Contents naE6

kO—"ö;07552967-5000
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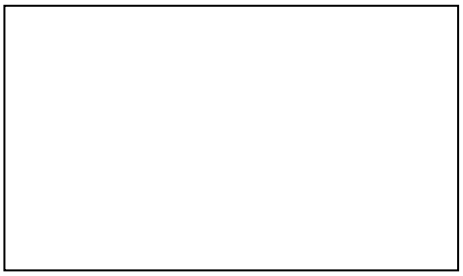
Ÿqvòö;sales@refond.com
5‘5§ö;C›&Žn•^?5•BÑ+ÕPÈ/ • [¨š i°&ª+ÕkO8Ð/º

1. Description 'a1w'•}O

1.1 GeneralDescription'a1wL½•£



This product uses the ceramics package, it has a high reliability. it also be widely application for Automotive Exterior Lighting. Size(mm): 2.00X1.60X0.80mm.

R¥'a1w¡wk=©2jØ? ‘3}US,æ{03« F•± . C›\Œ•Xk='5œ¨8ªd‘PÈ.'a1w?o? ö;2.00X 1.60X0.80mm

1.2 Features 'a1wfµE„

y Ceramic Package. ©2jØ? ‘3

yHigh Power Output and High Luminance. ± . hg1$± 'mCÞ

yPb -free reflow soldering application. P}§ 5](cÒC¾k=

yMoisture sensitive level:Level2. ¨È`Ðv })ö;Level 2

y Compliance with RoHS and REACH. u×0V 3 P)1$ 3 & " $)’³[

y Qualifications: The product qualification test plan is based on the guidelines of AEC-Q102 Stress Test Qualification for Automotive Grade Discrete Semiconductors™4TTö;'a1w™4TT]5— –æ-"6Ç'5 " & $2 [üœ¨})- u(/1? (dC¾.]5— ™4TT,¥--

1.3 Application 'a1wC¾k=

yAutomotive Exterior Lighting, Daytime Running Lamp, Headlamp, Fog lamp. œ¨8ªd‘PÈæ{9uPˆ •db§æ{œ¨8Ðb§æ{ª:b§

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1.4 Package Dimension ? ‘3?o?

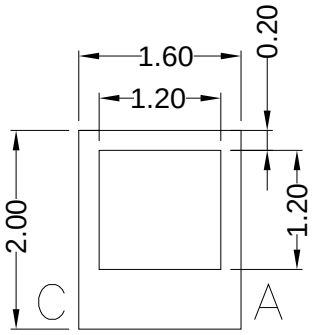

Fig.1-1 Top View !“M’?ö .

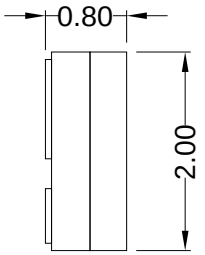

Fig.1-2 Side View ×M’?ö .

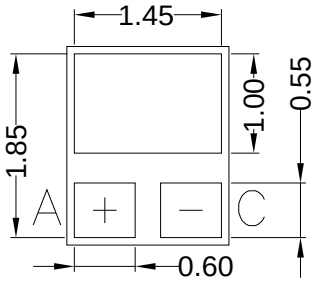

Fig.1-3 Bottom View 6üM’?ö .

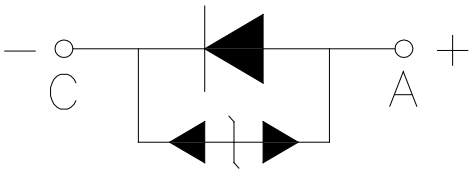

Fig.1-4 Polarity ± W

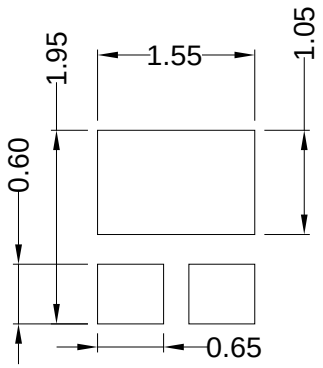

Fig.1-5 Soldering Patterns Ø9€':-

Notes 8Š\¤ö;

All dimensions units are millimeters. J>Rc?o? Sû\¤/@(Y&¹[x›

All dimensions tolerances are r0.2mm unless otherwise noted. © fµ-FSû\¤8ªæ{J>Rc?o? , Bµ&¹ p [x›

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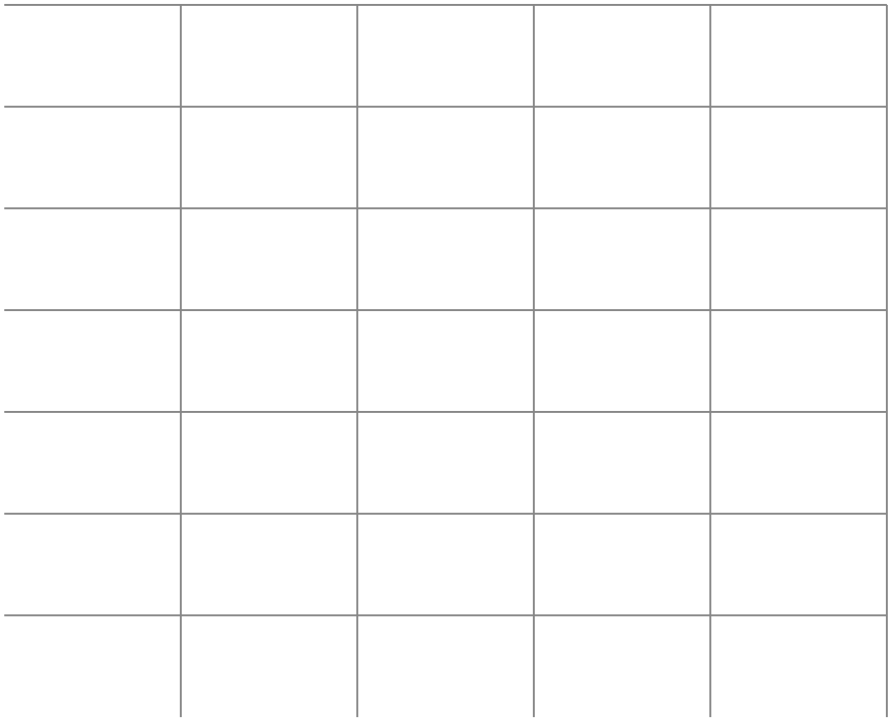
1.5 Product Parameters 'a1w/ìO¨

Table 1-1 Electrical / Optical Characteristics at Ts=25°C kOF•&x+Õ=ÖfµF•

Item ¬àna	Symbol u×0?	Test Condition]5— Rõ'Ý	Value			Unit /@(Y
			Min. æwRR?-)éæ	Typ æw,)6)éæx	Max. æwRR8Ð)éæ	
Forward Voltage æwYû0bkO/“æx	V_F	I_F=1000mA	2.8	---	3.4	V
Reverse Current æw`)kO](æx	I_R	V_R=5V	---	---	10	uA
luminous flux (#Øb©d^)	-	I_F=1000mA	360	---	460	lm
Viewing Angle æw0 +Õ“-CÞæx		I_F=1000mA	---	120	---	deg
Color Rendering Index Q „€KwO¨	R_a	I_F=1000mA	---	---	---	---
Thermal Resistance. æwcš¨Öæx	R_{THJ-S}	I_F=1000mA	---	3.1	4.1	/W

Table 1-2 Absolute Maximum Ratings at Ts=25°C }_? RR8Ð)é

Parameteræw/ìO¨æx	Symbolæwu×0?æ	Ratingæw)éæx	Unitsæw/@(Ya
Power Dissipation æw. •ræx	P_D	5100	mW
Forward Current æwYû0bkO](æx	I_F	1500	mA
Peak Forward Current æw@½)ékO](æx	IFP	2000	mA
Reverse Voltage æw/ÿ0bkO/“æx	V_R	5	V
Electrostatic Discharge (HBM)æwªýkOæx	E_{SD}	8000	V
Operating Temperature æwN|(r^›CÞæx	T_{OPR}	-40 ~ +125	B]



Bin data **H**

BIN CODE	X1	Y1	X2	Y2	X3	Y3	X4	Y4
57N	0.3221	0.3255	0.3206	0.3474	0.3375	0.3628	0.3365	0.3381
60N	0.3157	0.3211	0.3142	0.3430	0.3311	0.3584	0.3301	0.3337
65N	0.3029	0.3286	0.3206	0.3463	0.3222	0.3243	0.3069	0.3095

0.3243

1.7 Typical optical characteristics curves ,)6 +Õ=ÖfµF•R<}A

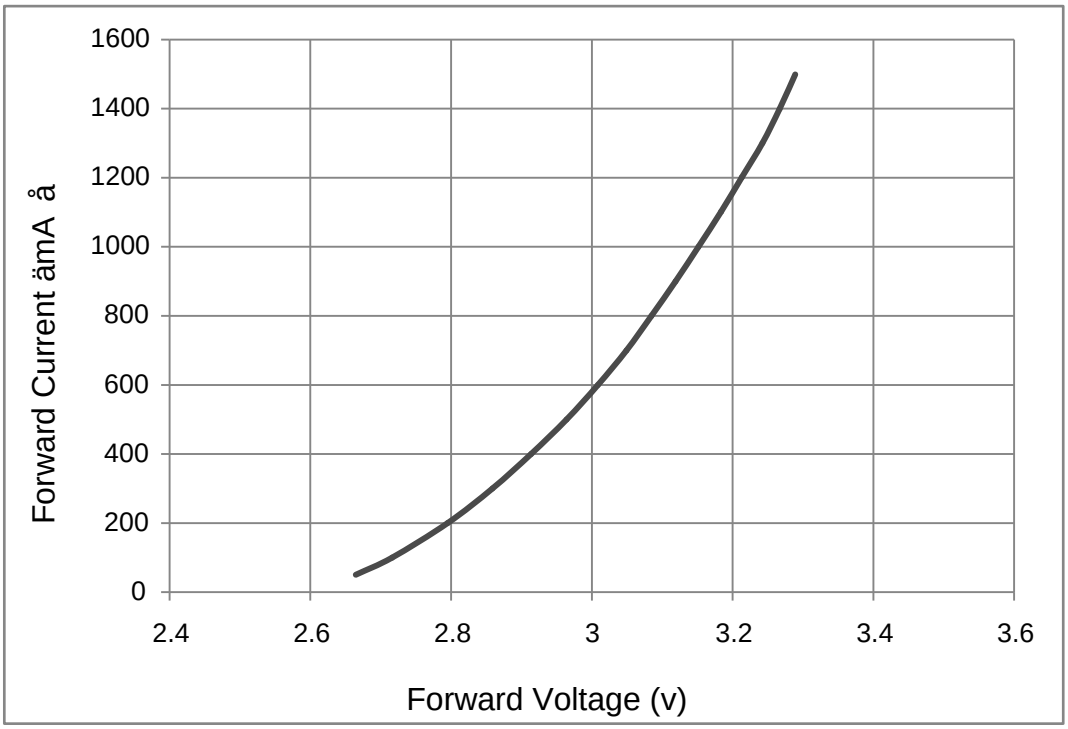


Fig 1-6 Forward Voltage Vs. Forward Current (> fµF•R<}A

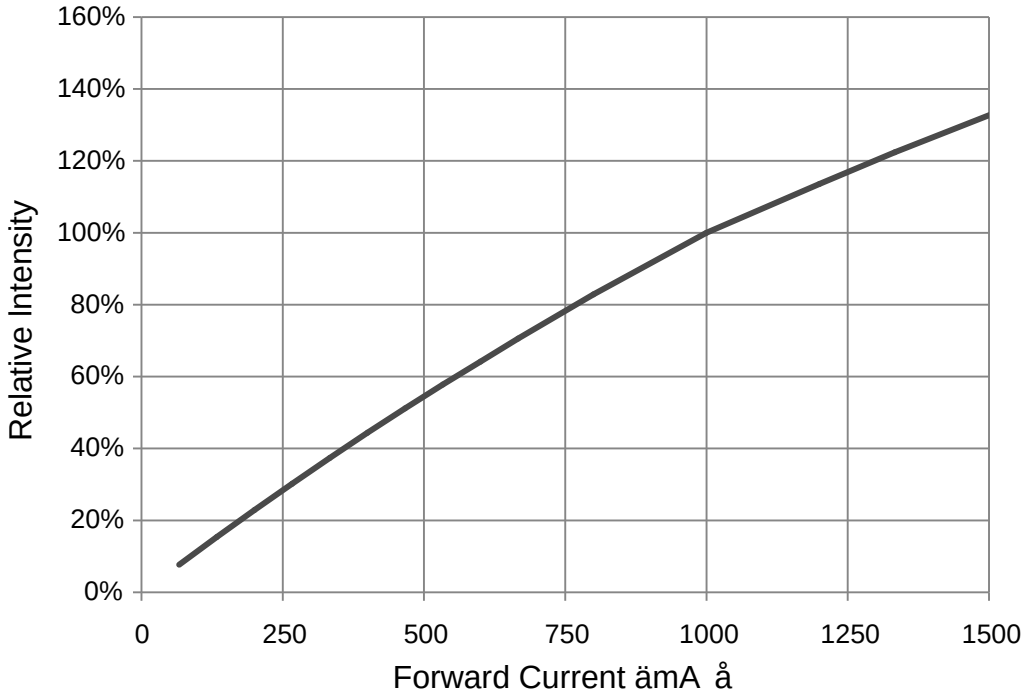


Fig 1-7 Forward Current Vs. Relative Intensity Yû0bkO](&xnq? +ÕE fµF•R<}A

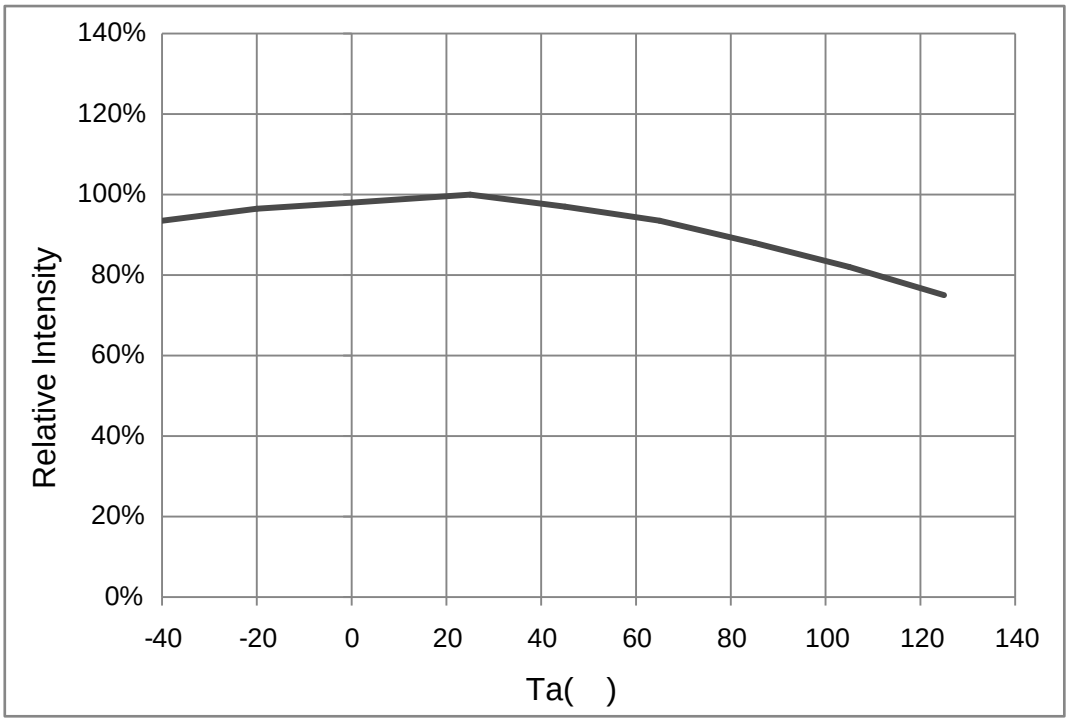


Fig 1-8 Ts Temperature Vs Relative Intensity v×•ƒ^›CÞ&xnq? +ÕE fµF•R<}A

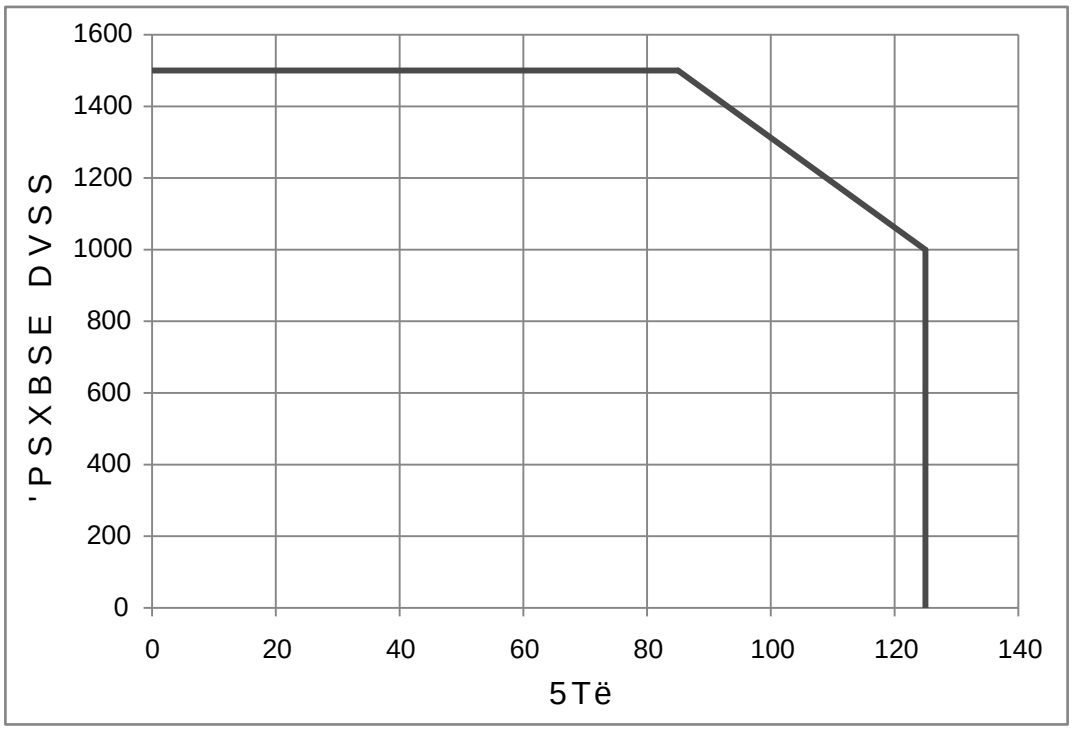


Fig 1-9 Ts Temperature Vs Forward Current v×•ƒ^›CÞ&xYû0bkO](fµF•R<}A

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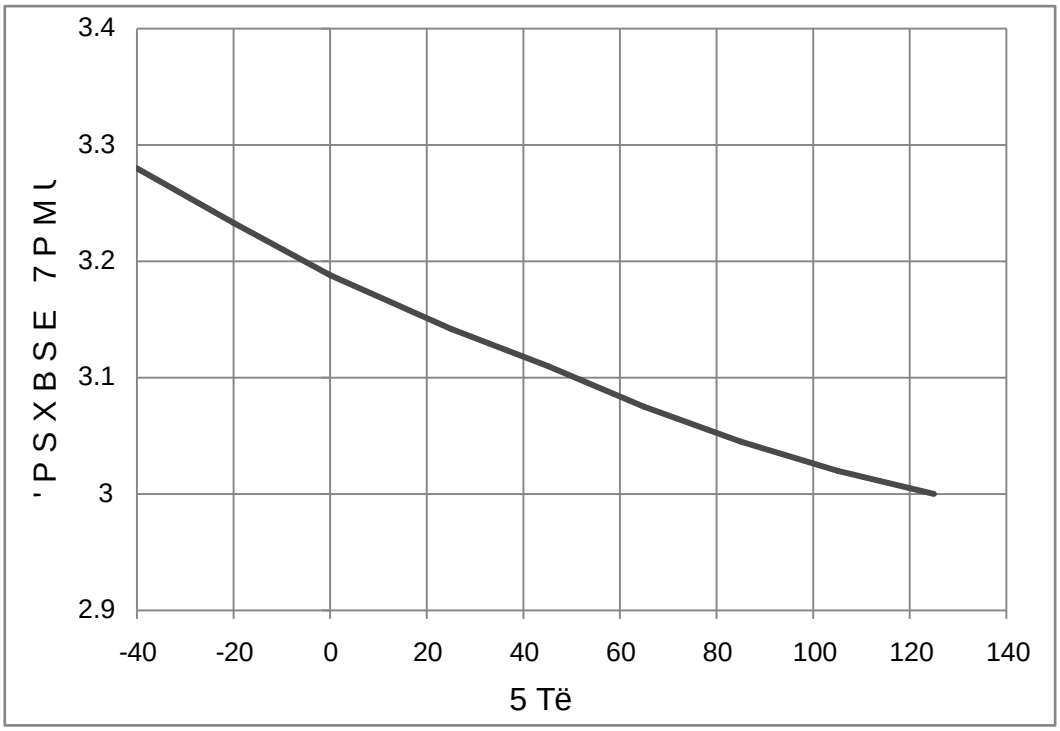

Fig. 1-10 Forward Voltage Vs Solder TemperaturekO/“&xv×•ƒ^›CÞfµF•R<}A

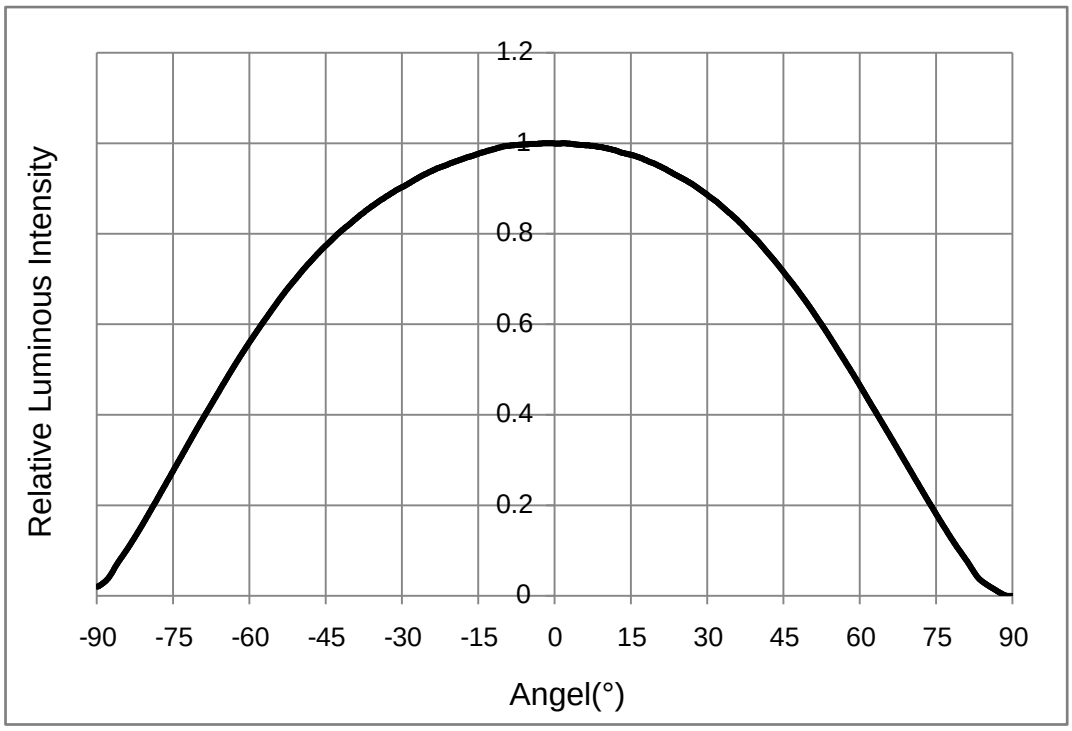

Fig 1-11 Radiation diagram œÒ? fµF•R<}A

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Fig. 1-12 Chromaticity Coordinate Vs Solder Temperature„€5ÂSû&xv×•ƒ^›CÞfµF•R<}A

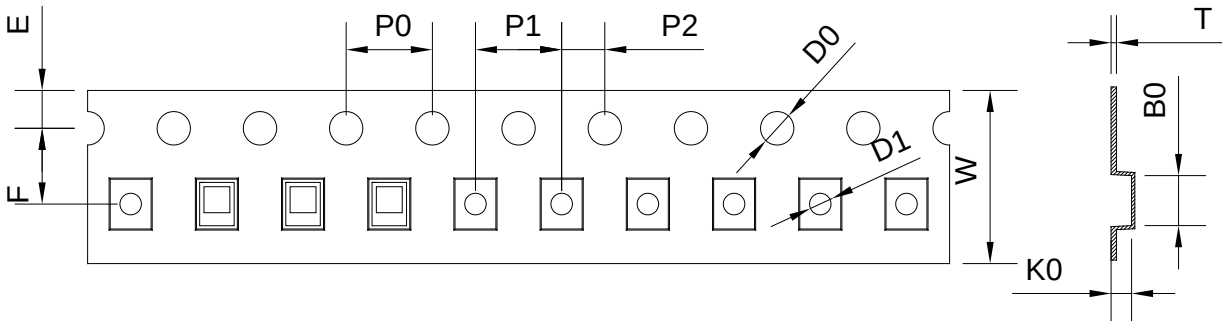
Fig 1-13 Spectrum Distribution +Õ—v- BÒfµF•R<}A

2. Packaging 'a1w.«‘3

2.1 Packaging Specification .«‘3“ TT

Package:4000pcs/reel..«‘3Zæ/w Q DoT

2.1.1 Carrier Tape Dimension œ¿C ?o?



symbol	A0	B0	K0	P0	P1	P2
Spec	1.80±0.1	2.30±0.1	0.95±0.1	4.00±0.1	4.00±0.1	2.00±0.05
symbol	W	T	E	F	D0	D1
Spec	8.00±0.1	0.20±0.05	1.75±0.1	3.50±0.1	1.50±0.1	1.10±0.1

Fig.2-1 Carrier Tape Dimension œ¿C ?o?

2.1.2 Reel Dimension /wn9?o?

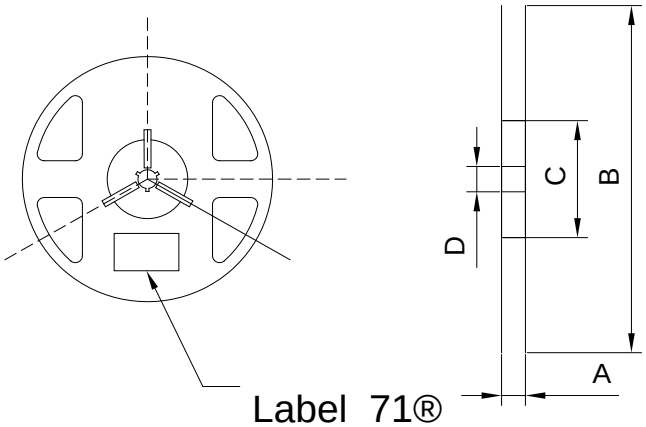


Fig.2-2Reel Dimension /wn9

Table 2-1 Dimension ?o?

A	12±0.3mm
B	180±2mm
C	60.0±1mm
D	13.0±0.2mm

Notes 8Š\¤ö;

The tolerances unless mentioned ±0.1mm. Unit : mm <•pÉ6Ò<•! -– â±0. 1;“L æ{ +â+ "ý õpÉ;“L o

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2.1.3 Label Form Specification SûvŠ“ TT

Table 2-2 Label Form SpecificationSûvŠ“ TT

PART NO	Part Number 1w0\
SPEC	

Fig 2-3 Label Form SpecificationSûvŠ“ TT

2.2 Moisture Resistant Packing ¨È`Ð.«‘3

Fig.2-4 MoiSture Resistant Packing ¨È`Ð.«‘3

2.3 Cardboard Box .«‘3}:vò

Fig.2-5 Cardboard Box .«‘3}:vò

2.4 Reliability Test Items And Conditions)L™FF•]5— ¬àna/úRõ'Ý

Table 2-3 Reliability Test Items And Conditions)L™FF•]5— ¬àna/úRõ'Ý

Test Items ¬àna	Ref.Standard /î•LSû,¥	Test Condition]5— Rõ'Ý	Time Pž¨,	Quantity O¨¡€	Ac/Re LyOPK(OP
Reflow 5](cÒ	JESD22-B106	Temp:260 ë max T=10 sec	2times	20pcs.	0/1
MSL2 ¨È`Ðv })2	JESD22-A113	85 ë/ 60%R_H	168 hrs.	20pcs.	0/1
Thermal Shock ,‡cš,~-	JEITAED-4701 300307	-40 ë 15min 9 ;10s 125 ë 15min	1000 cycle	20pcs.	0/1
Life Test ± ^›]5—	JESD22-A108	Ta=125 ë I_F=1000mA	1000hrs.	20pcs.	0/1
High Temperature High Humidity Life Test ± ^›± _*]5—	JESD22-A101	85 ë/ 85%R_H I_F=1000mA	1000hrs.	20pcs.	0/1

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2.5 Criteria For Judging Damage 8ßOj-<>ASû,¥

Table Criteria For Judging Damage 8ßOj-<>ASû,¥

Test Items ¬àna	Symbol u×0?	Test Condition]5— Rõ'Ý	Criteria For Judgement -<>ASû,¥	
			Min. RR?-	Max. RR8Ð

Notemesnpß

3.SMT Reflow Soldering Instructions SMT š WD y *f*

3.1 SMT Reflow Soldering Instructions SMT **5](cÒ—9PÈ**

Fig.3-1 SMT Reflow Soldering Instructions SMT 5](cÒ—9PÈ

Table 3-1Reflow parameters

4. Handling Precautions 'a1w(ªk=\¤H '2¬à

4.1 Handling Precautions 'a1w(ªk=\¤H '2¬à

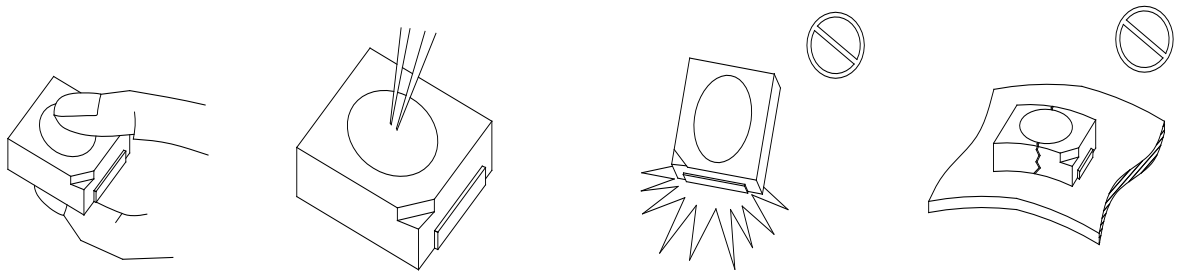

Fig 4-1 Cautions \¤H '2¬à

(5) In designing a circuit, the current through each LED can not exceed the absolute maximum rating specified for each LED. In the meanwhile, resistors for protection should be applied, otherwise slight voltage shift will cause big current change, burn out may happen. The driving circuit must be designed to allow forward voltage only when it is ON or OFF. If the reverse voltage is applied to LED, migration can be generated resulting in LED damage. — –ækOš Pžæ{ž •Þ & %‰¸kO](&v•J™„•B“ >Am¸RR8Ð)éæ{0ZPžæ{•nª=(ªk=)BJákO¨Öæ{0„--æ{EÎ?-m¸kO/“0 .Ê? (D¸™pœÅ8ÐkO](0 .Êæ{03•J? ƒ]'a1wL ZÈ okOš — –æEó¬â)B— 0+Rc5^D“0—Iô•O,'"¨{m¸Pž)«- h¡Yû0bkO/“m¸0 .Êæ{&v'³P6. /ÿ/“æ{0„--(L 5Á - & %‰

(6) Thermal Design is paramount importance because heat generation may result in the Characteristics decline, such as brightness decreased, Color change and so on. Please consider the heat generation of the LEDs when making the system design.LED >,PÒ5 &¹ƒH›gm¸0 cš1$h 7¯m¸^›CÞOV0 •\OV0 æ{^›CÞ/.± (¨í([- & %‰ +Õ Ojhgæ{Eg1‡0 +Õ- „€æ{J>'Ä5^— –æPžC¾+Î- •L• O”cš¨|¬ÿ o

(7) Compared to standard encapsulants, silicone is generally softer, and the surface is more likely to attract dust, requiring special care during processing. In cases where a minimal level of dirt and dust particles cannot be guaranteed, a suitable cleaning solution must be applied to the surface after the soldering of components. Refond suggests using isopropyl alcohol for cleaning. In case other solvents are used, it must be assured that these solvents do not dissolve the package or resin. Ultrasonic cleaning is not recommended. Ultrasonic cleaning may cause damage to the LED. &x,&'-? ‘3•8nqZñæ{pŠ•8ž C"œÅœ±æ{••« PÒ0¨¨á•nfŸæ{C¾k=PžC¾fµ-F\¤H æ{E2? 'a1w\Ç,™CÞ’³[œÅ± Pžæ{5](cÒ'Ä0_ª='³¡wk=G E2m¸^a\äP0D-æ{Iî'ÌL€†[k=D—&‹ ë(r^a\ä-kæ{9uª='³k=-L,&'-^a\ä-kæ{Eó¬â)B— &v(pv5Á? ‘3(dæ{™„8n^a\ä03•J(? - & %‰ RûL >ræ{&vL€†[•os+^a\äP0D- o

Table 4-1Storage *°=¸

Conditions s+x«		Temperature ^›CÞ	Humidity _*CÞ	Time Pž¨,
Storage Ø ˆ	Before Opening Aluminum Bag K .«-x	ö030 ë	ö075%	Within 1 Year From Date &gCƒ,;
	After Opening Aluminum Bag K .«0_	ö030 ë	ö060%	Recommended for use within 24 hours DŠ–ó24?-Pž,;(ªk=
Baking cwc•		60 p5 ë	-	ö124hours 8Ð'524?-Pž

(8) If the moisture absorbent materialp·silica gelp¸has faded away or the LEDs have exceeded the storage time, baking treatment should be performed after unpacking and based on the following conditionp·60±5p¸W for above 24 hours.9uSSC•e•-kIô.«‘38ßOjæ{lô•O'a1w&vu×0V'Ä&sRcOj*°=¸Rõ'Ýæ{ª=K .«0_•s•dcwc•æ{cwc•Rõ'Ýö;
p ëæ{8Ð'5 ?-Pž o
If the package is flatulence or damaged, please notify the sales staff to assist.9uSS.«‘3€Æ[^Iô•OpvL æ{—<ž oü§H 2 'ƒ0×/8. 8…i o
(9)Similar to most Solid state devices; LEDs are sensitive to Electro-Static Discharge (ESD) and Electrical Over Stress (EOS). *ø,&'-m¸/1? (dkO=©4<'Ý&gTKæ{ - &?%ýkO•B](- tl« C"OuH-æ{ª='³* 9i¨ÈJá o
(10) Other points for attention, please refer to our relevant information.,&> \¤H '2¬à—</ìd‘i°&ªnq,"™4Oñ o

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Version History/)]–ç/Ž07

DateP^R•	Revisor)]–ç•O	Versionf\R¥	Verifier>NTM	Remarks8Š\¤
2022/05/10	0ï™ Xian Zhou	E0	R«n$PÈ Zhu Yiming	P 0 •d New issue
2023/09/28	0ï™ Xian Zhou	E1	R«n$PÈ Zhu Yiming	f\R¥R?P Version update

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Declare kMPÈ

This specification is written both in English and in Chinese and the latter is formal.

'a1w“ TT&ü'Ä&¥…‰OÒP0D-ðiÍ„WRc‚~tr'Ä&¥OÒf\R¥&¹‚¥Ð

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