COB 产 品 规 格 书

SPECIFICATION

客户名称 Customer		产品型号 Product No.	**B4 Series COB** **(RD Version)**
客户型号 Customer No.		**ERP** 编码 ERP No.	

客 户 确 认 APPROVED SIGNATURES			

研 究 开 发 中 心 Research & Development Center	
审 批 CHECK	制 定 DRAW
版本号(Version NO.): RD Version	
文件发放日期(Release Date): 2024-11-06	

※ **确认后请扫描，邮件发送至 jxgd_sale01@szmtc.com.cn。**

B4 Series COB Datasheet (RD_Version)
B4 系列 COB 规格书（研发版）

Table of Contents 目录

1. Applications 产品应用

■ Indoor lighting: LED bulb, Spotlight, Ceiling lamp, Downlight
室内照明：球泡，射灯，天花灯，筒灯
■ Industry and Outdoor lighting: Floodlight, Hight bay light, Streetlight
工业和户外照明：投光灯，工矿灯，路灯
■ Other illumination 其它照明

2. Features 产品特点

■ Support 3w to 200w solution 提供 3w 到 200w 的解决方案
■ High efficiency 高光效
■ Low thermal resistance 低热阻
■ Long time reliability 长时间的可靠性
■ RoHS compliant 符合 ROHS 标准

3. Part No. Description 产品型号说明

Example 示例：
型号：MA1901-2612080000M-AKC0 色区：1340

型号说明：

Model 型号	MA1901	26	1208	0000	M	AKC0
Meaning 含义	Series 产品系列	Power 功率	Chip array 芯片排布	Internal code 内部代码	CRI 显指	Internal code 内部代码
		26w	12 S 8 P		>80	

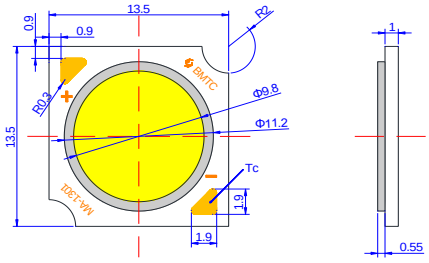
色区说明：

Bin Code 色区	13	40
Meaning 含义	色区标准	色温，40 表示 4000K

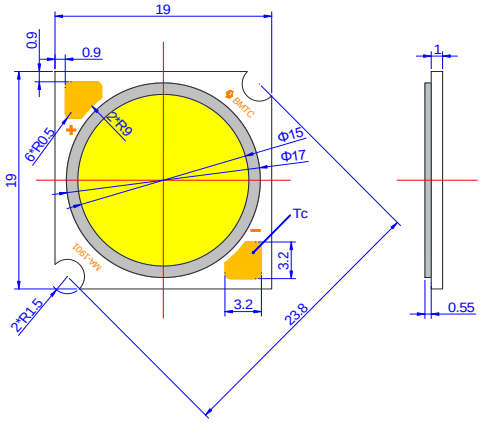
注意：下单须同时注明“型号”和“色区”

4. Package Outline Dimensions 封装外形尺寸

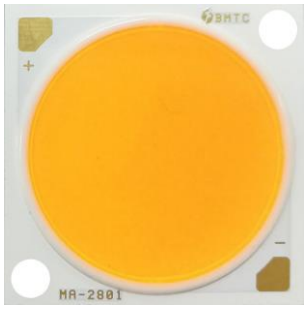
1) MA1301

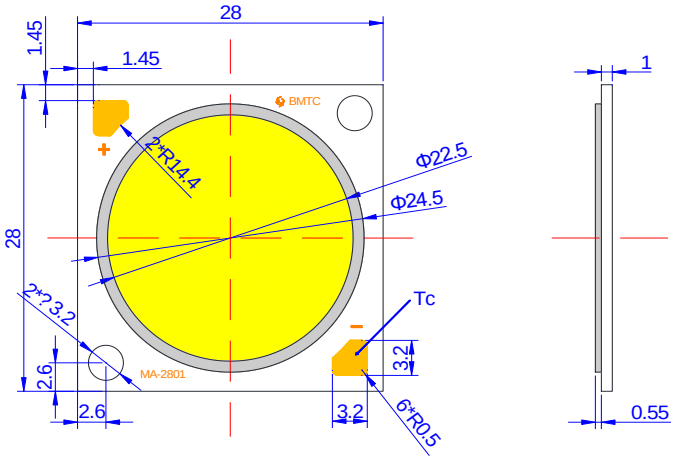


2) MA1901



3) MA2801





Note:

a. UNIT: MM [INCH]. 单位：毫米[英寸]

b. The tolerances unless mentioned is ±0.3 mm. 除非另有说明，以上尺寸的公差为±0.3 mm。

5. Absolute Maximum Ratings 极限参数

Item	Symbol	Model		Rating	Unit
Max. Current / Max. Power 最大正向电流 / 最大功率	Imax / Pmax	MA1301	12S1P	230 / 9	mA/W
			12S2P	460 / 18	
			12S3P	690 / 27	
			12S4P	920 / 36	
		MA1901	12S5P	1150 / 44	
			12S6P	1380 / 52	
			12S8P	1840 / 70	
			12S10P	2300 / 88	
		MA2801	12S12P	2760 / 105	
			18S12P	2760 / 157	
			18S18P	4140 / 236	
Operating Temperature 工作温度	Ta		-	-40 ~ +85	ºC
Storage Temperature 储存温度	Tstg		-	-40 ~ +85	ºC
LED Junction Temperature LED 结点温度	Tj		-	125	ºC
Thermal measurement point 热测试点	Tc		-	85	ºC

Note:

1) Input power and forward current are the values when the LED is used within the range of the derating curve in this data sheet.本数据表中的输入电源和正向电流值是使用的 LED 降额曲线范围内的值.
2) The temperature of Aluminum PCB do not exceed 85℃. 基板负极引线温度不能超过 85℃.
3) When hand soldering, keep the temperature of iron below less 350℃Cless than 5seconds.当手工焊接时,烙铁的温度必须小于 350℃,时间不能超过 5 秒.

6. Electro-Optical Characteristics 光电特性（Tj=85℃)

1) 3W_MA1301-12S1P

型号 Model	CRI (Min)	Bin Code 色区	CCT	If Typ. (mA)	Vf Min. (V)	Vf Max. (V)	Flux Min. (lm)	Flux Typ. (lm)	Eff. Typ. (lm/W)	Rj-c (℃/W)
MA1301-0312010000M-AKC0	80	1327	2700K	90	30.8	36.8	484	510	167	2.5
	80	1330	3000K	90	30.8	36.8	509	536	176	2.5
	80	1335	3500K	90	30.8	36.8	524	552	181	2.5
	80	1340	4000K	90	30.8	36.8	535	563	185	2.5
	80	1350	5000K	90	30.8	36.8	525	552	181	2.5
	80	1357	5700K	90	30.8	36.8	525	552	181	2.5
	80	1365	6500K	90	30.8	36.8	519	547	179	2.5
MA1301-0312010000H-AKC0	90	1327	2700K	90	30.8	36.8	447	470	155	2.5
	90	1330	3000K	90	30.8	36.8	485	510	168	2.5
	90	1335	3500K	90	30.8	36.8	510	537	177	2.5
	90	1340	4000K	90	30.8	36.8	525	552	181	2.5
	90	1350	5000K	90	30.8	36.8	529	558	183	2.5

2) 6W_MA1301-12S2P

型号 Model	CRI (Min)	Bin Code 色区	CCT	If Typ. (mA)	Vf Min. (V)	Vf Max. (V)	Flux Min. (lm)	Flux Typ. (lm)	Eff. Typ. (lm/W)	Rj-c (℃/W)
MA1301-0612020000M-AKC0	80	1327	2700K	180	30.8	36.8	964	1015	167	1.5
	80	1330	3000K	180	30.8	36.8	1014	1067	175	1.5
	80	1335	3500K	180	30.8	36.8	1043	1098	180	1.5
	80	1340	4000K	180	30.8	36.8	1064	1120	185	1.5
	80	1350	5000K	180	30.8	36.8	1043	1097	180	1.5
	80	1357	5700K	180	30.8	36.8	1043	1097	180	1.5
	80	1365	6500K	180	30.8	36.8	1033	1088	179	1.5
MA1301-0612020000H-AKC0	90	1327	2700K	180	30.8	36.8	890	937	154	1.5
	90	1330	3000K	180	30.8	36.8	965	1015	167	1.5
	90	1335	3500K	180	30.8	36.8	1016	1070	175	1.5

	90	1340	4000K	180	30.8	36.8	1045	1099	180	1.5
	90	1350	5000K	180	30.8	36.8	1054	1110	182	1.5

3) 9W_MA1301-12S3P

型号 Model	CRI (Min)	Bin Code 色区	CCT	If Typ. (mA)	Vf Min. (V)	Vf Max. (V)	Flux Min. (lm)	Flux Typ. (lm)	Eff. Typ. (lm/W)	Rj-c (℃/W)
MA1301-0912030000L-AKC0	70	1330	3000K	270	30.8	36.8	1522	1601	175	0.97
	70	1340	4000K	270	30.8	36.8	1597	1682	185	0.97
	70	1350	5000K	270	30.8	36.8	1611	1696	186	0.97
MA1301-0912030000M-AKC0	80	1327	2700K	270	30.8	36.8	1432	1508	165	0.97
	80	1330	3000K	270	30.8	36.8	1506	1584	174	0.97
	80	1335	3500K	270	30.8	36.8	1550	1631	179	0.97
	80	1340	4000K	270	30.8	36.8	1581	1664	183	0.97
	80	1350	5000K	270	30.8	36.8	1548	1630	178	0.97
	80	1357	5700K	270	30.8	36.8	1548	1630	178	0.97
	80	1365	6500K	270	30.8	36.8	1536	1617	177	0.97
MA1301-0912030000H-AKC0	90	1327	2700K	270	30.8	36.8	1321	1391	152	0.97
	90	1330	3000K	270	30.8	36.8	1433	1508	166	0.97
	90	1335	3500K	270	30.8	36.8	1507	1587	174	0.97
	90	1340	4000K	270	30.8	36.8	1550	1631	179	0.97
	90	1350	5000K	270	30.8	36.8	1565	1648	181	0.97

4) 12W_MA1301-12S4P

型号 Model	CRI (Min)	Bin Code 色区	CCT	If Typ. (mA)	Vf Min. (V)	Vf Max. (V)	Flux Min. (lm)	Flux Typ. (lm)	Eff. Typ. (lm/W)	Rj-c (℃/W)
MA1301-1212040000L-AKC0	70	1330	3000K	360	30.8	36.8	1998	2103	172	0.83
	70	1340	4000K	360	30.8	36.8	2099	2209	182	0.83
	70	1350	5000K	360	30.8	36.8	2117	2228	184	0.83
MA1301-1212040000M-AKC0	80	1327	2700K	360	30.8	36.8	1881	1981	163	0.83
	80	1330	3000K	360	30.8	36.8	1977	2081	171	0.83

	80	1335	3500K	360	30.8	36.8	2036	2143	176	0.83
	80	1340	4000K	360	30.8	36.8	2077	2186	179	0.83
	80	1350	5000K	360	30.8	36.8	2034	2141	176	0.83
	80	1357	5700K	360	30.8	36.8	2034	2141	176	0.83
	80	1365	6500K	360	30.8	36.8	2017	2123	174	0.83
MA1301-1212040000H-AKC0	90	1327	2700K	360	30.8	36.8	1736	1827	150	0.83
	90	1330	3000K	360	30.8	36.8	1882	1981	163	0.83
	90	1335	3500K	360	30.8	36.8	1981	2085	172	0.83
	90	1340	4000K	360	30.8	36.8	2035	2143	177	0.83
	90	1350	5000K	360	30.8	36.8	2057	2165	178	0.83

5) 16W_MA1901-12S5P

型号 Model	CRI (Min)	Bin Code 色区	CCT	If Typ. (mA)	Vf Min. (V)	Vf Max. (V)	Flux Min. (lm)	Flux Typ. (lm)	Eff. Typ. (lm/W)	Rj-c (℃/W)
MA1901-1612050000L-AKC0	70	1330	3000K	450	30.8	36.8	2573	2709	177	0.66
	70	1340	4000K	450	30.8	36.8	2702	2844	187	0.66
	70	1350	5000K	450	30.8	36.8	2725	2868	189	0.66
MA1901-1612050000M-AKC0	80	1327	2700K	450	30.8	36.8	2424	2551	167	0.66
	80	1330	3000K	450	30.8	36.8	2547	2681	176	0.66
	80	1335	3500K	450	30.8	36.8	2621	2759	181	0.66
	80	1340	4000K	450	30.8	36.8	2674	2814	185	0.66
	80	1350	5000K	450	30.8	36.8	2619	2757	181	0.66
	80	1357	5700K	450	30.8	36.8	2619	2757	181	0.66
	80	1365	6500K	450	30.8	36.8	2597	2734	179	0.66
MA1901-1612050000H-AKC0	90	1327	2700K	450	30.8	36.8	2235	2352	155	0.66
	90	1330	3000K	450	30.8	36.8	2424	2551	168	0.66
	90	1335	3500K	450	30.8	36.8	2553	2686	177	0.66
	90	1340	4000K	450	30.8	36.8	2622	2760	182	0.66
	90	1350	5000K	450	30.8	36.8	2649	2788	183	0.66

6) 19W_MA1901-12S6P

型号 Model	CRI (Min)	Bin Code 色区	CCT	If Typ. (mA)	Vf Min. (V)	Vf Max. (V)	Flux Min. (lm)	Flux Typ. (lm)	Eff. Typ. (lm/W)	Rj-c (℃/W)
MA1901-1912060000L-AKC0	70	1330	3000K	540	30.8	36.8	3073	3234	176	0.59
	70	1340	4000K	540	30.8	36.8	3226	3397	187	0.59
	70	1350	5000K	540	30.8	36.8	3254	3425	188	0.59
MA1901-1912060000M-AKC0	80	1327	2700K	540	30.8	36.8	2894	3047	167	0.59
	80	1330	3000K	540	30.8	36.8	3041	3201	175	0.59
	80	1335	3500K	540	30.8	36.8	3130	3295	180	0.59
	80	1340	4000K	540	30.8	36.8	3192	3361	185	0.59
	80	1350	5000K	540	30.8	36.8	3127	3292	180	0.59
	80	1357	5700K	540	30.8	36.8	3127	3292	180	0.59
	80	1365	6500K	540	30.8	36.8	3101	3264	179	0.59
MA1901-1912060000H-AKC0	90	1327	2700K	540	30.8	36.8	2669	2810	154	0.59
	90	1330	3000K	540	30.8	36.8	2894	3047	167	0.59
	90	1335	3500K	540	30.8	36.8	3047	3208	175	0.59
	90	1340	4000K	540	30.8	36.8	3132	3296	180	0.59
	90	1350	5000K	540	30.8	36.8	3162	3329	182	0.59

7) 26W_MA1901-12S8P

型号 Model	CRI (Min)	Bin Code 色区	CCT	If Typ. (mA)	Vf Min. (V)	Vf Max. (V)	Flux Min. (lm)	Flux Typ. (lm)	Eff. Typ. (lm/W)	Rj-c (℃/W)
MA1901-2612080000L-AKC0	70	1330	3000K	720	30.8	36.8	4037	4250	174	0.47
	70	1340	4000K	720	30.8	36.8	4239	4461	184	0.47
	70	1350	5000K	720	30.8	36.8	4274	4499	185	0.47
MA1901-2612080000M-AKC0	80	1327	2700K	720	30.8	36.8	3802	4001	164	0.47
	80	1330	3000K	720	30.8	36.8	3995	4206	173	0.47
	80	1335	3500K	720	30.8	36.8	4113	4329	178	0.47
	80	1340	4000K	720	30.8	36.8	4195	4415	181	0.47
	80	1350	5000K	720	30.8	36.8	4108	4324	177	0.47

	80	1357	5700K	720	30.8	36.8	4108	4324	177	0.47
	80	1365	6500K	720	30.8	36.8	4074	4288	176	0.47
MA1901-2612080000H-AKC0	90	1327	2700K	720	30.8	36.8	3506	3691	151	0.47
	90	1330	3000K	720	30.8	36.8	3802	4002	164	0.47
	90	1335	3500K	720	30.8	36.8	4002	4213	173	0.47
	90	1340	4000K	720	30.8	36.8	4112	4329	178	0.47
	90	1350	5000K	720	30.8	36.8	4155	4374	179	0.47

8) 33W_MA1901-12S10P

型号 Model	CRI (Min)	Bin Code 色区	CCT	If Typ. (mA)	Vf Min. (V)	Vf Max. (V)	Flux Min. (lm)	Flux Typ. (lm)	Eff. Typ. (lm/W)	Rj-c (℃/W)
MA1901-3312100000L-AKC0	70	1330	3000K	900	30.8	36.8	4996	5259	172	0.39
	70	1340	4000K	900	30.8	36.8	5245	5521	182	0.39
	70	1350	5000K	900	30.8	36.8	5289	5567	184	0.39
MA1901-3312100000M-AKC0	80	1327	2700K	900	30.8	36.8	4704	4952	163	0.39
	80	1330	3000K	900	30.8	36.8	4944	5205	171	0.39
	80	1335	3500K	900	30.8	36.8	5089	5357	176	0.39
	80	1340	4000K	900	30.8	36.8	5190	5464	179	0.39
	80	1350	5000K	900	30.8	36.8	5083	5351	176	0.39
	80	1357	5700K	900	30.8	36.8	5083	5351	176	0.39
	80	1365	6500K	900	30.8	36.8	5041	5307	174	0.39
MA1901-3312100000H-AKC0	90	1327	2700K	900	30.8	36.8	4339	4567	150	0.39
	90	1330	3000K	900	30.8	36.8	4706	4954	163	0.39
	90	1335	3500K	900	30.8	36.8	4953	5214	172	0.39
	90	1340	4000K	900	30.8	36.8	5089	5357	177	0.39
	90	1350	5000K	900	30.8	36.8	5141	5412	178	0.39

9) 40W_MA2801-12S12P

型号 Model	CRI (Min)	Bin Code 色区	CCT	If Typ. (mA)	Vf Min. (V)	Vf Max. (V)	Flux Min. (lm)	Flux Typ. (lm)	Eff. Typ. (lm/W)	Rj-c (℃/W)
MA2801-4012120000L-AKC0	70	1330	3000K	1080	30.8	36.8	6147	6470	176	0.31
	70	1340	4000K	1080	30.8	36.8	6454	6793	187	0.31
	70	1350	5000K	1080	30.8	36.8	6507	6849	188	0.31
MA2801-4012120000M-AKC0	80	1327	2700K	1080	30.8	36.8	5788	6092	167	0.31
	80	1330	3000K	1080	30.8	36.8	6083	6402	175	0.31
	80	1335	3500K	1080	30.8	36.8	6261	6590	180	0.31
	80	1340	4000K	1080	30.8	36.8	6386	6722	185	0.31
	80	1350	5000K	1080	30.8	36.8	6254	6584	180	0.31
	80	1357	5700K	1080	30.8	36.8	6254	6584	180	0.31
	80	1365	6500K	1080	30.8	36.8	6203	6529	179	0.31
MA2801-4012120000H-AKC0	90	1327	2700K	1080	30.8	36.8	5339	5619	154	0.31
	90	1330	3000K	1080	30.8	36.8	5789	6094	167	0.31
	90	1335	3500K	1080	30.8	36.8	6094	6414	175	0.31
	90	1340	4000K	1080	30.8	36.8	6261	6591	180	0.31
	90	1350	5000K	1080	30.8	36.8	6326	6659	182	0.31

10) 60W_MA2801-18S12P

型号 Model	CRI (Min)	Bin Code 色区	CCT	If Typ. (mA)	Vf Min. (V)	Vf Max. (V)	Flux Min. (lm)	Flux Typ. (lm)	Eff. Typ. (lm/W)	Rj-c (℃/W)
MA2801-6018120000L-AKC0	70	1330	3000K	1080	46.2	55.2	9084	9561	174	0.23
	70	1340	4000K	1080	46.2	55.2	9537	10039	184	0.23
	70	1350	5000K	1080	46.2	55.2	9617	10122	185	0.23
MA2801-6018120000M-AKC0	80	1327	2700K	1080	46.2	55.2	8554	9004	164	0.23
	80	1330	3000K	1080	46.2	55.2	8989	9462	173	0.23
	80	1335	3500K	1080	46.2	55.2	9252	9739	178	0.23
	80	1340	4000K	1080	46.2	55.2	9437	9934	181	0.23
	80	1350	5000K	1080	46.2	55.2	9243	9729	177	0.23

	80	1357	5700K	1080	46.2	55.2	9243	9729	177	0.23
	80	1365	6500K	1080	46.2	55.2	9166	9649	176	0.23
MA2801-6018120000H-AKC0	90	1327	2700K	1080	46.2	55.2	7889	8304	151	0.23
	90	1330	3000K	1080	46.2	55.2	8556	9006	164	0.23
	90	1335	3500K	1080	46.2	55.2	9006	9479	173	0.23
	90	1340	4000K	1080	46.2	55.2	9254	9740	178	0.23
	90	1350	5000K	1080	46.2	55.2	9348	9841	179	0.23

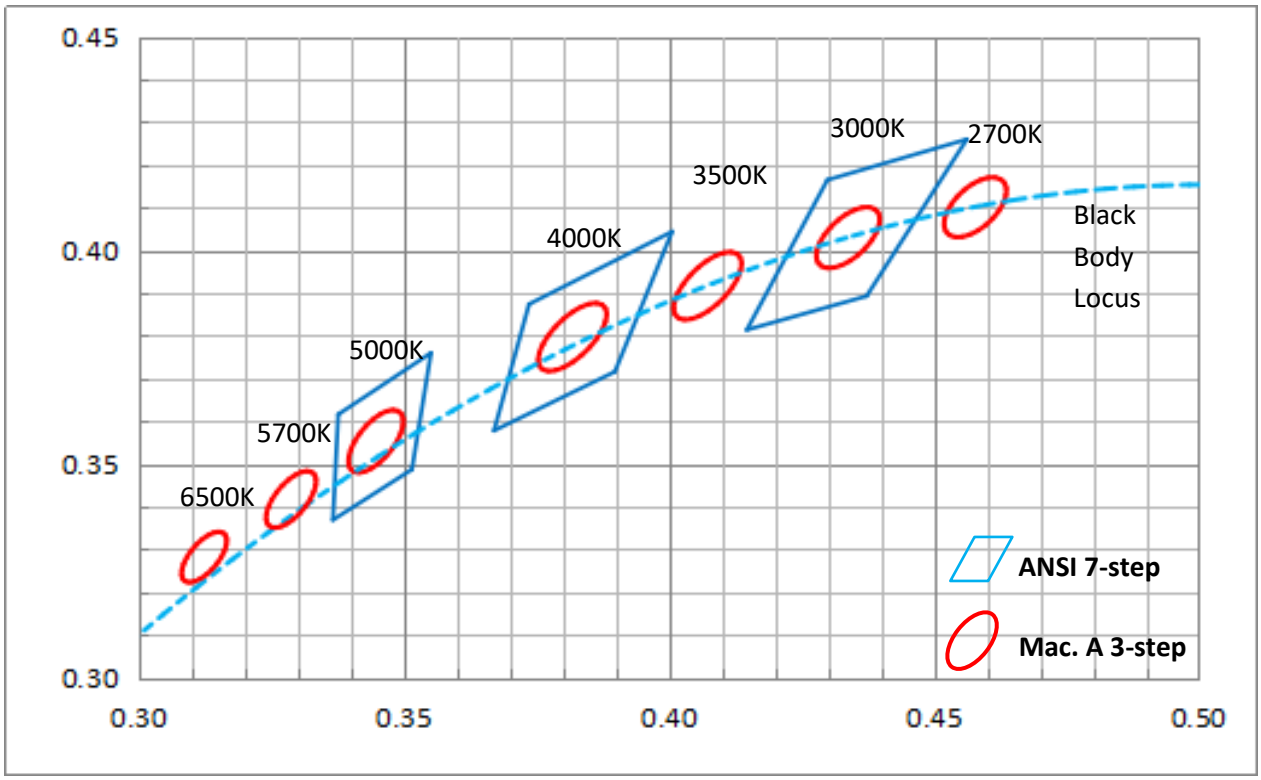
11) 80W_MA2801-18S18P

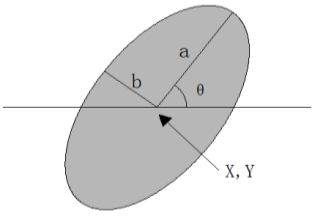
型号 Model	CRI (Min)	Bin Code 色区	CCT	If Typ. (mA)	Vf Min. (V)	Vf Max. (V)	Flux Min. (lm)	Flux Typ. (lm)	Eff. Typ. (lm/W)	Rj-c (℃/W)
MA2801-8018180000L-AKC0	70	1330	3000K	1620	46.2	55.2	13353	14057	171	0.16
	70	1340	4000K	1620	46.2	55.2	14019	14756	181	0.16
	70	1350	5000K	1620	46.2	55.2	14137	14881	182	0.16
MA2801-8018180000M-AKC0	80	1327	2700K	1620	46.2	55.2	12573	13235	161	0.16
	80	1330	3000K	1620	46.2	55.2	13214	13909	170	0.16
	80	1335	3500K	1620	46.2	55.2	13600	14316	174	0.16
	80	1340	4000K	1620	46.2	55.2	13873	14603	178	0.16
	80	1350	5000K	1620	46.2	55.2	13588	14303	174	0.16
	80	1357	5700K	1620	46.2	55.2	13588	14303	174	0.16
	80	1365	6500K	1620	46.2	55.2	13474	14184	173	0.16
MA2801-8018180000H-AKC0	90	1327	2700K	1620	46.2	55.2	11597	12207	149	0.16
	90	1330	3000K	1620	46.2	55.2	12576	13238	161	0.16
	90	1335	3500K	1620	46.2	55.2	13239	13935	169	0.16
	90	1340	4000K	1620	46.2	55.2	13602	14318	174	0.16
	90	1350	5000K	1620	46.2	55.2	13742	14466	176	0.16

Note:

1) Color bins are defined at rated test current operation. If use different forward current, it may cause the change of chromaticity and forward voltage（Tj=Tc=85℃）.
该产品通过瞬态额定电流测试分光分色，若使用不同电流，可能会引起色温及电压的变化。
2) BMTC maintains measurement tolerance of: Luminous flux = ±10 %, CRI = ±2, VF±3%.
不同标准源测试存在仪器公差：流明±10%，显指±2 和电压±3%。

7. Bin Code of CIE1931 CIE 分级代码（If = Typ. If, Tj = 25℃）





Step	Bin code 色区	CCT	X	Y	θ	a	b
3-Step	1327	2700K	0.4578	0.4101	53.70	0.0081	0.0042
3-Step	1330	3000K	0.4339	0.4033	53.22	0.0083	0.0041
3-Step	1335	3500K	0.4078	0.393	54.00	0.0093	0.0041
3-Step	1340	4000K	0.3818	0.3797	53.72	0.0094	0.0040
3-Step	1350	5000K	0.3446	0.3551	59.62	0.0082	0.0035
3-Step	1357	5700K	0.3287	0.3425	59.13	0.0075	0.0032
3-Step	1365	6500K	0.3123	0.3283	58.57	0.0067	0.0029

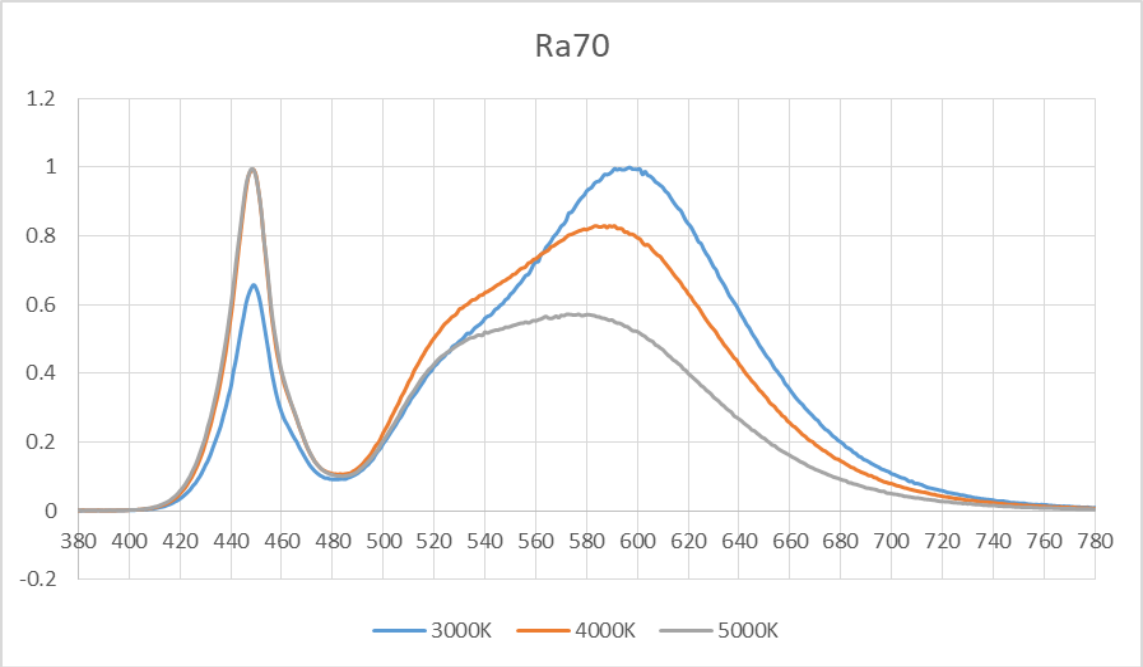
Note: Tolerance of Color coordinates is ±0.005.

色坐标 x, y 的测量误差为±0.005。

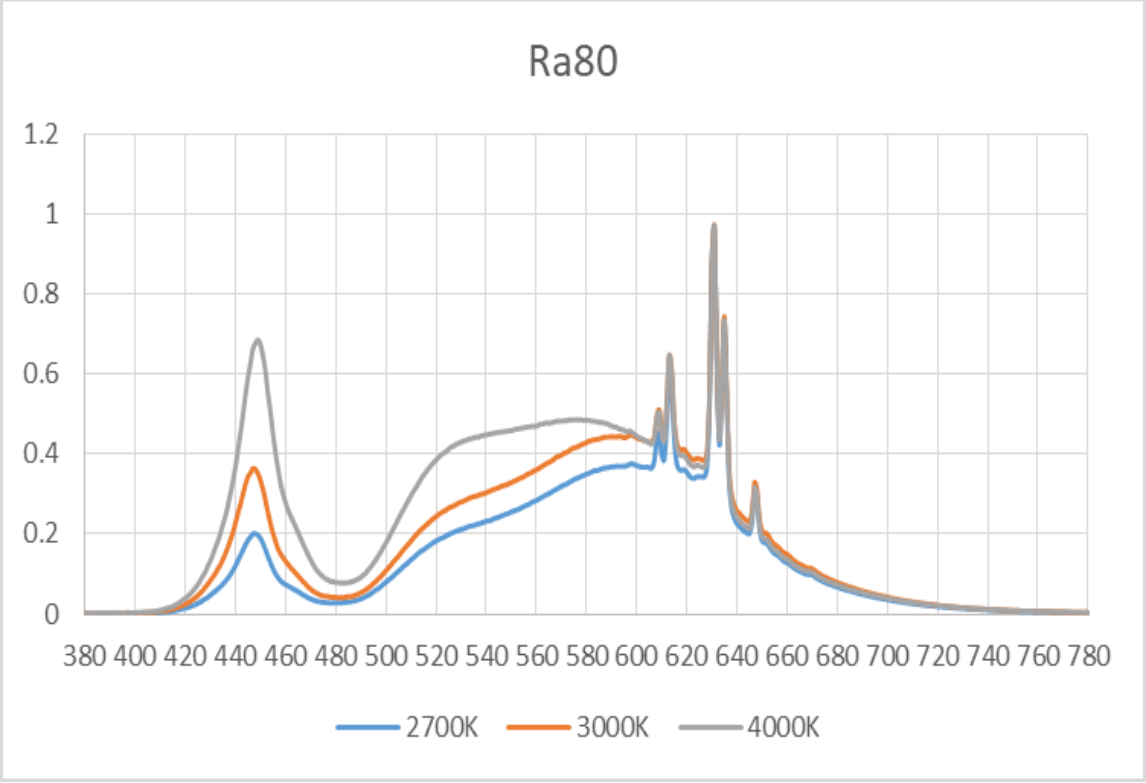
8. Typical Characteristics Graphs 典型特性曲线

a) 光谱图 Spectrum Distribution (IF= Sorting Current,Tj =25℃)

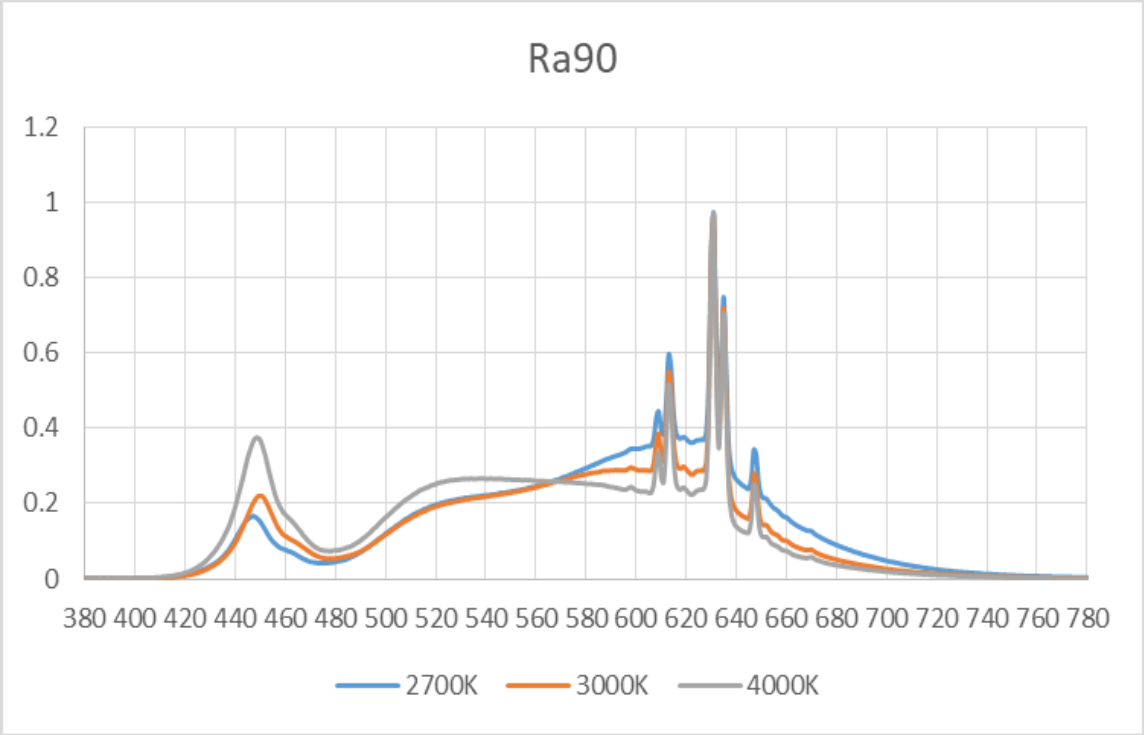
1)Ra70



2)Ra80



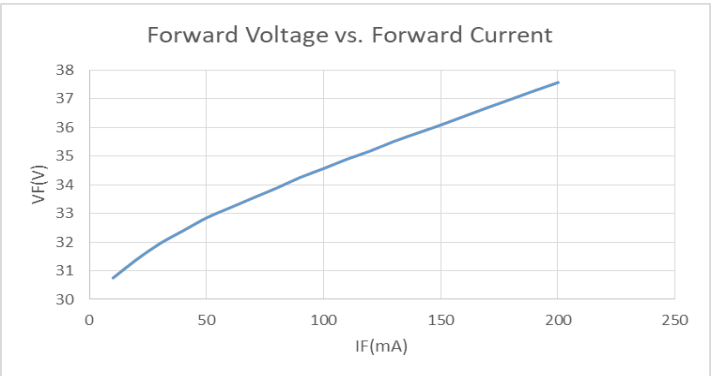
3)Ra90

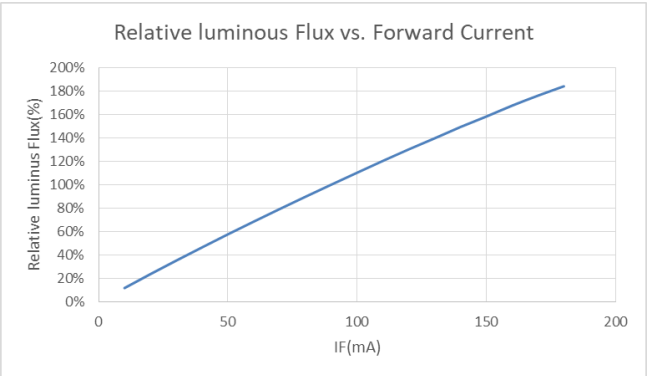


b）电流特性曲线 Forward Current Characteristics(Tj=25℃)

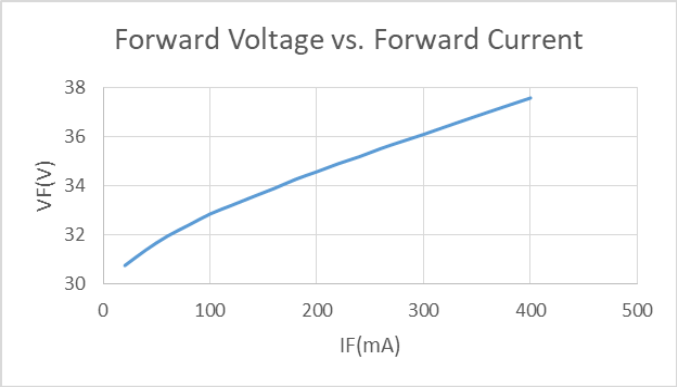
Ra70

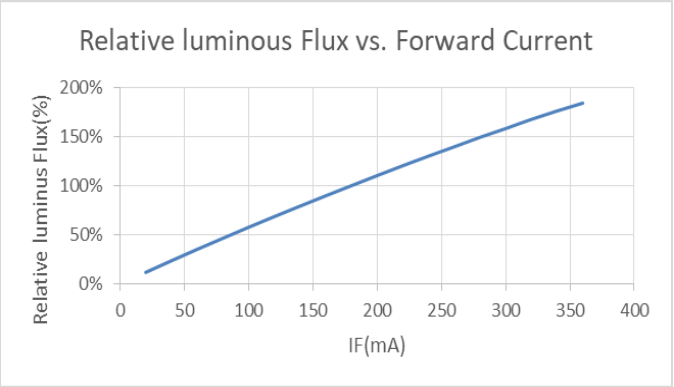
1）3W_MA1301-12S1P



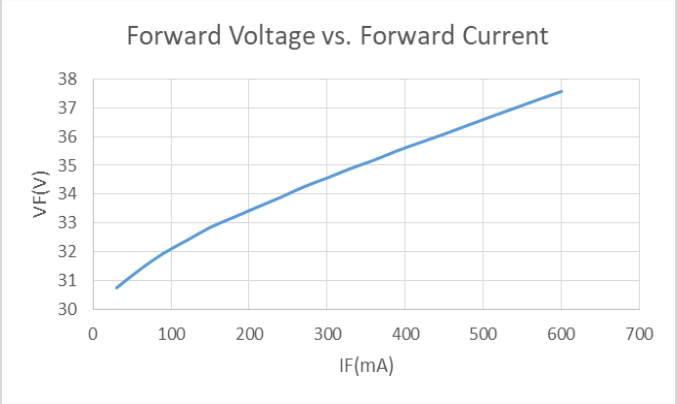


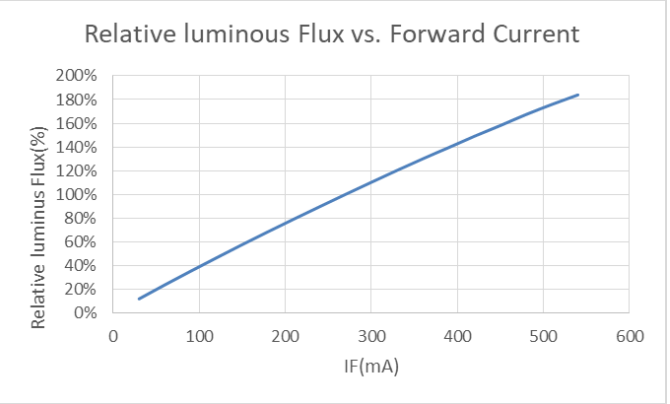
2) 6W_MA1301-12S2P



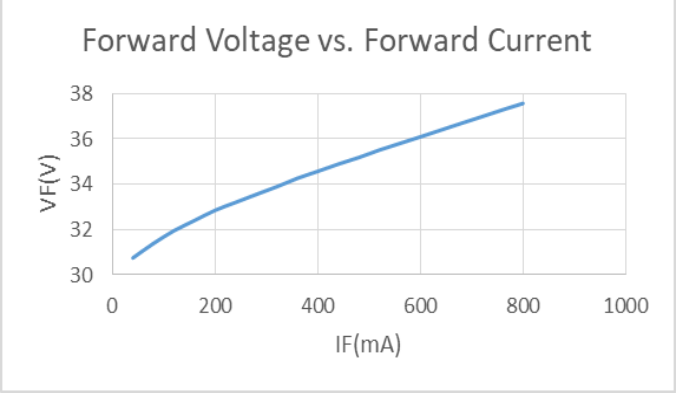


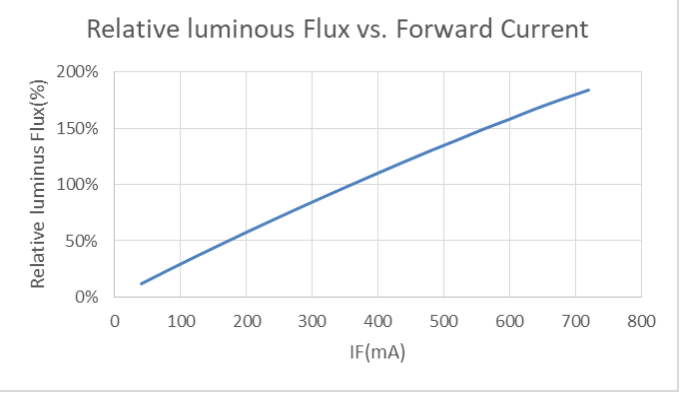
3) 9W_MA1301-12S3P



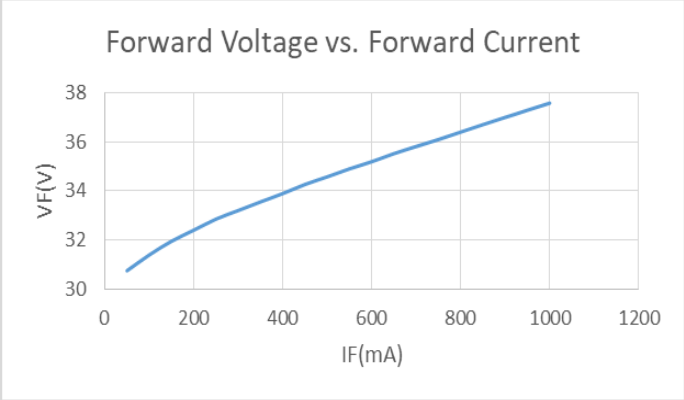


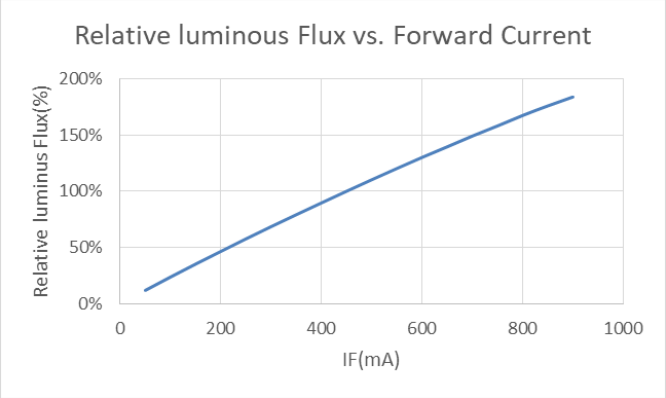
4) 12W_MA1301-12S4P



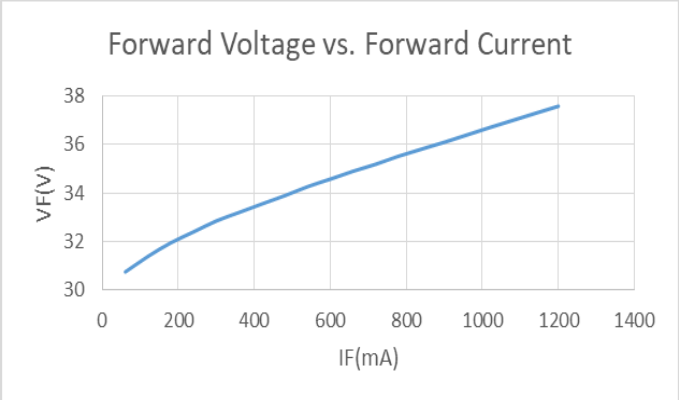


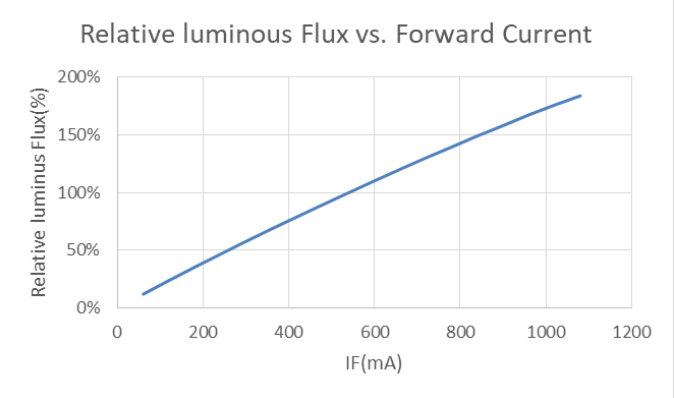
5) 16W_MA1901-12S5P



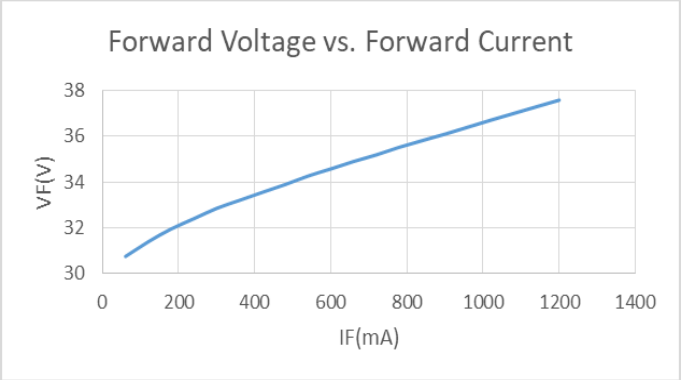


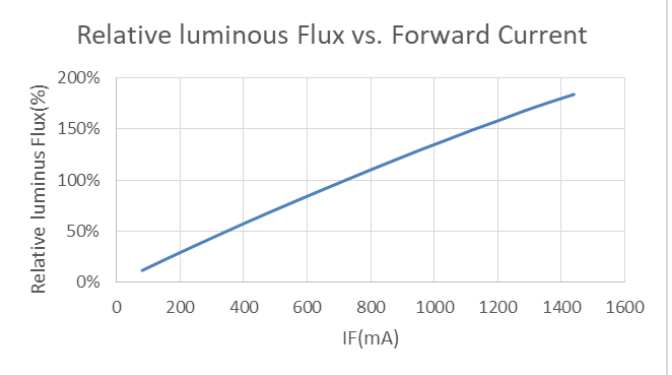
6) 19W_MA1901-12S6P



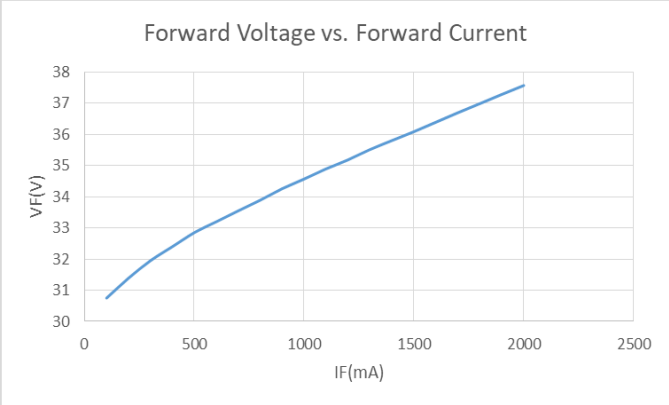


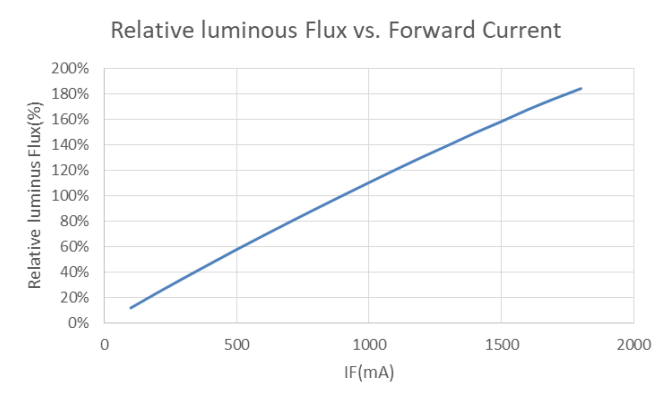
7) 26W_MA1901-12S8P



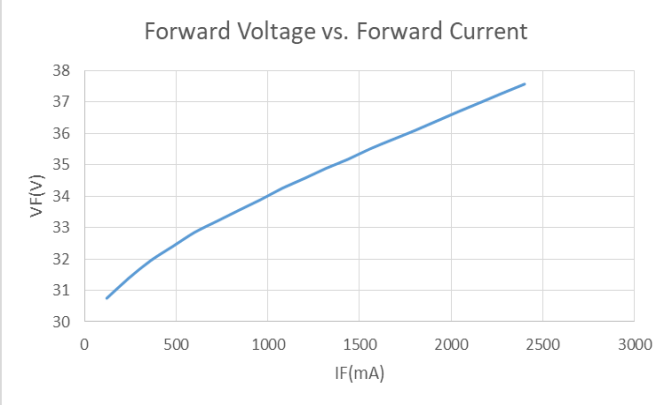


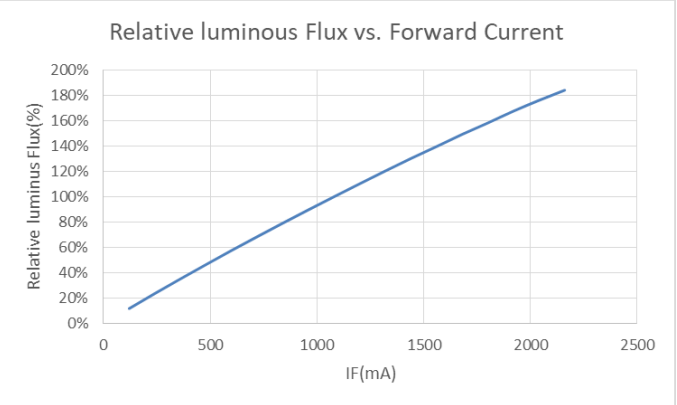
8) 33W_MA1901-12S10P



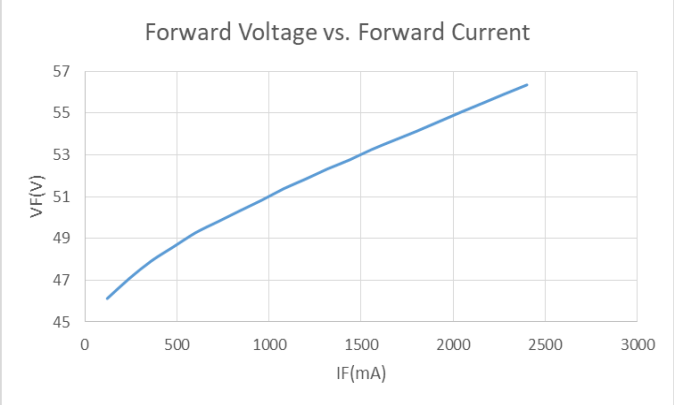


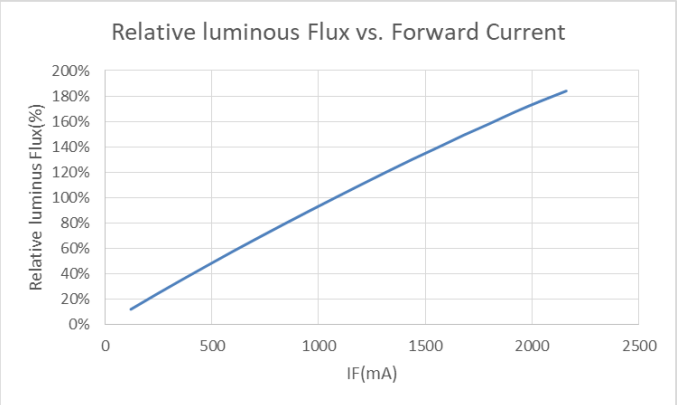
9) 40W_MA2801-12S12P



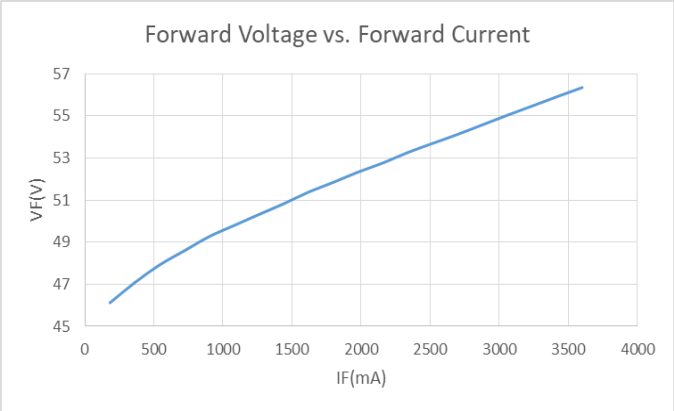


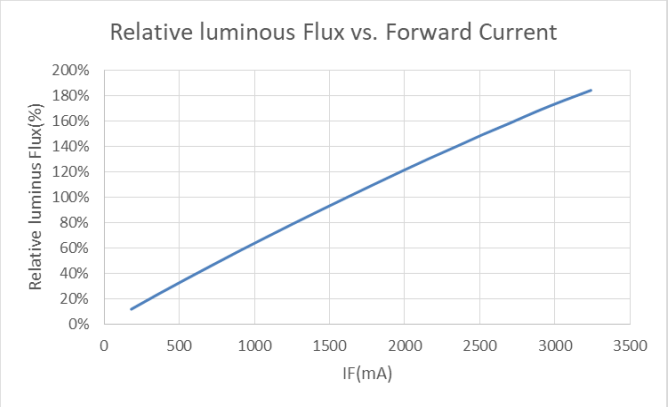
10) 60W_MA2801-18S12P





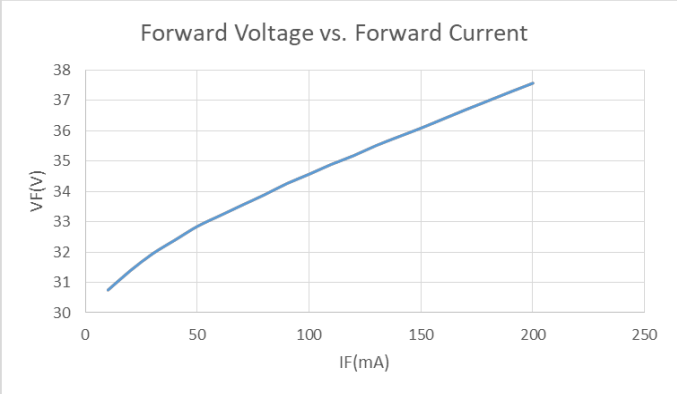
11) 80W_MA2801-18S18P

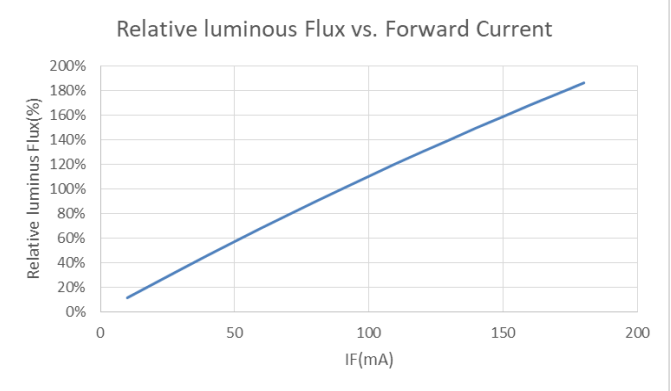




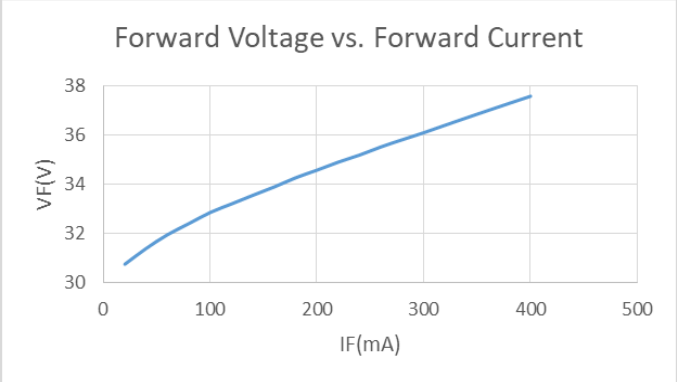
Ra80

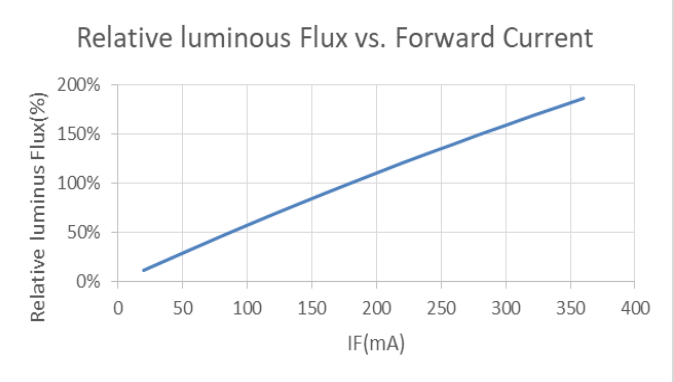
1) 3W_MA1301-12S1P



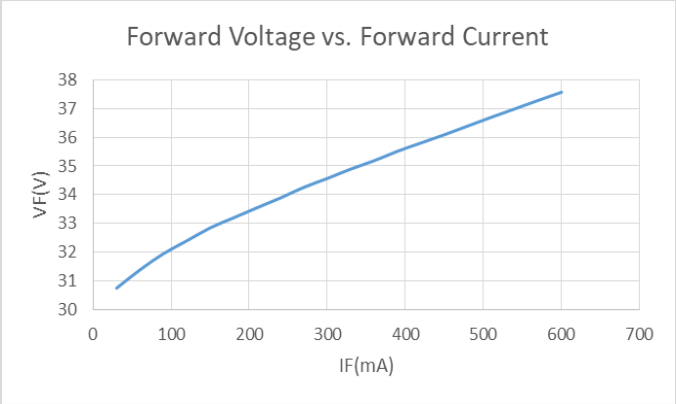


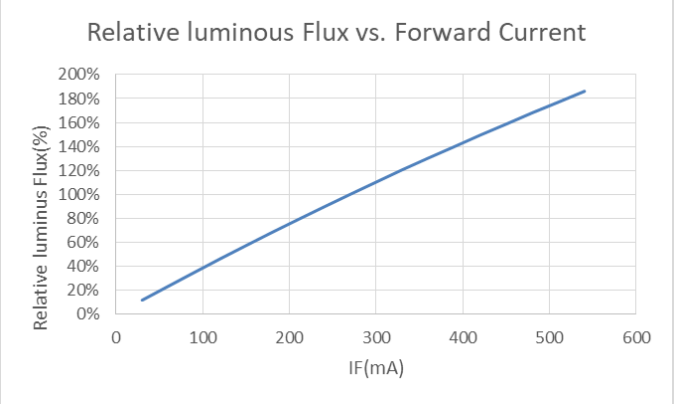
2) 6W_MA1301-12S2P



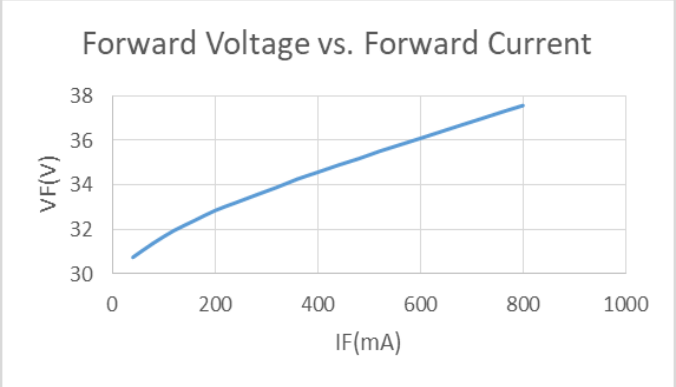


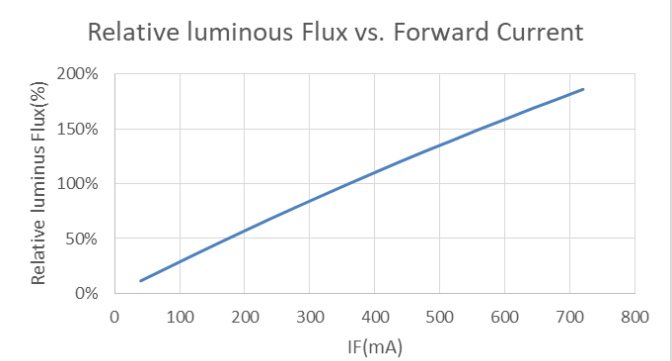
3) 9W_MA1301-12S3P



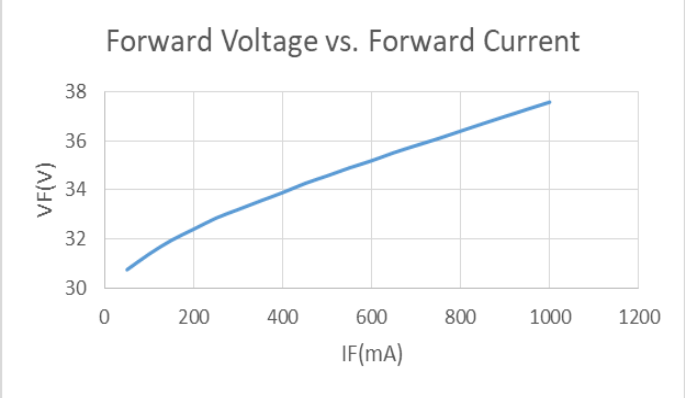


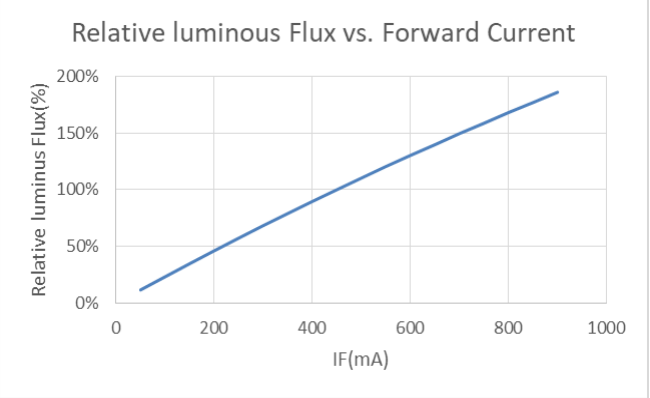
4) 12W_MA1301-12S4P



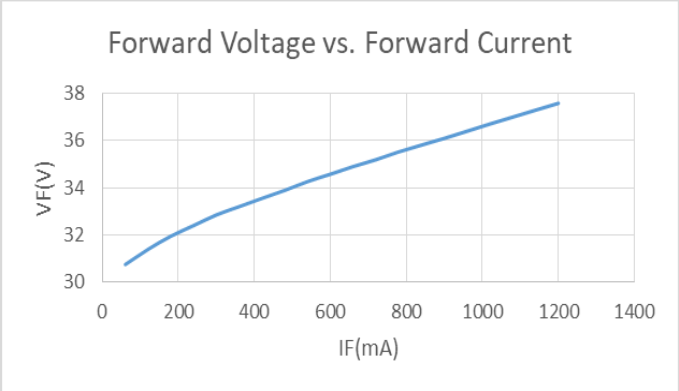


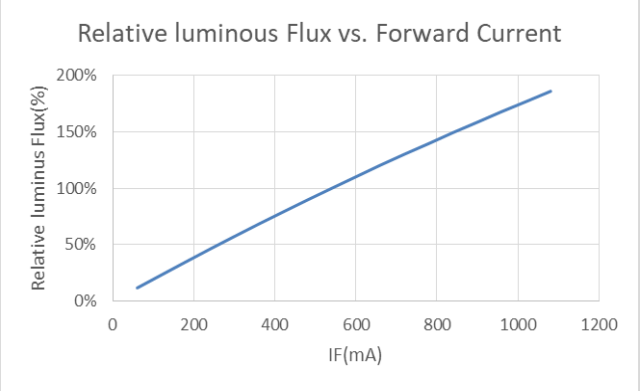
5) 16W_MA1901-12S5P



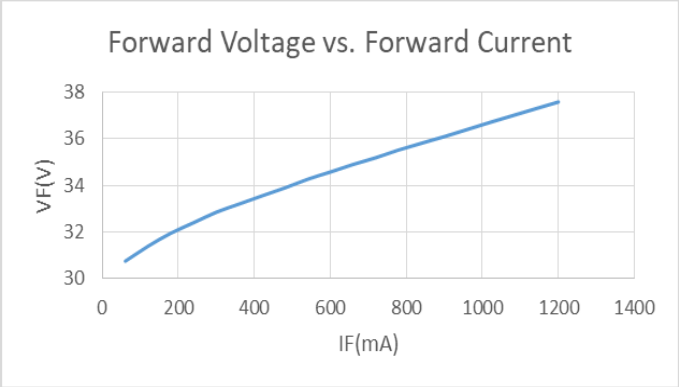


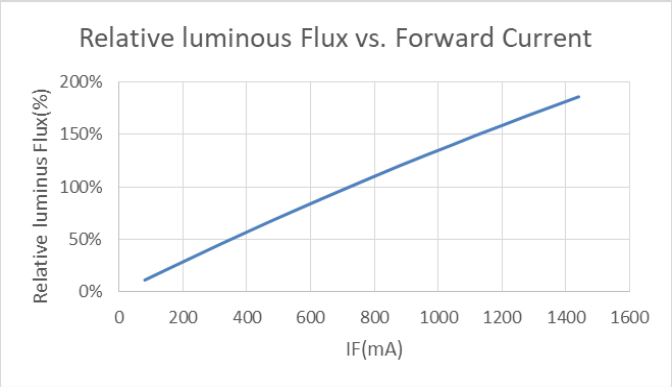
6) 19W_MA1901-12S6P



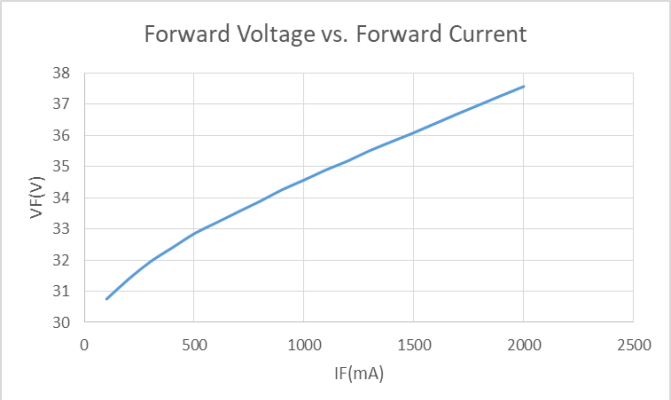


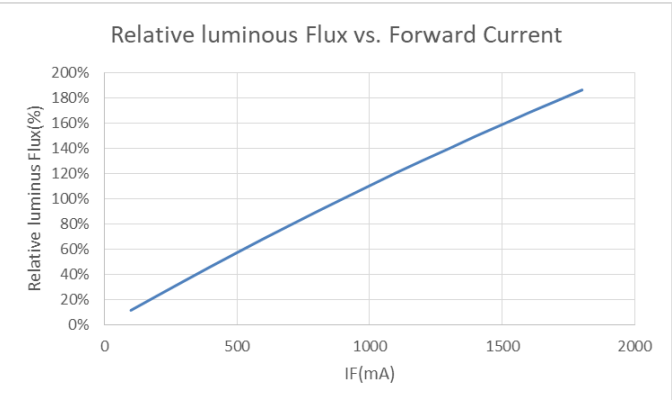
7) 26W_MA1901-12S8P



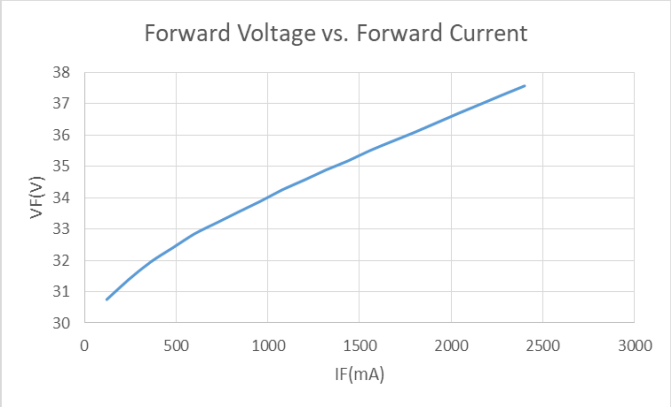


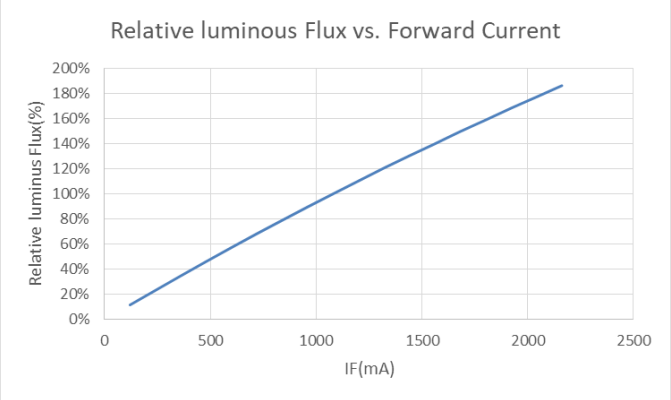
8) 33W_MA1901-12S10P



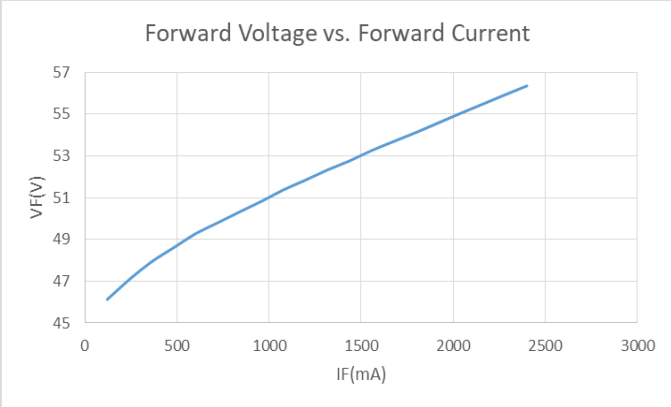


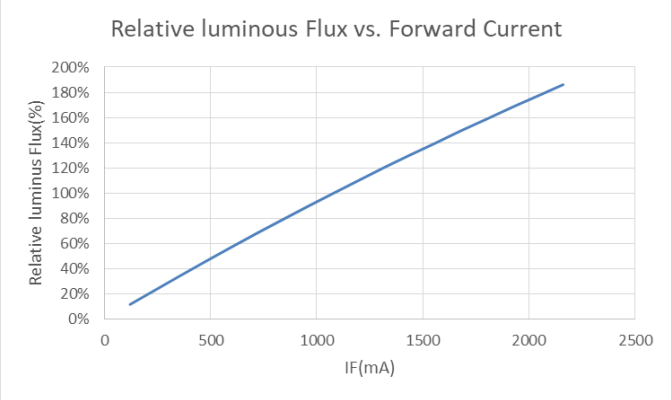
9) 40W_MA2801-12S12P



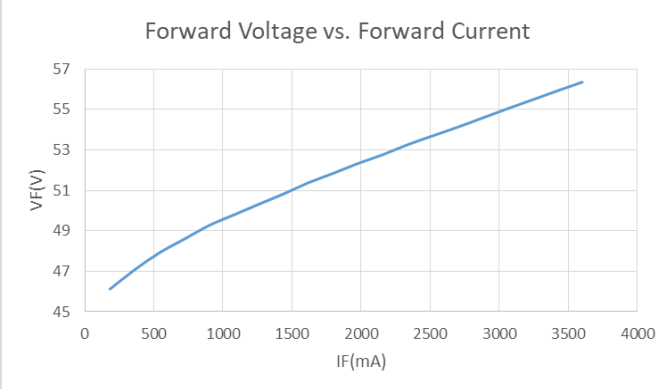


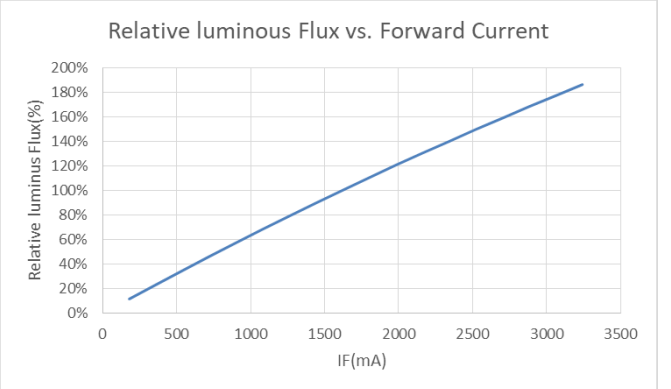
10) 60W_MA2801-18S12P





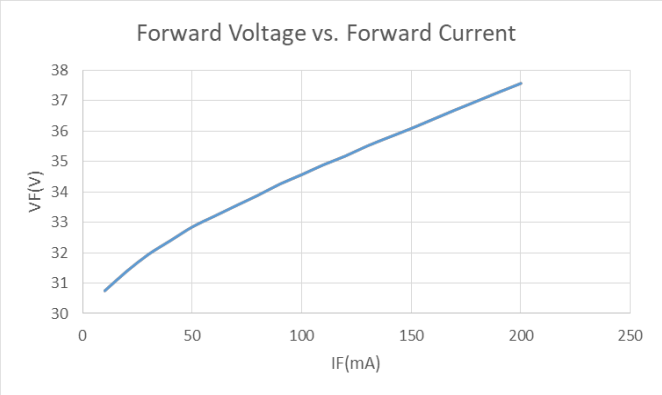
11) 80W_MA2801-18S18P

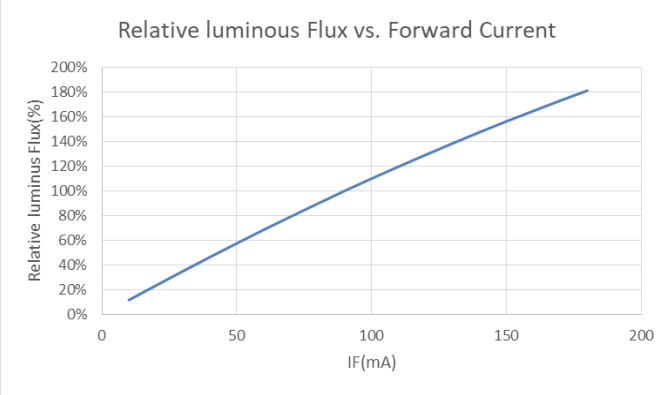




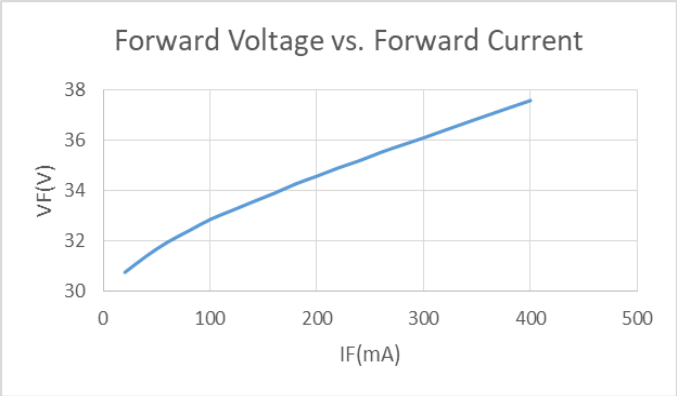
Ra90

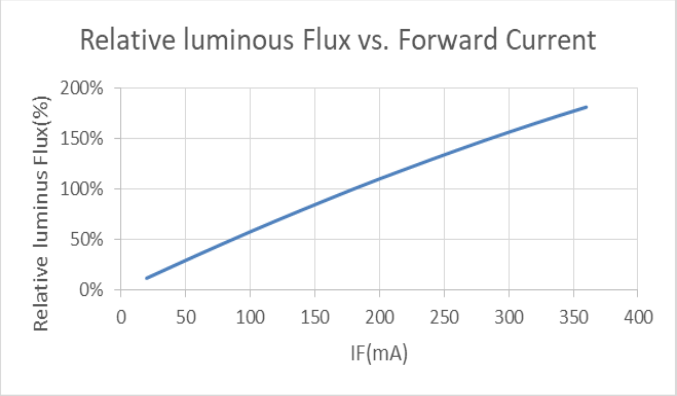
1) 3W_MA1301-12S1P



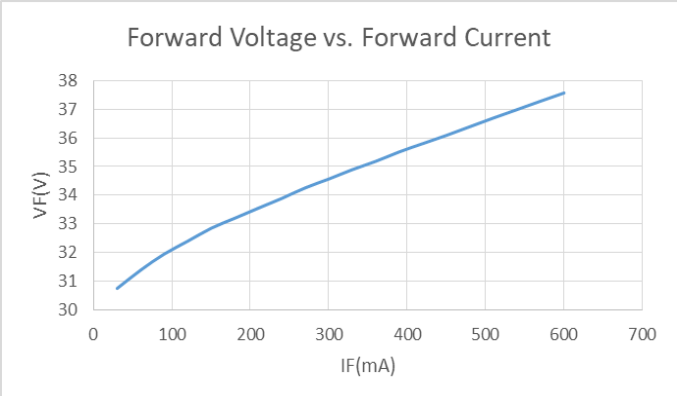


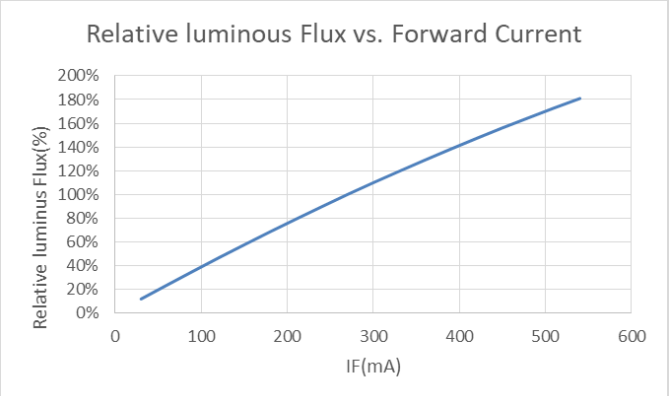
2) 6W_MA1301-12S2P



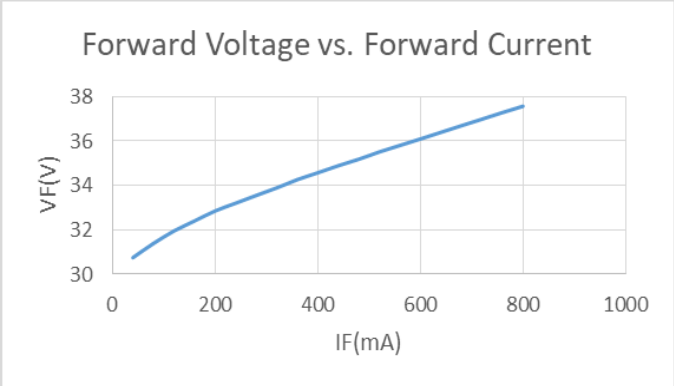


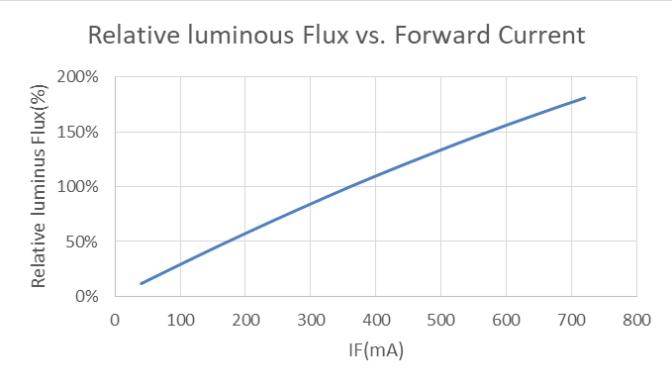
3) 9W_MA1301-12S3P



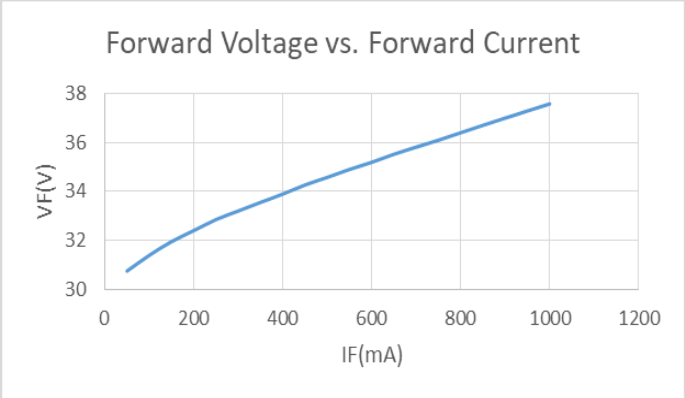


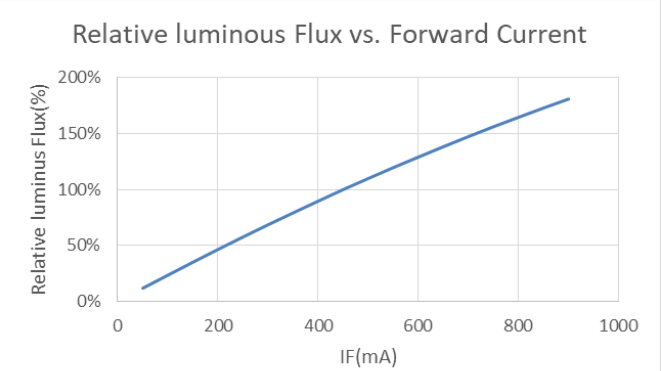
4) 12W_MA1301-12S4P



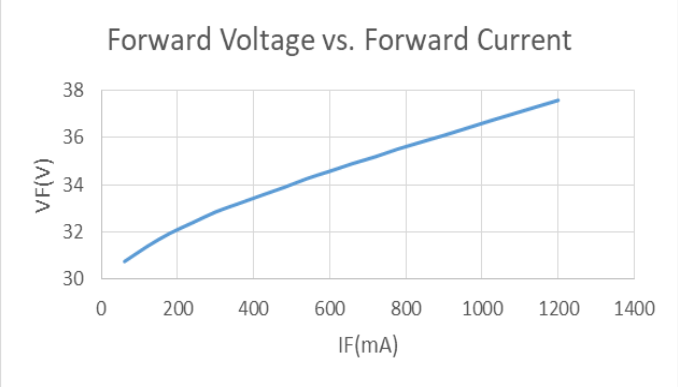


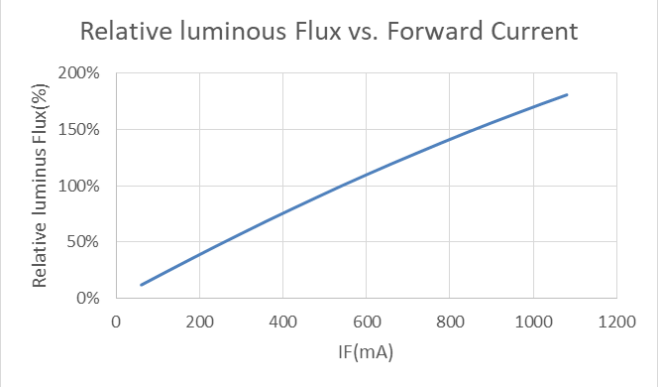
5) 16W_MA1901-12S5P



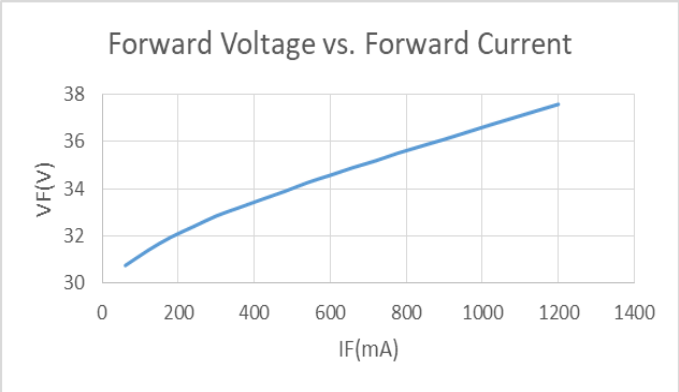


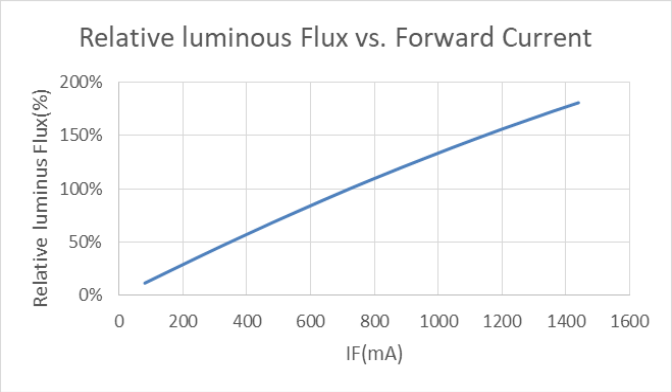
6) 19W_MA1901-12S6P



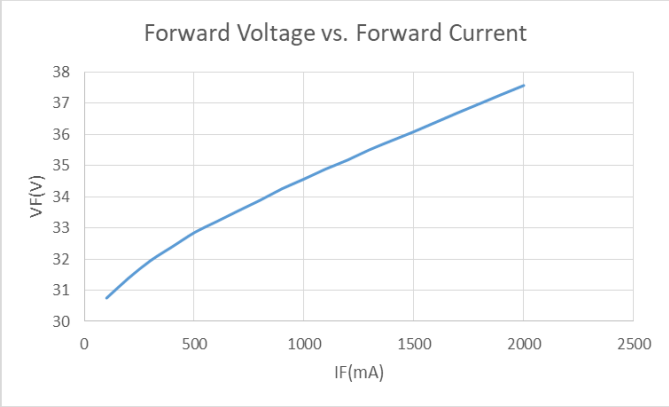


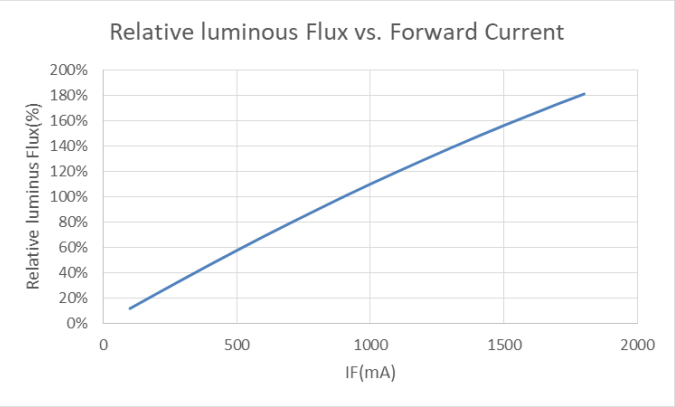
7) 26W_MA1901-12S8P



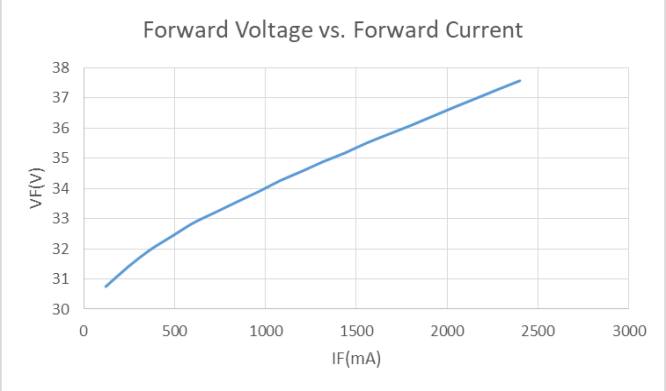


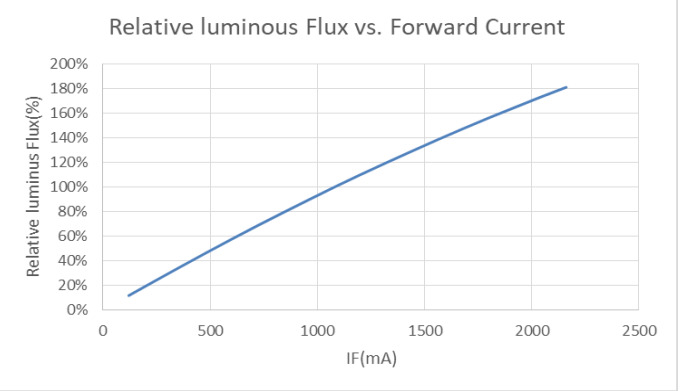
8) 33W_MA1901-12S10P



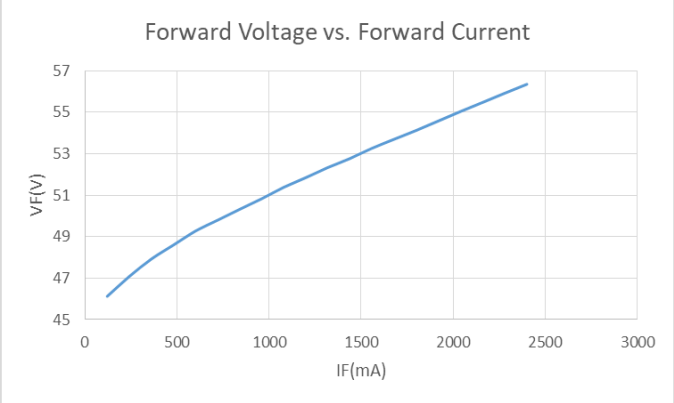


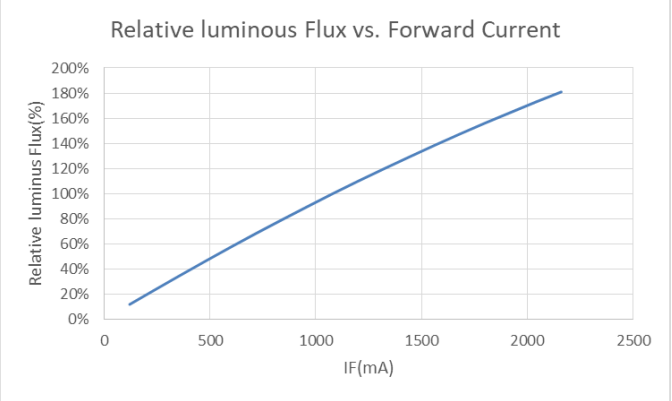
9) 40W_MA2801-12S12P



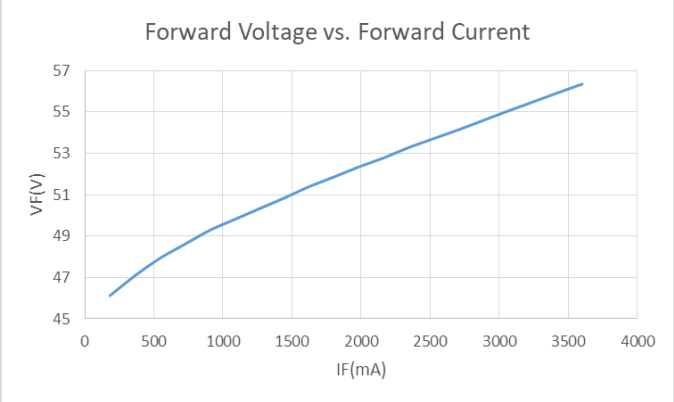


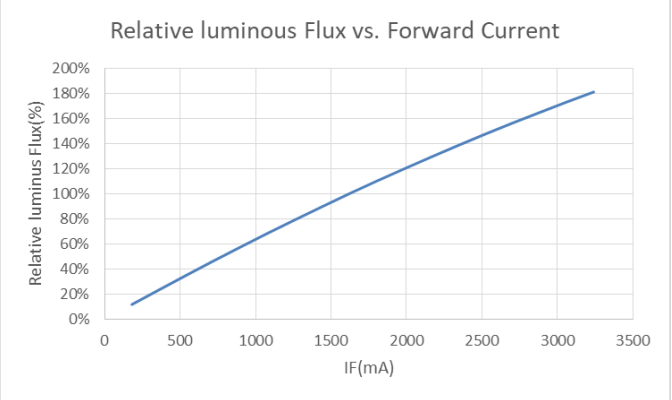
10) 60W_MA2801-18S12P





11) 80W_MA2801-18S18P

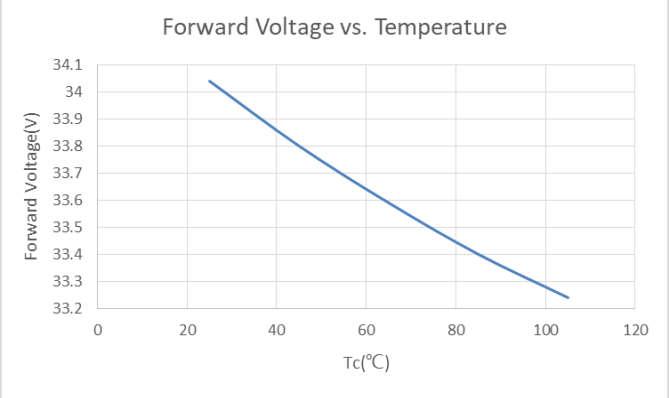


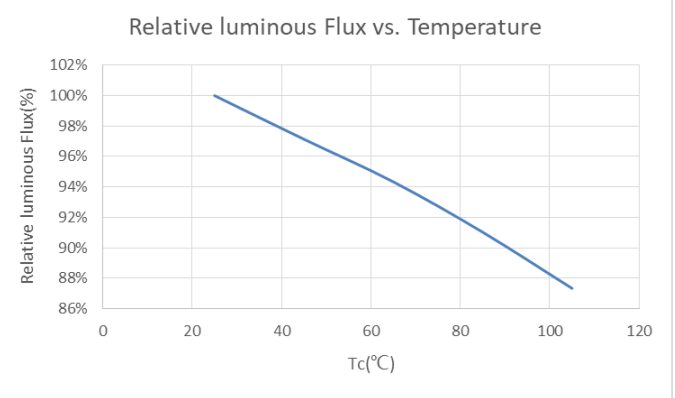


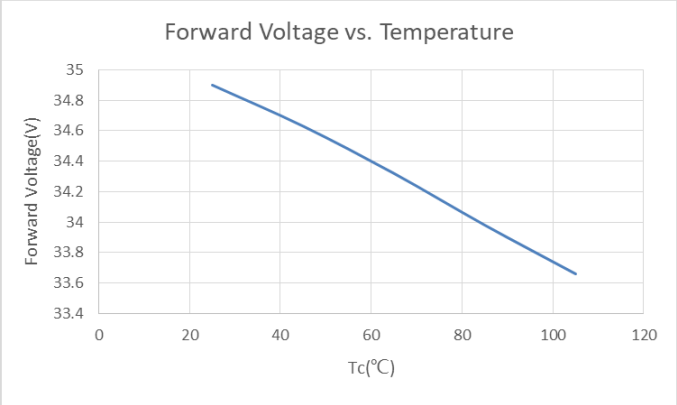
C) 温度特性曲线 Temperature Characteristics

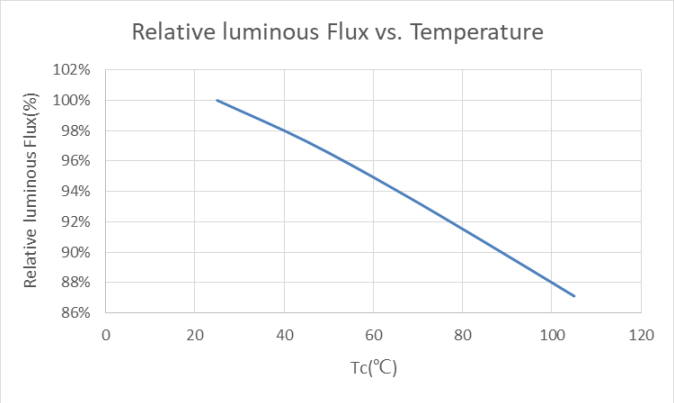
(分选电流) (IF=Sorting Current)

2700K

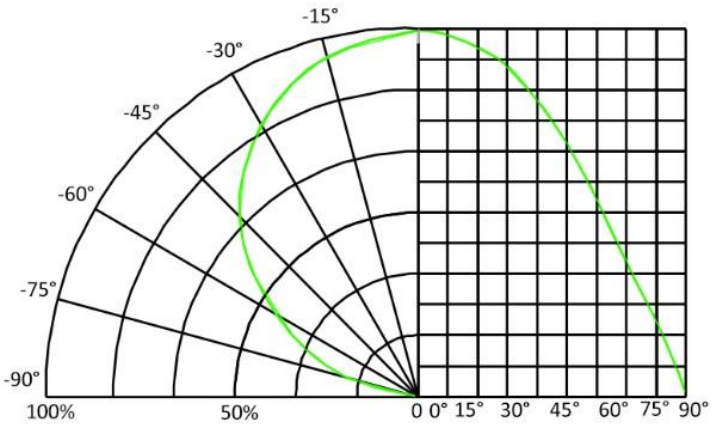






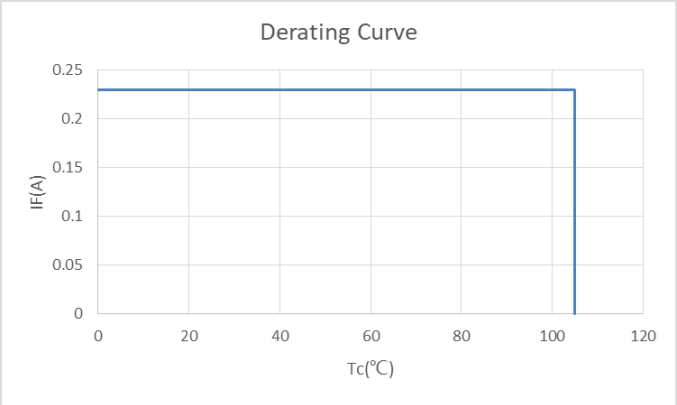


d)Beam Angle Characteristics(IF=Sorting Current，Tj=25°C)

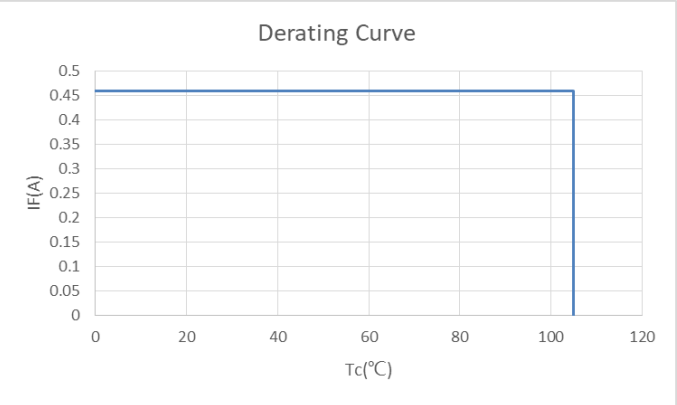


e) Derating Characteristics

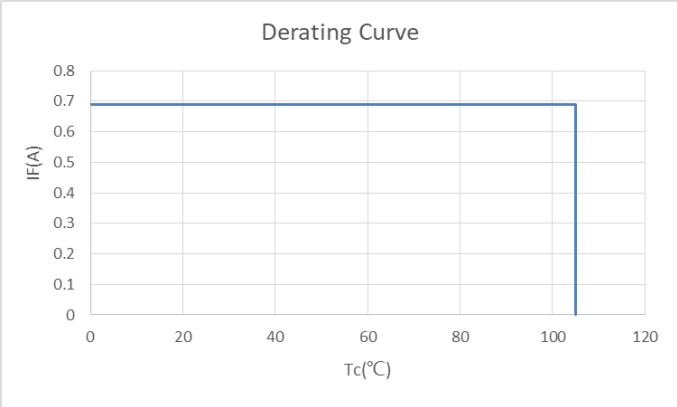
1) 3W_MA1301-12S1P



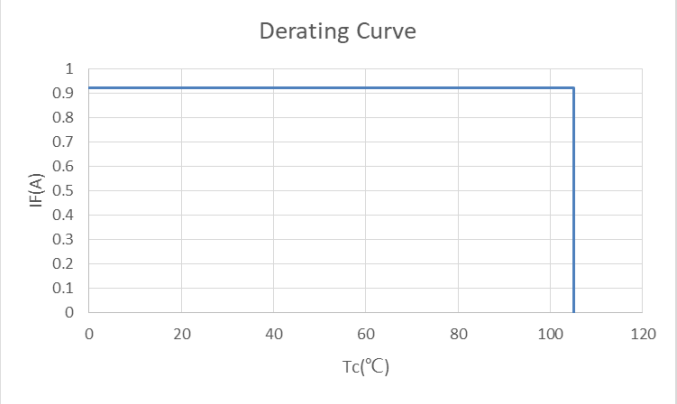
2) 6W_MA1301-12S2P



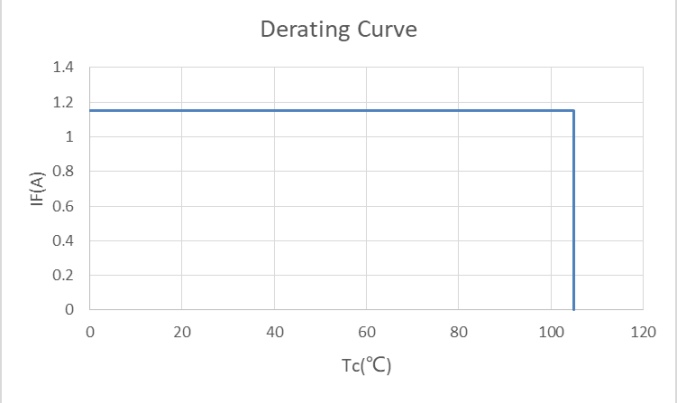
3) 9W_MA1301-12S3P



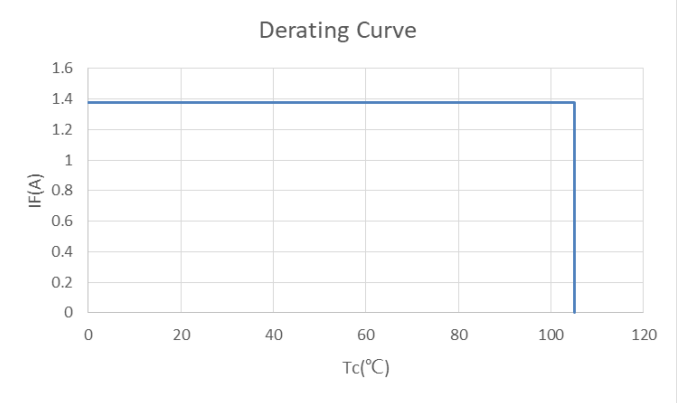
4) 12W_MA1301-12S4P



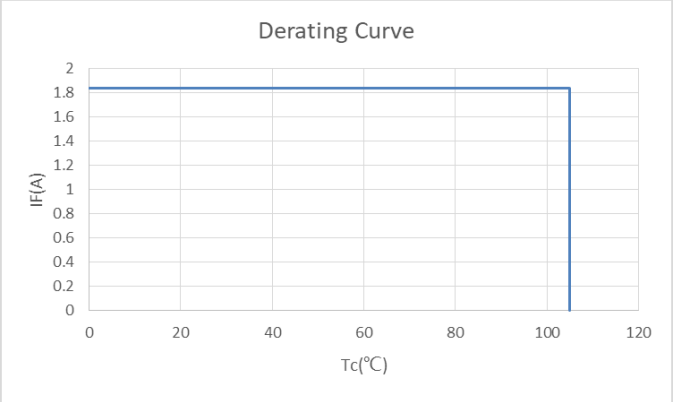
5) 16W_MA1901-12S5P



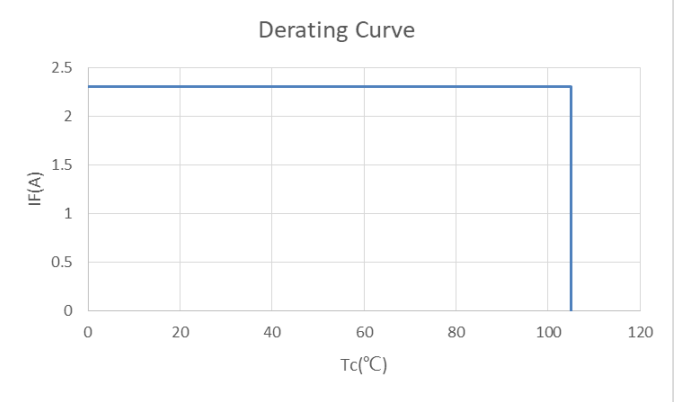
6) 19W_MA1901-12S6P



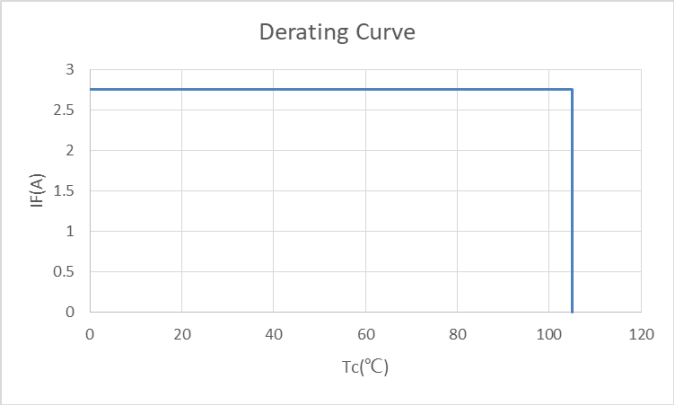
7) 26W_MA1901-12S8P



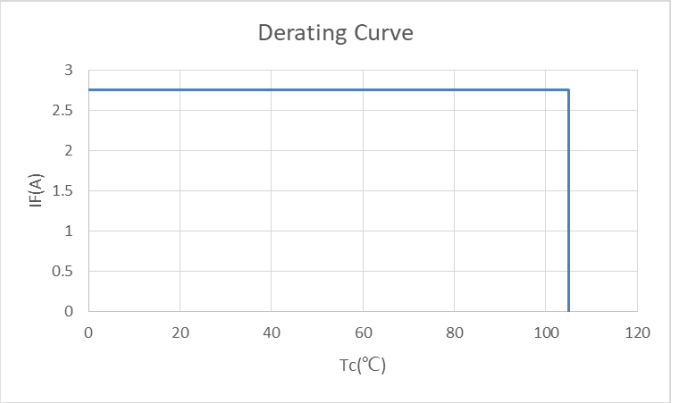
8) 33W_MA1901-12S10P



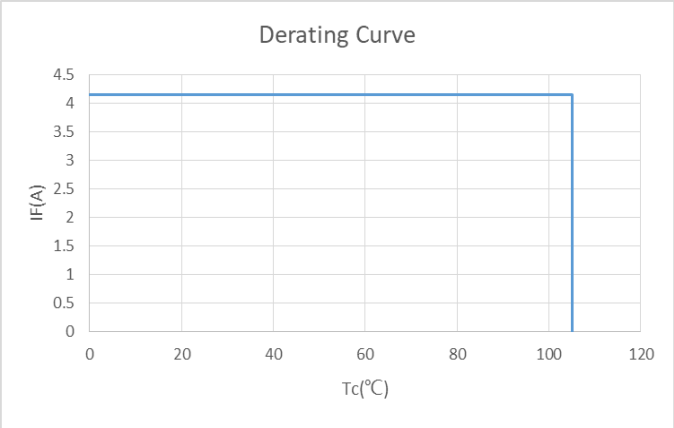
9) 40W_MA2801-12S12P



10) 60W_MA2801-18S12P



11) 80W_MA2801-18S18P



9.Reliability 可靠性

Test Item	Test conditions	Test Duration	Failure Criteria *4	Unites Failed/Tested
Temperature Cycle 温度循环	-40℃(15min) ~125℃ (15min) Temperature change within 30sec	100cycles	*2	0/10
High Temperature Storage 高温贮存	Ta=100℃±3℃	1000 hrs	*2	0/10
Low Temperature Storage 低温贮存	Ta=-40℃±3℃	1000 hrs	*2	0/10
Temperature Humidity Storage 高温湿度贮存	Ta=60℃±3℃, RH=90%±3%	1000 hrs	*2	0/10
Life Test 寿命试验	Ta=25℃±3℃, If=*1	1000 hrs	*2	0/10
High Temperature Life Test 高温寿命试验	Ta=85℃±3℃, If=*1	1000 hrs	*2	0/10

Note:

*1 Refer to IF typ.

*2 Failure criteria:

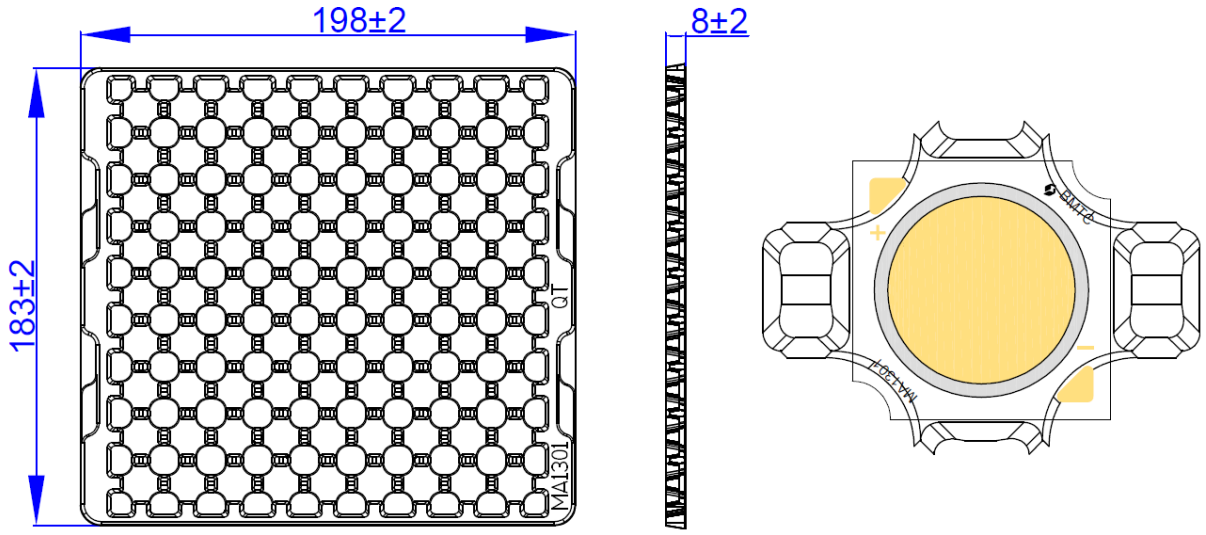
Criteria	Items	Failure Criteria
*4	Forward Voltage (V_F) 正向电压	>initial value x1.1 大于 1.1 倍的标称值
	Luminous Flux (φv) 光通量	< initial value x0.7 小于标称值的 70%

10．Packing Specifications 包装规格

➢ MA1301

Packing material 包装材料	Max. quantity 最大数量	Dimension(mm) 尺寸			
	in pcs of COB COB 数量（个）	Length 长	Width 宽	Height 高	Tolerance 公差
Tray 托盘	81	198	183	8	2
Anti-Static Bag 静电袋 **(最小包装量)**	**405（5 Trays)**	300	240	-	1
Outer Box 外箱	5670（14Bags)	365	265	260	5

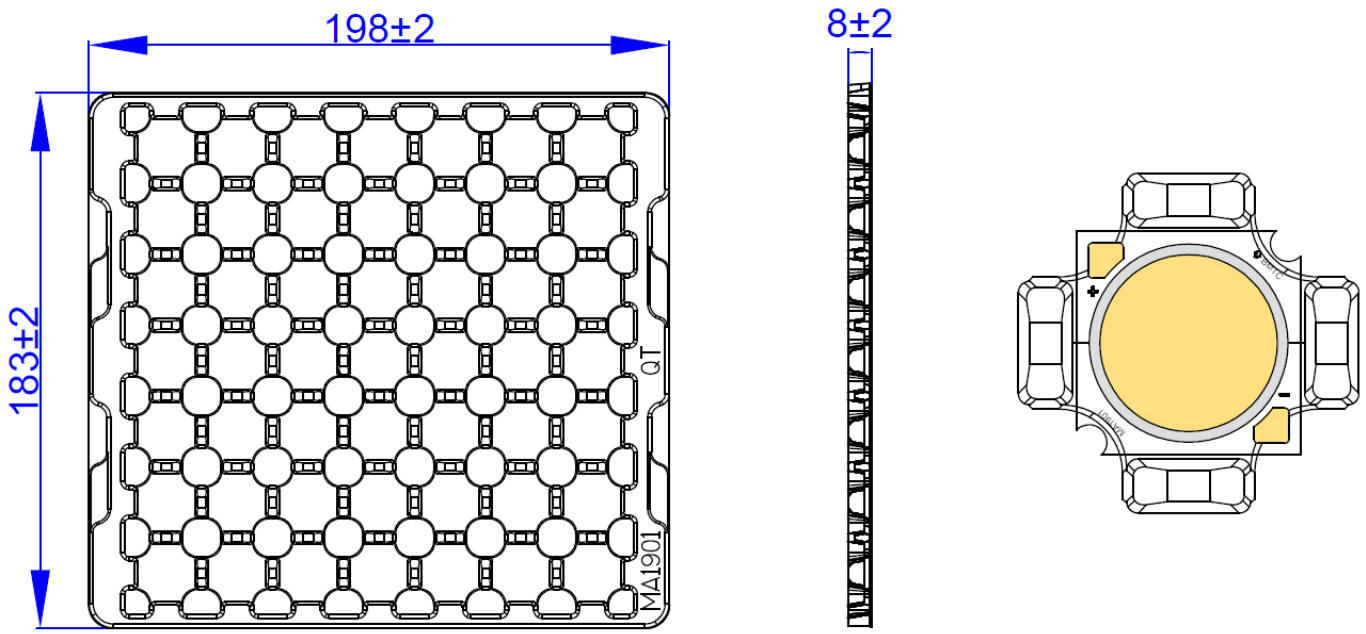
Tray



➢ MA1901

Packing material 包装材料	Max. quantity 最大数量 in pcs of COB COB 数量（个）	Dimension(mm) 尺寸 Length 长	Width 宽	Height 高	Tolerance 公差
Tray 托盘	49	198	183	8	2
Anti-Static Bag 静电袋 **(最小包装量)**	**245（5 Trays)**	300	240	-	1
Outer Box 外箱	3430（14Bags）	365	265	260	5

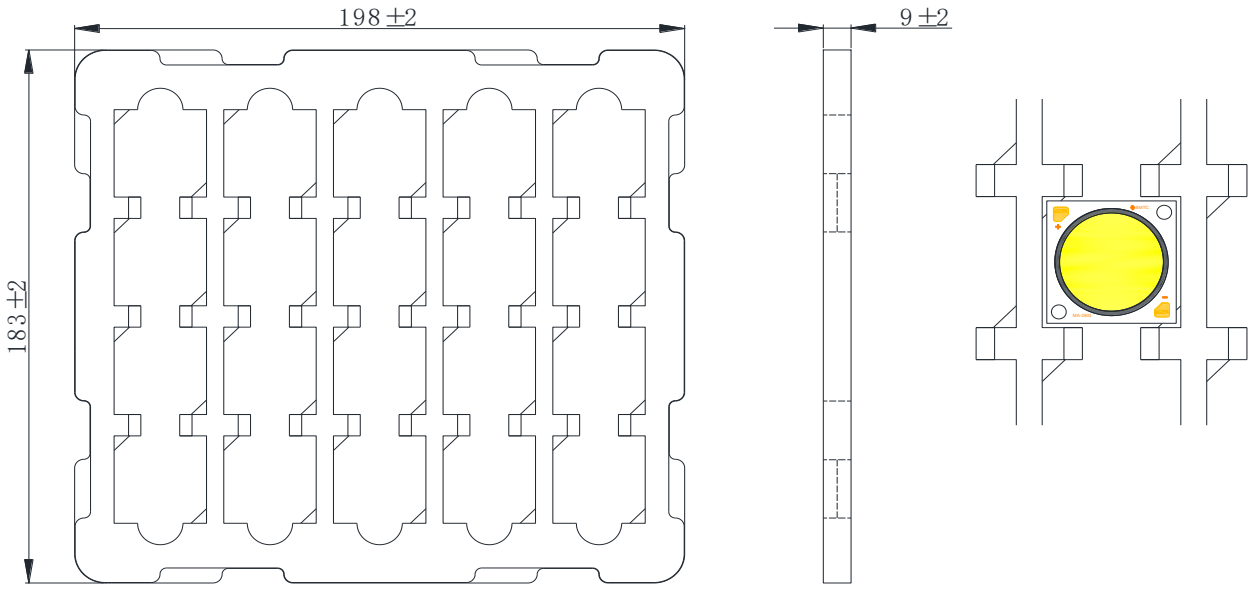
Tray



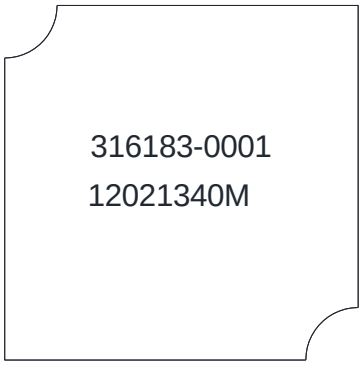
➢ MA2801

Packing material 包装材料	Max. quantity 最大数量	Dimension(mm) 尺寸			
	in pcs of COB COB 数量（个）	Length 长	Width 宽	Height 高	Tolerance 公差
Tray 托盘	20	198	183	9	2
Anti-Static Bag 静电袋（**最小包装量**）	**100（5 Tray)**	300	240	-	1
Outer Box（little） 外箱	1400（14 Bag）	365	265	260	5

Tray



laser 镭射规则



第一行：316183-0001，BMTC 内部追踪码

第二行：12021340M

1-4 位：代表串并信息，如 1202=12 串 2 并，与型号编码规则一致

5-6 位：代表分 bin 信息，如 13=ANSI，与型号编码规则一致

7-8 位：代表色温，如 40 代表 4000K，与型号编码规则一致

9 位：代表显指，如 M 带表 80 显指，与型号编码规则一致

11.Handling Precautions 处理注意事项

11.1 Cleaning 清洗

11.1.1 When necessary, cleaning should occur only with isopropyl alcohol (IPA) at room temperature (25℃) for a duration of no more than one minute. Dry at room temperature for 15 minutes before use.

产品如需清洗，只能在室温(25℃)下采用异丙醇(IPA)清洗，清洗时间不超过 1 秒。使用前在室温下放置 15 分钟晾干产品。

11.1.2 The influence of ultrasonic cleaning on the COB depends on factors such as ultrasonic power and the way the COB is mounted. Ultrasonic cleaning should be pre-qualified to ensure this will not cause damage to the COB.

超声波清洗对 COB 的影响取决于超声波功率及 COB 的安装方式等因素。超声波清洗需经过预审合格，以确保此举不会对 COB 造成损害。

11.2. Storage 储存

11.2.1 Don’ t open moisture barrier bag before the products are ready to use.

产品在准备使用之前，请勿打开防潮袋

11.2.2 Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.

防潮袋打开之前：LED应该保存在环境温度30℃（含）以下和相对湿度90%（含）以下环境

11.2.3 After opening the package: The LED's floor life are 24 hours under 30℃ or less and 70% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

防潮袋打开之后：在环境温度30℃（含）以下和相对湿度70%（含）以下，LED的使用时间是24小时；未使用完的LED需使用防潮袋密封包装

11.3 Operating 操作

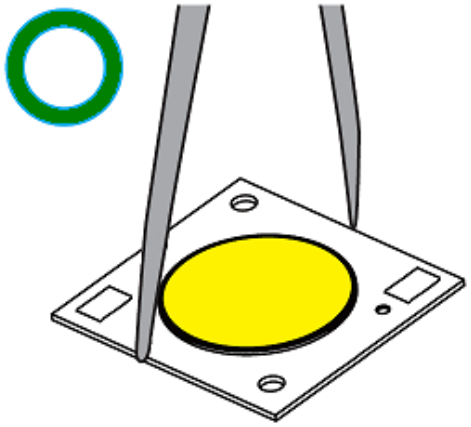
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force. As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might leads to damage and premature failure of the LED.

与又硬又脆的环氧封装相比，硅胶更软，更具弹性。尽管它的特性明显降低热应力，但它更

易被外界压力破坏。因此，在使用硅胶封装的 LED 产品时，应该留意安装过程中的一些特殊处理事项。不遵守操作的话可能导致 LED 损坏和失效

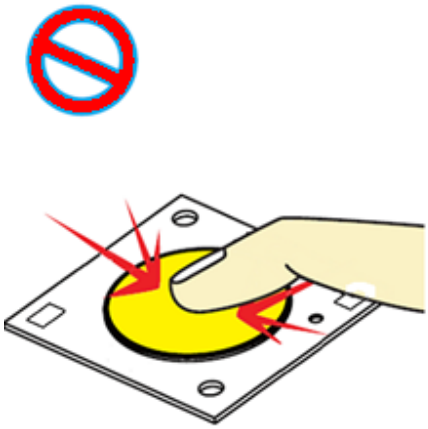
11.3.1 Handle the component along the side surfaces by using forceps or appropriate tools.

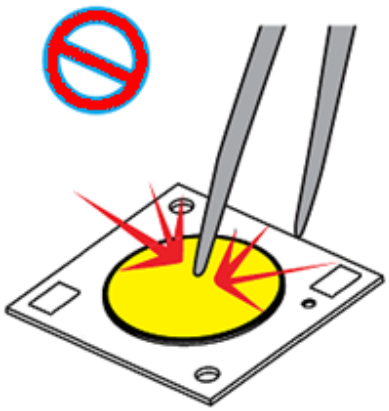
用镊子或合适的工具夹在元件的侧边



11.3.2 Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

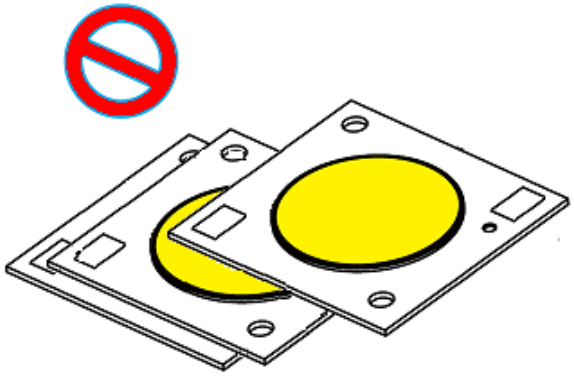
请勿直接触摸或操作硅胶透镜表面，这可能会损坏内部的电路





11.3.3 Do not stack the COBs. Impact may scratch the silicone lens or damage the internal circuitry.

请勿将 COB 材料叠成堆。相互间的挤压可能会划伤硅胶透镜表面或损坏内部电路



11.3.4 Users should be cautioned not to stare at the light of this LED product. The bright light can damage the eye.

用户应注意，LED 发光时，请勿直视。LED 的强光可能会伤害您的眼睛。

11.4 Chemicals Tested as Harmful 化学测试中的有害物质

In testing, BMTC has found the following chemicals to be harmful to the LEDs. BMTC recommends not using these chemicals anywhere in an LED system. The fumes from even small amounts of these chemicals may damage the LEDs.

经过测试，BMTC发现下列化学品会对LED造成损害，建议不要在任何的LED系统使用这些化学品。即使这些化学品量很少，其所释放的气体也可能会导致LED损害。

- Chemicals that might outgas aromatic hydrocarbons (e.g., toluene, benzene, xylene)
  可能会致使芳香烃化合物释气的化学物（如：甲苯，苯，二甲苯）
- Methyl acetate or ethyl acetate (i.e., nail polish remover)
  乙酸甲酯或乙酸乙酯（如：指甲油清洗剂）
- Cyanoacrylates (i.e., Superglue)
  氰基丙烯酸酯（如：强力胶）
- Glycol ethers (including Precision Electronics Cleaner - propylene glycol monomethyl ether)
  乙二醇（包括精密电子清洗剂-二丙二醇单甲醚）
- Formaldehyde or butadiene
  甲醛或丁二烯
- bleach
  漂白剂

- Cleaner spray
  清洁喷雾剂
- activator
  活化剂
- thread locker
  螺丝固定胶
- Sulfur，bromide，iodine ，chloride
  硫，溴，碘，氯

11.5 ESD Protection During Production 生产过程中的静电保护

Electric static discharge can result when static-sensitive products come in contact with the operator or other conductors.

当操作人员或者其他导体接触静电敏感材料时，容易产生静电放电。

The following procedures may decrease the possibility of ESD damage:

以下操作可降低静电破坏的可能性

11.5.1 Minimize friction between the product and surroundings to avoid static buildup.

将产品和外界之间的摩擦减到最低以避免静电产生

11.5.2 All production machinery and test instruments must be electrically grounded.

所有的产品设备和测试仪器必须接地

11.5.3 Operators must wear anti-static bracelets.

操作人员必须配戴静电环

11.5.4 Wear anti-static suit when entering work areas with conductive machinery.

进入带电设备工作区域时需穿防静电服

11.5.5 Set up ESD protection areas using grounded metal plating for component handling.

使用经电镀处理的金属部件接地从而建立 ESD 保护区域

11.5.6 All workstations that handle IC and ESD-sensitive components must maintain an electrostatic potential of 150V or less.

所有操作 IC 和 ESD 敏感器件元器件的工作台必须保持低于 150V 的静电保护

11.5.7 Maintain a humidity level of 50% or higher in production areas.

产品区域环境需保持高于 50%的湿度水平

11.5.8 Use anti-static packaging for transport and storage.

运输和储存需使用防静电包装

11.5.9 All anti-static equipment and procedures should be periodically inspected and

evaluated for proper functionality.

防静电设备及相关操作应该定期检查及评估以确保运行正常

11.6 Thermal Management 热管理

11.6.1 Thermal design of the end product is of paramount importance. Please consider the heat generation of the LED when making the system design. The coefficient of temperature increase per input electric power is affected by the thermal resistance of the circuit board and density of LED placement on the board, as well as other components. It is necessary to avoid intense heat generation and operate within the maximum ratings given in this specification.

终端产品的散热设计是极其重要的。在做整体设计时请考虑 LED 的热量处理。单位输入功率的温度系数的增加受线路板的热阻，LED 在板上布置的密度和其他元器件的影响。避免热量积累和在本规格书中指定的最大额定范围内操作是必要的

11.6.2 The equation ① indicates correlation between Tj and Ta, and the equation ② indicates correlation between Tj and Ts

等式①表明 Tj 和 Ta 的相互关系，等式②表明 Tj 和 Tc 的相互关系

Tj = Ta + Rthj-a *W ..... ①

Tj = Tc + Rthj-c *W ..... ②

Tj = dice junction temperature: °C Tj =晶片结点温度：°C

Ta = ambient temperature:°C Ta =环境温度：°C

Tc = substrate test point temperature:°C Tc=基板测试点温度：°C

Rth j-a = heat resistance from dice junction temperature to ambient temperature : °C / W

Rth j-a=晶片结温至环境温度之间的热阻：℃/W

Rth j-c = heat resistance from dice junction temperature to Ts measuring point : °C / W

Rth j-c=晶片结温至 Ts 测量点之间的热阻：℃/W

W = inputting power (IFx VF) : W

W=输入功率 (IFx VF) : W

11.6.3 Thermal model 热模型

shows a thermal model for a single COB mounted to a heat sink.

显示单一 COB 材料到散热器的热传导模型