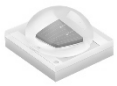
OVERVIEW



Emission color: White

Lens appearance: White

Chip: InGaN

Applicable to all SMT assembly methods.

Compatible with infrared and vapor phase reflow soldering processes.

Compatible with automatic placement equipment.

FEATURES:

3535 is a high power package that provides high luminance

from a super robust package to enable cost effective and reliable fixture,3535 uses an industry standard 3535 surface mount package with a fairly small Light Emitting Surface (LES).

Queendom 3535 Multiple color temperatures & high color rendering: 2700K–6500K, supporting CRI > 80/90 options And offers hot-color targeting to ensure that the LEDs are within color target at application

conditions of 85°C. Futhermore, with the latest NightScape Technology,

Durable packaging: anti-sulfurization, anti-UV, and anti-humidity design

APPLICATIONS:

Automobile: dashboard, brake lights, turn signals.

Biomedical optics, instrument and equipment testing

Status indicator: consumer electronics and industrial electronics.

Security, infrared monitoring, night vision

Industrial lighting: factory lights, warehouse lighting, high-power ceiling lights

Automotive lighting: high beam lights, engineering vehicles/special vehicles headlights

Plant lighting/medical light sources: can be matched with customized spectrum versions

ABSOLUTE MAXIMUM RATINGS

Table 1. Absolute maximum ratings for LEDs.

PARAMETER	AXIMUM RATINGS
Parameter PD (mW)	≤3800mW
DC Forward Current [1, 2]	350mA HP3535W**WE
	700mA HP3535W**WF
	1000mA HP3535W**WG
Peak Pulsed Forward Current [1, 3]	400mA HP3535W**WE
	850mA HP3535W**WF
	1200mA HP3535W**WG
LED Junction Temperature [1] (DC & Pulse)	125°C
Reverse Voltage (Vreverse)	5
ESD Sensitivity (ANSI/ESDA/JEDEC JS-001-2012)	Class 2
LED Storage Temperature	-40°C to 80°C
Operating Temperature Range	Minus 40°C To plus 80°C
Soldering Temperature	JEDEC 020c 260°C
Allowable Reflow Cycles	3~5 Seconds
ESD Sensitivity	2000V HBM

Notes for Table 1:Proper current derating must be observed to maintain the junction temperature below the maximum allowable junction temperature.Single-color light.At 0.01ms pulse on time test with a pulse period of 0.1ms.

PRODUCT MODEL CODE CORRESPONDING SKU TABLE

PRODUCT	RANK	NOMINAL CCT/K	TEST (mA)	PART NUMBER
HP3535WY2WE	HP0101	2700K	350	8541401000HP0101
HP3535WV2WE	HP0102	3000K	350	8541401000HP0102
HP3535WU2WE	HP0103	3500K	350	8541401000HP0103
HP3535WT2WE	HP0104	4000K	350	8541401000HP0104
HP3535WR2WE	HP0105	5000K	350	8541401000HP0105
HP3535WQ2WE	HP0106	5700K	350	8541401000HP0106
HP3535WP2WE	HP0107	6500K	350	8541401000HP0107
HP3535WD2WE	HP0108	7600K	350	8541401000HP0108
HP3535WY2WF	HP0109	2700K	700	8541401000HP0109
HP3535WV2WF	HP0110	3000K	700	8541401000HP0110
HP3535WU2WF	HP0111	3500K	700	8541401000HP0111
HP3535WT2WF	HP0112	4000K	700	8541401000HP0112
HP3535WR2WF	HP0113	5000K	700	8541401000HP0113
HP3535WQ2WF	HP0114	5700K	700	8541401000HP0114
HP3535WP2WF	HP0115	6500K	700	8541401000HP0115
HP3535WD2WF	HP0116	7600K	700	8541401000HP0116
HP3535WY2WG	HP0117	2700K	1000	8541401000HP0117
HP3535WV2WG	HP0118	3000K	1000	8541401000HP0118
HP3535WU2WG	HP0119	3500K	1000	8541401000HP0119
HP3535WT2WG	HP0120	4000K	1000	8541401000HP0120
HP3535WR2WG	HP0121	5000K	1000	8541401000HP0121
HP3535WQ2WG	HP0122	5700K	1000	8541401000HP0122
HP3535WP2WG	HP0123	6500K	1000	8541401000HP0123
HP3535WD2WG	HP0124	7600K	1000	8541401000HP0124

PRODUCT ELECTRICAL INDEX

Table 2. Product performance of Queendom Commercial LEDs at specified test conditions, Continued., T_j=25°C .

PRODUCT	RANK	NOMINAL	CRI	FLUX (lm)		TYPICAL	TEST	PART NUMBER
		CCT/K	[2] Ra	MIN	MAX	2Θ 1/2	(mA)	
HP3535WY2WE	HP0101	2700K	80	100	160	120	350	8541401000HP0101
HP3535WV2WE	HP0102	3000K	80	100	160	120	350	8541401000HP0102
HP3535WU2WE	HP0103	3500K	80	100	160	120	350	8541401000HP0103
HP3535WT2WE	HP0104	4000K	80	100	160	120	350	8541401000HP0104
HP3535WR2WE	HP0105	5000K	80	100	160	120	350	8541401000HP0105
HP3535WQ2WE	HP0106	5700K	80	100	160	120	350	8541401000HP0106
HP3535WP2WE	HP0107	6500K	80	100	160	120	350	8541401000HP0107
HP3535WD2WE	HP0108	7600K	80	100	160	120	350	8541401000HP0108
HP3535WY2WF	HP0109	2700K	80	190	240	120	700	8541401000HP0109
HP3535WV2WF	HP0110	3000K	80	190	240	120	700	8541401000HP0110
HP3535WU2WF	HP0111	3500K	80	190	240	120	700	8541401000HP0111
HP3535WT2WF	HP0112	4000K	80	190	240	120	700	8541401000HP0112
HP3535WR2WF	HP0113	5000K	80	190	240	120	700	8541401000HP0113
HP3535WQ2WF	HP0114	5700K	80	190	240	120	700	8541401000HP0114
HP3535WP2WF	HP0115	6500K	80	190	240	120	700	8541401000HP0115
HP3535WD2WF	HP0116	7600K	80	190	240	120	700	8541401000HP0116
HP3535WY2WG	HP0117	2700K	80	210	430	120	1000	8541401000HP0117
HP3535WV2WG	HP0118	3000K	80	210	430	120	1000	8541401000HP0118
HP3535WU2WG	HP0119	3500K	80	210	430	120	1000	8541401000HP0119
HP3535WT2WG	HP0120	4000K	80	210	430	120	1000	8541401000HP0120
HP3535WR2WG	HP0121	5000K	80	210	430	120	1000	8541401000HP0121
HP3535WQ2WG	HP0122	5700K	80	210	430	120	1000	8541401000HP0122
HP3535WP2WG	HP0123	6500K	80	210	430	120	1000	8541401000HP0123
HP3535WD2WG	HP0124	7600K	80	210	430	120	1000	8541401000HP0124

Notes:

The dominant wavelength (λd/cct) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

maintains a ±7.5% tolerance on luminous fl ux measurements, ±0.15V tolerance on forward voltage measurements, and ±2 tolerance on CRI measurements

Products tested under pulsed condition (10ms pulse width) at nominal drive current.

Typical pulsed test performance values are provided as reference only and are not a guarantee of performance.

ELECTRICAL AND THERMAL CHARACTERISTICS

Table 4Product performance of Queendom 3535 at rated current, T_j=25°C .

PRODUCT	COLOR	TYPICAL SPECTRAL HALF-WIDTH [1] (K)	TYPICAL TEMPERATURE COEFFICIENT OF DOMINANT WAVELENGTH (CCT/°C)	TYPICAL VIEWING ANGLE [2]	PART NUMBER
HP3535W**	2700K	50	−2.5	120°	8541401000HP01
	3000K	100	−2.2	120°	
	3500K	100	−1.9	120°	
	4000K	120	−1.6	120°	
	5000K	120	−1.2	120°	
	5700K	150	−1.0	120°	
	6500K	249	−0.9	120°	
	7600K	300	−0.8	120°	

Notes for Table

Notes for Table 2:Spectral half-width is the spectral bandwidth at 50% of the peak intensity.

Viewing angle is the off axis angle from the LED centerline where the luminous intensity is ½ of the peak value.

ELECTRICAL AND THERMAL CHARACTERISTICS

Table5. Product performance of Queendom 3535 at 350MA rated current, T_j=25°C .

Product	COLOR	FORWARD VOLTAGE [1] (Vf)			TYPICAL TEMPERATURE COEFFICIENT OF FORWARD VOLTAGE [2] (mV/°C)	TYPICAL THERMAL RESISTANCE—JUNCTION TO SOLDER PAD (°C/W)
		MINIMUM	TYPICAL	MAXIMUM		
HP3535W**W*	2700K	2.80	3.00	3.20	**−2.4**	**2.8**
	3000K	2.80	3.00	3.20	**−2.4**	**2.8**
	3500K	2.80	3.00	3.20	**−2.4**	**2.8**
	4000K	2.80	3.00	3.20	**−2.4**	**2.8**
	5000K	2.80	3.00	3.20	**−2.4**	**2.8**
	5700K	2.80	3.00	3.20	**−2.4**	**2.8**
	6500K	2.80	3.00	3.20	**−2.4**	**2.8**
	7600K	2.80	3.00	3.20	**−2.4**	**2.8**

Notes for Table :

Spectral half-width is the spectral bandwidth at 50% of the peak intensity.

Viewing angle is the off axis angle from the LED centerline where the luminous intensity is ½ of the pe

CHARACTERISTIC CURVES

SPECTRAL POWER DISTRIBUTION CHARACTERISTIC

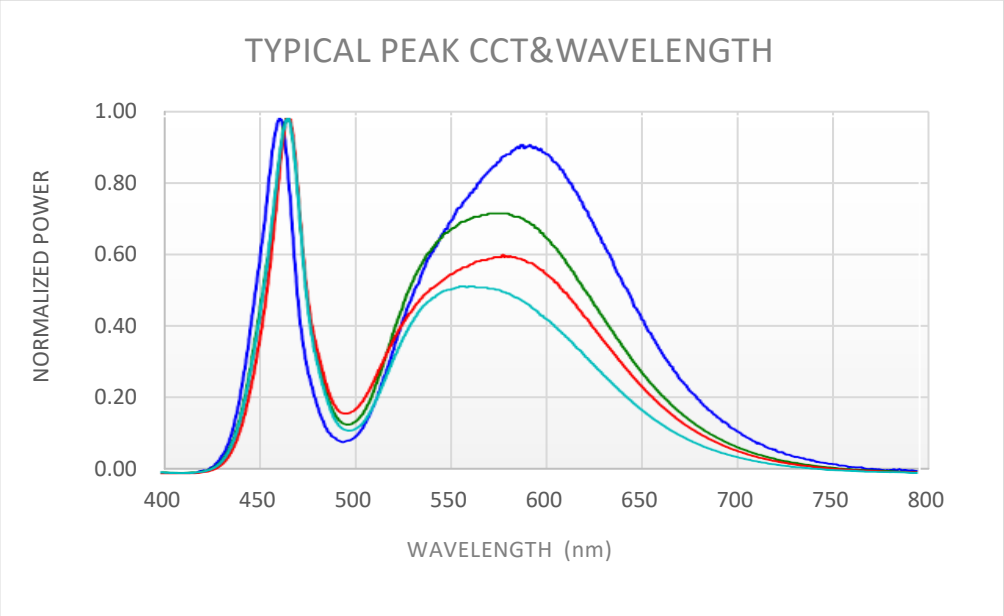


Figure 1. Typical normalized light output vs. junction temperature for at specified test current.Tj=25°C

LIGHT OUTPUT CHARACTERISTICS

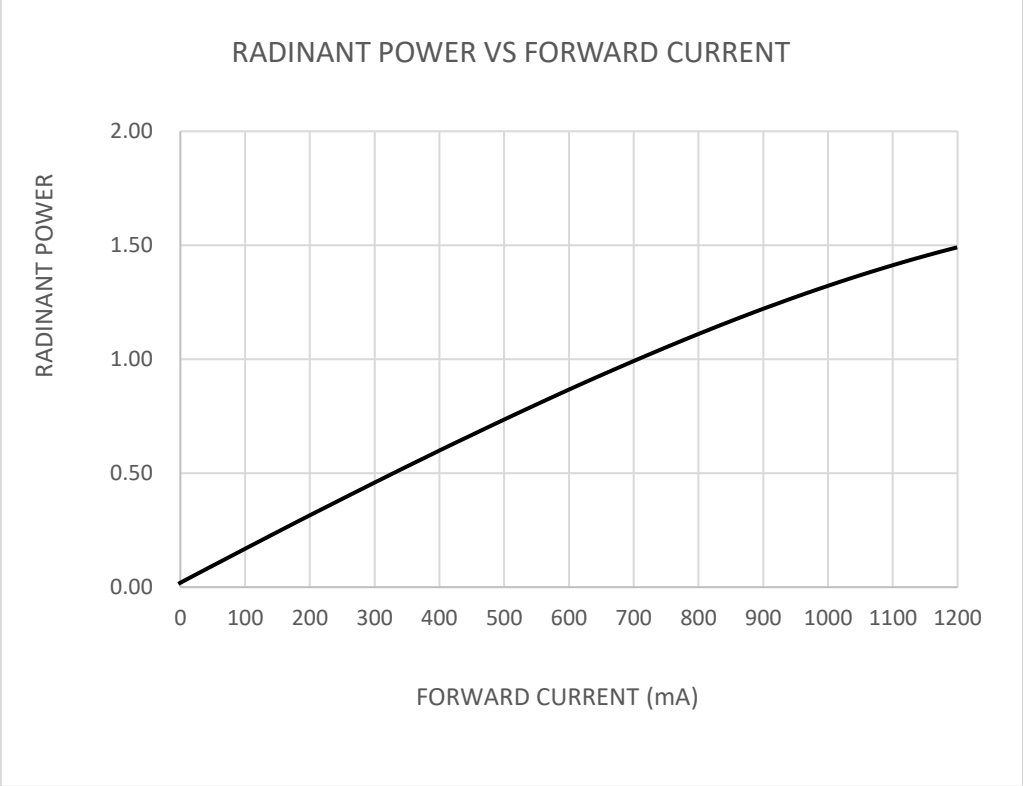


Figure 2 Typical normalized radiant power vs. junction temperature for at Tj=25ºC.

LIGHT OUTPUT CHARACTERISTICS

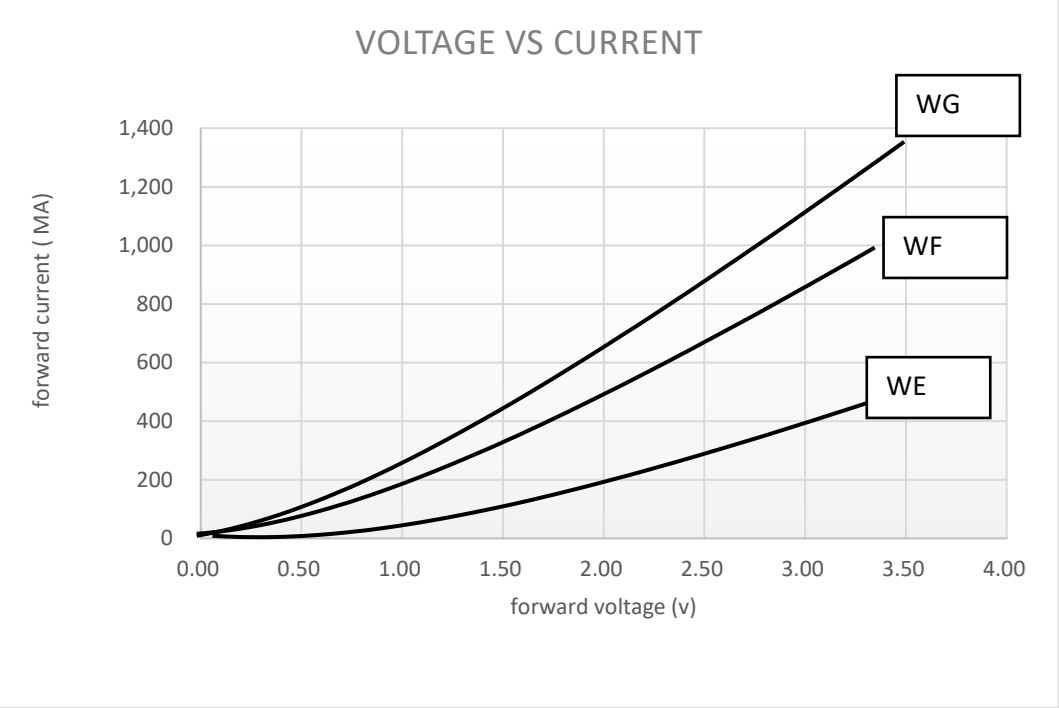


Figure 3. Typical forward current vs. forward voltage for at Tj=25°C.

RADIATION PATTERN CHARACTERISTICS

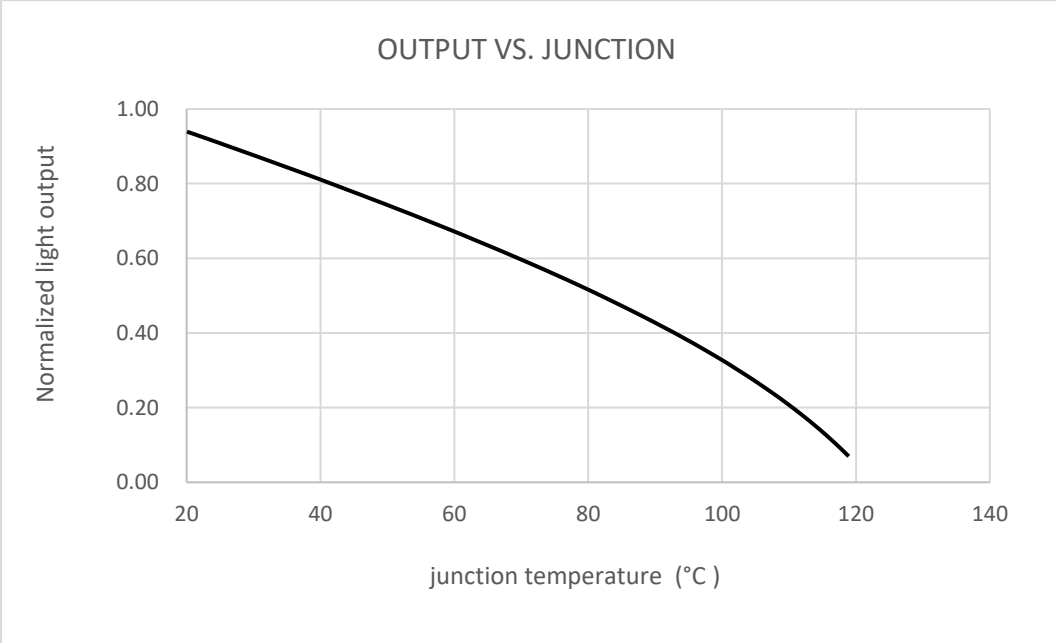
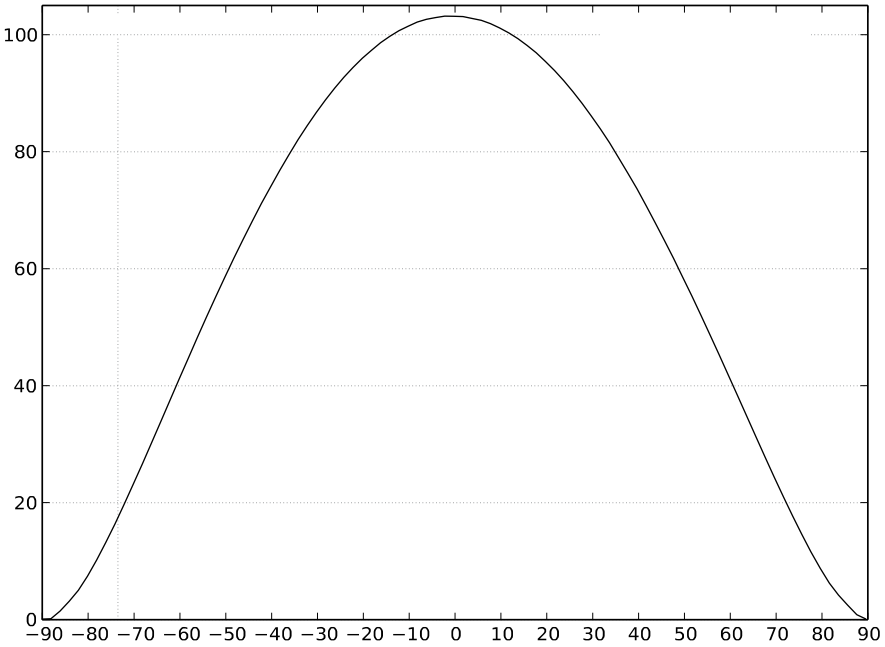


Figure 4. Typical normalized light output vs. junction temperature for at test current.

TYPICAL RADIATION PATTERN



Notes for Figure :

1. Typical viewing angle is 90°.

2. The viewing angle is defi ned as the off axis angle from the centerline where luminous intensity (Iv) is ½ of the peak value.

TYPICAL RADIATION PATTERN

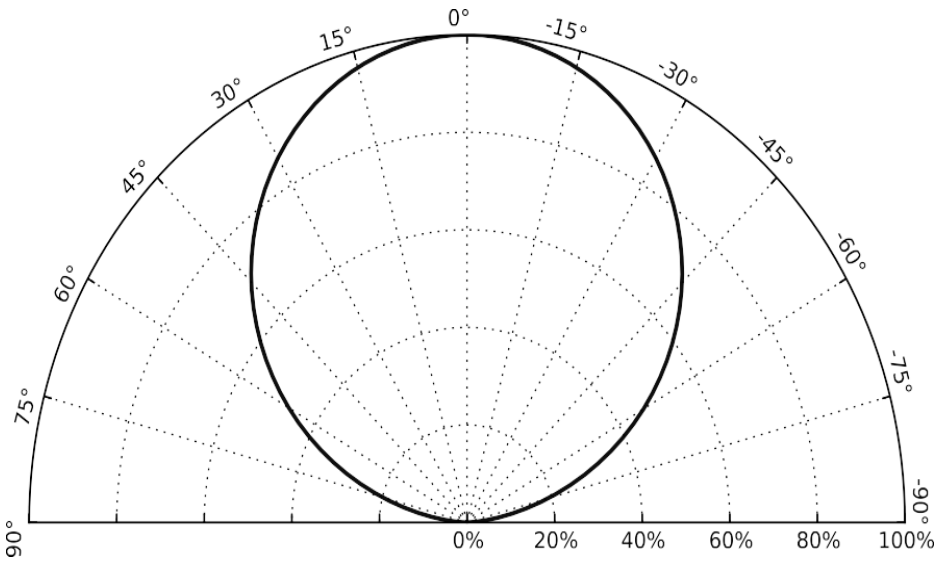
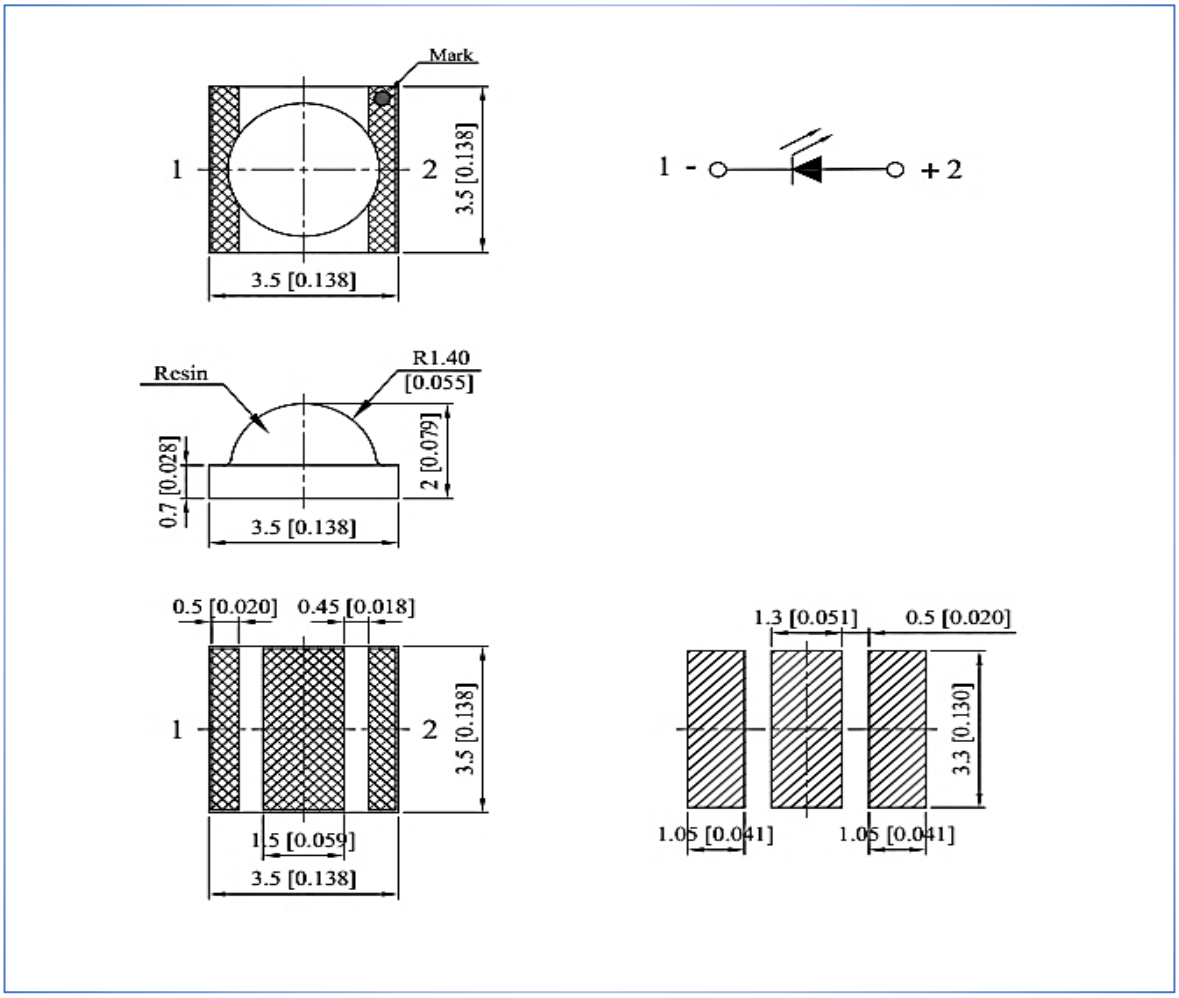


Figure 5. TYPICAL POLAR RADIATION PATTERN AT 700MA, TSP=25°C

DIMENSIONAL DRAWING:



Notes for Figure :

1. Drawings are not to scale.
2. Drawing dimensions are in millimeters.
3. Unless otherwise specifi ed, tolerances are ± 0.10mm.

RECOMMENDED SOLDER PAD

For superior solder joint connectivity results we recommend soldering under standard nitrogen atmosphere. Package not suitable for ultra sonic cleaning

Chromaticity Region & Coordinates

Figure 1a. Typical normalized power vs. wavelength for QUEENDOM LEDs, Tj=25°C.

Region	CIE x	CIE y	Region	CIE x	CIE y
Y rank (2200 K)					
Y1	0.4854	0.4022	Y9	0.4974	0.421
	0.4914	0.4116		0.5033	0.4304
	0.4964	0.4116		0.5087	0.4304
	0.4903	0.4022		0.5025	0.421
Y2	0.4903	0.4022	YA	0.5025	0.421
	0.4964	0.4116		0.5087	0.4304
	0.5014	0.4116		0.514	0.4303
	0.4952	0.4023		0.5077	0.421
Y3	0.4952	0.4023	YB	0.5077	0.421
	0.5014	0.4116		0.514	0.4303
	0.5065	0.4116		0.5194	0.4303
	0.5	0.4023		0.5129	0.421
Y4	0.5	0.4023	YC	0.5129	0.421
	0.5065	0.4116		0.5194	0.4303
	0.5115	0.4116		0.5247	0.4303
	0.5049	0.4023		0.5181	0.421
Y5	0.4914	0.4116	YD	0.5033	0.4304
	0.4974	0.421		0.5093	0.4398
	0.5025	0.421		0.5148	0.4398
	0.4964	0.4116		0.5087	0.4304
Y6	0.4964	0.4116	YE	0.5087	0.4304
	0.5025	0.421		0.5148	0.4398
	0.5077	0.421		0.5203	0.4397
	0.5014	0.4116		0.514	0.4303
Y7	0.5014	0.4116	YF	0.514	0.4303
	0.5077	0.421		0.5203	0.4397
	0.5129	0.421		0.5258	0.4397
	0.5065	0.4116		0.5194	0.4303
Y8	0.5065	0.4116	YG	0.5194	0.4303
	0.5129	0.421		0.5258	0.4397
	0.5181	0.421		0.5313	0.4396
	0.5115	0.4116		0.5247	0.4303

Region	CIE x	CIE y	Region	CIE x	CIE y
W rank (2700 K)					
W1	0.4417	0.394	W9	0.4515	0.4128
	0.4472	0.3953		0.4573	0.4141
	0.4522	0.4047		0.4623	0.4235
	0.4466	0.4034		0.4563	0.4222
W2	0.4472	0.3953	WA	0.4573	0.4141
	0.4527	0.3966		0.4631	0.4153
	0.4579	0.4059		0.4683	0.4247
	0.4522	0.4047		0.4623	0.4235
W3	0.4527	0.3966	WB	0.4631	0.4153
	0.4582	0.3978		0.4689	0.4166
	0.4635	0.4072		0.4742	0.426
	0.4579	0.4059		0.4683	0.4247
W4	0.4582	0.3978	WC	0.4689	0.4166
	0.4637	0.3991		0.4747	0.4179
	0.4692	0.4085		0.4802	0.4272
	0.4635	0.4072		0.4742	0.426
W5	0.4466	0.4034	WD	0.4563	0.4222
	0.4522	0.4047		0.4623	0.4235
	0.4573	0.4141		0.4673	0.4329
	0.4515	0.4128		0.4612	0.4316
W6	0.4522	0.4047	WE	0.4623	0.4235
	0.4579	0.4059		0.4683	0.4247
	0.4631	0.4153		0.4735	0.4341
	0.4573	0.4141		0.4673	0.4329
W7	0.4579	0.4059	WF	0.4683	0.4247
	0.4635	0.4072		0.4742	0.426
	0.4689	0.4166		0.4796	0.4354
	0.4631	0.4153		0.4735	0.4341
W8	0.4635	0.4072	WG	0.4742	0.426
	0.4692	0.4085		0.4802	0.4272
	0.4747	0.4179		0.4857	0.4366
	0.4689	0.4166		0.4796	0.4354

Figure 1b. Typical normalized power vs. wavelength for QUEENDOM LEDs, Tj=25°C.

Region	CIE x	CIE y	Region	CIE x	CIE y
U rank (3500 K)					
U1	0.3889	0.369	U9	0.3941	0.3848
	0.3915	0.3768		0.3968	0.393
	0.3981	0.38		0.404	0.3966
	0.3953	0.372		0.401	0.3882
U2	0.3953	0.372	UA	0.401	0.3882
	0.3981	0.38		0.404	0.3966
	0.4048	0.3832		0.4113	0.4001
	0.4017	0.3751		0.408	0.3916
U3	0.4017	0.3751	UB	0.408	0.3916
	0.4048	0.3832		0.4113	0.4001
	0.4116	0.3865		0.4186	0.4037
	0.4082	0.3782		0.415	0.395
U4	0.4082	0.3782	UC	0.415	0.395
	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	0.393
	0.3941	0.3848		0.3996	0.4015
	0.401	0.3882		0.4071	0.4052
	0.3981	0.38		0.404	0.3966
U6	0.3981	0.38	UE	0.404	0.3966
	0.401	0.3882		0.4071	0.4052
	0.408	0.3916		0.4146	0.4089
	0.4048	0.3832		0.4113	0.4001
U7	0.4048	0.3832	UF	0.4113	0.4001
	0.408	0.3916		0.4146	0.4089
	0.415	0.395		0.4222	0.4127
	0.4116	0.3865		0.4186	0.4037
U8	0.4116	0.3865	UG	0.4186	0.4037
	0.415	0.395		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 (4000 K)					
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	0.376
	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
	0.384	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

Figure 1c. Typical normalized power vs. wavelength for QUEENDOM LEDs, Tj=25°C.

Region	CIE x	CIE y	Region	CIE x	CIE y
R rank (5000 K)					
R1	0.3366	0.3369	R9	0.3374	0.3554
	0.3369	0.3431		0.3371	0.3493
	0.3407	0.346		0.3411	0.3522
	0.3403	0.3398		0.3415	0.3587
R2	0.3403	0.3398	RA	0.3415	0.3587
	0.3407	0.346		0.3411	0.3522
	0.3446	0.3491		0.3451	0.3554
	0.344	0.3427		0.3457	0.3621
R3	0.3446	0.3491	RB	0.3451	0.3554
	0.344	0.3427		0.3457	0.3621
	0.3477	0.3458		0.35	0.3655
	0.3485	0.3522		0.3492	0.3587
R4	0.3485	0.3522	RC	0.3492	0.3587
	0.3477	0.3458		0.35	0.3655
	0.3514	0.3487		0.3542	0.369
	0.3524	0.3554		0.3533	0.362
R5	0.3371	0.3493	RD	0.3376	0.3616
	0.3369	0.3431		0.3374	0.3554
	0.3407	0.346		0.3415	0.3587
	0.3411	0.3522		0.342	0.3652
R6	0.3407	0.346	RE	0.3415	0.3587
	0.3411	0.3522		0.342	0.3652
	0.3451	0.3554		0.3463	0.3687
	0.3446	0.3491		0.3457	0.3621
R7	0.3446	0.3491	RF	0.3457	0.3621
	0.3451	0.3554		0.3463	0.3687
	0.3492	0.3587		0.3507	0.3724
	0.3485	0.3522		0.35	0.3655
R8	0.3485	0.3522	RG	0.35	0.3655
	0.3492	0.3587		0.3507	0.3724
	0.3533	0.362		0.3551	0.376
	0.3524	0.3554		0.3542	0.369

Region	CIE x	CIE y	Region	CIE x	CIE y
Q rank (5700 K)					
Q1	0.3218	0.3298	Q9	0.3211	0.3407
	0.3222	0.3243		0.3215	0.3353
	0.3258	0.3275		0.3254	0.3388
	0.3256	0.3331		0.3252	0.3444
Q2	0.3256	0.3331	QA	0.3252	0.3444
	0.3258	0.3275		0.3254	0.3388
	0.3294	0.3306		0.3293	0.3423
	0.3294	0.3364		0.3293	0.3481
Q3	0.3294	0.3364	QB	0.3293	0.3481
	0.3294	0.3306		0.3293	0.3423
	0.333	0.3338		0.3332	0.3458
	0.3331	0.3398		0.3333	0.3518
Q4	0.3331	0.3398	QC	0.3333	0.3518
	0.333	0.3338		0.3332	0.3458
	0.3366	0.3369		0.3371	0.3493
	0.3369	0.3431		0.3374	0.3554
Q1	0.3215	0.3353	QD	0.3207	0.3462
	0.3218	0.3298		0.3211	0.3407
	0.3256	0.3331		0.3252	0.3444
	0.3254	0.3388		0.325	0.3501
Q2	0.3254	0.3388	QE	0.325	0.3501
	0.3256	0.3331		0.3252	0.3444
	0.3294	0.3364		0.3293	0.3481
	0.3293	0.3423		0.3292	0.3539
Q3	0.3293	0.3423	QF	0.3292	0.3539
	0.3294	0.3364		0.3293	0.3481
	0.3331	0.3398		0.3333	0.3518
	0.3332	0.3458		0.3334	0.3578
Q4	0.3332	0.3458	QG	0.3334	0.3578
	0.3331	0.3398		0.3333	0.3518
	0.3369	0.3431		0.3374	0.3554
	0.3371	0.3493		0.3376	0.3616

Figure 1d. Typical normalized power vs. wavelength for QUEENDOM LEDs, Tj=25°C.

Region	CIE x	CIE y	Region	CIE x	CIE y
P rank (6500 K)					
P1	0.3068	0.3113	P9	0.3048	0.3207
	0.3106	0.315		0.3089	0.3249
	0.3098	0.3199		0.308	0.3298
	0.3058	0.316		0.3038	0.3256
P2	0.3106	0.315	PA	0.3089	0.3249
	0.3144	0.3186		0.313	0.329
	0.3137	0.3238		0.3123	0.3341
	0.3098	0.3199		0.308	0.3298
P3	0.3144	0.3186	PB	0.313	0.329
	0.3183	0.3224		0.3172	0.3332
	0.3177	0.3278		0.3166	0.3384
	0.3137	0.3238		0.3123	0.3341
P4	0.3183	0.3224	PC	0.3172	0.3332
	0.3221	0.3261		0.3214	0.3373
	0.3218	0.3317		0.321	0.3427
	0.3177	0.3278		0.3166	0.3384
P5	0.3058	0.316	PD	0.3038	0.3256
	0.3098	0.3199		0.308	0.3298
	0.3089	0.3249		0.3072	0.3348
	0.3048	0.3207		0.3028	0.3304
P6	0.3098	0.3199	PE	0.308	0.3298
	0.3137	0.3238		0.3123	0.3341
	0.313	0.329		0.3115	0.3391
	0.3089	0.3249		0.3072	0.3348
P7	0.3137	0.3238	PF	0.3123	0.3341
	0.3177	0.3278		0.3166	0.3384
	0.3172	0.3332		0.316	0.3436
	0.313	0.329		0.3115	0.3391
P8	0.3177	0.3278	PG	0.3166	0.3384
	0.3218	0.3317		0.321	0.3427
	0.3214	0.3373		0.3206	0.3481
	0.3172	0.3332		0.316	0.3436

Product Bin and Labeling Definitions

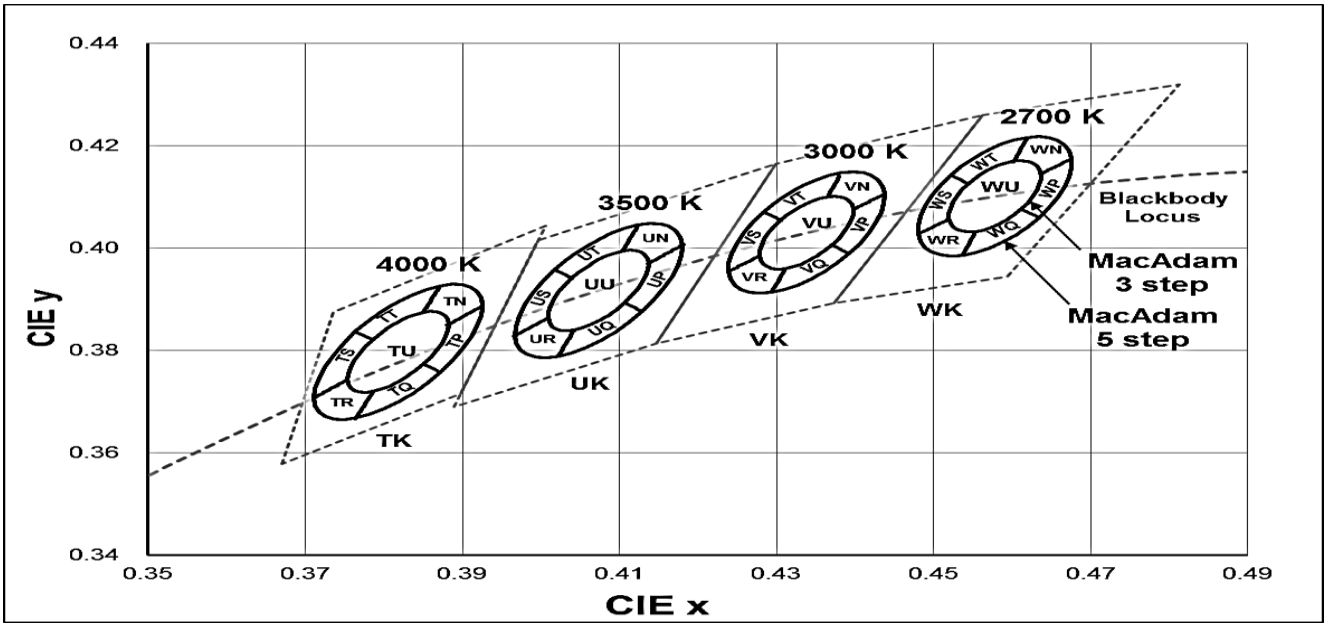
Decoding Product Bin Labeling

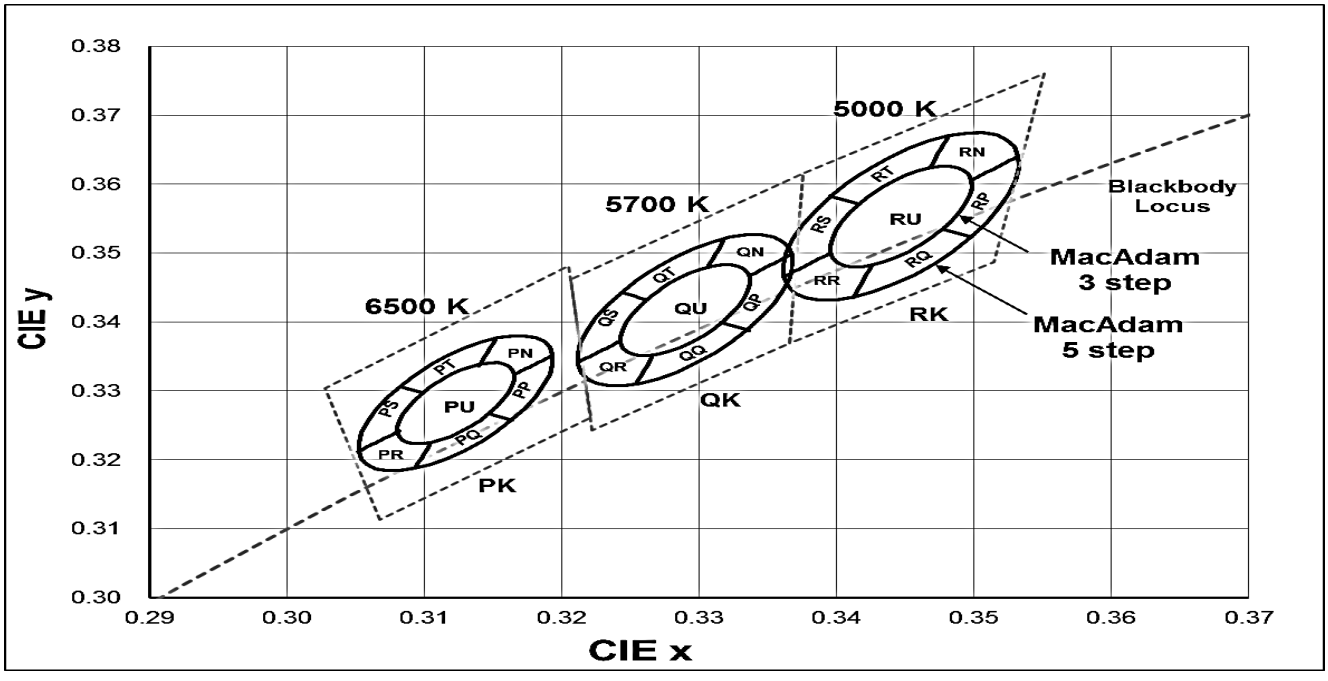
In the manufacturing of semiconductor products, there are variations in performance around the average values given in the technical datasheet. For this reason, Queendom leds bins LED components for luminous flux, intensity, radiometric power, color point, peak wavelength, dominant wavelength and forward voltage.

RANK NOMINAL CCT & COLOR COORDINATES

Chromaticity Region & Coordinates

Table 1a. Electrical and thermal characteristics for Queendom at specified test current, Tj=25°C





Dominant Wavelength Bins

RANK Table 1. Dominant wavelength bins & Product performance of Queendom Commercial LEDs at specified test conditions.

	Region	CIE x	CIE y	Major-axis	Minor-axis	Rotation
3 step	2700	0.4578	0.4101	0.0081	0.0042	53.7
	3000	0.4338	0.403	0.0083	0.0041	53.22
	3500	0.4073	0.3917	0.0093	0.0041	54
	4000	0.3818	0.3797	0.0094	0.004	53.72
	5000	0.3447	0.3553	0.0082	0.0035	59.62
	5700	0.3287	0.3417	0.0075	0.0032	59.1
	6500	0.3123	0.3282	0.0067	0.0029	58.57
5 step	2700	0.4578	0.4101	0.0135	0.007	53.7
	3000	0.4338	0.403	0.0138	0.0068	53.22
	3500	0.4073	0.3917	0.0155	0.0068	54
	4000	0.3818	0.3797	0.0157	0.0067	53.72
	5000	0.3447	0.3553	0.0137	0.0058	59.62
	5700	0.3287	0.3417	0.0125	0.0053	59.1
	6500	0.3123	0.3282	0.0112	0.0048	58.57

Notes:

1. The tolerance of luminous intensity (Iv)is ±15％.
2. The tolerance of dominant wavelength is ±1nm.
3. This specification is preliminary.
4.This specification is a standard specification of our factory, can make in accordance with customer's special requirement.

TABLE Forward Voltage BINS

Table 3. Electrical and thermal characteristics for Queendom at specified test current, Tj=25°C

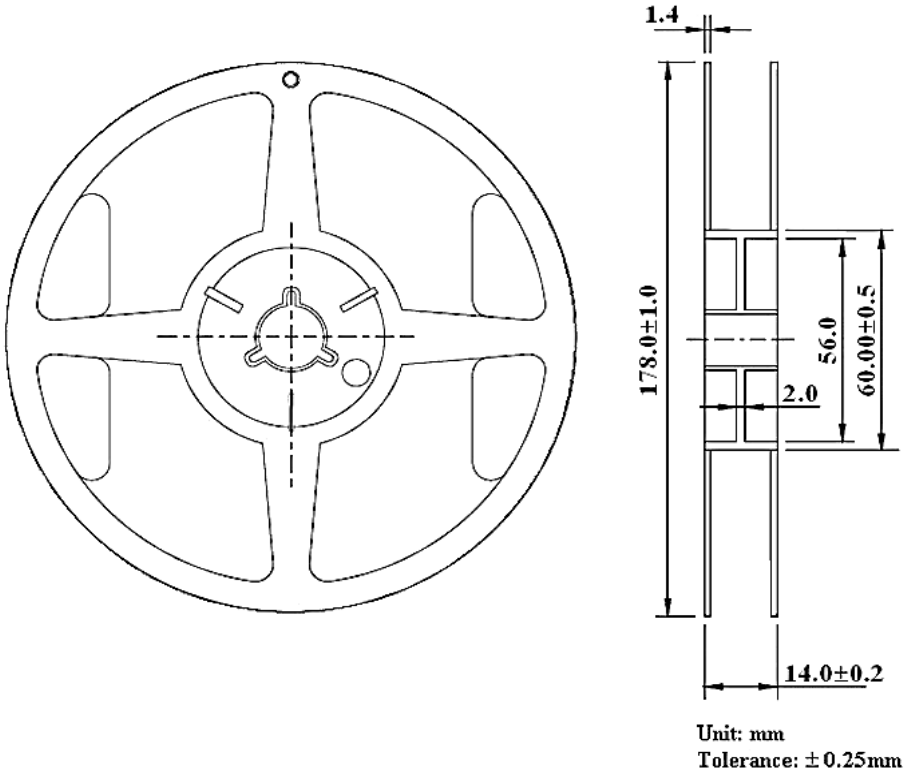
NUMBER	FORWARD VOLTAGE [1] (Vf)			RANK WAVELENGTH [2]		TYPICAL VOLTAGE
	MINIMUM	TYPICAL	MAXIMUM	MINIMUM	MAXIMUM	[3]
V1	1	1.2	1.4	0.1	0.2	0.2
V2	1.4	1.6	1.8	0.1	0.2	0.2
V3	1.8	2	2.2	0.1	0.2	0.2
V4	2.2	2.4	2.6	0.1	0.2	0.2
V5	2.6	2.8	3	0.1	0.2	0.2
V6	3	3.2	3.4	0.1	0.2	0.2
V7	3.4	3.6	3.8	0.1	0.2	0.2
V8	3.8	4	4.2	0.1	0.2	0.2
V9	4.2	4.4	4.6	0.1	0.2	0.2
VA	4.6	4.8	5	0.1	0.2	0.2
VB	5	5.2	5.4	0.1	0.2	0.2
VC	5.4	5.6	5.8	0.1	0.2	0.2
VD	5.8	6				
VE	6	7	8	1	2	2
VF	8	9	10	1	2	2
VG	10	11	12	1	2	2
VH	12	13	14	1	2	2
VI	14	15	16	1	2	2
VJ	16	17	18	1	2	2
VK	18	19	20	1	2	2
VL	20	21	22	1	2	2
VM	22	23	24	1	2	2
VN	24	25	26	1	2	2
VO	26	27	28	1	2	2

TABLE TYPICAL POWER BINS

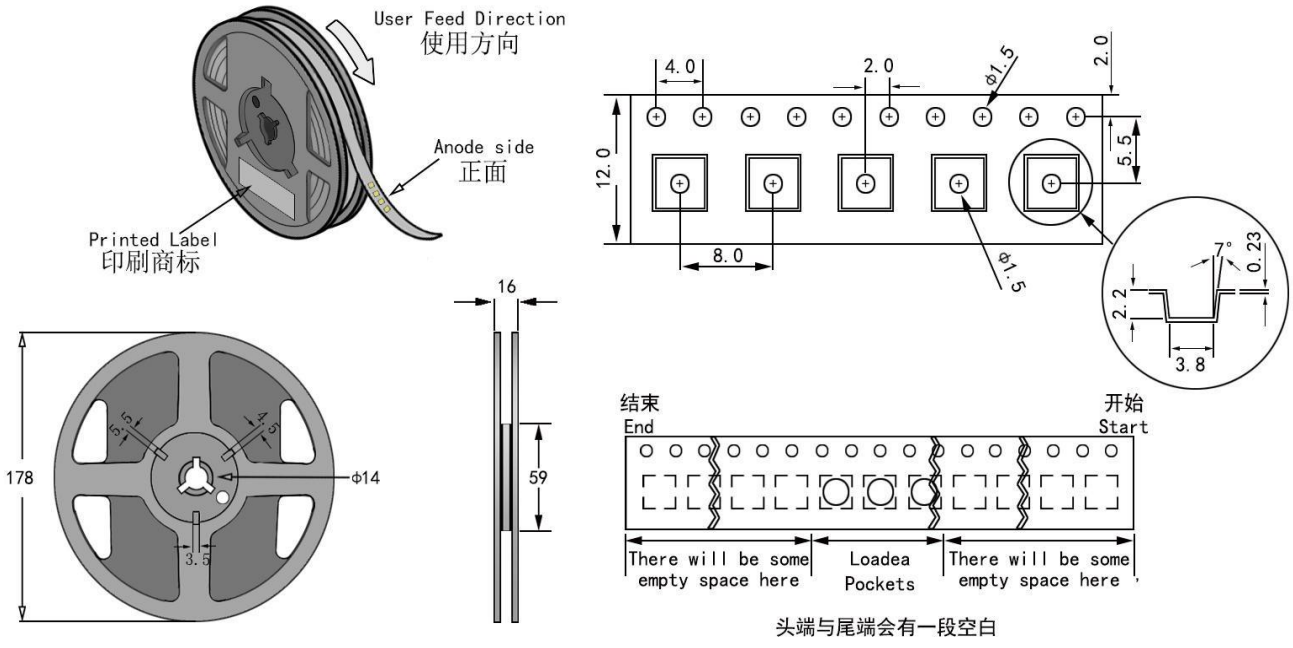
Table 4. Electrical and thermal characteristics for Queendom at specified test current, Tj=25°C

RANK NO.	TYPICAL POWER RANK (W) [1]		RANK POWER [2] (W)		TYPICAL POWER HALF WIDTH
	min	max	MINIMUM	MAXIMUM	[3] (W)
WE	1	3	1	3	3
WF	3	6	1	3	3
WG	6	9	1	3	3
WH	9	12	1	3	3
WI	12	15	1	3	3
WJ	15	18	1	3	3
WK	18	21	1	3	3
WL	21	24	1	3	3
WM	24	27	1	3	3
WN	27	30	2	3	3
WO	30	34	2	4	4
WP	34	38	2	4	4
WQ	38	42	2	4	4

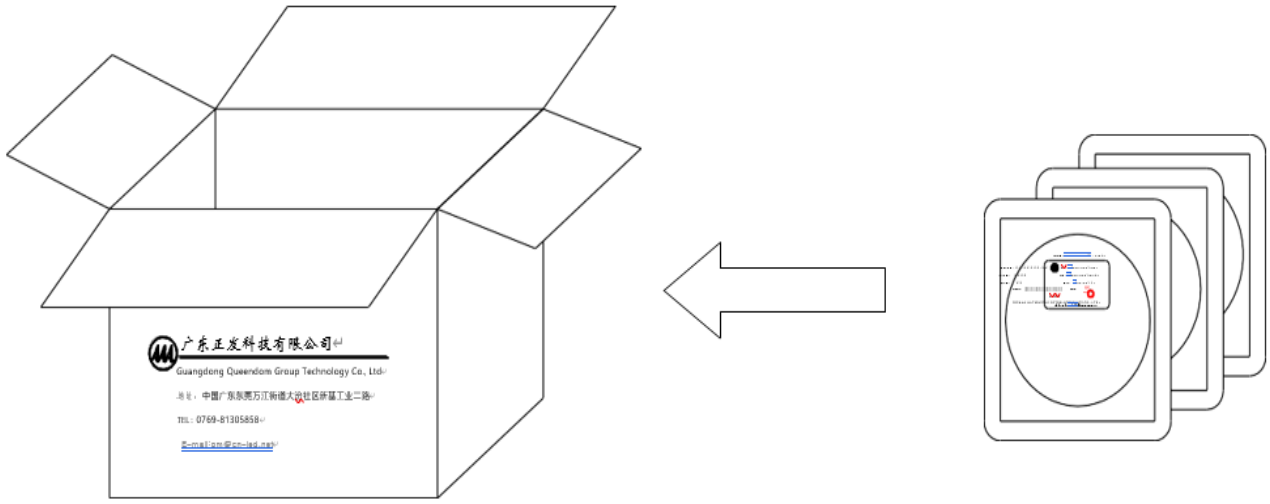
REEL DIMENSIONS:



CARRIER TAPE DIMENSIONS:



Packaging cartons



Information

- With Stopper

Without Stopper

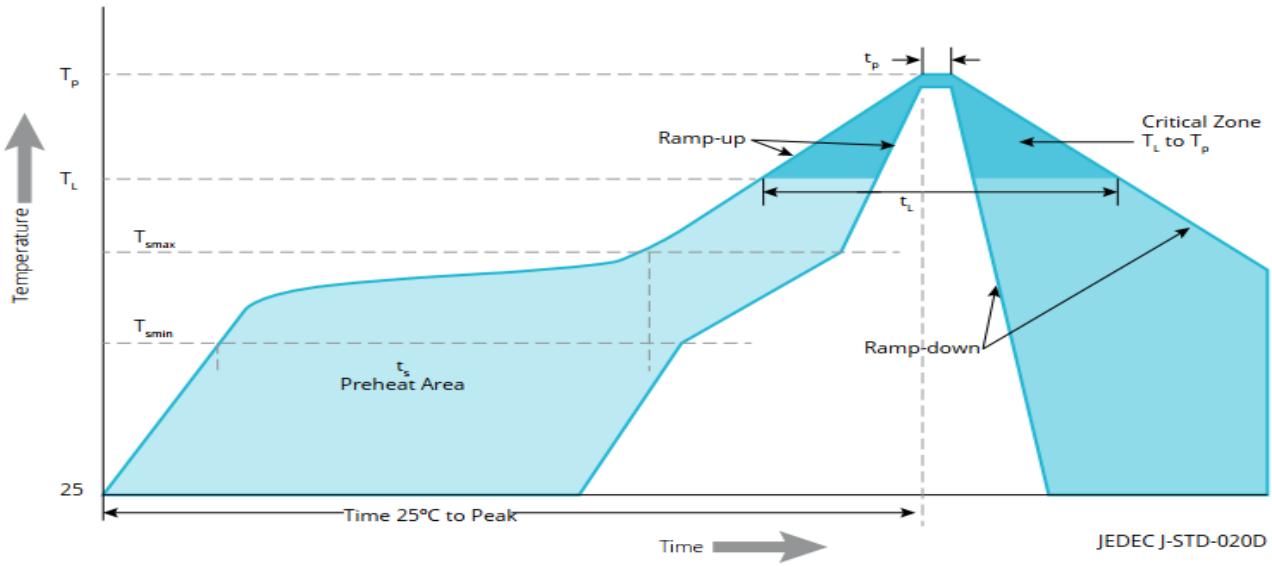
CPN:Customer's Product Number
P/N:Product Number
QTY:Packing Quantity
LOT NO:Lot Number
VF:Forward Voltage Rank
IV:Luminous Intensity Rank
WLD:Dom. Wavelength Rank
BIN:BIN Code
DATE:Date Of Dispatch

Packing Quantity

1. 1000 PCS/1 Bag,
2. 10 Inner Cartons/1 Outside Carton

CAUTIONS

Reflow Soldering Guidelines



Visualization of the acceptable reflow temperature profile as specified

Reflow profile characteristics for Queendom smd.

ProFIle Feature	lead-Free assemBly
Reheat Minimum Temperature (Tsmin)	150°C
Preheat Maximum Temperature (Tsmax)	200°C
Preheat Time (tsmin to tsmax)	60 to 120 seconds
Ramp-Up Rate (TL to Tp)	3°C / second maximum
Liquidus Temperature (TL)	217°C
Time Maintained Above Temperature TL (tL)	60 to 150 seconds
Peak / Classification Temperature (Tp)	260°C
Time Within 5°C of Actual Temperature (tp)	20 to 40 seconds
Ramp-Down Rate (Tp to TL)	6°C / second maximum
Time 25°C to P	8 minutes maximum

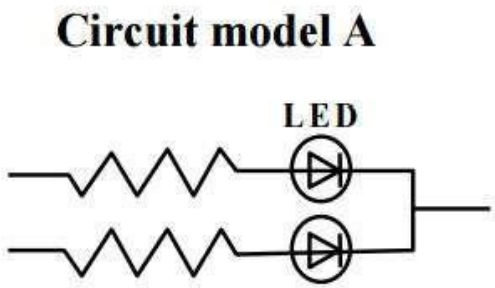
JEDEC Moisture Sensitivity

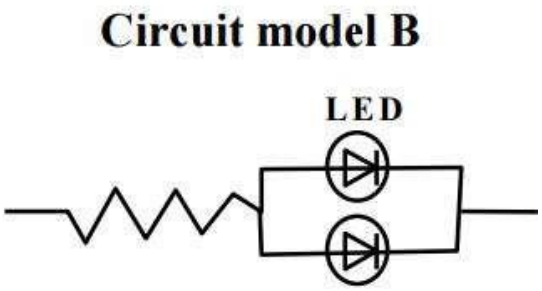
Moisture sensitivity levels for LEDs Line

leVel	Floor lIFe		soaK requlrements standard	
	tIme	condItIons	tIme	condItIons
1	Unlimited	≤30°C / 85% RH	168 Hours +5 / -0	85°C / 85% RH

Drive Method

An LED is a current-operated device. In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended that a current limiting resistor be incorporated in the drive circuit, in series with each LED as shown in Circuit A below.





Recommended circuit

The brightness of each LED might appear different due to the differences in the I-V characteristics of those LEDs.

Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

ESD (Electrostatic Discharge)

Static Electricity or power surge will damage the LED. Suggestions to prevent ESD damage:

Use a conductive wrist band or anti- electrostatic glove when handling these LEDs.

All devices, equipment, and machinery must be properly grounded.

Work tables, storage racks, etc. should be properly grounded.

Use ion blower to neutralize the static charge which might have built up on surface of the LEDs plastic lens as a result of friction between LEDs during storage and handing.

Others

The information included in this document reflects representative usage scenarios and is intended for technical reference only.

The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to the latest datasheet for the updated specifications.

When using the products referenced in this document, please make sure the product is being operated within the environmental and electrical limits specified in the datasheet. If customer usage exceeds the specified limits, Queendom will not be responsible for any subsequent issues.

The LEDs described here are intended to be used for ordinary electronic equipment (such as office equipment, communication equipment and household applications). Consult Queendom's Sales in advance for information on applications in which exceptional reliability is required, particularly when the failure or malfunction of the LEDs may directly jeopardize life or health, such as in aviation, transportation, traffic control equipment, medical and life support systems and safety devices.

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