



UW1149B

Right Angle Type White LED

Features

Package	Right Angle Type, Diffused pale yellow resin
Product features	• Outer Dimension 4.0 x 2.85 x 3.0mm(L x W x H) • Temperature range Storage Temperature : -40℃~100℃ Operating Temperature : -30℃~ 85℃ • Spatial distribution characteristics. (2 θ 1/2 : 110deg) • Lead-free soldering compatible • RoHS compliant
Chromaticity coordinates	x = 0.31TYP., y = 0.32TYP. (Condition : I _F =20mA)
Half Intensity Angle	110 deg.
Die materials	InGaN
Optical efficiency	15 lm/W
Rank grouping parameter	Sorted by luminous intensity and chromaticity per rank taping
Assembly method	Auto pick & place machine (Auto Mounter)
Soldering methods	Reflow soldering, TTW (Through The Wave) soldering and manual soldering
Taping and reel	1,500pcs per reel in a 12mm width tape. (Standard) Reel diameter: ϕ180mm
ESD	1kV (HBM)

Recommended Applications

Electric Household Appliances, PC/Peripheral Equipment, Other General Applications



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Color and Luminous Intensity

(T_a=25°C)

Part No.	Material	Emitted Color	Lens Color	Luminous Intensity			Luminous Flux	
				I _v (mcd)			Φ _v (lm)	
				MIN.	TYP.	I _F	TYP.	I _F
UW1149B	InGaN	White	Pale Yellow	282	400	20	1.1	20

※ Note : The above luminous intensity(I_v) is the setup values of the sorting machine.
(Tolerance : I_v...±10%)

Absolute Maximum Ratings

(T_a=25℃)

Item	Symbol	Absolute Maximum Ratings	Unit
Power Dissipation	P _d	100	mW
Forward Current	I _F	25	mA
Pulse Forward Current ※ 1	I _{FRM}	100	mA
Derating (T _a =25℃ or higher)	ΔI _F	0.33	mA/℃
	ΔI _{FRM}	1.33	mA/℃
Reverse Voltage	V _R	5	V
Operating Temperature	T _{opr}	-30~+85	℃
Storage Temperature	T _{stg}	-40~+100	℃

※ 1 I_{FRM} Measurement condition : Pulse Width ≦ 1ms., Duty ≦ 1/20.

Electro-Optical Characteristics

(T_a=25℃)

Item	Condition	Symbol	Characteristics		Unit
Forward Voltage	I _F =20mA	V _F	TYP.	3.7	V
			MAX.	4	
Reverse Current	V _R =5V	I _R	MAX.	10	μA
Half Intensity Angle	I _F =20mA	2θ _{1/2}	TYP.	110	deg.
Chromaticity Coordinates	I _F =20mA	x	TYP.	0.31	-
		y	TYP.	0.32	-

Luminous Intensity Rank

(T_a=25℃)

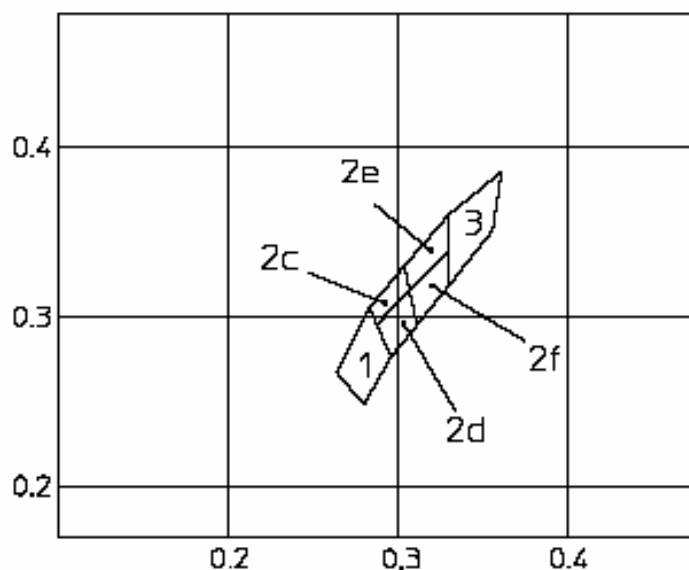
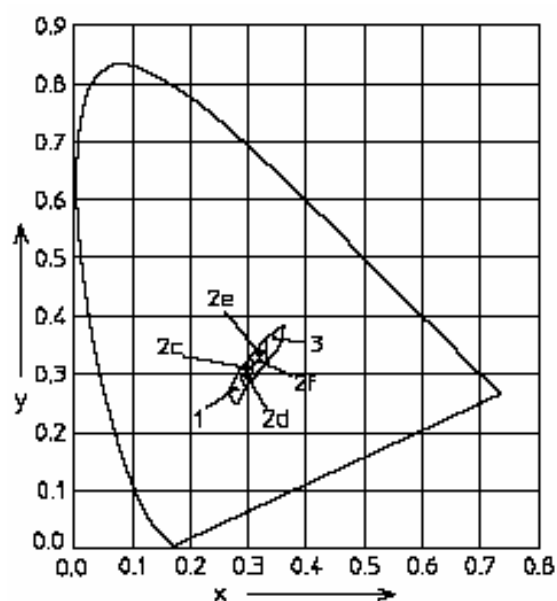
Intensity Tolerance each Rank : +/-10%

Rank	I _V (mcd)		Condition
	MIN.	MAX.	
A	282	336	I _F =20mA
B	336	400	
C	400	475	
D	475	565	
E	565	672	
F	672	-	

※Please contact our sales staff concerning rank designation.

Sorting Chart for Chromaticity Coordinates

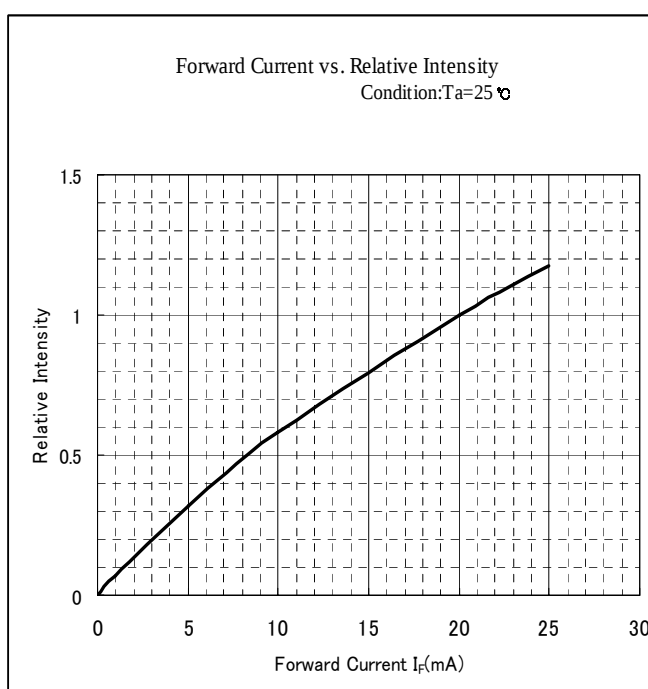
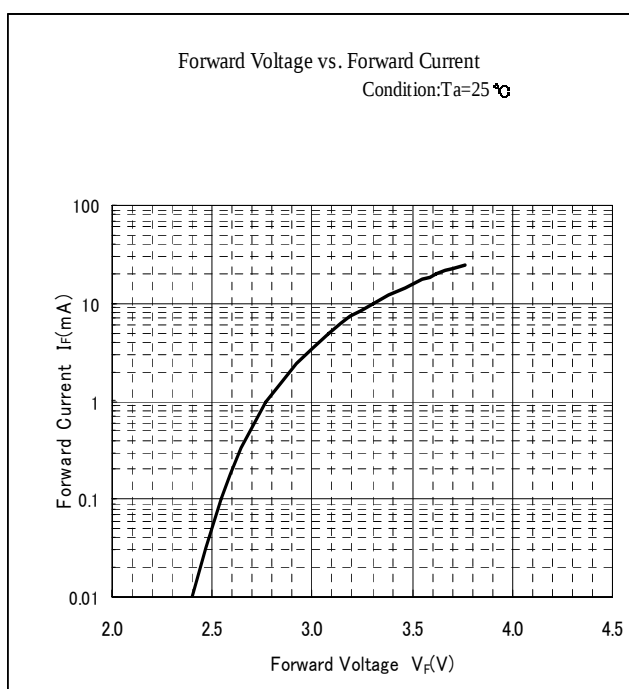
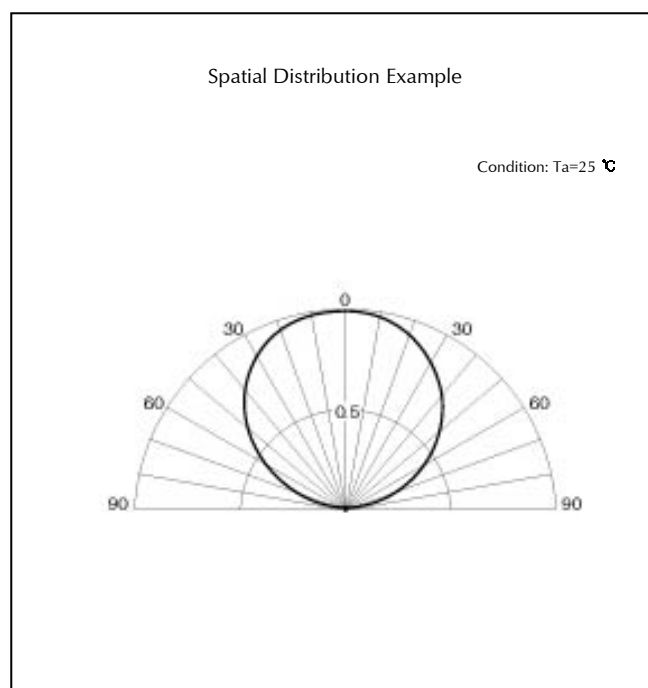
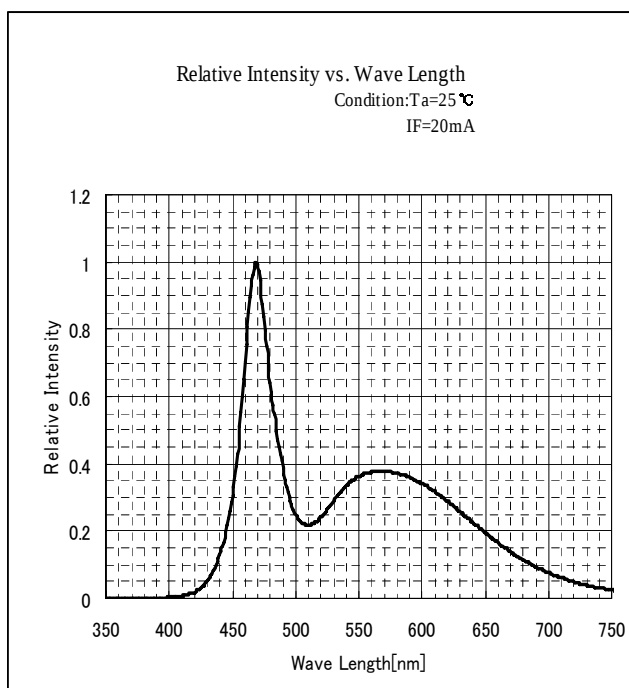
Chromaticity Coordinates Tolerance Each Rank : ± 0.01



Rank	LEFT DOWN point		LEFT UP point		RIGHT UP point		RIGHT UP point	
	x	y	x	y	x	y	x	y
1	0.280	0.248	0.264	0.267	0.283	0.305	0.296	0.276
2c	0.287	0.295	0.283	0.305	0.304	0.330	0.307	0.315
2d	0.296	0.276	0.287	0.295	0.307	0.315	0.311	0.294
2e	0.307	0.315	0.304	0.330	0.330	0.360	0.330	0.339
2f	0.311	0.294	0.307	0.315	0.330	0.339	0.330	0.318
3	0.330	0.318	0.330	0.360	0.361	0.385	0.356	0.351

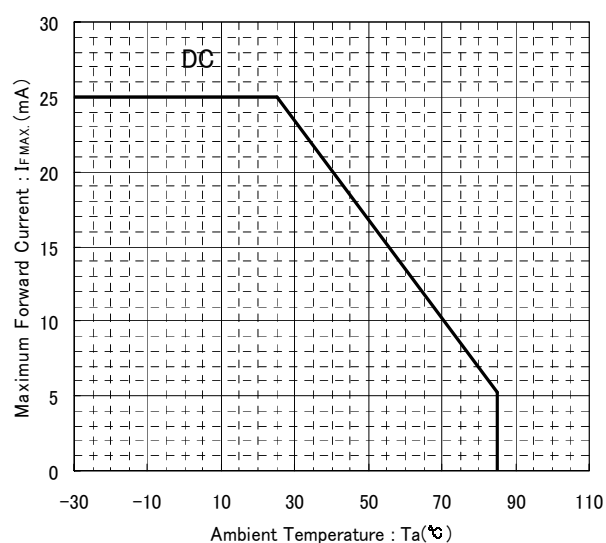
✖ Please contact our sales staff concerning rank designation.

Technical Data

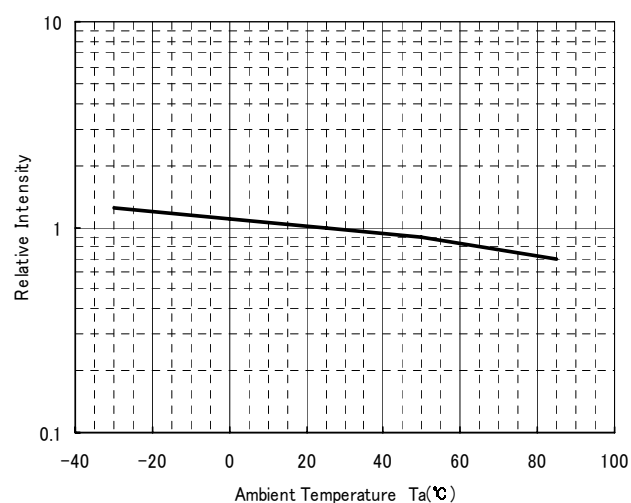


Technical Data

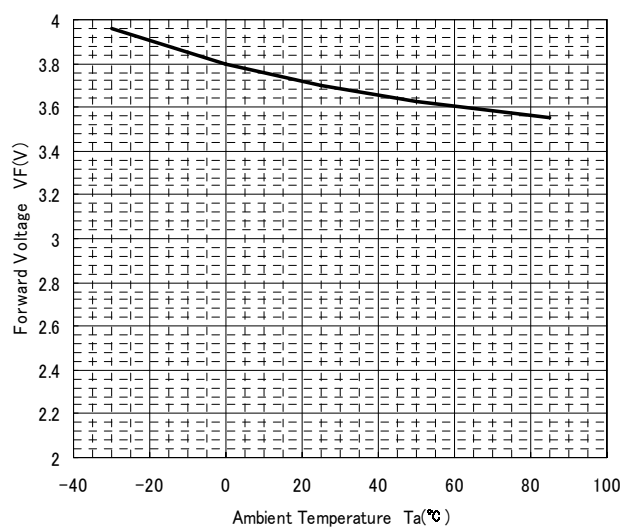
Ambient Temperature vs. Maximum Forward Current



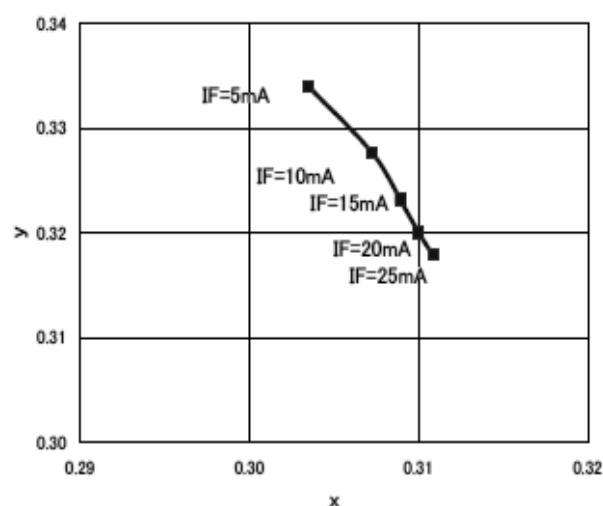
Ambient Temperature vs Relative Intensity
Condition: $I_F=20mA$



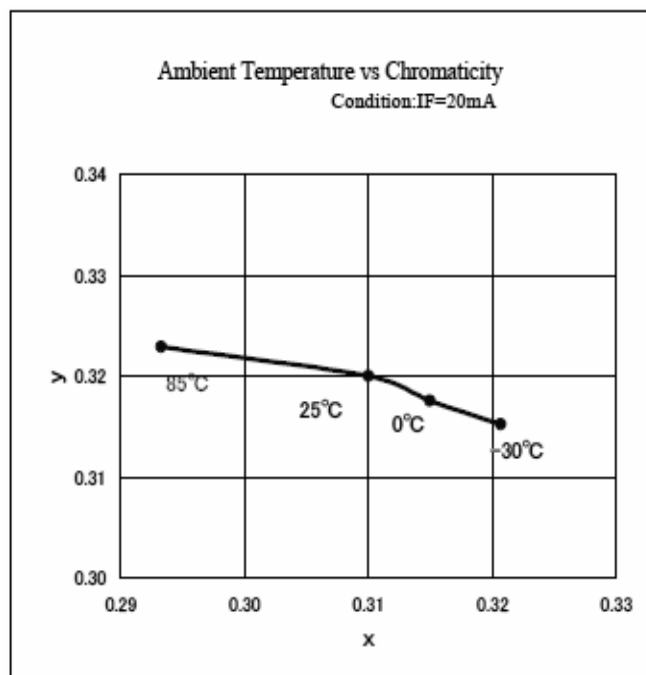
Ambient Temperature vs Forward Voltage
Condition: $I_F=20mA$



Forward Current vs. Chromaticity
Condition: $T_a=25^\circ C$

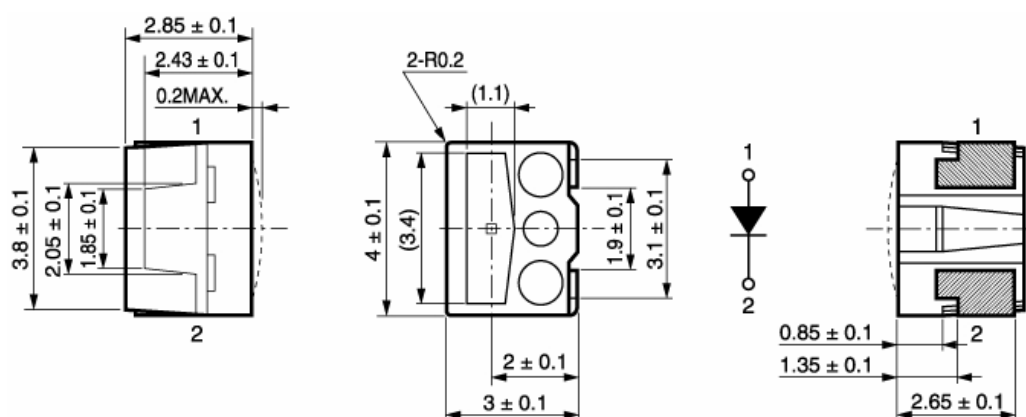


Technical Data



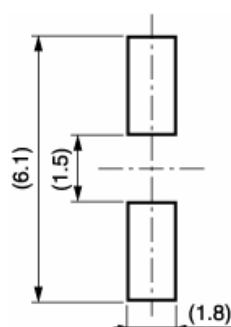
Package Dimensions

(Unit: mm)



Recommended Soldering Pattern

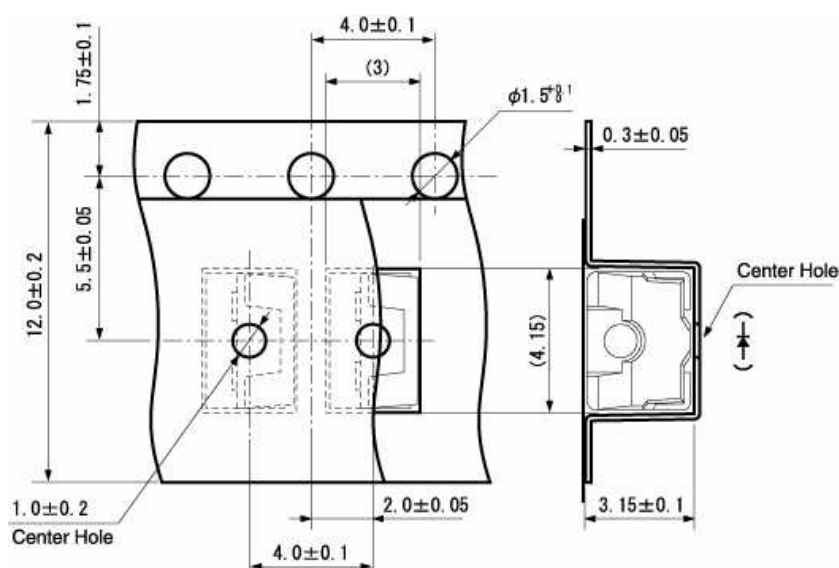
(Unit: mm)



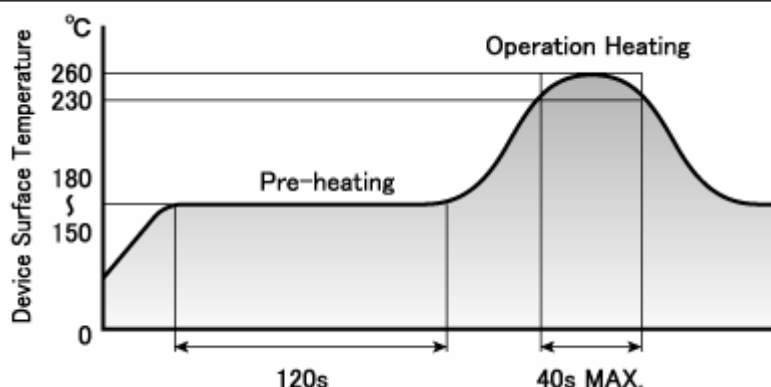
Taping Specification

(Unit: mm)

Quantity: 1,500pcs/ reel (standard)



Reflow Soldering Conditions



- 1) The above profile temperature gives the maximum temperature of the LED resin surface. Please set the temperature so as to avoid exceeding this range.
- 2) Total times of reflow soldering process shall be no more than 2 times. When the second reflow soldering process is performed, intervals between the first and second reflow should be short as possible (while allowing some time for the component to return to normal temperature after the first reflow) in order to prevent the LED from absorbing moisture.
- 3) Temperature fluctuation to the LED during the pre-heating process shall be minimized. (6 °C maximum)

TTW (Through The Wave) soldering Conditions

Pre-heating	120 °C 60 s	(MAX.) (MAX.)
Solder Bath Temp.	265 °C	(MAX.)
Dipping Time	5 s	(MAX.)

- 1) The dip soldering process shall be 2 times maximum.
- 2) The product shall be cooled to room temp. before the second dipping process.

Manual Soldering Conditions

Iron tip temp.	350 °C	(MAX.)
Soldering time and frequency	3 s 1 time	(MAX.) (MAX.)

Reliability Testing Result

Reliability Testing Result	Applicable Standard	Testing Conditions	Duration	Failure
Room Temp. Operating Life	EIAJ ED-4701/100(101)	Ta = 25℃, If = 25mA	1,000 h	0/20
High Temp. Operating Life	EIAJ ED-4701/100(101)	Ta = 85℃, If = 6mA	1,000 h	0/20
Low Temp. Operating Life	EIAJ ED-4701/100(101)	Ta = -40℃, If = 25mA	1,000 h	0/20
Wet High Temp. Operating Life	EIAJ ED-4701/100(102)	Ta = 60℃, 90%, If = 13.5mA	500 h	0/20
Wet High Temp. Storage Life	EIAJ ED-4701/100(103)	Ta = 60℃, 90%	1,000 h	0/20
Thermal Shock	EIAJ ED-4701/100(105)	Ta = -40℃ ~ 100℃ (each 15min.)	500 cycles	0/20
High Temp. Storage Life	EIAJ ED-4701/200(201)	Ta = 100℃	1,000 h	0/20
Low Temp. Storage Life	EIAJ ED-4701/200(202)	Ta = -40℃	1,000 h	0/20
Cycled Temp. Humidity Life	EIAJ ED-4701/200(203)	Ta = -30℃ ~ 80℃, 95%, 8h/cycle	30 cycles	0/20
Resistance to Reflow Soldering	EIAJ ED-4701/300(301)	Preheat : 150℃ ~ 180℃ (120s Max.) Soldering Temp. : 260℃ (5s) Moisture Soak : 30℃, 70%, 72h	2 times	0/20
Electric Static Discharge (ESD) ^{※1}	EIAJ ED-4701/300(304)	C = 100pF, R2 = 1.5KΩ, ±2,000V	once each polarity	0/20
Vibration, Variable Frequency	EIAJ ED-4701/400(403)	98.1m/s ² (10G), 100 ~ 2KHz, 20min. XYZ each direction	2 h	0/20

※1 Reference test

Failure Criteria

Items	Symbols	Conditions	Failure criteria
Luminous Intensity	Iv	If=20mA	Testing Min. Value $\geq$ Spec. Min. Value $\times$ 0.5
Forward Voltage	V _F	If=20mA	Testing Max. Value $\leq$ Spec. Max. Value $\times$ 1.2
Reverse Current	I _R	V _R =5V	Testing Max. Value $\leq$ Spec. Max. Value $\times$ 2.5
Cosmetic Appearance	-	-	No notable, decoloration, deformation and cracking

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