

These specifications shall be applied to the White LED-Chip (LED or LEDs), NNSW208AT, which is supplied by Nichia Corporation (Nichia) to

## 1. SPECIFICATIONS

### (1) Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Absolute Maximum Rating	Unit
Forward Current	IF	35	mA
Pulse Forward Current	IFP	100	mA
Reverse Voltage	VR	5	V
Power Dissipation	PD	105	mW
Operating Temperature	Topr	-30 ~ + 85	°C
Storage Temperature	Tstg	-40 ~ +100	°C
Soldering Temperature	Tsld	Reflow Soldering : 260°C for 10sec. Hand Soldering : 350°C for 3sec.	

IFP Conditions : Pulse Width ≤ 10msec. and Duty ≤ 1/10

### (2) Initial Electrical/Optical Characteristics (Ta=25°C)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	VF	IF=20[mA]	-	(2.85)	2.95	V
Reverse Current	IR	VR= 5[V]	-	-	50	μA
Luminous Flux	φv	IF=20[mA]	-	(7.4)	-	lm
Luminous Intensity	Iv	IF=20[mA]	-	(2.4)	-	cd
Chromaticity Coordinate	x	IF=20[mA]	-	0.300	-	-
	y	IF=20[mA]	-	0.295	-	-
Lifetime	-	Ta=60[°C] Tj≤83[°C] IF=20[mA] Tested with Nichia testing circuit board.	15000	-	-	hrs

\* Forward Voltage Measurement allowance is ± 0.05V.

\* Luminous flux value is traceable to the CIE 127:2007-compliant national standards.

\* Please refer to CIE 1931 chromaticity diagram.

\* Estimated time to 50% degradation of initial luminous flux based on Nichia's internal test results.

(3) Ranking

(Ta=25°C)

Item	Symbol	Condition	Min.	Max.	Unit	
Forward Voltage	Rank La	V <sub>F</sub>	I <sub>F</sub> =20[mA]	2.8	2.95	V
	Rank K2			2.6	2.8	
Luminous Flux	Rank V720	φ <sub>v</sub>	I <sub>F</sub> =20[mA]	7.20	7.35	lm
	Rank V705			7.05	7.20	
	Rank V690			6.90	7.05	
	Rank V675			6.75	6.90	
	Rank V660			6.60	6.75	

\* Forward Voltage Measurement allowance is ± 0.05V.

\* Luminous Flux Measurement allowance is ± 7%.

Color Ranks

(I<sub>F</sub>=20mA, Ta=25°C)

	Rank Sa5258			
x	0.2783	0.2764	0.2788	0.2805
y	0.2565	0.2589	0.2624	0.2600

	Rank Sa5267			
x	0.2805	0.2788	0.2810	0.2827
y	0.2600	0.2624	0.2660	0.2634

	Rank Sa5268			
x	0.2827	0.2810	0.2833	0.2850
y	0.2634	0.2660	0.2698	0.2670

	Rank Sa5276			
x	0.2802	0.2783	0.2805	0.2823
y	0.2538	0.2565	0.2600	0.2574

	Rank Sa5278			
x	0.2819	0.2802	0.2823	0.2840
y	0.2513	0.2538	0.2574	0.2550

	Rank Sa5285			
x	0.2823	0.2805	0.2827	0.2844
y	0.2574	0.2600	0.2634	0.2608

	Rank Sa5286			
x	0.2844	0.2827	0.2850	0.2866
y	0.2608	0.2634	0.2670	0.2643

	Rank Sa5287			
x	0.2840	0.2823	0.2844	0.2860
y	0.2550	0.2574	0.2608	0.2585

	Rank Sa5288			
x	0.2860	0.2844	0.2866	0.2880
y	0.2585	0.2608	0.2643	0.2620

	Rank Sa6257			
x	0.2850	0.2833	0.2855	0.2871
y	0.2670	0.2698	0.2734	0.2705

	Rank Sa6258			
x	0.2871	0.2855	0.2878	0.2893
y	0.2705	0.2734	0.2771	0.2743

	Rank Sa6275			
x	0.2866	0.2850	0.2871	0.2886
y	0.2643	0.2670	0.2705	0.2678

	Rank Sa6276			
x	0.2886	0.2871	0.2893	0.2908
y	0.2678	0.2705	0.2743	0.2713

	Rank Sa6277			
x	0.2880	0.2866	0.2886	0.2900
y	0.2620	0.2643	0.2678	0.2654

	Rank Sa6278			
x	0.2900	0.2886	0.2908	0.2920
y	0.2654	0.2678	0.2713	0.2690

\* Color Coordinates Measurement allowance is  $\pm 0.005$ .

\* Basically, a shipment shall consist of the LEDs of a combination of the above ranks.

The percentage of each rank in the shipment shall be determined by Nichia.

**\* The inspection sheet is submitted by Nichia Corporation.**

Details on Color Mixing Rank labeling

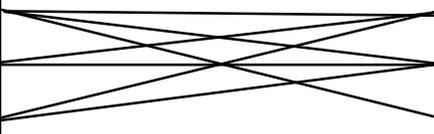
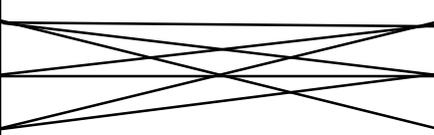
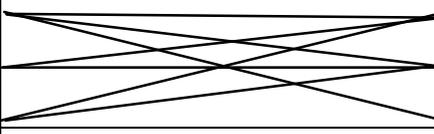
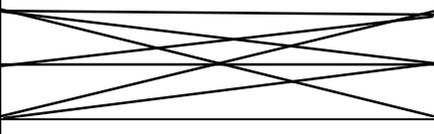
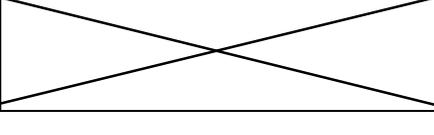
x x x x x - x

7 Digit Alphabets and numbers subjected to below.

1st digit : Color Category

2nd digit : Line No. of Color rank(left side or upper side)

4th digit : Line No. of Color rank(right side or lower side)

Combination of Color rank			Color Category	Line No.
Sa5258		Sa6258	A	1
Sa5276		Sa6276		2
Sa5278		Sa6278		3
Sa5267		Sa6258	B	1
Sa5285		Sa6276		2
Sa5287		Sa6278		3
Sa5267		Sa6257	C	1
Sa5285		Sa6275		2
Sa5287		Sa6277		3
Sa5268		Sa6258	D	1
Sa5286		Sa6276		2
Sa5288		Sa6278		3
Sa5268		Sa6257	E	1
Sa5286		Sa6275		2
Sa5288		Sa6277		3

Combination of Color rank			Color Category
Sa5268		Sa6257	F
Sa5286		Sa6275	
Sa5288		Sa6277	
Line No.	3	4	

3rd digit : Lumious Flux rank(left side or upper side)

5th digit : Lumious Flux rank(right side or lower side)

	Code
V645	1
V660	2
V675	3
V690	4
V705	5
V720	6

6th digit : Forward Voltage rank

	Code
K2	a
La	b

7th digit : Color rank(left side or right side, upper side or lower side)

	Code
Left side, Upper side	L
Right side, Lower side	R

Shipping rank table (partly)

Left				Right				
Mixing	Color	Luminous Flux	Forward Voltage	Color	Luminous Flux	Forward Voltage	Mixing	
A1212a-L	Sa5258	V660	K2	Sa6258	V660	K2	A1212a-R	
A1212b-L			La			La	A1212b-R	
A1213a-L			K2			V675	K2	A1213a-R
A1213b-L			La				La	A1213b-R
A1222a-L			K2	Sa6276	V660	K2	A1222a-R	
A1222b-L			La			La	A1222b-R	
A1223a-L			K2			V675	K2	A1223a-R
A1223b-L			La				La	A1223b-R
A1232a-L			K2	Sa6278	V660	K2	A1232a-R	
A1232b-L			La			La	A1232b-R	
A1233a-L			K2			V675	K2	A1233a-R
A1233b-L			La				La	A1233b-R
A1312a-L	Sa5258	V675	K2	Sa6258	V660	K2	A1212a-R	
A1312b-L			La			La	A1212b-R	
A1313a-L			K2			V675	K2	A1213a-R
A1313b-L			La				La	A1213b-R
A1314a-L			K2	V690	K2	A1314a-R		
A1314b-L			La		La	A1314b-R		
A1322a-L			K2	Sa6276	V660	K2	A1222a-R	
A1322b-L			La			La	A1222b-R	
A1323a-L			K2			V675	K2	A1223a-R
A1323b-L			La				La	A1223b-R
A1324a-L			K2	V690	K2	A1324a-R		
A1324b-L			La		La	A1324b-R		
A1332a-L	K2	Sa6278	V660	K2	A1232a-R			
A1332b-L	La			La	A1232b-R			
A1333a-L	K2			V675	K2	A1233a-R		
A1333b-L	La				La	A1233b-R		
A1334a-L	K2	V690	K2	A1334a-R				
A1334b-L	La		La	A1334b-R				

For detailed description of mixing rank, please refer to the attached “K93 Mixing Pattern for LGD”.

## 2.INITIAL OPTICAL/ELECTRICAL CHARACTERISTICS

Please refer to “CHARACTERISTICS” on the following pages.

## 3.OUTLINE DIMENSIONS AND MATERIALS

Please refer to “OUTLINE DIMENSIONS” on the following page.

## 4.PACKAGING

- The LEDs are packed in cardboard boxes after taping.

Please refer to “TAPING DIMENSIONS” and “PACKING” on the following pages.

The label on the minimum packing unit shows ; Part Number, Lot Number, Ranking, Quantity

- In order to protect the LEDs from mechanical shock, we pack them in cardboard boxes for transportation.
- The LEDs may be damaged if the boxes are dropped or receive a strong impact against them, so precautions must be taken to prevent any damage.
- The boxes are not water resistant and therefore must be kept away from water and moisture.
- When the LEDs are transported, we recommend that you use the same packing method as Nichia.
- If a box shows noticeable damage upon arrival at the customer's warehouse, it is recommended that the customer submit a claim to Nichia within two weeks after arrival of the products. If the submitted notice regarding the damage exceeds the aforementioned two weeks, it will be treated in the manner shown in term 8.

## 5.LOT NUMBER

The first six digits number shows **lot number**.

The lot number is composed of the following characters;

○□×××× - ◇◇◇

○ - Year (A for 2010, B for 2011 )

□ - Month ( 1 for Jan., 9 for Sep., A for Oct., B for Nov. )

×××× - Nichia's Product Number

◇◇◇ - Ranking by Color Coordinates, Ranking by Luminous Flux  
Ranking by Forward Voltage

## 6.RELIABILITY

## (1) TEST ITEMS AND RESULTS

Test Item	Standard Test Method	Test Conditions	Note	Number of Damaged
Resistance to Soldering Heat (Reflow Soldering)	JEITA ED-4701 300 301	Tsld=260°C, 10sec. (Pre treatment 30°C,70%,168hrs.)	2 times	0/50
Solderability (Reflow Soldering)	JEITA ED-4701 303 303A	Tsld=245 ± 5°C, 5sec. using flux Lead-free Solder (Sn-3.0Ag-0.5Cu)	1 time over 95%	0/50
Thermal Shock	JEITA ED-4701 300 307	0°C ~ 100°C 15sec. 15sec.	20 cycles	0/50
Temperature Cycle	JEITA ED-4701 100 105	-40°C ~ 25°C ~ 100°C ~ 25°C 30min. 5min. 30min. 5min.	100 cycles	0/50
Moisture Resistance Cyclic	JEITA ED-4701 200 203	25°C ~ 65°C ~ -10°C 90%RH 24hrs./1cycle	10 cycles	0/50
High Temperature Storage	JEITA ED-4701 200 201	Ta=100°C	1000 hrs.	0/50
Temperature Humidity Storage	JEITA ED-4701 100 103	Ta=60°C, RH=90%	1000 hrs.	0/50
Low Temperature Storage	JEITA ED-4701 200 202	Ta=-40°C	1000 hrs.	0/50
Steady State Operating Life Condition 1		Ta=25°C, IF=20mA	1000 hrs.	0/50
Steady State Operating Life Condition 2		Ta=25°C, IF=35mA	500 hrs.	0/50
Steady State Operating Life of High Temperature		Ta=85°C, IF=8.5mA	1000 hrs.	0/50
Steady State Operating Life of High Humidity Heat		60°C, RH=90%, IF=15mA	500 hrs.	0/50
Steady State Operating Life of Low Temperature		Ta=-30°C, IF=20mA	1000 hrs.	0/50
Vibration	JEITA ED-4701 400 403	100 ~ 2000 ~ 100Hz Sweep 4min. 200m/s <sup>2</sup> 3directions, 4cycles	48min.	0/50
Substrate Bending	JEITA ED-4702	3mm, 5 ± 1 sec.	1 time	0/50
Adhesion Strength	JEITA ED-4702	5N, 10 ± 1 sec.	1 time	0/50

## (2) CRITERIA FOR JUDGING DAMAGE

Item	Symbol	Test Conditions	Criteria for Judgement	
			Min.	Max.
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	-	U.S.L.*) × 1.1
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	-	U.S.L.*) × 2.0
Luminous Flux	φ <sub>v</sub>	I <sub>F</sub> =20mA	L.S.L.***) × 0.7	-

\*) U.S.L. : Upper Standard Level

\*\*) L.S.L. : Lower Standard Level

## 7. CAUTIONS

The LEDs are devices which are materialized by combining Blue LEDs and special phosphors. Consequently, the color of the LEDs is changed a little by an operating current. Care should be taken after due consideration when using LEDs.

### (1) Moisture Proof Package

- When moisture is absorbed into the SMT package it may vaporize and expand during soldering. There is a possibility that this can cause exfoliation of the contacts and damage to the optical characteristics of the LEDs. For this reason, the moisture proof package is used to keep moisture to a minimum in the package.
- The moisture proof package is made of an aluminum moisture proof bag. A package of a moisture absorbent material (silica gel) is inserted into the aluminum moisture proof bag. The silica gel changes its color from blue to red as it absorbs moisture.

### (2) Storage

#### · Storage Conditions

Before opening the package :

The LEDs should be kept at 30°C or less and 90%RH or less. The LEDs should be used within a year. When storing the LEDs, moisture proof packaging with absorbent material (silica gel) is recommended.

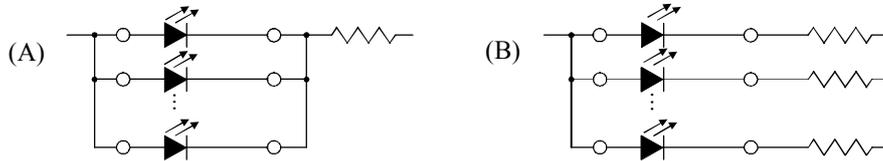
After opening the package :

The LEDs should be kept at 30°C or less and 70%RH or less. The LEDs should be soldered within 168 hours (7days) after opening the package. If unused LEDs remain, they should be stored in moisture proof packages, such as sealed containers with packages of moisture absorbent material (silica gel). It is also recommended to return the LEDs to the original moisture proof bag and to reseal the moisture proof bag again.

- If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.  
Baking treatment : more than 24 hours at  $65 \pm 5^\circ\text{C}$
- This product has silver plated metal parts that are inside and/or outside the package body. The silver plating becomes tarnished when being exposed to an environment which contains corrosive gases. Any LED with tarnished leads may lead to poor solderability and deterioration of optical characteristics. Please do not expose the LEDs to corrosive atmosphere during storage.
- After assembly and during use, silver plating can be affected by the corrosive gases emitted by components and materials in close proximity of the LEDs within an end product, and the gases entering into the product from the external atmosphere. The above should be taken into consideration when designing. Resin materials, in particular, may contain substances which affects on silver plating, such as halogen.
- Please avoid rapid transitions in ambient temperature, especially in high humidity environments where condensation can occur.

### (3) Recommended circuit

- In designing a circuit, the current through each LED must not exceed the absolute maximum rating specified for each LED. It is recommended to use Circuit B which regulates the current flowing through each LED. In the meanwhile, when driving LEDs with a constant voltage in Circuit A, the current through the LEDs may vary due to the variation in forward voltage ( $V_F$ ) of the LEDs. In the worst case, some LED may be subjected to stresses in excess of the absolute maximum rating.



- This product should be operated in forward bias. A driving circuit must be designed so that the product is not subjected to either forward or reverse voltage while it is off. In particular, if a reverse voltage is continuously applied to the product, such operation can cause migration resulting in LED damage.

### (4) Heat Generation

- 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.
- The operating current should be decided after considering the ambient maximum temperature of LEDs.

(5) Soldering Conditions

- The LEDs can be soldered in place using the reflow soldering method. Nichia cannot make a guarantee on the LEDs after they have been assembled using the dip soldering method.
- Recommended soldering conditions

	Reflow Soldering		Hand Soldering	
	Lead Solder	Lead-free Solder	Temperature	350°C Max. 3 sec. Max. (one time only)
Pre-heat	120 ~ 150°C	180 ~ 200°C	Soldering time	
Pre-heat time	120 sec. Max.	120 sec. Max.		
Peak temperature	240°C Max.	260°C Max.		
Soldering time	10 sec. Max.	10 sec. Max.		
Condition	refer to Temperature - profile ①.	refer to Temperature - profile ②. (N <sub>2</sub> reflow is recommended.)		

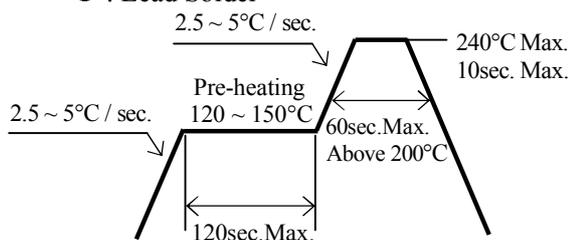
\* Although the recommended soldering conditions are specified in the above table, reflow or hand soldering at the lowest possible temperature is desirable for the LEDs.

\* A rapid-rate process is not recommended for cooling the LEDs down from the peak temperature.

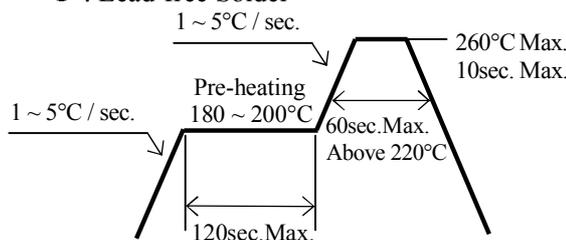
[Temperature-profile (Surface of circuit board)]

Use the conditions shown to the under figure.

<① : Lead Solder>

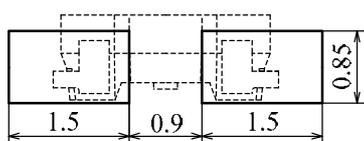


<② : Lead-free Solder>



[Recommended soldering pad design]

Use the following conditions shown in the figure.



(Unit : mm)

- Occasionally there is a brightness decrease caused by the influence of heat or ambient atmosphere during air reflow. It is recommended that the customer use the nitrogen reflow method.
- Repairing 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.
- Reflow soldering should not be done more than two times.
- When soldering, do not put stress on the LEDs during heating.
- After soldering, do not warp the circuit board.

## (6) Cleaning

- It is recommended that isopropyl alcohol be used as a solvent for cleaning the LEDs. When using other solvents, it should be confirmed beforehand whether the solvents will dissolve the package and the resin or not. Freon solvents should not be used to clean the LEDs because of worldwide regulations.
- Do not clean the LEDs by the ultrasonic. When it is absolutely necessary, the influence of ultrasonic cleaning on the LEDs depends on factors such as ultrasonic power and the assembled condition. Before cleaning, a pre-test should be done to confirm whether any damage to the LEDs will occur.

## (7) Static Electricity

- Static electricity or surge voltage damages the LEDs.  
It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.
- All devices, equipment and machinery must be properly grounded. It is recommended that precautions be taken against surge voltage to the equipment that mounts the LEDs.
- When inspecting the final products in which LEDs were assembled, it is recommended to check whether the assembled LEDs are damaged by static electricity or not. It is easy to find static-damaged LEDs by a light-on test or a VF test at a lower current (below 1mA is recommended).
- Damaged LEDs will show some unusual characteristics such as the leak current remarkably increases, the forward voltage becomes lower, or the LEDs do not light at the low current.

Criteria : ( $V_F > 2.0V$  at  $I_F=0.5mA$ )

## (8) Safety Guideline for Human Eyes

- The International Electrical Commission (IEC) published in 2006 IEC 62471:2006 *Photobiological safety of lamps and lamp systems* which includes LEDs within its scope. Meanwhile LEDs were removed from the scope of the IEC 60825-1:2007 laser safety standard, the 2001 edition of which included LED sources within its scope. However, keep in mind that some countries and regions have adopted standards based on the IEC laser safety standard IEC 60825-1:2001 which includes LEDs within its scope.

Following IEC 62471:2006, most of Nichia LEDs can be classified as belonging to either Exempt Group or Risk Group 1. Optical characteristics of a LED such as radiant flux, spectrum and light distribution are factors that affect the risk group determination of the LED. Especially a high-power LED, that emits light containing blue wavelengths, may be in Risk Group 2.

Great care should be taken when viewing directly the LED driven at high current or the LED with optical instruments, which may greatly increase the hazard to your eyes.

## (9) Others

- NNSW208A complies with RoHS Directive.
- Care must be taken to ensure that the reverse voltage will not exceed the absolute maximum rating when using the LEDs with matrix drive.
- Flashing lights have been known to cause discomfort in people; you can prevent this by taking precautions during use. Also, people should be cautious when using equipment that has had LEDs incorporated into it.

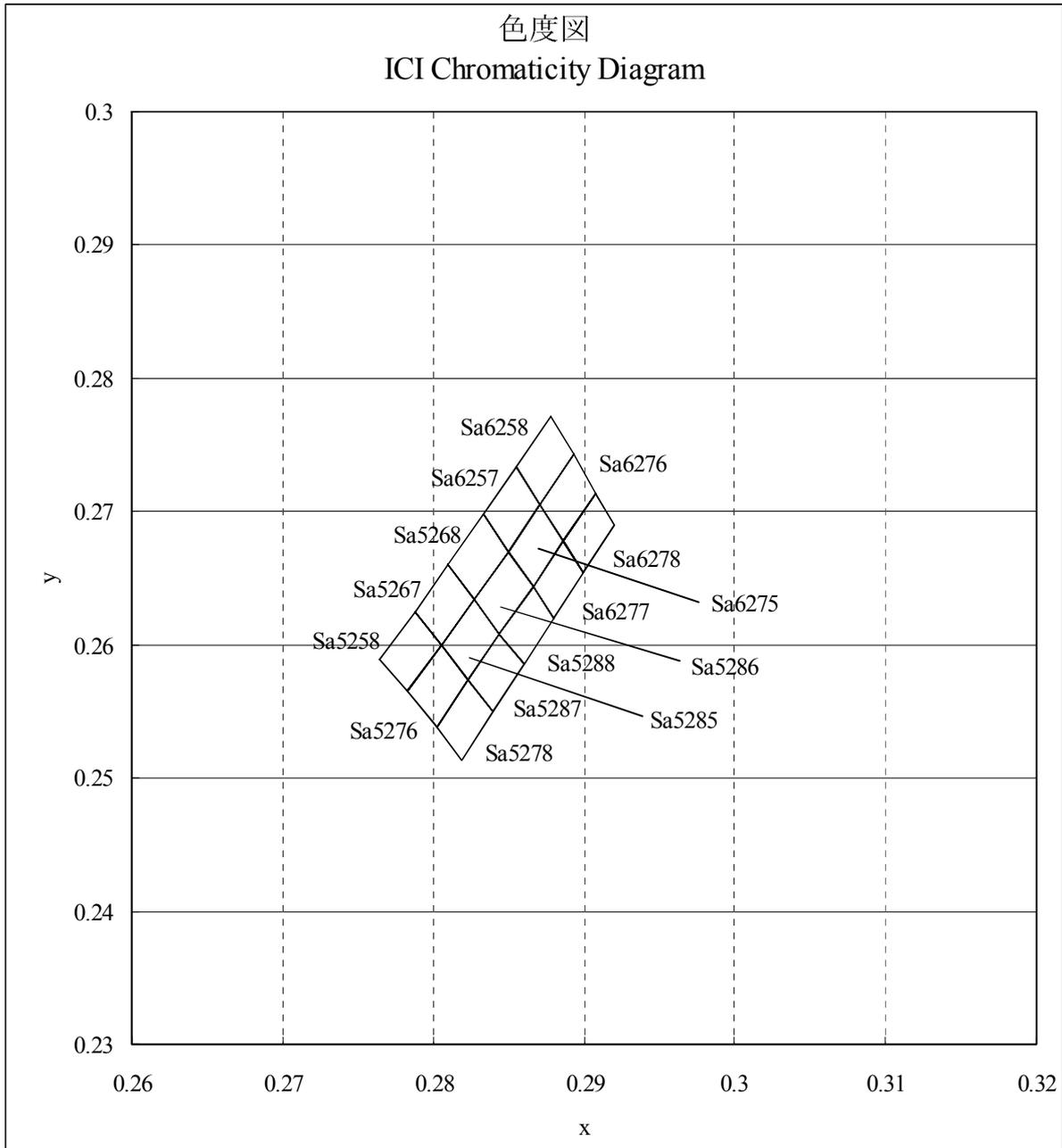
## 8. WARRANTY

- (1) Nichia warrants that its LEDs conform to the foregoing specifications and that Nichia will convey good title to all LEDs sold.
- (2) NICHIA DISCLAIMS ALL OTHER WARRANTIES INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
- (3) In the event any LED supplied by Nichia is found not to conform to the foregoing specifications within ninety days of receipt, Nichia will repair or replace the LED, at Nichia's discretion, provided that the customer (1) promptly notifies Nichia in writing of the details of the defect (2) ships the LEDs at the customer's expense to Nichia for examination, and (3) the defect is due to the negligence of Nichia and not mishandling or misuse by the customer.
- (4) Nichia will not take responsibility for any trouble that is caused by using the LEDs at conditions exceeding our specifications.
- (5) These specifications are applied only when a LED stands alone and it is strongly recommended that the customer of the LEDs confirms the properties upon assembly. Nichia is not responsible for failures caused during and after assembling.
- (6) A claim report stating details about the defect shall be made when returning defective LEDs. Nichia will investigate the report immediately and inform the customer of the results.
- (7) The LEDs described in this brochure are intended to be used for ordinary electronic equipment (such as office equipment, communications equipment, measurement instruments and household appliances). Consult Nichia's sales staff in advance for information on the applications in which exceptional quality and reliability are required, particularly when the failure or malfunction of the LEDs may directly jeopardize life or health (such as for airplanes, aerospace, submersible repeaters, nuclear reactor control systems, automobiles, traffic control equipment, life support systems and safety devices).
- (8) NICHIA'S LIABILITY FOR DEFECTIVE LAMPS SHALL BE LIMITED TO REPLACEMENT AND IN NO EVENT SHALL NICHIA BE LIABLE FOR CONSEQUENTIAL DAMAGES OR LOST PROFITS.

## 9. OTHERS

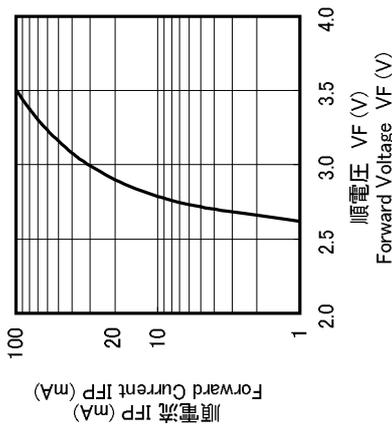
- (1) The warranties of quality set forth herein are exclusive. All previous negotiations and agreements not specifically incorporated herein are superseded and rendered null and void.
- (2) Both parties shall sincerely try to find a solution when any disagreement occurs regarding these specifications.
- (3) The customer shall not reverse engineer by disassembling or analysis of the LEDs without having prior written consent from Nichia. When defective LEDs are found, the customer shall inform Nichia directly before disassembling or analysis.
- (4) These specifications can be revised upon mutual agreement.
- (5) Nichia understands that the customer accepts the content of these specifications, if the customer does not return these specifications with signatures within 3 weeks after receipt.

--- END of SPECIFICATIONS ---

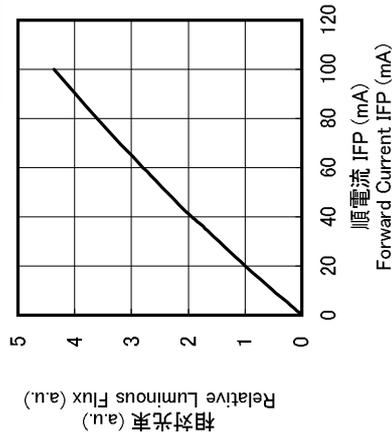


\* Color Coordinates Measurement allowance is  $\pm 0.005$ .

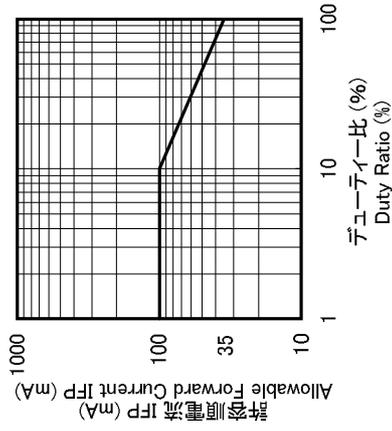
■ 順電圧-順電流特性  
Forward Voltage vs. Forward Current  
Ta=25°C



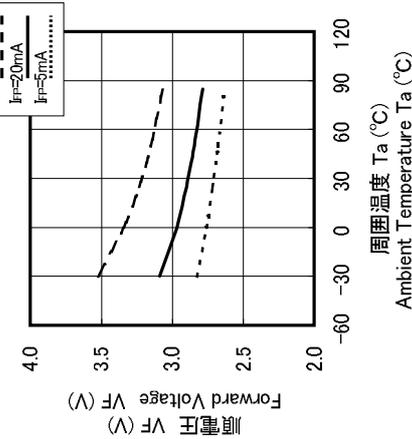
■ 順電流-相対光束特性  
Forward Current vs. Relative Luminous Flux  
Ta=25°C



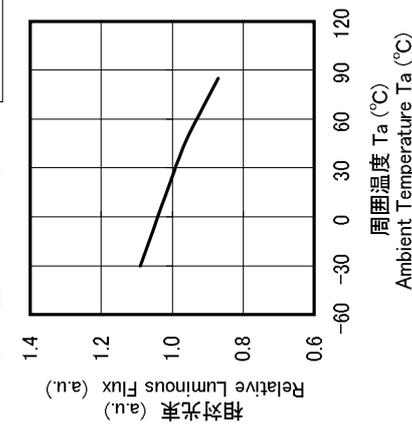
■ デューティ比-許容順電流特性  
Duty Ratio vs. Allowable Forward Current  
Ta=25°C



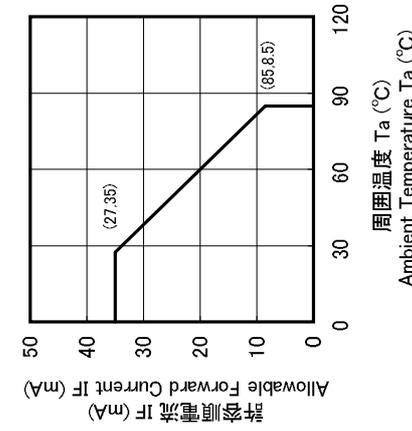
■ 周囲温度-順電圧特性  
Ambient Temperature vs. Forward Voltage



■ 周囲温度-相対光束特性  
Ambient Temperature vs. Relative Luminous Flux  
IFP=20mA

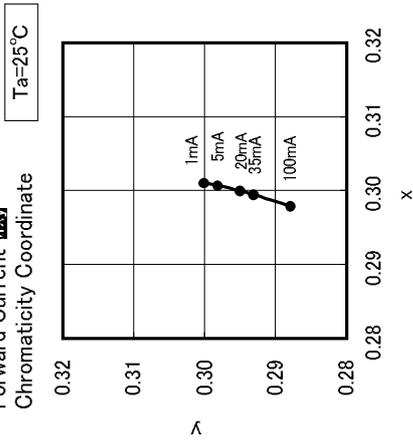


■ 周囲温度-許容順電流特性  
Ambient Temperature vs. Allowable Forward Current

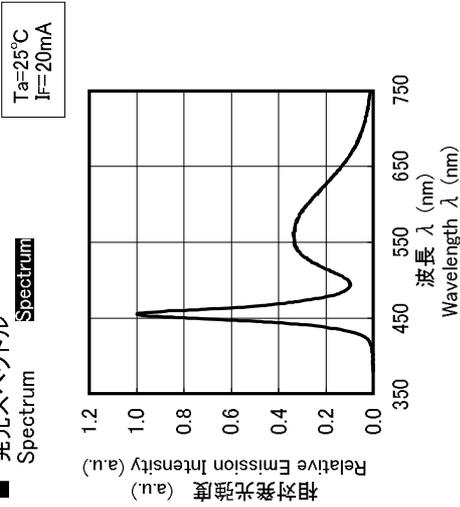


作成 Draw 山口		検図 Check 石川	承認 Approve 岡崎	部門 Section ST
作成日 Date H22-3-23				名称 Title 初期電気/光学特性 CHARACTERISTICS
型名 Model NNSW208A		図面番号 NICHTA CORPORATION		STSZ-H057661

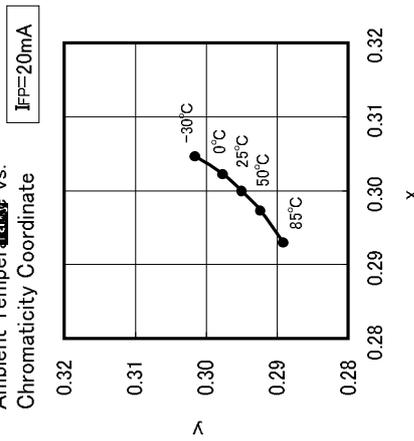
■ 順電流-色度特性  
Forward Current vs.  
Chromaticity Coordinate



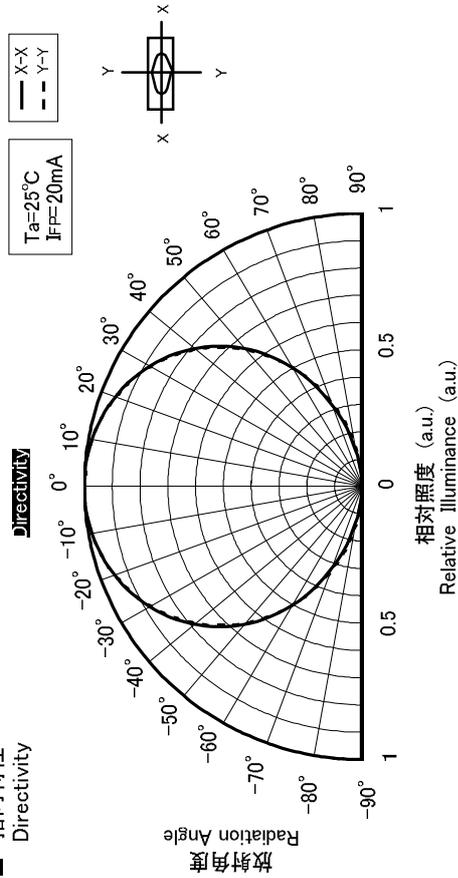
■ 発光スペクトル  
Spectrum Spectrum



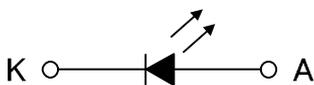
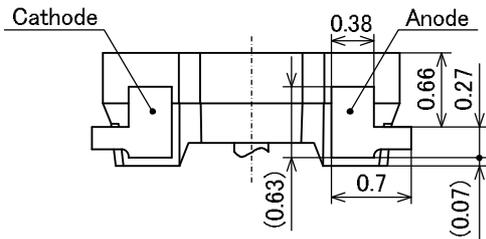
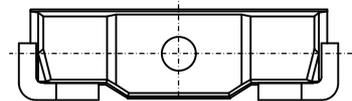
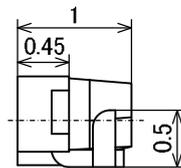
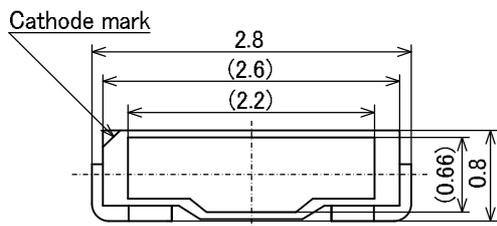
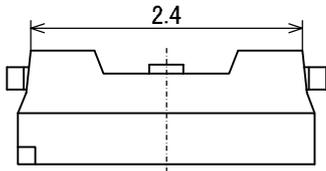
■ 周囲温度-色度特性  
Ambient Temperature vs.  
Chromaticity Coordinate



■ 指向特性  
Directivity



部門 Section	承認 Approve	検図 Check	作成 Draw
ST	岡崎	石川	山口
作成日 Date	H22-3-23		
名称 Title	初期電気/光学特性 CHARACTERISTICS		
型名 Model	NNSW208A		
図面番号 No.	日亜化学工業 (株) NICHIA CORPORATION		
STSZ-H057671			

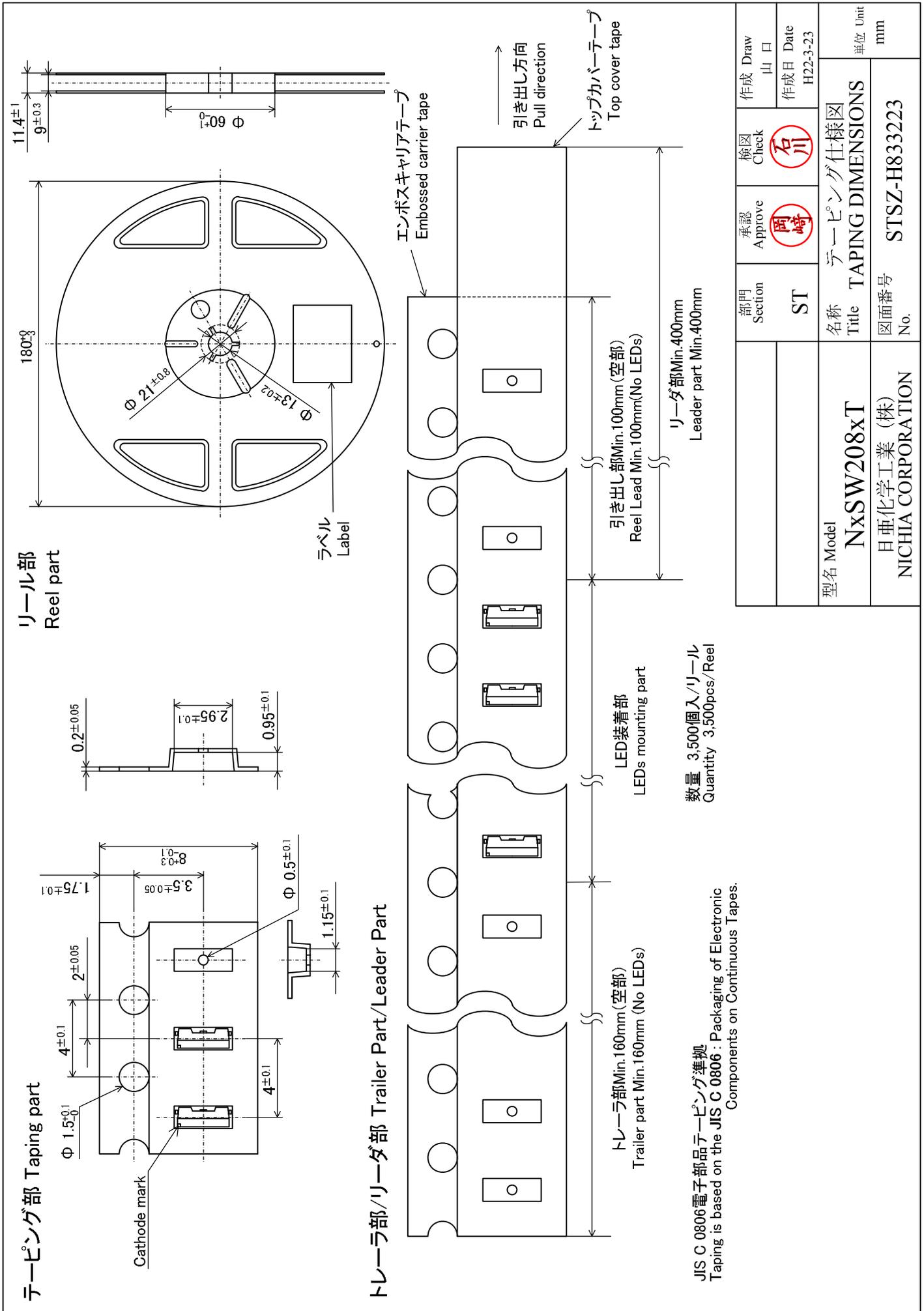


項目 Item	材質 Materials
パッケージ材質 Package	耐熱性ポリマー Heat-Resistant Polymer
封止樹脂 Encapsulating Resin	シリコン樹脂 (拡散剤+蛍光体入り) Silicone Resin (with Diffused + Phosphor)
電極 Electrodes	銅合金+銀メッキ Ag Plating Copper Alloy

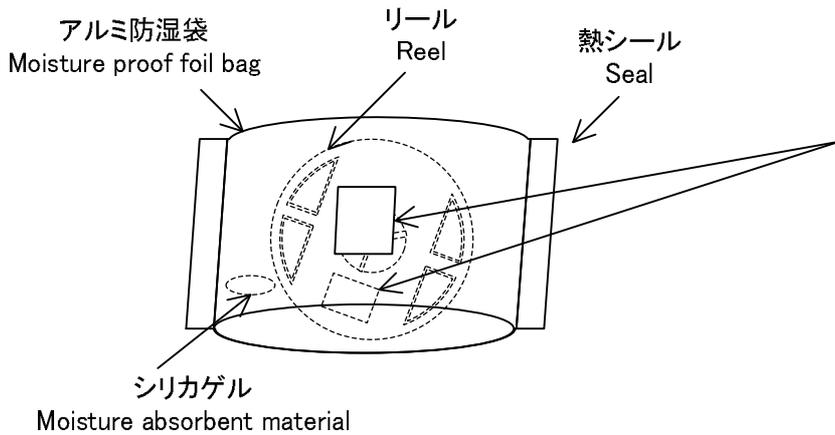
(注) バリは寸法に含まないものとします。

(NOTE) The LED may have flash/flange which exceeds the tolerance of this print.

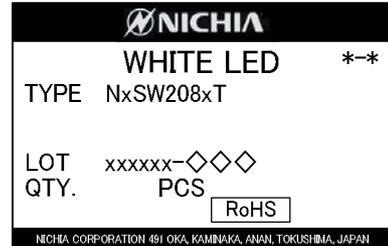
	部門 Section	承認 Approve	検図 Check	作成 Draw
	ST			山口
				作成日 Date H22-3-24
型名 Model <b>NxSW208A</b>	名称 Title 外形寸法図 OUTLINE DIMENSIONS			単位 Unit mm
日垂化学工業 (株) NICHIA CORPORATION	図面番号 No.	STSZ-H057681		公差 Allow ±0.1



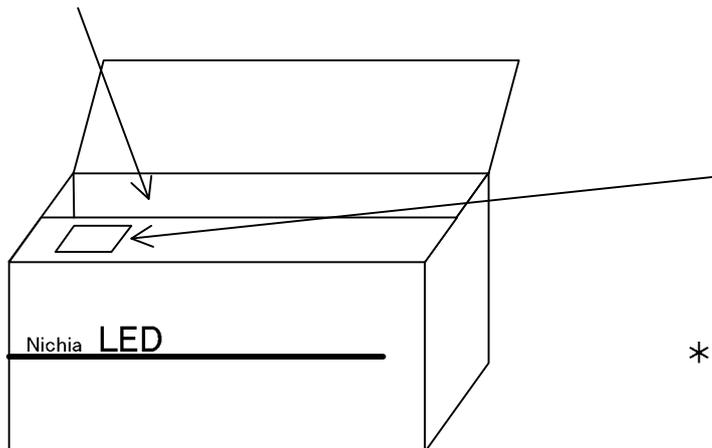
シリカゲルとともにリールをアルミ防湿袋に入れ、熱シールにより封をする。  
 The reel and moisture absorbent material are put in the moisture proof foil bag and then heat sealed.



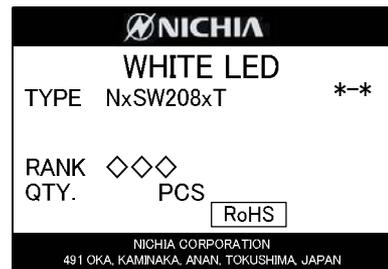
ラベル Label



ダンボールで仕切りをする。  
 The box is partitioned with the cardboard.



ラベル Label



\* The Color Mixing Rank is shown at \*\*\*\* part.

基本梱包単位 Packing Unit

	リール数 Reel/bag	チップ个数 Quantity/bag(pcs)
アルミ防湿袋 Moisture proof foil bag	1reel	3,500 MAX.

梱包箱(段ボール) Cardbord box	箱の寸法 Dimensions(mm)	リール数 Reel/box	チップ个数 Quantity/box(pcs)
S	291 × 237 × 120 × 8t	7reel MAX.	24,500 MAX.
M	259 × 247 × 243 × 5t	15reel MAX.	52,500 MAX.
L	444 × 262 × 259 × 8t	30reel MAX.	105,000 MAX.

Samsung Electronics Co., Ltd. Only	部門 Section	承認 Approve	検図 Check	作成 Draw 三木田
	ST			作成日 Date H23-2-15
型名 Model NxSW208xT	名称 Title	梱包仕様図 PACKING		
日亜化学工業(株) NICHIA CORPORATION	図面番号 No.	STSZ-H167721		