A3), (A4+A4) or (AZ+AZ).
4. A Chromaticity Coordinates of kitting bin is mixed by kitting procedure.(below kitting simulation) Especially, one of 6, 7, A or B rank can be mixed with other rank, or can be used alone.
5. '☆' means one of the W(2700K), V(3000K), U(3500K) and T(4000K) a segment of the CCT rank.

[Kitting example]

User can get the green box position by kitting combination.