Part Number **SECG1WA0EY-S**

- Package : 3.0 × 1.4 × 1.2t Surface Mount LED
- Color : White
- Application : Automotive, Consumer Electronics, Office Automation, Indicator
- Features : MSL-3, RoHS compliant, Compatible with heat-resistance of lead-free solder.

● Absolute maximum ratings Ta=25℃

Parameter	Symbol	Ratings	Unit	Remark
Power dissipation	PD	108	mW	
Forward current	IF	30	mA	
Forward current reduction ratio	ΔIF	-0.76	mA/℃	Avobe 60℃
Pulse forward current	IFP	70	mA	Frequency: f=1kHz Pulse width: tw≦100μs
Reverse voltage	VR	3	V	
Operating temperature	Topr	-40～85	℃	
Storage temperature	Tstg	-40～100	℃	
Junction temperature	Tjmax	100	℃	

● Electrical / Optical characteristics Ta=25℃

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward voltage	VF	IF=20mA		3.1	3.6	V
Reverse current	IR	VR=3V			10	μA
Luminous intensity ※1	IV	IF=20mA	747	1037	1327	mcd
Chromaticity coordinates ※2	x	IF=20mA		0.307		-
	y			0.315		-
Directivity	2θ 1/2	IF=20mA		120		degree
Thermal resistance	θj-a	-		300		℃/W

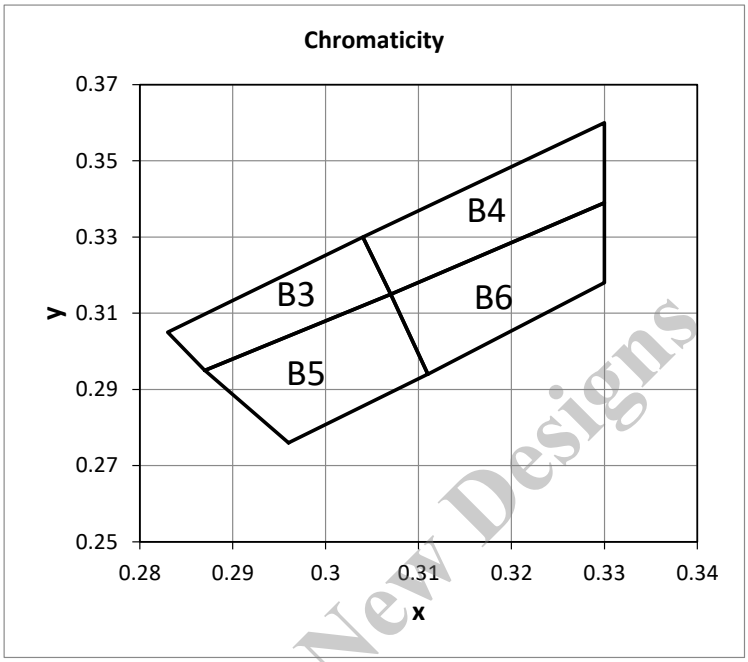
※1 Luminous intensity rank (Tolerance : ±20%)

Rank	Luminous intensity range (mcd)		
E	747	～	996
F	996	～	1327

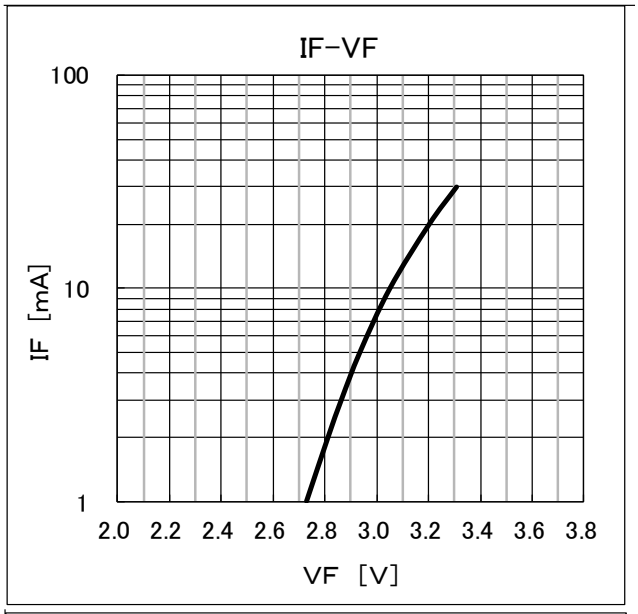
※2 Chromaticity Rank

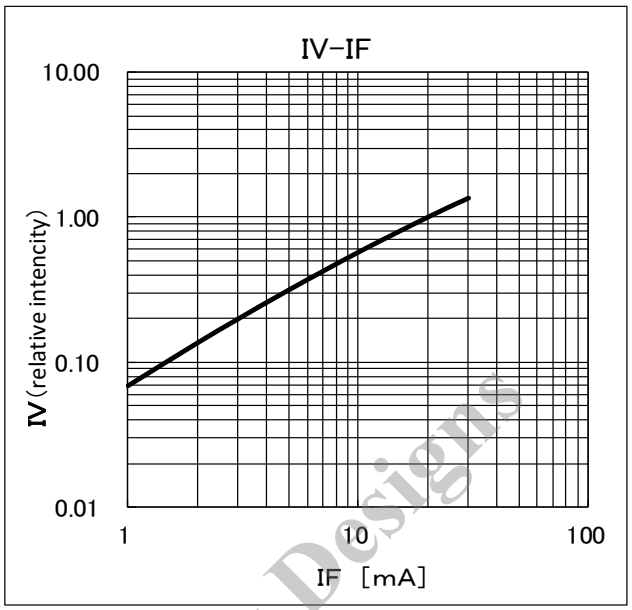
Rank	x	y
B3	0.287	0.295
	0.307	0.315
	0.304	0.33
	0.283	0.305
B4	0.307	0.315
	0.33	0.339
	0.33	0.36
	0.304	0.33
B5	0.296	0.276
	0.311	0.294
	0.307	0.315
	0.287	0.295
B6	0.311	0.294
	0.33	0.318
	0.33	0.339
	0.307	0.315

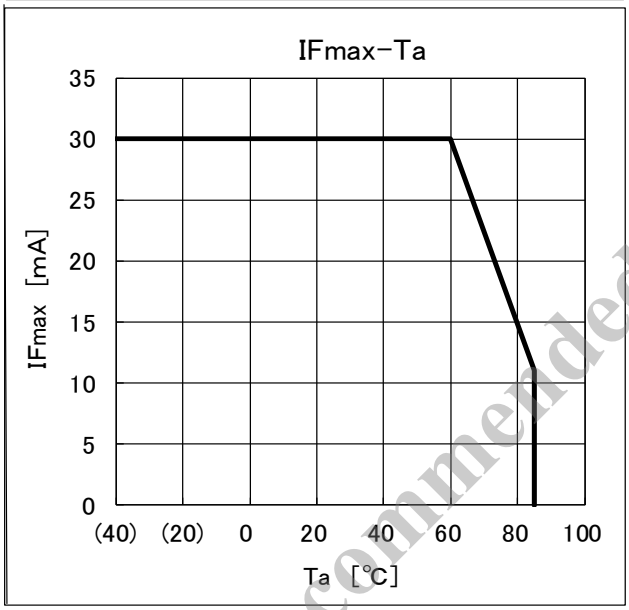
(Tolerance : ±0.01)

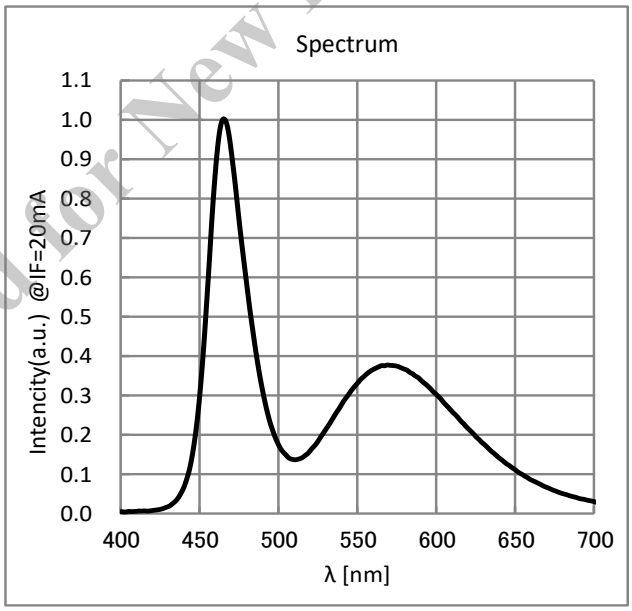


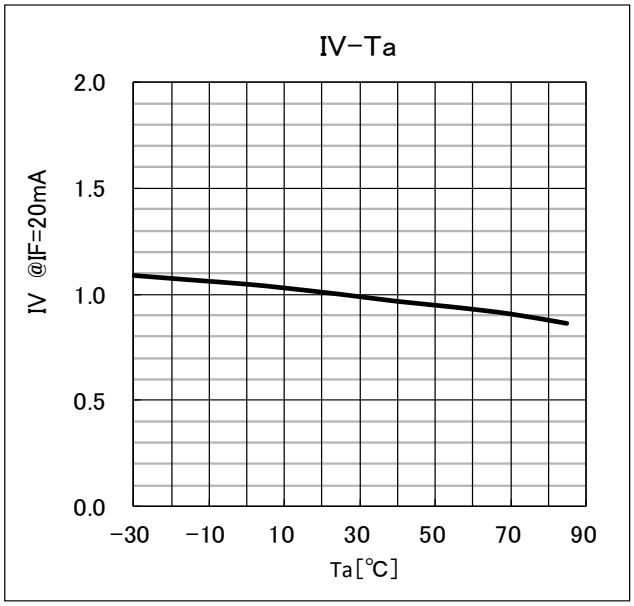
● Characteristic data

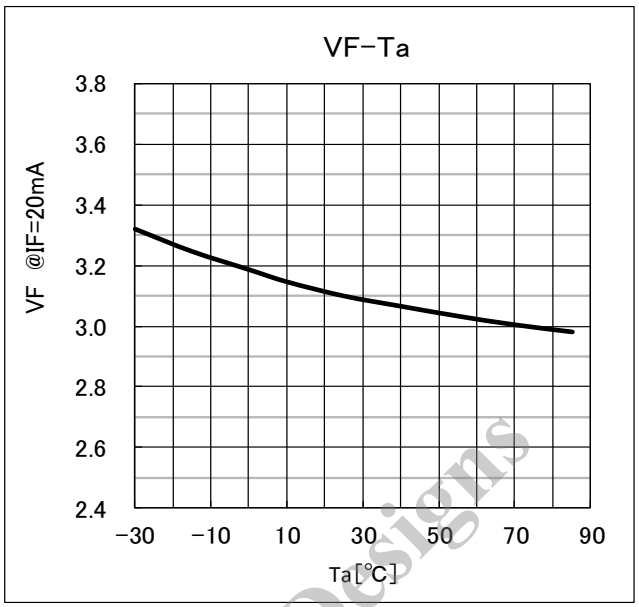


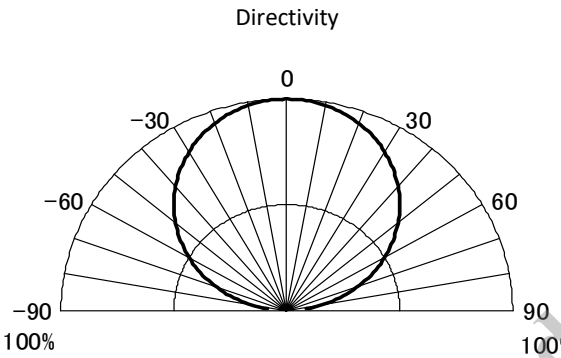








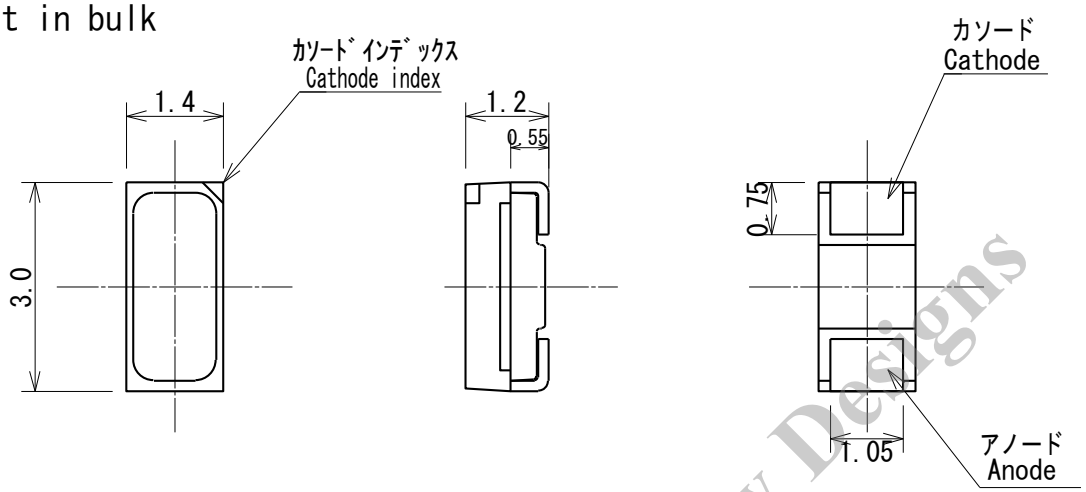




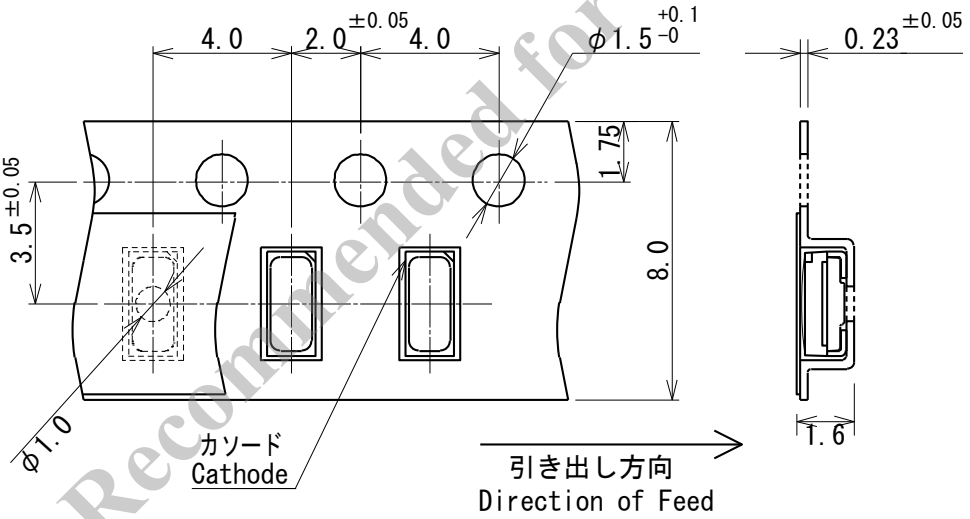
● Outline

SEC*100E Series Outline dimensions

単品
Part in bulk



エンボステーピング
Embossed taping



端子の材質・処理
Material & Finish of leads

材質 Material	銅 Copper
処理 Finish	銀メッキ Ag plating

樹脂の材質・処理
Material of resin

材質 Material	シリコーン系樹脂 Silicone containing phosphor

一般公差 ±0.2
Tolerance

単位Unit:mm

● Soldering conditions

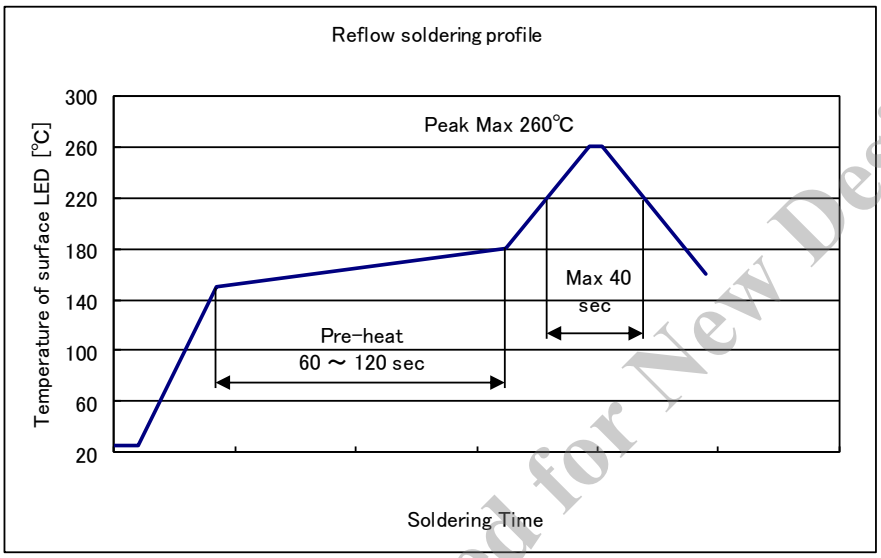
Following soldering conditions are recommended.

① Reflow conditions (at the surface of LED resin)

Pre-heat : 150 ～ 180 ℃、60 ～ 120 sec

Soldering temperature: 40sec Max above 220 ℃. Peak temperature is 260 ℃ Max.

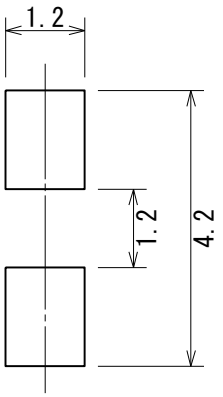
Soldering must not be permitted more than 2 times.



② Hand soldering

Temperature of soldering iron tip : 350±10℃, 5 sec Max. 1 time.

③ Recommended solder pad



Unit : mm

● Attention after opened

The LED is in SMD package. When the LED is mounted by means of soldering and the resin is unusually damp, soldering may cause interfacial defoliation. This occurs when a drastic temperature change causes moisture in the resin to evaporate and to swell. Therefore, attention to the below must be paid.

① Atmosphere when using the LEDs after package is opened

After opened and mounted, soldering should be carried out quickly.

Following atmosphere is recommended when using (and mounting) the LEDs.

Temperature : 5～30℃ Humidity : less than 70%

② Baking

In case 168 hours have passed after package is opened, LEDs must be dried as follows. Perform baking only once.

60±5 ℃ for more than 24 hours (taping reel)

③ Storage after package is opened

Unused remaining LEDs should be stored with silica gel desiccants in a hermetically sealed container, Preferably the origin moisture-proof bags for storage Zipper. Following storage conditions are recommendedafter package is opened.

Temperature : 5～40℃ Humidity : less than 30%

In case indicator color (blue) of desiccant (ex. silica gel) has disappeared,
LEDs must be dried under the same conditions as ② above.

● Other

① After soldering any mechanical force or excessive vibration should not be applied to LEDs during cooling process until the LEDs cool down to normal temperature.

② Quick cooling must be avoided.

③ The LEDs should not be mounted on warped direction of PCB.

④ Extra attention should be paid to the sealing resin of the product, which is silicone resin.
When you handle a product with the sharp things, such as tweezers and a nail, please avoid it in resin.
Removed product should not be used.

⑤ Please avoid contact to mounted LED.

⑥ This productseries emits high light power. Do NOT look directly into the light emitting area. Direct exposure to the light over an extended time period may har m eyes.

⑦ The silver plating of the lead frame may discolor if the product comes into contact with material containing sulfides or if it is exposed to an atmosphere containing sulfide gas.

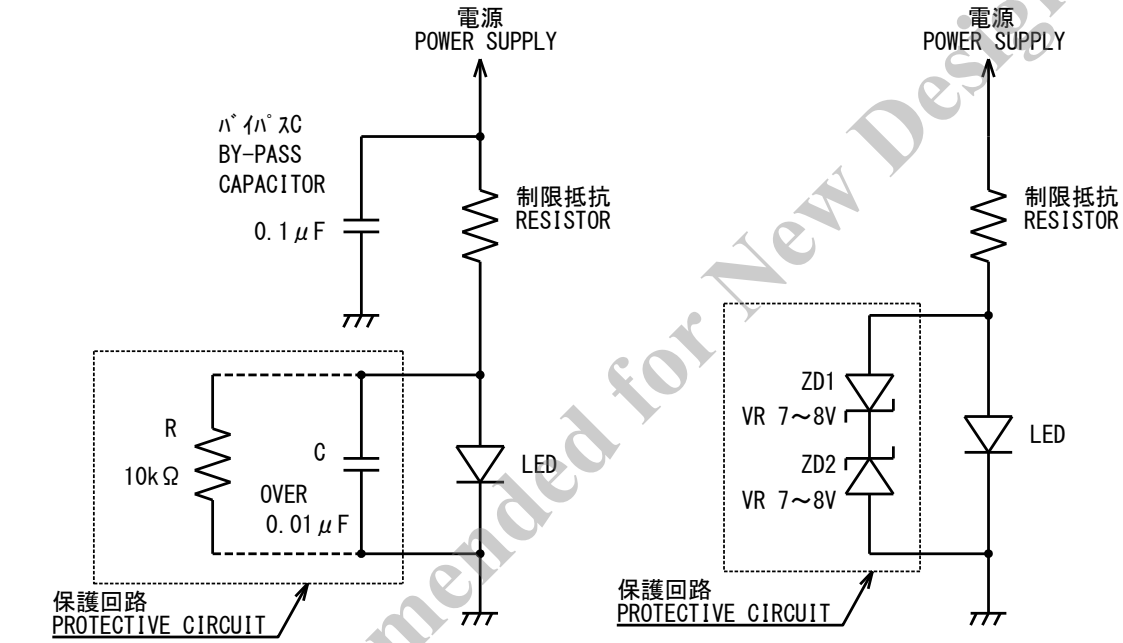
⑧ Dispersion of VF and IV widely, if using the LED lamps with low current. When you use with low current , please be careful about varies widely. The LED Lamp is recommended to use with sorting current.

● Electrostatic Discharge

Products are sensitive to static electricity and care shall be fully taken when handling Products. Particularly in case that an over-voltage which exceeds the Absolute Maximum Rating of Products shall be applied, the overflowed energy may cause damages to, or possibly result in destruction of Products. Buyer shall take absolutely secured countermeasures against static electricity and surge when handling products.

● The circuit of unti-static and unti-surge

The anti-static and anti-surge reference circuit is shown below. Besides, the circuit is reference, Buyer shall sufficiently check static electricity and surge level when employing products.



① ｺﾝﾃﾞﾝｻｰ使用例
① REF. CIRCUIT WITH CAPACITOR

② ﾂｪﾅｰDi使用例
② REF. CIRCUIT WITH ZENER DIODE

①The reference protection circuit with capacitor
②The reference protection circuit with zener diode

● Reliability Test Conditions

Test Items 試験項目	Times 試験期間	Test Conditions 試験条件
Steady state Operating Life Test 連続通電試験	1000h	Ta = Room Temperature IF = IFmax
Intermittent Operating Load Test 断続通電試験	1000h	Ta = Room Temperature IF = IFmax, on/off each 1min.
High Temperature Operating Life Test 高温連続通電試験	1000h	JEITA ED-4701 101A Ta = Topr max, IF = Ifmax at derating
High Temperature Storage Test 高温保存試験	1000h	JEITA ED-4701 102A Ta = Tstg max
Low Temperature Storage Test 低温保存試験	1000h	JEITA ED-4701 202A Ta = Tstg min
Moisture Resistance Test 耐湿性試験	1000h	JEITA ED-4701 103A Ta=60℃,RH=90%
Temperature Cycle Test 温度サイクル試験	100c	JEITA ED-4701 105A Ta = Tstg min ～ Tstg max each 30min.
Soldering Heat Test 1 はんだ耐熱性試験 1	2 times	JEITA ED-4701 301D Reflow Peak 260℃ Max Infrared Reflow or Convection Reflow Soldering MSL3
Soldering Heat Test 2 はんだ耐熱性試験 2	1 times	350℃,3.5s Using soldering iron
Solder ability Test はんだ付け性試験	1 times	JEITA ED-4701/303A 245℃,5s, Using flux

● Failure Criteria

Measurement Item 測定項目	Failure Criteria 故障判定基準
VF 順方向電圧	MAX VFS×1.2(+20%)* MIN VFS×0.8(−20%)* *初期値の±20%
IR 逆方向電流	MAX UL×2* *規格の2倍
IV 光度	MIN IVS×0.5(−50%)* *初期値の50%

*はんだ付け性試験・・・95%以上はんだに覆われていること。
*Solderability・・・The Lead shall be covered by solder at least 95%.

*VFS・・・Initial data of VF *UL・・・Upper limit of spec.
*IVS・・・Initial data of Luminous Intensity
*VFSはVF初期値、ULは規格上限値、IVSは光度の初期値。

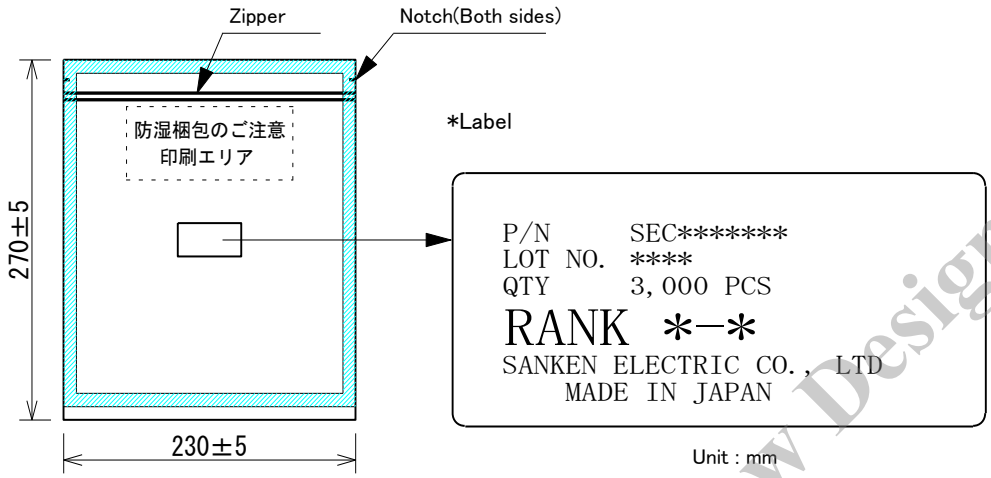
● Packing

Minimum packing specifications

Packing Material : Aluminum laminated moisture-proof packing(desiccant, enclosure)

Quantity : 3000 pcs (Minimum order quantity)

Label : See below



1) Part Number : SEC＊＊＊＊＊＊

2) Lot No. : ＊ ＊ ＊＊
↑ ↑ ↑
① ② ③

① Last digit of year

② Month

January ― September → Arabic Numeral
October → O
November → N
December → D

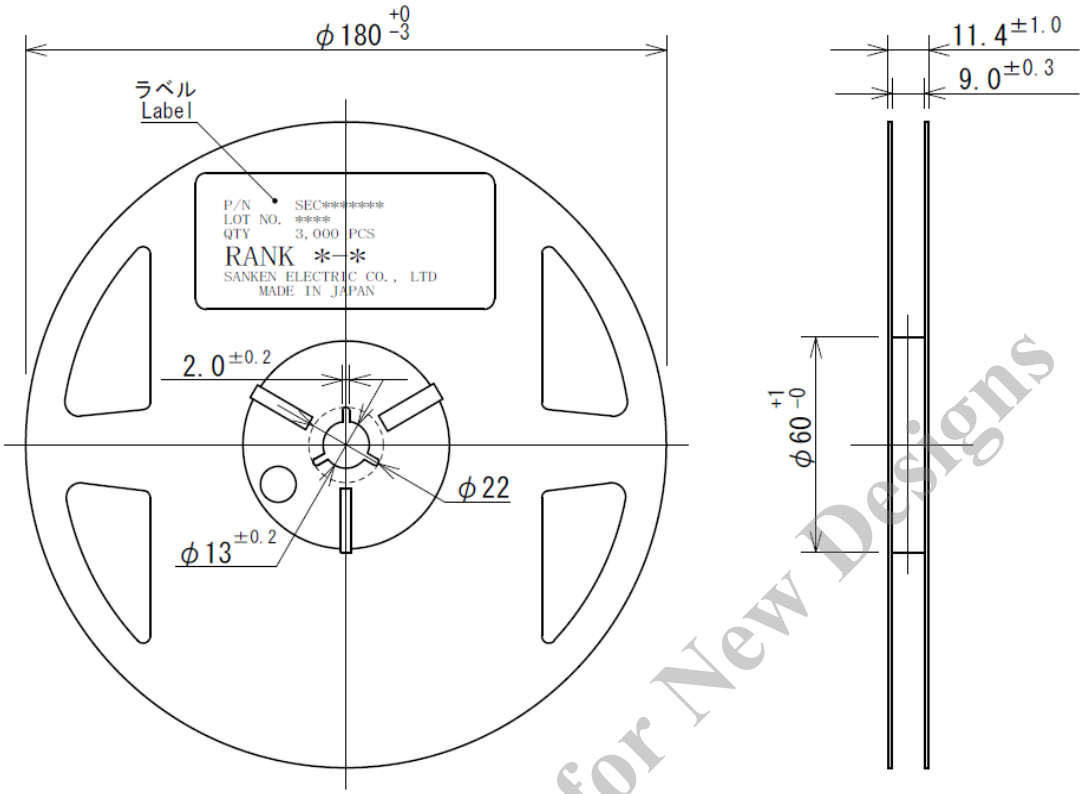
③ Day

3) Quantity

4) Rank : ＊ ― ＊
↑ ↑
① ②

① Luminous intensity rank
② Chromaticity Rank

●Taping reel dimensions



一般公差
Tolerance ±0.2

①数量 Quantity
3000個／リールとする。
The quantity per reel shall be 3000 pcs.

②累積ピッチ誤差 Accumulative pitch tolerance
10ピッチで±0.2mm以下とする。
Accumulative tolerance per 10 pitches shall be ±0.2mm.

③カバーテープ引き剥がし強度 Adhesion strength of cover tape
0.1N～1.0Nとする。但し、カバーテープとキャリアテープとの引き剥がし角度は10° とする。
Adhesion strength shall be 0.1-1.0 N when the cover tape and the carrier tape are torn off at the angle of 10 degrees.

④梱包 Packaging
防湿パックに梱包し、ラベルに品名、ロットNo.、数量を表示する。
P/N, manufacturing date code number and quantity shall be indicated on a moist-proof package.

単位Unit:mm

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