



SMD LED CHIPS

QUEENDOM GROUP

SMD PLCC LEDS

S3014 WHITE LED SERIES

THREE-SEGMENT
CHIP STRUCTURE

OPTIMIZED HEAT
DISSIPATION

THREE-SEGMENT
CHIP STRUCTURE

OPTIMIZED HEAT
DISSIPATION



OVERVIEW

Package: PLCC 3014 White package with yellow diffuse lens

Chip Technology: InGaN

SMT Compatibility: Suitable for all surface mount assembly methods

Reflow Compatible: Supports both infrared and vapor phase reflow soldering processes

Automated Assembly: Fully compatible with automatic placement equipment

Multi-CCT Options: Available across wide Correlated Color Temperature range

Multiple CRI Levels: 70 CRI, 80 CRI, and 90 CRI options available



FEATURES:

The S3014 series represents Queendom's advanced high-efficiency white LED solution in a compact PLCC 3014 surface-mount package.

Engineered for superior performance and reliability in space-constrained applications, these LEDs feature:

Ultra-thin profile ideal for slim lighting designs

High-luminance output from a compact, low-profile package

Wide viewing angle (120°) enabled by optimized inter-reflector design

Small Light Emitting Surface (LES) for precise optical control and uniform light distribution

Hot-color targeting technology ensuring color consistency at 85°C operating conditions

Low thermal resistance for efficient heat dissipation in compact fixtures

APPLICATIONS:

Consumer Electronics: Smartphone backlighting, tablet displays, laptop keyboards

Architectural: Recessed downlights, linear lighting, cove lighting

Commercial: Office panels, retail display lighting, signage

Residential: LED bulbs, strip lights, under-cabinet lighting

Industrial: Status indicators, equipment panels, control systems

Quality Assurance

- ✓ RoHS compliant
- ✓ Hot-color targeting ensures consistent chromaticity at elevated temperatures (85°C)
- ✓ Industry-standard 3014 package dimensions for easy integration and PCB layout flexibility
- ✓ Optimized thermal management for extended operational life in high-density applications
- ✓ ESD protection up to 2kV (HBM) for robust handling during assembly

ABSOLUTE MAXIMUM RATINGS

Table 1. Absolute maximum ratings for LEDs.

PARAMETER	WHITE
Parameter PD (mW)	200
DC Forward Current ^[1, 2]	60 mA
Peak Pulsed Forward Current ^[1, 3]	100 mA
LED Junction Temperature ^[4] (DC & Pulse)	115°C
Reverse Voltage (V _{reverse})	5
ESD Sensitivity (ANSI/ESDA/JEDEC JS-001-2012)	Class 1
LED Storage Temperature	-40°C to 100°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:

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

Product Selection Guide

Table 2 . Product performance of Queendom LEDs at Tj=25°C

Model	Rank Code	Color Type	CRI	Test Current	Part Number
Device Model	Rank	CCT/K	(Ra)	(mA)	P/N
S3014YW2WA	SL1317	2200K	80	20	8541401000SL1317
S3014WW2WA	SL1318	2700K	80	20	8541401000SL1318
S3014WV2WA	SL1319	3000K	80	20	8541401000SL1319
S3014WU2WA	SL1320	3500K	80	20	8541401000SL1320
S3014WT2WA	SL1321	4000K	80	20	8541401000SL1321
S3014WR2WA	SL1322	5000K	80	20	8541401000SL1322
S3014WQ2WA	SL1323	5700K	80	20	8541401000SL1323
S3014WP2WA	SL1324	6500K	80	20	8541401000SL1324
S3014WD2WA	SL1325	7600K	80	20	8541401000SL1325
S3014WD2WA	SL1326	10500K	80	20	8541401000SL1326
S3014YW2WC	SL1327	2200K	80	60	8541401000SL1327
S3014WW2WC	SL1328	2700K	80	60	8541401000SL1328
S3014WV2WC	SL1329	3000K	80	60	8541401000SL1329
S3014WU2WC	SL1330	3500K	80	60	8541401000SL1330
S3014WT2WC	SL1331	4000K	80	60	8541401000SL1331
S3014WR2WC	SL1332	5000K	80	60	8541401000SL1332
S3014WQ2WC	SL1333	5700K	80	60	8541401000SL1333
S3014WP2WC	SL1334	6500K	80	60	8541401000SL1334
S3014WD2WC	SL1335	7600K	80	60	8541401000SL1335
S3014WD2WC	SL1336	10500K	80	60	8541401000SL1336

Product Electrical Index & TYPICALWAVELENGTH

IF =60 mA; TJ = 25 °C

Table 3 Product performance of Queendom LEDs at Tj=25°C

Model	Rank Code	Color Type	Luminous Flux (lm)		Forward Voltage VF (V)		Efficacy
Device Model	Rank	CCT/K	MIN	MAX	MIN	MAX	(lm/W)
S3014YW2WA	SL1317	2200K	6.6	8.6	2.6	3.4	126.42
S3014WW2WA	SL1318	2700K	6.8	8.8	2.6	3.4	129.92
S3014WV2WA	SL1319	3000K	6.9	9.1	2.6	3.4	133.25
S3014WU2WA	SL1320	3500K	7.1	9.3	2.6	3.4	137.08
S3014WT2WA	SL1321	4000K	7.1	9.3	2.6	3.4	137.08
S3014WR2WA	SL1322	5000K	7.1	9.3	2.6	3.4	137.08
S3014WQ2WA	SL1323	5700K	7.1	9.2	2.6	3.4	135.75
S3014WP2WA	SL1324	6500K	6.9	9.1	2.6	3.4	133.25
S3014WD2WA	SL1325	7600K	7.0	9.2	2.6	3.4	134.58
S3014WD2WA	SL1326	10500K	6.9	9.0	2.6	3.4	132.50
S3014YW2WC	SL1327	2200K	19.7	25.8	2.6	3.4	126.42
S3014WW2WC	SL1328	2700K	20.3	26.5	2.6	3.4	129.92
S3014WV2WC	SL1329	3000K	20.8	27.2	2.6	3.4	133.25
S3014WU2WC	SL1330	3500K	21.4	28.0	2.6	3.4	137.08
S3014WT2WC	SL1331	4000K	21.4	28.0	2.6	3.4	137.08
S3014WR2WC	SL1332	5000K	21.4	28.0	2.6	3.4	137.08
S3014WQ2WC	SL1333	5700K	21.2	27.7	2.6	3.4	135.75
S3014WP2WC	SL1334	6500K	20.8	27.2	2.6	3.4	133.25
S3014WD2WC	SL1335	7600K	21.0	27.5	2.6	3.4	134.58
S3014WD2WC	SL1336	10500K	20.7	27.0	2.6	3.4	132.50

Notes for Table 3:

1. Main wavelength measurement maintains an error of $\pm 1\text{nm}$.
2. Luminous flux measurement maintains an error of $\pm 7.5\%$.

OPTICAL CHARACTERISTICS

Table 5. Optical characteristics for Queendom LEDs at Tj=25°C

PRODUCT	COLOR	TYPICAL SPECTRAL HALF-WIDTH [1] (K)	TYPICAL TEMPERATURE COEFFICIENT OF DOMINANT WAVELENGTH (CCT /°C)	TYPICAL VIEWING ANGLE [2]
S3014**2WA S3014**2WC	2200K	45	-2.0 ~ -2.5	120°
	2700K	50	-1.8 ~ -2.3	120°
	3000K	100	-1.5 ~ -2.0	120°
	3500K	100	-1.5 ~ -2.0	120°
	4000K	120	-1.2 ~ -1.8	120°
	5000K	120	-1.0 ~ -1.5	120°
	5700K	150	-1.0 ~ -1.5	120°
	6500K	249	-0.6 ~ -1.0	120°
	7600K	300	-0.5 ~ -0.8	120°
	10500K	500	-0.4 ~ -0.7	120°

Notes for Table 3:

1. Spectral half-width is the spectral bandwidth at 50% of the peak intensity.
2. 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

Table 6 . Electrical and thermal characteristics for Queendom LEDs at Tj=25°C

Device Model	PEAK 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		
S3014**2WA	WHITE	2.60	3.00	3.40	-1.5 ~ -2.4	12 ~ 18
S3014**2WC	WHITE	2.60	3.00	3.40	-2.0 ~ -2.5	10 ~ 16

Notes for Table 4:

1. Maintains a tolerance of ±0.1V on forward voltage measurements.
2. Measured between 25°C and 85°C.

CHARACTERISTIC CURVES

SPECTRAL POWER DISTRIBUTION CHARACTERISTIC

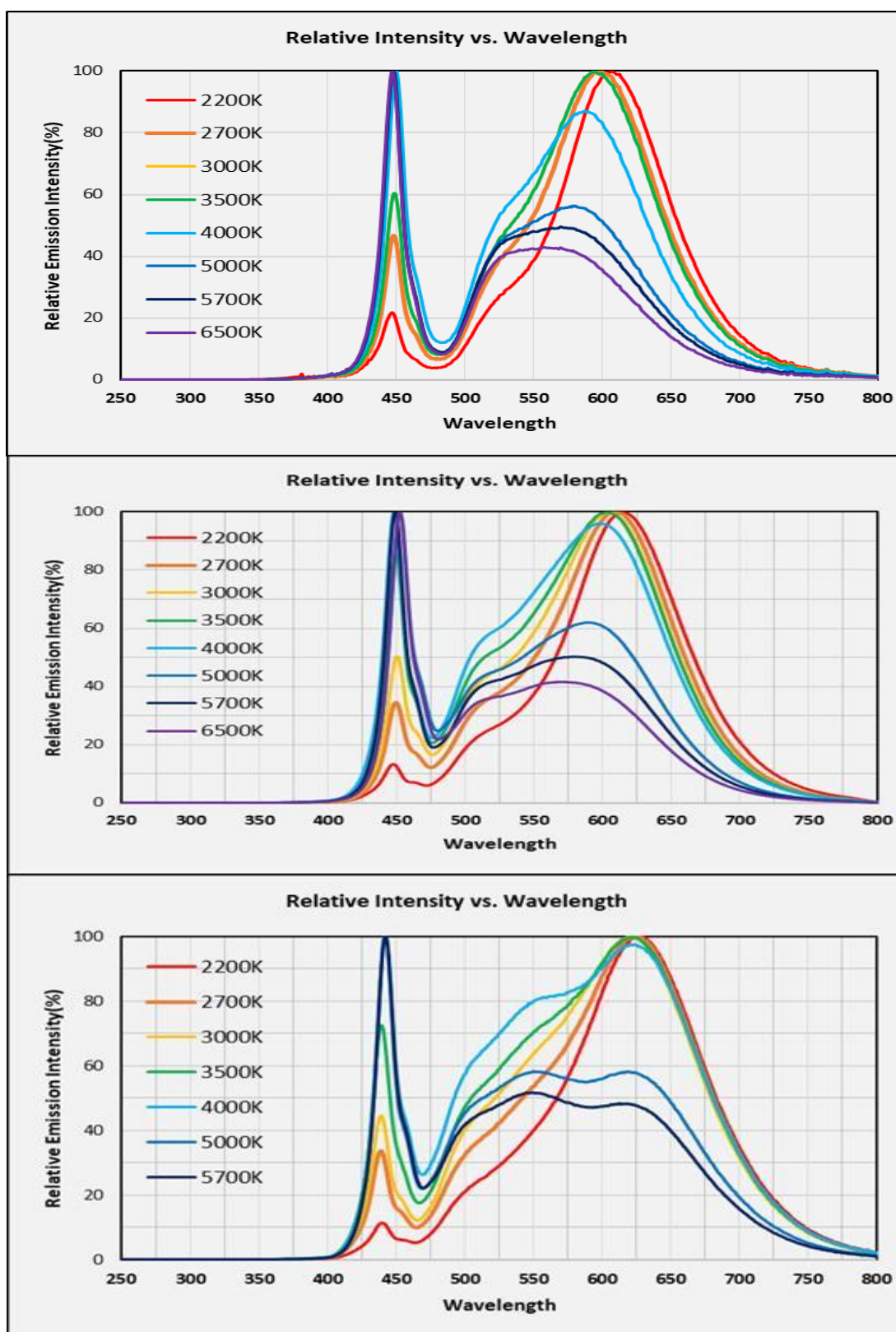


Figure 1. Typical normalized light output vs. junction temperature for at specified test current. $T_j=25^{\circ}\text{C}$

LIGHT OUTPUT CHARACTERISTICS

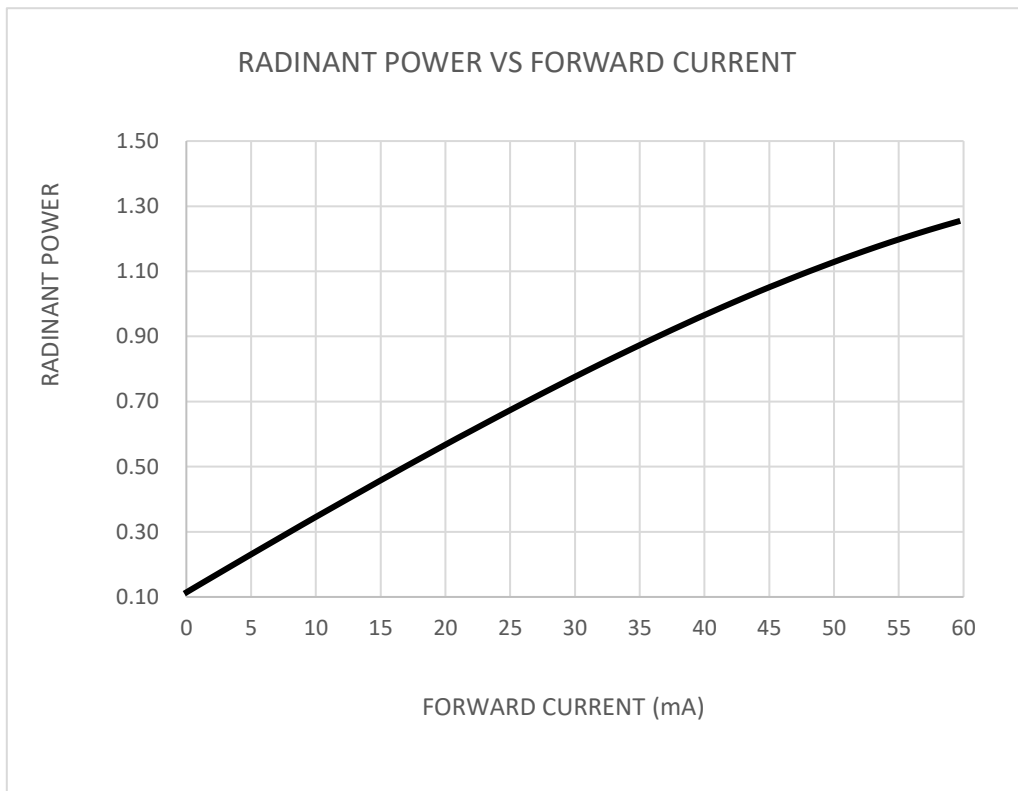


Figure 2 Typical normalized radiant power vs. junction temperature for at $T_j=25^{\circ}\text{C}$.

LIGHT OUTPUT CHARACTERISTICS

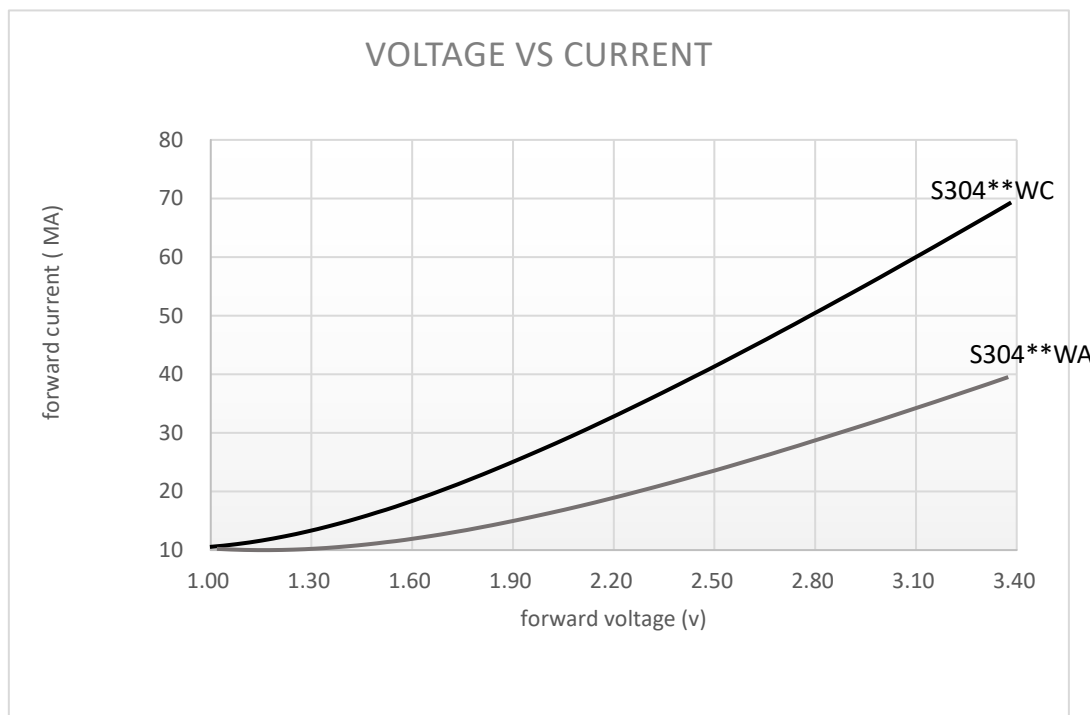


Figure 3. Typical forward current vs. forward voltage for at $T_j=25^{\circ}\text{C}$.

RADIATION PATTERN CHARACTERISTICS

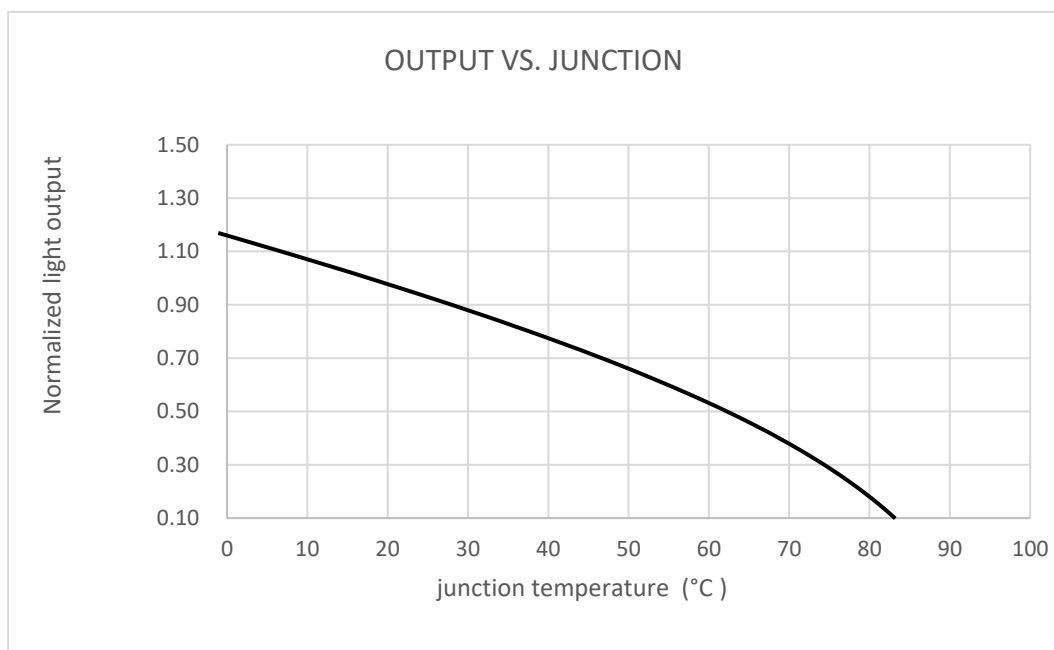


Figure 4. Typical normalized light output vs. junction temperature for at test current.

TYPICAL RADIATION PATTERN

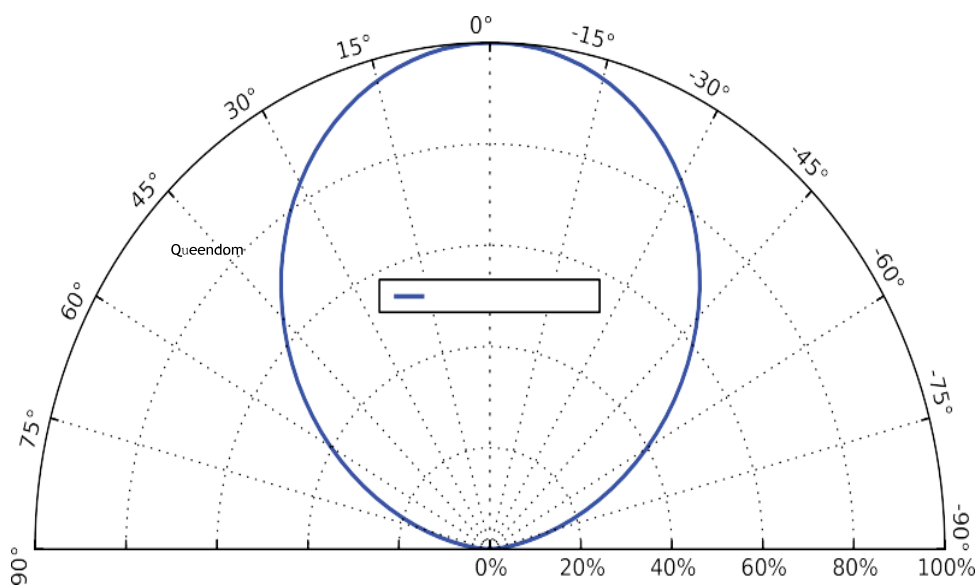
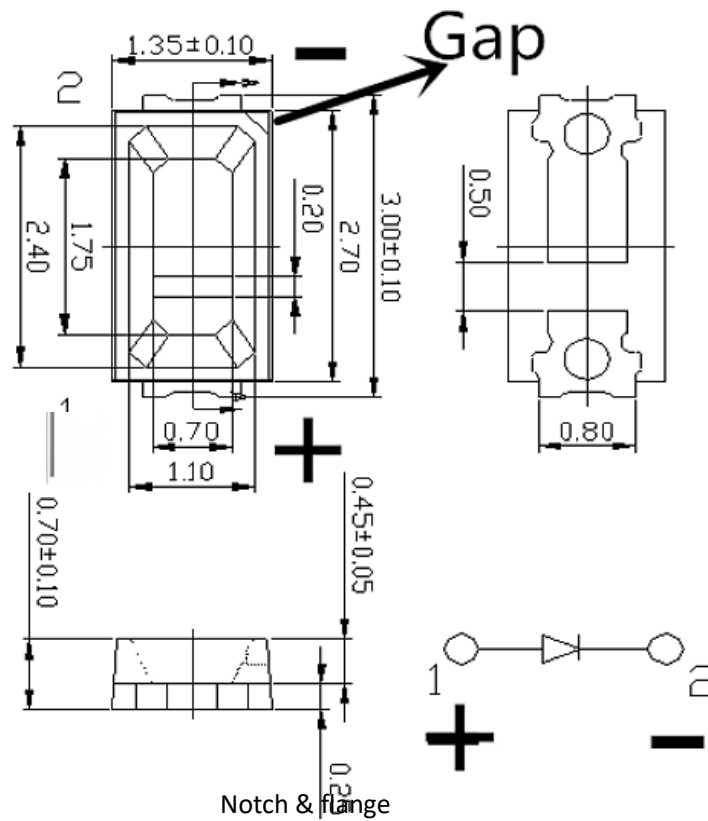


Figure 5. TYPICAL POLAR RADIATION PATTERN AT 20 OR 60MA, TSP=25°C

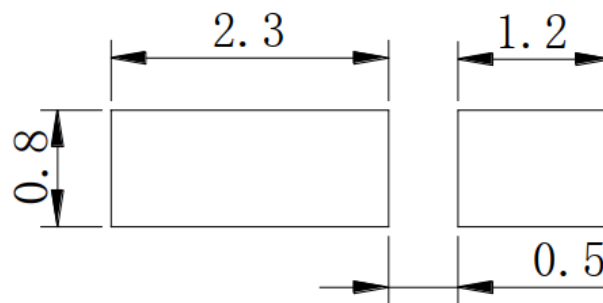
DIMENSIONAL DRAWING:



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25 mm (.010") unless otherwise noted.
3. Protruded resin under flange is 1.00mm (.039") max.

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, T_j=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.



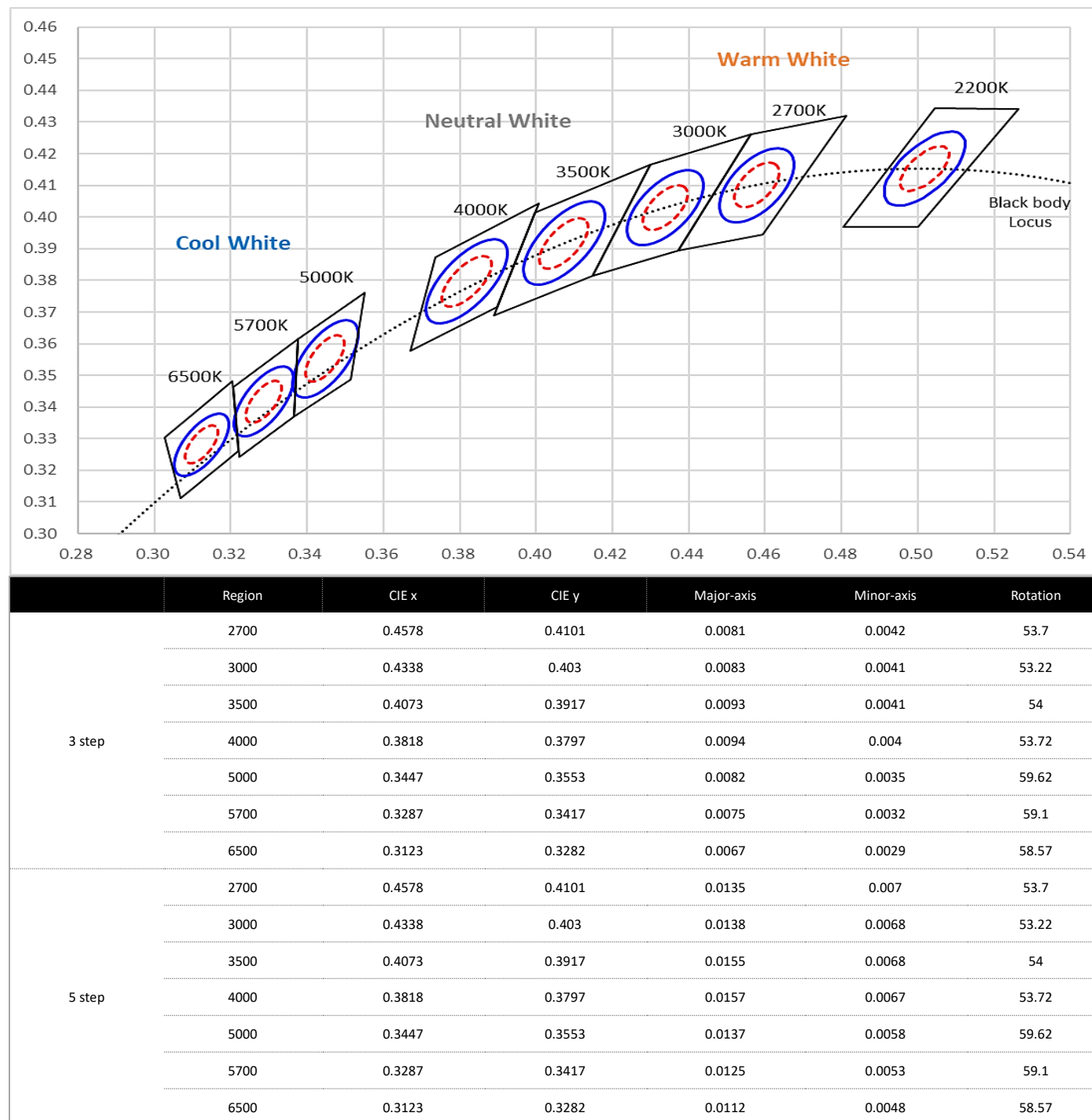
Region	CIE x	CIE y	Region	CIE x	CIE y
P rank (6500 K)					
P1	0.3068	0.3113	P9	0.3048	0.3207
	0.3106	0.315		0.3089	0.3249
	0.3098	0.3199		0.308	0.3298
	0.3058	0.316		0.3038	0.3256
P2	0.3106	0.315	PA	0.3089	0.3249
	0.3144	0.3186		0.313	0.329
	0.3137	0.3238		0.3123	0.3341
	0.3098	0.3199		0.308	0.3298
P3	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

Dominant Wavelength Bins

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

RANK NOMINAL CCT & COLOR COORDINATES

Chromaticity Region & Coordinates



Notes:

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



LUMINOUS FLUX BINS

Table 2.Luminous flux bin definitions for QUEENDOM Color Line at Tj=25°C.

BIN	QUEENDOM FLUX [1] (lm)		RANK FLUX [2] (lm)		TYPICAL FLUX HALF WIDTH
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	[3] (lm)
LA	6	8	2	4	4
LB	8	10	2	4	4
LC	10	12	2	4	4
LD	12	14	2	4	4
LE	14	16	2	4	4
LF	16	18	2	4	4
LG	18	20	2	4	4
LH	20	22	2	4	4
LI	22	24	2	4	4
LJ	24	26	2	4	4
LK	26	28	2	4	4
LL	28	30	2	4	4
LM	30	32	2	4	4
LN	32	34	2	4	4
LO	34	36	2	4	4
LA	6	8	2	4	4
LB	8	10	2	4	4
LC	10	12	2	4	4
LD	12	14	2	4	4
LE	14	16	2	4	4

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

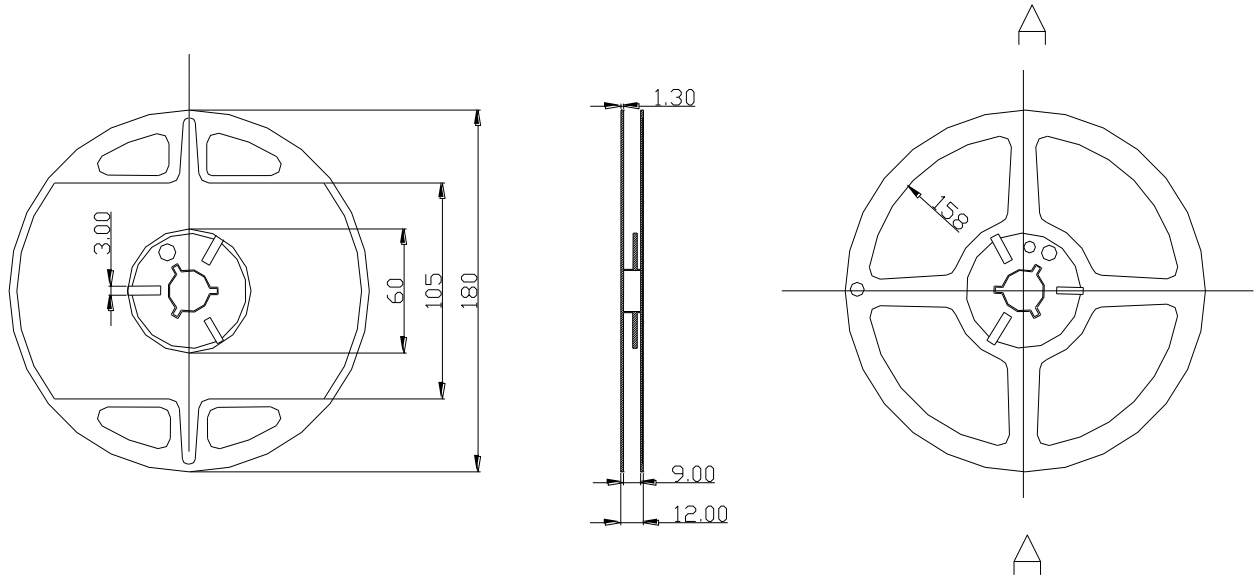
TABLE TYPICAL POWER BINS

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

Packaging Information

Reel Dimensions:



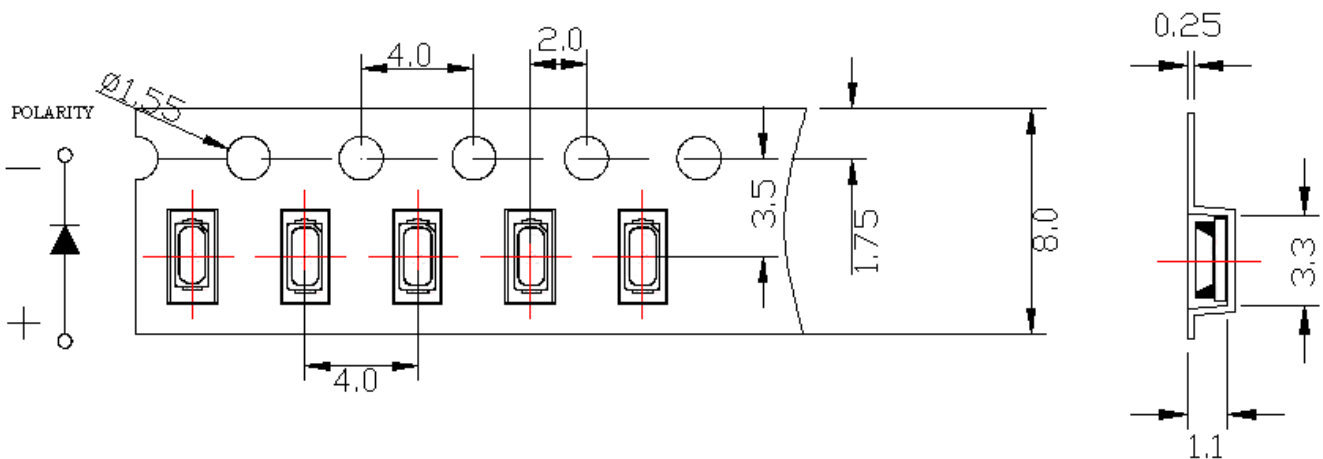
Notes:

Quantity: The quantity/reel is 4,000 pcs

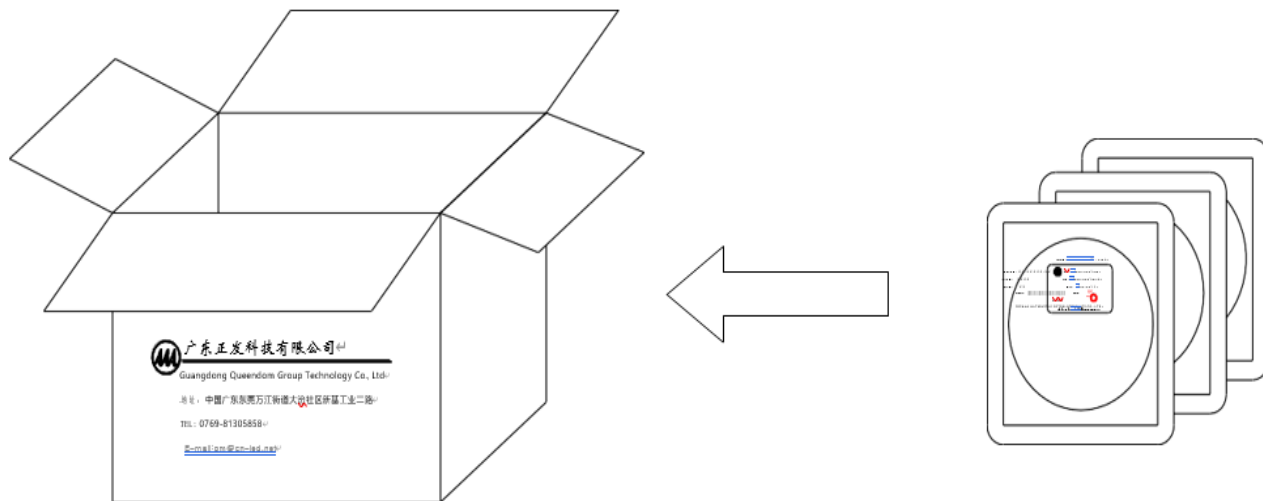
All dimensions are millimeters (tolerance : $\pm 0.2\text{mm}$)

Packaging: P/N, Manufacturing data code no. and quantity are indicated on the aluminum packing bag

Carrier Tape Dimensions:



Packaging cartons



Information

- With Stopper

CPN: P/N:XXXXXXXXXX	VF:XX-XX
	IV:XX-XX
QTY:XXX	WLD:XX-XX
	BIN:XX-XX
LOT NO:XXXXXXXXXX	DATE:XX-XX-XX
	

Without Stopper

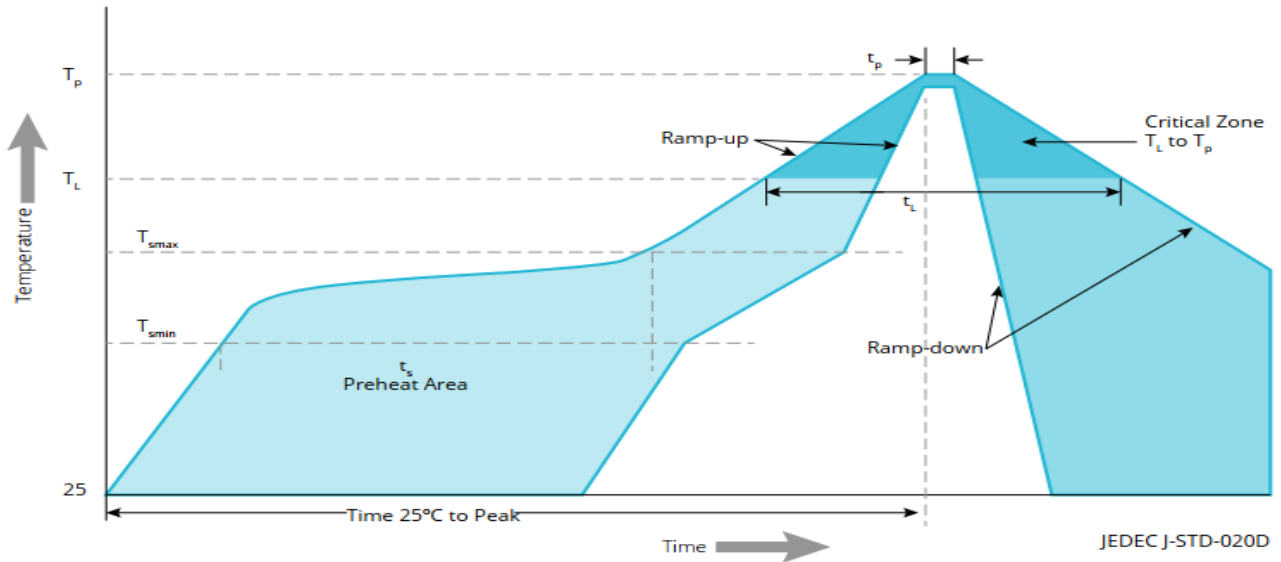
CPN:Customer's Product Number
P/N:Product Number
QTY:Packing Quantity
LOT NO:Lot Number
VF:Forward Voltage Rank
IV:Luminous Intensity Rank
WLD:Dom. Wavelength Rank
BIN:BIN Code
DATE: Date Of Dispatch

Packing Quantity

1. 3000PCS/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 (T_{smin})	150°C
Preheat Maximum Temperature (T_{smax})	200°C
Preheat Time (t_{smin} to t_{smax})	60 to 120 seconds
Ramp-Up Rate (T_L to T_p)	3°C / second maximum
Liquidus Temperature (T_L)	217°C
Time Maintained Above Temperature T_L (t_L)	60 to 150 seconds
Peak / Classification Temperature (T_p)	260°C
Time Within 5°C of Actual Temperature (t_p)	20 to 40 seconds
Ramp-Down Rate (T_p to T_L)	6°C / second maximum
Time 25°C to P	8 minutes maximum

JEDEC Moisture Sensitivity

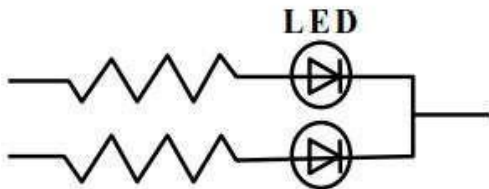
Moisture sensitivity levels for LEDs Line

level	Floor life		soak requirements standard	
	time	conditions	time	conditions
1	Unlimited	$\leq 30^\circ\text{C} / 85\% \text{ RH}$	168 Hours +5 / -0	85°C / 85% RH

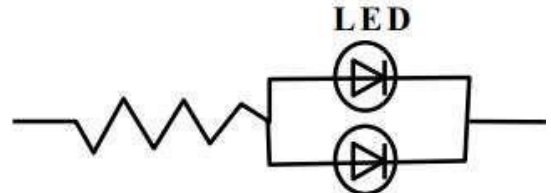
Drive Method

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.

Circuit model A



Circuit model B



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.