

**SMD LED LAMP**
**BL-LS0603XX**
**Features:**

- 1.6mmx0.8mm SMD, 0.8mm THICKNESS
- Mono-color type
- Compatible with automatic placement equipment
- WIDE VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- PACKAGE: 4KPCS/REEL
- RoHs Compliance


**Electrical-optical characteristics: (Ta=25°C) (Test Condition: IF=20mA)**

Part Number	Chip			Lens Type	Forward Voltage(VF) Unit:V		Luminous Intensity (Iv) Unit:mcd		Viewing Angle 2θ1/2 (deg)
	Emitted Color	Material	λp (nm)		Typ	Max	Min.	Typ.	
					BL-LS0603HC	Red	GaP	700	
BL-LS0603SRC	Super Red	AlGaAs	660	1.85	2.30	5	13		
BL-LS0603LRC	Super Red	AlGaAs	660	1.85	2.30	10	28		
BL-LS0603URC	Ultra Red	AlGaAs	660	1.95	2.50	20	45		
BL-LS0603EC	Orange	GaAsP	640	2.10	2.70	1	6		
BL-LS0603YC	Yellow	GaAsP	583	2.15	2.70	1	6		
BL-LS0603GC	Green	GaP	568	2.30	2.70	6	15		

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

Parameter	H	SR	LR	UR	E	Y	G	Unit
Forward Current I <sub>F</sub>	30	30	30	30	30	30	30	mA
Power Dissipation P <sub>d</sub>	65	78	78	78	65	65	65	mW
Reverse Voltage V <sub>R</sub>	5	5	5	5	5	5	5	V
Peak Forward Current I <sub>PF</sub> (Duty 1/10 @1KHZ)	100	100	100	100	100	100	100	mA
Operation Temperature T <sub>OPR</sub>	-30 to +80							°C
Storage Temperature T <sub>STG</sub>	-40 to +85							°C
Lead Soldering Temperature T <sub>SOL</sub>	Max.260±5°C for 3 sec Max. (1.6mm from the base of the epoxy bulb)							°C

**SMD LED LAMP**
**BL-LS0603XX**
**Electrical-optical characteristics: (Ta=25°C) (Test Condition: IF=20mA)**

Part Number	Chip			Lens Type	Forward Voltage(VF) Unit:V		Luminous Intensity (Iv) Unit:mcd		Viewing Angle 2θ1/2 (deg)
	Emitted Color	Material	λ <sub>P</sub> (nm)		Typ	Max	Min.	Typ.	
BL-LS0603UDR	Ultra Red	AlGaAs	655	Water Clear	2.10	2.50	22	55	130
BL-LS0603UHR	Ultra Red	AlGaAs	645		2.10	2.60	30	80	
BL-LS0603UEC	Ultra Orange	AlGaAs	630		2.10	2.50	30	80	
BL-LS0603UHD	Ultra Orange	AlGaAs	618		2.10	2.60	50	110	
BL-LS0603UYO	Ultra Amber	AlGaInP	610		2.10	2.60	30	80	
BL-LS0603UYC	Ultra Yellow	AlGaInP	593		2.10	2.60	25	70	
BL-LS0603UGC	Ultra Green	AlGaInP	575		2.20	2.70	10	40	
BL-LS0603PGC	Ultra Pure Green	InGaN	525		3.50	4.20	50	100	
BL-LS0603BGC	Ultra Bluish Green	InGaN	505		3.50	4.20	50	110	
BL-LS0603DNB	Blue	InGaN	470		3.50	4.20	10	33	
BL-LS0603UBC	Ultra Blue	InGaN	470		3.50	4.20	10	30	
BL-LS0603UWC	Ultra White	InGaN	/		3.50	4.20	40	200	

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

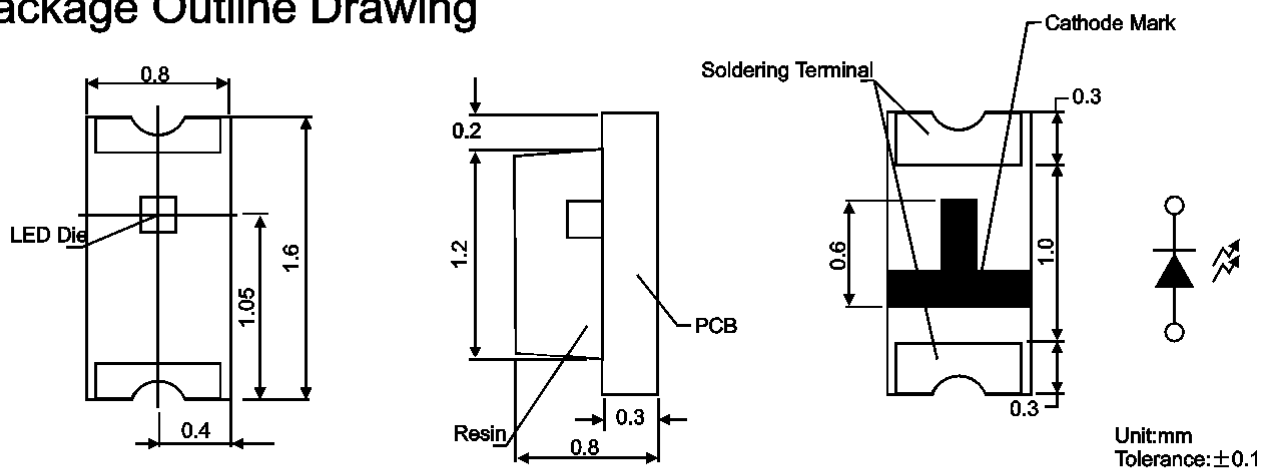
Parameter	UDR	UHR	UE	UHD	UYO	UY	UG	PG	BG	DNB	UB	UW	Unit
Forward Current I <sub>F</sub>	30	30	30	30	30	30	30	30	30	30	30	30	mA
Power Dissipation P <sub>d</sub>	78	78	78	78	78	78	78	78	78	78	78	78	mW
Reverse Voltage V <sub>R</sub>	5	5	5	5	5	5	5	5	5	5	5	5	V
Peak Forward Current I <sub>PF</sub> (Duty 1/10 @1KHZ)	100	100	100	100	100	100	100	100	100	100	100	100	mA
Operation Temperature T <sub>OPR</sub>	-30 to +80												°C
Storage Temperature T <sub>STG</sub>	-40 to +85												°C
Lead Soldering Temperature T <sub>SOL</sub>	Max.260±5°C for 3 sec Max. (1.6mm from the base of the epoxy bulb)												°C

**SMD LED LAMP**

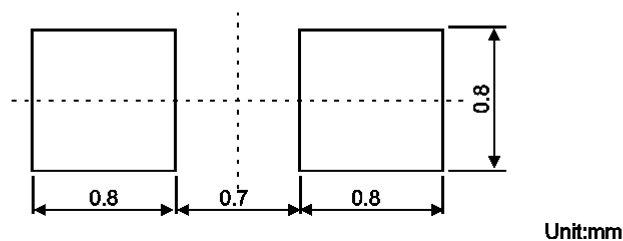
**BL-LS0603XX**

■ **Package configuration & Internal circuit diagram**

**BL-LS0603 Series  
Package Outline Drawing**



**Recommended Soldering Pad Dimensions**



**Notes:**

1. All dimensions are in millimeters (inches)
2. Tolerance is  $\pm 0.25(0.01)$  unless otherwise noted.
3. Specifications are subject to change without notice.

**SMD LED LAMP**
**BL-LS0603XX**
**SELECTION CODE FOR SUPER BRIGHT LEDS**

Group	brightness (MCD)		Group	brightness (MCD)	
	min	max		min	max
D3	160	180	E2	260	300
D4	180	200	F0	300	350
E0	200	230	F1	350	400
E1	230	260	F2	400	450

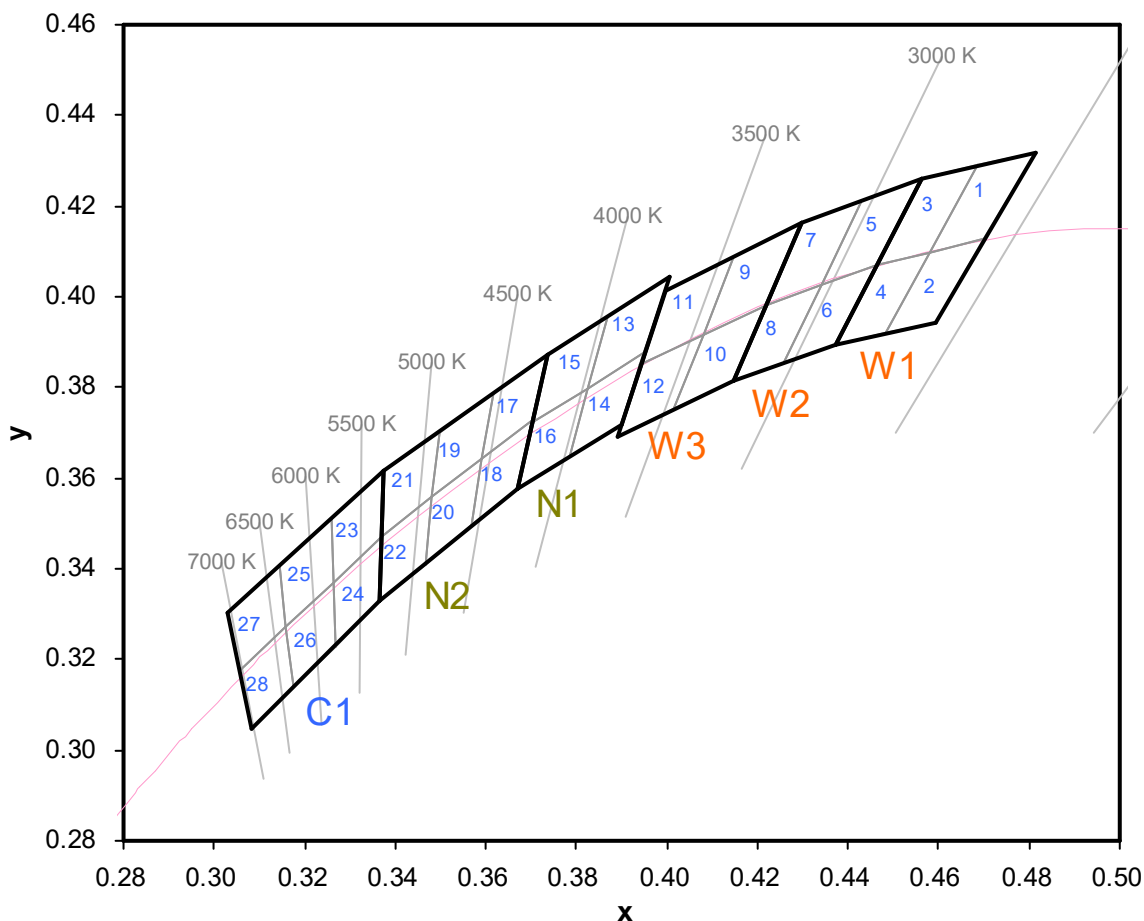
**forward voltage Ranks**

Group	Voltage (V)		Group	Voltage (V)	
	min	max		min	max
F0	2.8	2.9			
F1	2.9	3			
G0	3	3.1			
G1	3.1	3.2			
H0	3.2	3.3			
H1	3.3	3.4			
J0	3.4	3.5			

**SMD LED LAMP**

**BL-LS0603XX**

**Color Temperature Bin**



CODE	x	y
W1	0.4373	0.3893
	0.4562	0.4260
	0.4813	0.4319
	0.4593	0.3944
	X	Y
W2	0.4147	0.3814
	0.4299	0.4165
	0.4562	0.4260
	0.4373	0.3893
	X	Y
W3	0.3889	0.3690
	0.3996	0.4015
	0.4299	0.4165
	0.4147	0.3814

CODE	X	Y
N1	0.3670	0.3578
	0.3736	0.3874
	0.4006	0.4044
	0.3898	0.3716
	X	Y
N2	0.3481	0.3557
	0.3376	0.3616
	0.3592	0.3641
	0.3670	0.3578
	X	Y
C1	0.3160	0.3274
	0.3028	0.3304
	0.3265	0.3371
	0.3364	0.3328

**SMD LED LAMP**
**BL-LS0603XX**

CODE	x	y	CODE	x	y	CODE	x	y	CODE	x	y
1	0.4582	0.4099	8	0.4147	0.3814	15	0.3702	0.3722	22	0.3481	0.3557
	0.4687	0.4289		0.4221	0.3984		0.3736	0.3874		0.3370	0.3472
	0.4813	0.4319		0.4342	0.4028		0.3869	0.3958		0.3364	0.3328
	0.4700	0.4126		0.4259	0.3853		0.3825	0.3798		0.3466	0.3411
2	0.4483	0.3919	9	0.4080	0.3916	16	0.3670	0.3578	23	0.3376	0.3616
	0.4582	0.4099		0.4146	0.4089		0.3702	0.3722		0.3260	0.3512
	0.4700	0.4126		0.4299	0.4165		0.3825	0.3798		0.3265	0.3371
	0.4593	0.3944		0.4221	0.3984		0.3783	0.3646		0.3370	0.3472
3	0.4465	0.4071	10	0.4017	0.3751	17	0.3736	0.3874	24	0.3370	0.3472
	0.4562	0.4260		0.4080	0.3916		0.3616	0.3788		0.3265	0.3371
	0.4687	0.4289		0.4221	0.3984		0.3592	0.3641		0.3270	0.3230
	0.4582	0.4099		0.4147	0.3814		0.3703	0.3726		0.3364	0.3328
4	0.4373	0.3893	11	0.3941	0.3848	18	0.3703	0.3726	25	0.3260	0.3512
	0.4465	0.4071		0.3996	0.4015		0.3592	0.3641		0.3144	0.3408
	0.4582	0.4099		0.4146	0.4089		0.3568	0.3495		0.3160	0.3274
	0.4483	0.3919		0.4080	0.3916		0.3670	0.3578		0.3265	0.3371
5	0.4342	0.4028	12	0.3889	0.3690	19	0.3616	0.3788	26	0.3265	0.3371
	0.4430	0.4212		0.3941	0.3848		0.3496	0.3702		0.3160	0.3274
	0.4562	0.4260		0.4080	0.3916		0.3481	0.3557		0.3175	0.3139
	0.4465	0.4071		0.4017	0.3751		0.3592	0.3641		0.3270	0.3230
6	0.4259	0.3853	13	0.3825	0.3798	20	0.3592	0.3641	27	0.3144	0.3408
	0.4342	0.4028		0.3869	0.3958		0.3481	0.3557		0.3028	0.3304
	0.4465	0.4071		0.4006	0.4044		0.3466	0.3411		0.3055	0.3177
	0.4373	0.3893		0.3950	0.3875		0.3568	0.3495		0.3160	0.3274
7	0.4221	0.3984	14	0.3783	0.3646	21	0.3496	0.3702	28	0.3160	0.3274
	0.4299	0.4165		0.3825	0.3798		0.3376	0.3616		0.3055	0.3177
	0.4430	0.4212		0.3950	0.3875		0.3370	0.3472		0.3081	0.3049
	0.4342	0.4028		0.3898	0.3716		0.3481	0.3557		0.3175	0.3139

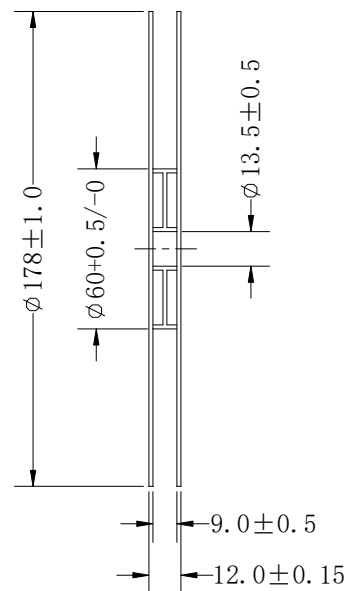
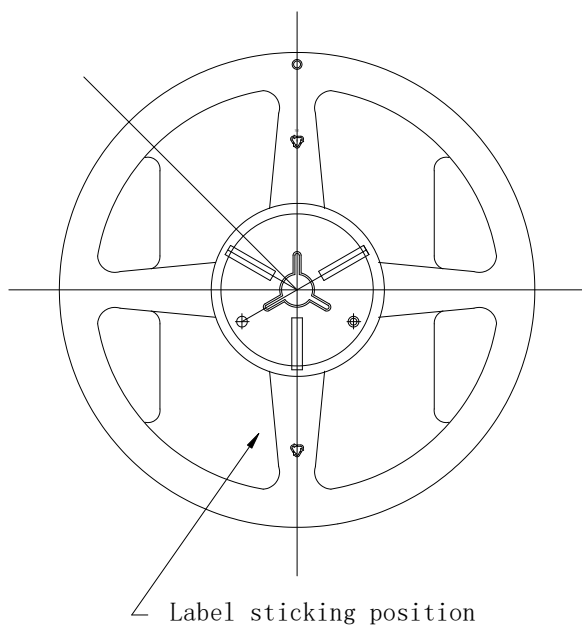
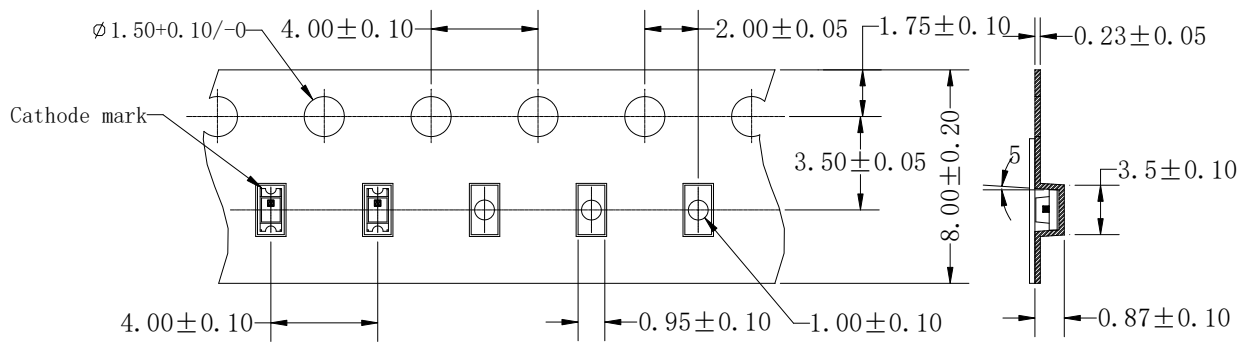
**SMD LED LAMP**

**BL-LS0603XX**

■ **Tape Specifications**

Unit: mm

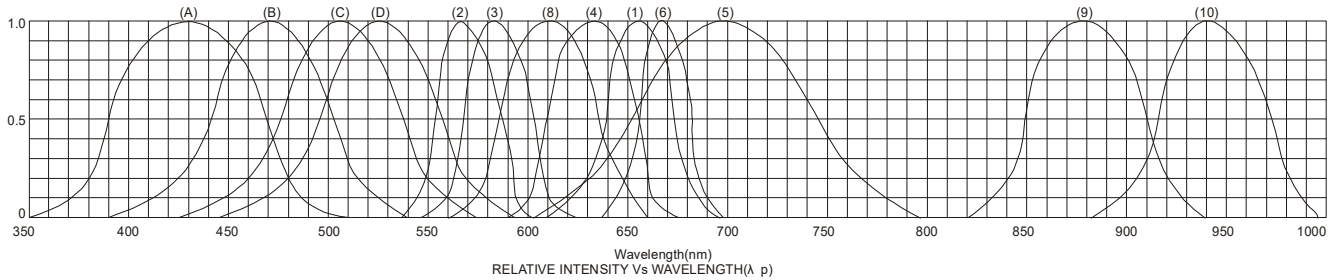
Tolerance:  $\pm 0.1$



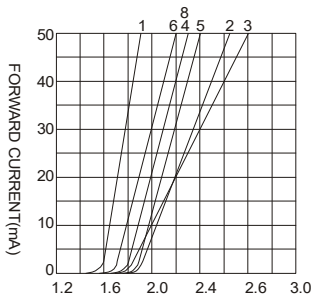
# SMD LED LAMP

BL-LS0603XX

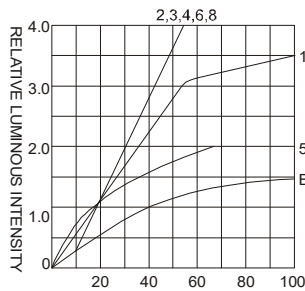
## Typical electrical-optical characteristics curves:



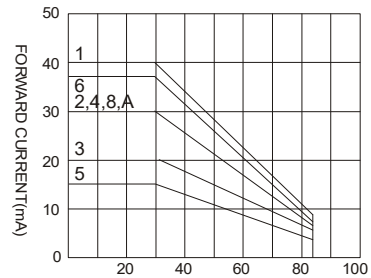
- (1) - GaAsP/GaAs 655nm/Red
- (2) - GaP 570nm/Yellow Green
- (3) - GaAsP/GaP 585nm/Yellow
- (4) - GaAsP/GaP 635nm/Orange & Hi-Eff Red
- (5) - GaP 700nm/Bright Red
- (6) - GaAlAs/GaAs 660nm/Super Red
- (8) - GaAsP/GaP 610nm/Super Red
- (9) - GaAlAs 880nm
- (10) - GaAs/GaAs & GaAlAs/GaAs 940nm
- (A) - GaN/SiC 430nm/Blue
- (B) - InGaN/SiC 470nm/Blue
- (C) - InGaN/SiC 505nm/Ultra Green
- (D) - InGaAl/SiC 525nm/Ultra Green



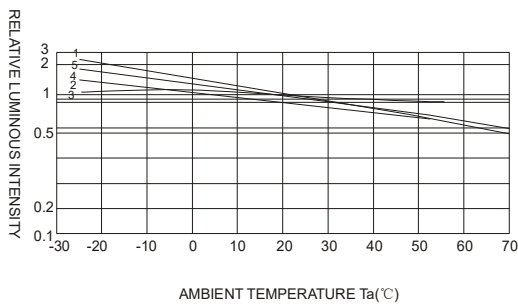
FORWARD VOLTAGE (Vf)  
FORWARD CURRENT VS.  
FORWARD VOLTAGE



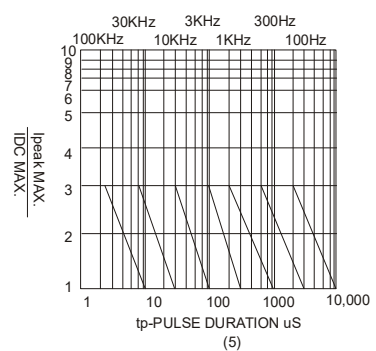
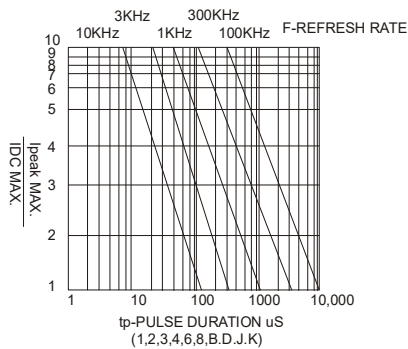
FORWARD CURRENT (mA)  
RELATIVE LUMINOUS  
INTENSITY VS. FORWARD  
CURRENT



AMBIENT TEMPERATURE Ta(°C)  
FORWARD CURRENT VS. AMBIENT  
TEMPERATURE



AMBIENT TEMPERATURE Ta(°C)



NOTE: 25°C free air temperature unless otherwise specified



**SMD LED LAMP**

**BL-LS0603XX**

■ **Packing and weighting**

